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Abstract

This paper examines the relationship between tariffs and the usage of non-tariff measures (NTMs) for a product-level global panel of 97 countries over the period 1996-2020. Using the most comprehensive NTM data set to date, I find that tariff levels or changes therein are of little relevance for implementing NTMs. Instead, smaller tariff overhangs, the difference between WTO members' bound and applied tariff rates, emerge as a significant predictor of future NTM actions. The inverse link between tariff overhangs and NTMs is observable both (i) at the aggregate NTM level and (ii) for the large majority of different NTM subcategories.

JEL codes: F13, F14, F53
Keywords: Non-tariff Measures, Tariffs, GATT/WTO

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1 Introduction

The WTO frequently points to past tariff liberalization efforts to showcase its success in securing freer world trade. However, the organization's progress in regulating and restricting non-tariff measures (NTMs) is much more limited. Since the Great Recession in 2008/09 WTO members' protectionist actions, mostly in the form NTMs, have consistently outpaced trade-liberalizing policies, which threatens to undermine prior tariff reductions (Oxford Analytica 2019). Although this trend is suggestive, efforts to systematically explore the link between countries' tariffs and NTM choices have been severely hampered in the past by the lack of detailed and reliable NTM data.[1]

In this note, I consider the tariff-NTM nexus using data from the UNCTAD NTM TRAINS Portal (UNCTAD 2023a), which has recently become available and is the most comprehensive collection of NTMs in terms of country, year and product coverage to date. Focusing on the product-level (HS6-digit), I do not detect a correlation between countries' bound or applied tariff rates with NTMs. Instead, a country's sectoral tariff overhang, the difference between the WTO-negotiated bound and most-favored nation (MFN) applied tariff rates, emerges as a significant predictor of subsequent NTMs. A low tariff overhang indicates less flexibility for a country to raise its applied tariff when faced with protectionist pressures. Importers are then more likely to implement NTMs to reach their desired level of protection. The inverse link between tariff overhangs and NTMs is observable both (i) at the aggregate NTM level and (ii) for the large majority of different NTM subcategories.

The next section introduces the data and the estimation strategy. Section 3 examines the empirical link between tariffs and NTMs at both the aggregate and the NTM subcategory levels. Section 4 concludes.

2 Estimation Strategy and Data

2.1 Empirical Model

To test whether tariff overhangs are related to new NTMs, I estimate a linear fixed effects model:[2]

$$NTM_{ict} = \beta Overhang_{ic,t-1} + \gamma Z_{ic,t-1} + \eta_i + \omega_{ct} + \epsilon_{ict} \quad , \tag{1}$$

[1] Kuenzel (2023) provides an recent overview on the state of this literature.

[2] Non-linear models require dropping observations that are perfectly explained by the fixed effects structure, which can cause a sample selection bias.

where NTM_{ict} are new NTMs in HS6-digit product i imposed by importer c in year t. I use two distinct NTM variables: (i) a binary NTM indicator that takes the value one if the importer implements at least one new NTM for product i in year t, and (ii) a corresponding count variable of all new NTMs. The tariff overhang in specification (1) is the product-level difference between the bound and MFN applied tariffs:

$$Overhang_{ic,t-1} = BoundTariff_{ic,t-1} - AppliedTariff_{ic,t-1} \quad . \tag{2}$$

If a lower tariff overhang is linked to more NTMs, we should expect that $\beta < 0$. Importantly, the vector $Z_{ic,t-1}$ accounts for the levels and changes of the bound and applied tariff rates to distinguish between their impact and the tariff overhang.

In addition, the model includes the import share accounted for by PTA partners, $\text{PTAimportshare}_{ict}$, and the logged world import share of the importer in the product, $\log(\text{WorldImportShare})_{ict}$, which are key tariff overhang determinants (Beshkar et al. 2015). All specifications also contain HS6-digit, η_i, and country-year, ω_{ct}, fixed effects to control for product-specific and time-varying country-specific determinants of NTMs, respectively.[3] I use a one-year lag of all independent variables to account for information lags. The results are very similar when using contemporaneous observations.

