Online Appendix for "The negative impact of disintegration on trade: the case of Brexit"

A Additional regression analyses

Table A.1: Countries included in the sample

Albania	Greece	Paraguay
Argentina	Hong Kong SAR, China	Peru
Australia	Hungary	Philippines
Austria	Iceland	Poland
Belgium	India	Portugal
Brazil	Indonesia	Romania
Bulgaria	Ireland	Russian Federation
Canada	Israel	Saudi Arabia
Cape Verde	Italy	Serbia
Chile	Japan	Singapore
China	Kenya	Slovakia
Colombia	Korea, Rep.	Slovenia
Costa Rica	Latvia	South Africa
Croatia	Lithuania	Sweden
Czech Republic	Luxembourg	Switzerland
Denmark	Mexico	Taiwan, China
Dominican Republic	Netherlands	Thailand
Estonia	New Zealand	Turkey
Finland	Nigeria	United Kingdom
France	Norway	United States
Germany		

Table A.2: Spanish trade with the UK: firms and value

	Exports				Imports			
	All		Sample		All		Sample	
Year	Firms	Value	Firms	Value	Firms	Value	Firms	Value
2014	11839	16630	7440	16442	22045	11223	7205	10907
2015	11672	18220	7480	18013	28562	12691	7173	12361
2016	11790	20077	7489	19862	32447	11193	7133	10852
2017	11707	18740	7432	18519	28241	11381	7116	11038
2018	11735	18581	7413	18348	20334	11516	7041	11163
2019	12010	19890	7581	19651	18857	11711	7049	11346
2020	12117	17229	7536	16982	18313	9542	6825	9200
2021	64350	18873	9576	17942	115291	8702	6769	7879
2022	49429	21273	9738	20226	86624	11237	6916	10675

Note: Values are in millions of euros. The Sample includes firms trading with the UK at least one transaction equal to or above 10,000 euros per year. Source: Spanish Customs database.

Table A.3: Alternative samples. Value of trade flows

	EU		Eurozone		Non-euro EU	
	(1)	(2)	(3)	(4)	(5)	(6)
	Exports	Imports	Exports	Imports	Exports	Imports
Post-referendum$_{ct}$	-0.040^{b}	-0.038^{c}	-0.043^{c}	-0.023	0.024	-0.004
	(0.015)	(0.021)	(0.022)	(0.028)	(0.019)	(0.045)
Official$_{ct}$	-0.028	-0.048	-0.040	-0.047	0.121^{b}	0.132
	(0.018)	(0.041)	(0.026)	(0.054)	(0.038)	(0.108)
TCA$_{ct}$	-0.296^{a}	-0.313^{a}	-0.309^{a}	-0.320^{a}	-0.259^{a}	-0.200^{c}
	(0.024)	(0.042)	(0.022)	(0.045)	(0.067)	(0.094)
ln Real GDP$_{ct}$	0.506^{a}	0.439	0.296^{a}	0.019	1.468^{a}	2.498^{b}
	(0.168)	(0.343)	(0.068)	(0.108)	(0.268)	(0.782)
ln Real exchange rate$_{ct}$	0.035	0.141	-0.013	0.221	0.244^{c}	0.122
	(0.112)	(0.144)	(0.189)	(0.246)	(0.121)	(0.146)
Observations	4802942	4952390	4043485	4476452	1100150	767361
Adj.-R2	0.812	0.759	0.817	0.757	0.801	0.776
Firms	36855	46557	36312	45425	19028	19916
Countries	25	25	17	17	9	9
Products	7619	8089	7588	8054	6124	6270

Note: In odd columns the dependent variable is the (log) value of exports and in even columns the (log) value of imports. All estimations include a firm×country×product fixed effect, a firm×product×quarter fixed effect, and a constant. Standard errors clustered at the country level are in parentheses. a, b, and c: statistically significant at 1%, 5%, and 10%, respectively.

Table A.4: Alternative samples. Entry at firm-destination level

	EU		Eurozone		Non-euro EU	
	(1)	(2)	(3)	(4)	(5)	(6)
	Exports	Imports	Exports	Imports	Exports	Imports
Post-referendum$_{ct}$	0.004	0.006	0.000	0.008	0.014^{a}	0.010^{c}
	(0.003)	(0.004)	(0.003)	(0.008)	(0.004)	(0.005)
Official$_{ct}$	0.012^{b}	0.008	0.005	0.008	0.035^{a}	0.027^{c}
	(0.005)	(0.006)	(0.004)	(0.010)	(0.009)	(0.013)
TCA$_{ct}$	-0.057^{a}	-0.135^{a}	-0.059^{a}	-0.131^{a}	-0.037^{a}	-0.122^{a}
	(0.004)	(0.007)	(0.004)	(0.009)	(0.006)	(0.009)
ln Real GDP$_{ct}$	0.050^{b}	0.090^{c}	0.030^{a}	0.052^{b}	0.172^{a}	0.275^{a}
	(0.019)	(0.050)	(0.007)	(0.024)	(0.042)	(0.075)
ln Real exchange rate$_{ct}$	0.031	0.080^{a}	-0.000	0.072	0.062^{b}	0.095^{a}
	(0.022)	(0.023)	(0.022)	(0.056)	(0.025)	(0.020)
Observations	2028147	1303168	1394285	987732	778623	457657
Adj.-R2	0.079	0.013	0.081	0.002	0.081	0.021
Firms	16554	18969	16485	18852	15051	15922
Countries	25	25	17	17	9	9
Products						