2.2 Data

The key to the analysis is the product-level NTM data in the UNCTAD TRAINS Portal (UNCTAD 2023a). The UNCTAD researchers classify countries' NTMs into 16 separate categories and provide in each case a short description.[4] I obtain country-specific HS6-digit NTMs with their respective implementation dates for the period 1996 to 2020. The final dataset contains 97 countries and 5,195,781 observations, with a total of 1,943,712 NTMs.[5]

Table 1 shows the NTMs by category; the majority are sanitary and phytosanitary measures (SPS) and technical barriers to trade (TBT) with counts of 533,135 and 545,127, respectively. There is also a substantial number of export-related NTMs (370,699), price controls (198,275), quantity controls (141,008), pre-shipment inspections (78,290), finance measures (27,883), temporary trade

[3] Table A1 in the Appendix shows the baseline results for alternative fixed effects specifications. The results are similar in all cases.

[4] There were no recorded NTMs in two of the subcategories for the present sample.

[5] For a breakdown by country, see Table A1 in the Appendix.

barriers (TBT, 25,487), IP restrictions (14,552), and competition measures (6,459). Investment controls, distribution restrictions, subsidies and rules of origin (ROO) are less frequent with counts of less than 2,000 each.

I obtain importer-specific tariff data from the TRAINS database (UNCTAD 2023b), which provides average bound and MFN applied tariffs at the HS6-digit level. Table A1 shows the distribution of tariff overhangs across products in the sample for each country.[6] Only five WTO members (China, EU, Hong Kong, Japan, Switzerland, US) feature no positive tariff overhangs for most or all of their products, indicating little trade policy flexibility. For 33 WTO members, a majority of products is subject to tariff overhangs of 25 percentage points or higher. The remaining 59 countries have a more evenly distributed tariff overhang structure, frequently with a majority of their products having tariff overhangs between zero and 25 percentage points.

To construct the PTAImportShare and log(WorldImportShare) measures, I use trade data from CEPII (2023) and bilateral PTA information over time from the updated dataset of Egger and Larch (2008). Table 3 provides summary statistics and definitions for all variables.

3 Results

3.1 NTM Aggregate

Table 4 shows the estimation results for the model in equation (1) when aggregating new NTMs across all subcategories. Specifications (1) to (4) use the binary product-level NTM indicator as dependent variable, whereas columns (5) to (8) focus on NTM counts. Standard errors are clustered throughout at the country/HS4-digit level as NTM and tariff choices are potentially correlated over time within the country/HS4-digit level.

Specification (1) includes the tariff overhang as well as country-year and HS6-digit fixed effects. The tariff overhang coefficient is negative and statistically significant at the one percent level. The estimated coefficient of $-.0346$ implies that a tariff overhang increase from zero to 30 percentage points, corresponding to the 25th and 75th percentiles in the data, respectively, lowers the likelihood of a new NTM in a given product and year by 1.04 ($= 30 \times -.0346$) percentage points. The unconditional probability of a new NTM in the sample is 10.2 percentage points, implying also a substantial economic magnitude of the tariff overhang effect.

[6] The sample excludes the one percent of product with the largest tariff overhangs to minimize the impact of outliers, which limits the data to tariff overhangs of 122 percent or less.

Accounting for the key overhang determinants PTAImportShare and log(WorldImportShare) in column (2) leaves the tariff overhang coefficient nearly unchanged. Hence, the overhang measure and not its underlying determinants are driving the negative correlation with NTMs. Specification (3) adds the contemporaneous individual applied and bound tariffs. The significant negative tariff overhang coefficient persists while neither of the tariff rates on their own can be linked to new NTMs. Column (4) adds instead the one-year lagged change in applied and bound tariffs. A similar picture as in specification (3) emerges; the tariff overhang coefficient retains its earlier magnitude. Whereas decreases in applied tariffs are a significant predictor of NTMs, the economic magnitude of the effect is small as the average applied tariff change in the sample is only $-.2$ percentage points.

The NTM count specifications in columns (5) to (8) follow the same structure as specifications (1) to (4). The results are very similar. There is throughout a statistically significant negative (at the one percent level) link between tariff overhangs and NTMs. Following a similar thought experiment as above, the $-.2741$ coefficient in column (5) implies that a tariff overhang increase from zero to 30 percentage points lowers the product-level NTM count by .08 ($= 30 \times -.2741$). Put differently, a country with 30 percentage point tariff overhangs in all of its 5,000 HS6-digit products will implement 400 fewer (.08 times 5,000) new NTMs in a given year compared to an importer with zero tariff overhangs throughout.

3.2 Estimates by NTM Category

Table 5 provides the tariff overhang coefficients when estimating the model in (1) separately for each NTM subcategory. The specifications in panel A of Table 5 regress the respective binary NTM subcategory variables on the tariff overhang and the control variables (including the fixed effects) from specification (2) in Table 4. The results are nearly identical when also controlling for the additional tariff level and change variables introduced in Table 4. These estimates are available upon request.

To conserve space, I only report the tariff overhang estimates in Table 5. For 10 out of the 14 NTM subcategories, there is a negative and statistically significant link (at the one percent level) between tariff overhangs and the respective NTMs. Low tariff overhangs are a crucial determinant for a wide range of different NTMs, including NTM subcategories previously considered in the literature: SPS, TBT, and TTB measures. The magnitude of the tariff overhang estimates varies between the different NTM subcategories, with SPS, TBT and export-related measures being the most likely to be implemented in the presence of low tariff overhangs. Finance measures, competition

restrictions, investment controls and subsidies are not negatively linked with tariff overhangs.

Panel B in Table 5 uses instead the corresponding NTM count variables. The signs and statistical significance levels are nearly identical to Panel A. The magnitude of the tariff overhang effect is again largest for SPS, TBT and export-related measures. In general, the consistency of the NTM subcategory results in Table 5 offers convincing evidence for an inverse link between tariff overhangs and NTMs. Countries are more likely to implement NTMs for products with less tariff setting flexibility as indicated by a low tariff overhang.

4 Concluding Remarks

Using the most extensive panel of NTMs to date, I show that countries' tariff overhangs are an inverse predictor of NTM actions at the importer-product level. Countries with lower tariff overhangs are more likely to implement additional regulations and other protectionist measures. This significant tariff-NTM nexus is present for most NTM subcategories and is robust to the inclusion of bound and applied tariff levels as well as their changes. If applied tariffs are close to WTO-negotiated bound tariffs, countries will implement protection via more loosely regulated policies, limiting the relevance of past tariff liberalizations for the world trading system.

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Table 1: NTMs by Subcategory

NTM Subcategory	NTM Count
SPS	533,135
TBT	545,127
Pre-shipment Inspections	78,290
TTB	25,487
Quantity Control	141,008
Price Control	198,275
Finance Measures	27,883
Competition Measures	6,459
Investment Measures	998
Distribution Restrictions	101
Subsidies	150
IP Restrictions	14,552
ROO	1,548
Export-related Measures	370,699
Total	**1,943,712**

Table 2: Non-zero NTM Distribution

NTM Count	1	2	3	4	5	6-10	11-50	>50	Total
Observations	203,309	108,571	48,458	39,469	25,637	68,566	32,399	726	527,135

Table 3: Summary Statistics

Variable	Mean	Std. Dev.	Obs.	Definition
AppliedTariff	0.0833	0.1794	5,186,129	HS6-digit MFN applied tariff (in ad valorem terms)
ΔAppliedTariff, 1 year	-0.0022	0.0516	4,542,247	1-year change in AppliedTariff
BoundTariff	0.2679	0.2826	5,186,129	HS6-digit bound tariff (in ad valorem terms)
ΔBoundTariff, 1 year	0.0000	0.0037	4,542,247	1-year change in BoundTariff
log(WorldImportShare)	-6.5700	2.6969	5,195,830	log of HS6-digit world import share
NTM	0.1015	0.3019	5,195,830	New NTM in HS6-digit product (Yes: 1, No: 0)
NTMcount	0.3741	2.1918	5,195,830	New NTM count in HS6-digit product
Overhang	0.1829	0.2110	5,195,830	BoundTariff − AppliedTariff
PTAImportShare	0.4377	0.3817	5,195,830	Product-level import share from PTA partners

Table 4: NTMs vs. Tariffs

Dependent variable:	NTM Dummy				NTM Count			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Overhang_{t-1}	-0.0346***	-0.0345***	-0.0315***	-0.0280***	-0.2741***	-0.2738***	-0.2948***	-0.2076***
	(0.0029)	(0.0029)	(0.0034)	(0.0032)	(0.0236)	(0.0236)	(0.0287)	(0.0249)
BoundTariff_t			-0.0030				0.0151	
			(0.0020)				(0.0166)	
AppliedTariff_t			0.0022				-0.0735*	
			(0.0024)				(0.0401)	
$\Delta\text{BoundTariff}_{t-1}$, 1 year				-0.0088				-0.0825
				(0.0244)				(0.1280)
$\Delta\text{AppliedTariff}_{t-1}$, 1 year				-0.0152**				-0.0633**
				(0.0063)				(0.0276)
$\text{PTAImportshare}_{t-1}$		0.0075***	0.0074***	0.0082***		0.0098	0.0095	0.0116*
		(0.0007)	(0.0007)	(0.0007)		(0.0060)	(0.0060)	(0.0060)
$\log(\text{WorldImportShare})_{t-1}$		-0.0004***	-0.0004***	-0.0004***		-0.0010	-0.0011	-0.0012
		(0.0001)	(0.0001)	(0.0001)		(0.0013)	(0.0013)	(0.0014)
Observations	5,195,781	5,195,781	5,186,129	4,542,247	5,195,781	5,195,781	5,186,129	4,542,247
R2	0.5784	0.5784	0.5787	0.5867	0.2879	0.2879	0.2879	0.3016
Country-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HS6-digit FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table presents linear fixed effects regressions of the model in equation (1). Clustered standard errors at the country/HS4-digit level are in parentheses. ***, ** and * indicate 1 percent, 5 percent and 10 percent significance levels, respectively.

Table 5: NTMs by Subcategory vs. Tariff Overhangs

Panel A: Binary NTM Variables

Dependent variable:	(9) SPS	(10) TBT	(11) Preshipment Inspections	(12) TTB	(13) Quantity Control	(14) Price Control	(15) Finance Measures
$Overhang_{t-1}$	-0.0394***	-0.0144***	-0.0051***	-0.0045***	-0.0020***	-0.0062***	0.0002
	(0.0025)	(0.0016)	(0.0008)	(0.0005)	(0.0007)	(0.0007)	(0.0001)
Dependent variable:	(16) Competition Measures	(17) Investment Measures	(18) Distribution Restrictions	(19) Subsidies	(20) IP Restrictions	(21) ROO	(22) Export-related Measures
$Overhang_{t-1}$	0.0001	0.0006***	-0.0001***	0.0000	-0.0015***	-0.0008***	-0.0089***
	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0002)	(0.0001)	(0.0011)

Panel B: Count NTM Variables

Dependent variable:	(23) SPS	(24) TBT	(25) Preshipment Inspections	(26) TTB	(27) Quantity Control	(28) Price Control	(29) Finance Measures
$Overhang_{t-1}$	-0.1756***	-0.0376***	-0.0065**	-0.0058***	-0.0013	-0.0153***	0.0008***
	(0.0125)	(0.0085)	(0.0026)	(0.0008)	(0.0013)	(0.0015)	(0.0003)
Dependent variable:	(30) Competition Measures	(31) Investment Measures	(32) Distribution Restrictions	(33) Subsidies	(34) IP Restrictions	(35) ROO	(36) Export-related Measures
$Overhang_{t-1}$	0.0003*	0.0014***	-0.0001***	0.0000	-0.0017***	-0.0014***	-0.0311***
	(0.0002)	(0.0002)	(0.0000)	(0.0000)	(0.0002)	(0.0002)	(0.0076)

Notes: The table presents $Overhang_{t-1}$ coefficients from linear fixed effects regressions of the model in equation (1). All regressions include the same controls as column (2) in Table 4. Clustered standard errors at the country/HS4-digit level are in parentheses. ***, ** and * indicate 1 percent, 5 percent and 10 percent significance levels, respectively.

Appendix A: Additional Results

Table A1: NTMs and Tariff Overhang Distribution by Country, HS6-digit, 1996–2020

Country	Observations	NTM Count	Share of Sectors by Tariff Overhang			
			$\leq 0\%$	$0-10\%$	$10-25\%$	$>25\%$
Antigua and Barbuda	51,436	860	0.000	0.000	0.023	0.977
Argentina	107,584	42,024	0.040	0.138	0.643	0.179
Armenia	51,931	24,051	0.381	0.402	0.217	0.000
Australia	109,393	1,082	0.288	0.381	0.290	0.042
Bahrain	61,220	121,262	0.024	0.011	0.092	0.872
Bangladesh	3,050	1,106	0.075	0.187	0.367	0.371
Barbados	24,330	1,886	0.002	0.000	0.005	0.993
Benin	18,785	6,613	0.544	0.125	0.050	0.281
Bolivia	91,586	14,997	0.024	0.009	0.113	0.854
Botswana	65,630	4,653	0.249	0.230	0.445	0.076
Brazil	114,429	49,779	0.045	0.156	0.655	0.144
Brunei	58,016	12,773	0.006	0.002	0.791	0.201
Burkina Faso	19,719	279	0.556	0.128	0.045	0.271
Burundi	5,139	10	0.328	0.061	0.028	0.583
Cambodia	11,882	8,281	0.394	0.250	0.327	0.029
Cameroon	5,770	822	0.000	0.000	0.000	1.000
Canada	123,180	2,927	0.533	0.444	0.023	0.000
Cape Verde	16,557	7,273	0.127	0.641	0.232	0.000
Chad	1,305	69	0.000	0.000	0.000	1.000
Chile	102,057	7,489	0.000	0.000	0.991	0.008
China	76,645	111,565	0.880	0.109	0.010	0.001
Colombia	108,288	19,951	0.019	0.007	0.473	0.501
Costa Rica	85,800	8,393	0.026	0.016	0.086	0.873
Cote d'Ivoire	23,357	1,294	0.756	0.149	0.091	0.004
Cuba	23,980	9,897	0.364	0.314	0.154	0.167
Dominica	20,416	851	0.001	0.002	0.067	0.931
Dominican Republic	70,526	28	0.010	0.057	0.461	0.471
Ecuador	81,328	16,199	0.162	0.152	0.678	0.008
Egypt, Arab Rep.	85,109	20,980	0.141	0.185	0.472	0.202
El Salvador	87,559	4,317	0.024	0.009	0.405	0.563
Eswatini	45,070	122	0.249	0.231	0.445	0.075
European Union	122,709	73,430	0.944	0.053	0.003	0.000
Gabon	29,171	2,087	0.816	0.030	0.033	0.121
Georgia	42,290	10,227	0.564	0.245	0.191	0.000
Ghana	5,469	1,258	0.001	0.002	0.027	0.969
Grenada	16,620	55	0.007	0.000	0.039	0.954
Guatemala	73,757	8,897	0.018	0.013	0.239	0.729
Guinea	5,822	616	0.548	0.168	0.197	0.087
Guyana	40,207	887	0.012	0.002	0.016	0.970
Honduras	65,871	2,935	0.010	0.051	0.495	0.444
Hong Kong, China	51,608	3,801	1.000	0.000	0.000	0.000
Iceland	62,247	2,731	0.339	0.301	0.269	0.091
India	61,465	2,667	0.130	0.090	0.307	0.473
Indonesia	97,285	137,867	0.027	0.023	0.307	0.643
Israel	49,186	297	0.262	0.505	0.139	0.094
Jamaica	33,440	223	0.012	0.040	0.112	0.836
Japan	118,755	22,680	0.949	0.048	0.003	0.000
Jordan	59,830	3,175	0.450	0.325	0.211	0.014

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Country	Observations	NTM Count	Share of Sectors by Tariff Overhang			
			$\leq 0\%$	$0-10\%$	$10-25\%$	$>25\%$
Kenya	8,277	5,481	0.008	0.017	0.016	0.959
Korea, Rep.	105,555	36,531	0.416	0.477	0.090	0.017
Kuwait	73,733	118,886	0.003	0.000	0.002	0.995
Kyrgyz Republic	42,119	10,786	0.549	0.347	0.104	0.000
Malawi	10,385	1,223	0.003	0.007	0.097	0.893
Malaysia	68,313	8,272	0.253	0.459	0.244	0.044
Mauritania	6,072	491	0.483	0.256	0.167	0.094
Mauritius	10,703	7,124	0.428	0.001	0.015	0.557
Mexico	109,276	16,095	0.041	0.035	0.554	0.369
Moldova	46,362	17	0.623	0.269	0.106	0.001
Morocco	59,321	8,703	0.157	0.098	0.226	0.519
Mozambique	4,740	2,478	0.029	0.005	0.000	0.966
Myanmar	4,510	1,771	0.122	0.051	0.283	0.544
Namibia	66,232	40	0.253	0.227	0.441	0.079
Nepal	53,566	2,255	0.093	0.085	0.770	0.052
New Zealand	98,826	107,664	0.411	0.226	0.343	0.019
Nicaragua	84,783	7,689	0.004	0.003	0.205	0.787
Niger	38,003	1,341	0.247	0.068	0.036	0.649
Norway	106,360	38,130	0.618	0.330	0.052	0.000
Oman	56,751	124,527	0.110	0.257	0.620	0.014
Pakistan	77,263	11,094	0.088	0.042	0.062	0.808
Panama	55,605	5,801	0.133	0.189	0.451	0.226
Papua New Guinea	42,821	7,879	0.029	0.030	0.317	0.624
Paraguay	86,819	6,751	0.021	0.047	0.607	0.326
Peru	79,992	7,626	0.018	0.011	0.626	0.344
Philippines	65,759	43,070	0.057	0.131	0.606	0.205
Qatar	70,625	135,316	0.018	0.184	0.796	0.003
Rwanda	40,614	25,312	0.051	0.012	0.012	0.925
Saudi Arabia	24,890	17,009	0.124	0.496	0.380	0.000
Senegal	63,328	2,576	0.006	0.001	0.975	0.018
Singapore	84,056	33,684	0.238	0.233	0.529	0.000
South Africa	96,828	14,299	0.246	0.238	0.446	0.069
Sri Lanka	22,388	9,320	0.072	0.281	0.469	0.178
Suriname	4,424	2	0.385	0.135	0.480	0.000
Switzerland	24,267	23,707	1.000	0.000	0.000	0.000
Tanzania	7,010	11,487	0.000	0.000	0.004	0.996
Thailand	30,287	11,482	0.285	0.064	0.510	0.142
Togo	5,037	2,066	0.000	0.000	0.000	1.000
Trinidad and Tobago	35,817	66	0.016	0.007	0.041	0.936
Tunisia	24,710	2,135	0.069	0.106	0.369	0.457
Turkey	47,559	6,388	0.144	0.334	0.354	0.168
Uganda	9,985	4,833	0.000	0.003	0.034	0.963
Ukraine	52,662	205	0.696	0.277	0.027	0.000
United Arab Emirates	53,417	146,727	0.015	0.221	0.764	0.001
United States	116,950	42,130	0.950	0.050	0.000	0.000
Uruguay	89,335	4,111	0.006	0.121	0.645	0.228
Venezuela	89,997	5,982	0.034	0.027	0.652	0.287
Vietnam	47,479	87,056	0.586	0.366	0.046	0.002
Zimbabwe	5,210	428	0.358	0.124	0.088	0.430

Table A2: Non-tariff Measure Usage vs. Tariffs: Alternative Fixed Effects Specifications

Dependent variable:	NTM Dummy					NTM Count				
	(A1)	(A2)	(A3)	(A4)	(A5)	(A6)	(A7)	(A8)	(A9)	(A10)
Overhang_{t-1}	-0.0079***	-0.0074***	-0.0115***	-0.0226***	-0.0408***	-0.1219***	-0.0586*	-0.1129***	-0.0888***	-0.1327***
	(0.0018)	(0.0016)	(0.0023)	(0.0045)	(0.0089)	(0.0362)	(0.0305)	(0.0328)	(0.0304)	(0.0455)
$\text{PTAImportshare}_{t-1}$	0.0020***	0.0005**	-0.0081***	-0.0107***	-0.0136***	0.0173***	0.0122**	-0.0020	-0.0121**	-0.0226***
	(0.0003)	(0.0002)	(0.0006)	(0.0007)	(0.0009)	(0.0045)	(0.0048)	(0.0057)	(0.0059)	(0.0060)
$\log(\text{WorldImportShare})_{t-1}$	0.0004***	0.0003***	0.0013***	0.0014***	0.0020***	-0.0047***	-0.0004	0.0019	0.0081***	0.0138***
	(0.0001)	(0.0000)	(0.0001)	(0.0001)	(0.0002)	(0.0015)	(0.0007)	(0.0014)	(0.0008)	(0.0011)
Observations	5,191,192	4,762,752	5,195,800	5,194,103	5,177,168	5,191,192	4,762,752	5,195,800	5,194,103	5,177,168
R-squared	0.8565	0.9497	0.2263	0.2413	0.2610	0.5478	0.7787	0.1579	0.2082	0.3273
Fixed effects	HS2xct	HS4xct	HS2xc + t	HS4xc + t	HS6xc + t	HS2xct	HS4xct	HS2xc + t	HS4xc + t	HS6xc + t

Notes: The table presents linear fixed effects regressions of the model in equation (1). Clustered standard errors at the country/4-digit HS level are in parentheses. ***, ** and * indicate 1 percent, 5 percent and 10 percent significance levels, respectively.