Note: In odd (even) columns the dependent variable turns one if firm f that did not export (import) at $t-1$ began exporting (importing) at t. All estimations include a firm×time fixed effect, a destination fixed effect, and a constant. Standard errors clustered at the country level are in parentheses. a, b, and c: statistically significant at 1%, 5%, and 10%, respectively.

Table A.5: Alternative samples. Entry at firm-destination-product level

	EU		Eurozone		Non-euro EU	
	(1) Exports	(2) Imports	(3) Exports	(4) Imports	(5) Exports	(6) Imports
Post-referendum$_{ct}$	-0.000	0.006	-0.002	0.017^{b}	0.014^{a}	0.001
	(0.004)	(0.007)	(0.004)	(0.006)	(0.003)	(0.009)
Official$_{ct}$	0.023^{a}	0.030^{a}	0.019^{a}	0.039^{a}	0.048^{a}	0.038^{c}
	(0.005)	(0.010)	(0.005)	(0.011)	(0.011)	(0.020)
TCA$_{ct}$	-0.137^{a}	-0.297^{a}	-0.137^{a}	-0.289^{a}	-0.109^{a}	-0.243^{a}
	(0.006)	(0.018)	(0.006)	(0.016)	(0.008)	(0.013)
ln Real GDP$_{ct}$	0.069^{a}	0.124	0.043^{a}	0.038	0.209^{a}	0.411^{a}
	(0.020)	(0.087)	(0.011)	(0.028)	(0.051)	(0.122)
ln Real exchange rate$_{ct}$	0.020	0.062	0.012	0.123^{b}	0.030	0.070
	(0.031)	(0.036)	(0.030)	(0.052)	(0.040)	(0.061)
Observations	3523970	1408246	2523135	1167574	1316886	503545
Adj.-R2	0.162	0.019	0.159	-0.002	0.163	0.062
Firms	16187	16862	16123	16767	14745	14813
Countries	25	25	17	17	9	9
Products	6079	6269	6059	6259	5803	5956

Note: In odd (even) columns the dependent variable turns one if firm f that did not export (import) at $t-1$ began exporting (importing) at t. All estimations include a firm×product×time fixed effect, a destination×product fixed effect, and a constant. Standard errors clustered at the country level are in parentheses. a, b, and c: statistically significant at 1%, 5%, and 10%, respectively.

Table A.6: Alternative samples. Exit at the firm-destination level

	EU		Eurozone		Non-euro EU	
	(1)	(2)	(3)	(4)	(5)	(6)
	Exports	Imports	Exports	Imports	Exports	Imports
Post-referendum$_{ct}$	0.007	-0.002	0.011	0.003	-0.012	-0.035
	(0.006)	(0.011)	(0.009)	(0.009)	(0.009)	(0.027)
Official$_{ct}$	-0.011	-0.038^{b}	-0.003	-0.032^{c}	-0.081^{a}	-0.143^{b}
	(0.008)	(0.018)	(0.012)	(0.018)	(0.016)	(0.043)
TCA$_{ct}$	0.155^{a}	0.316^{a}	0.158^{a}	0.320^{a}	0.124^{a}	0.302^{a}
	(0.008)	(0.016)	(0.010)	(0.012)	(0.018)	(0.044)
ln Real GDP$_{ct}$	-0.119^{c}	-0.137	-0.076	-0.102	-0.502^{a}	-0.820^{a}
	(0.061)	(0.119)	(0.046)	(0.113)	(0.090)	(0.120)
ln Real exchange rate$_{ct}$	-0.000	0.093	0.034	0.109	-0.017	0.181
	(0.045)	(0.097)	(0.072)	(0.090)	(0.070)	(0.219)
Observations	1901575	704674	1485661	618855	616259	232331
Adj.-R2	0.310	0.075	0.313	0.066	0.326	0.125
Firms	16395	17170	16355	17080	15060	15243
Countries	25	25	17	17	9	9
Products	6090	6291	6075	6283	5831	6014

Note: In odd (even) columns the dependent variable turns one if firm f that exported (imported) at $t-1$ ceased to export (import) at t. All estimations include a firm×time fixed effect, a destination fixed effect, and a constant. Standard errors clustered at the country level are in parentheses. a, b, and c: statistically significant at 1%, 5%, and 10%, respectively.

Table A.7: Alternative samples. Exit at the firm-destination-product level

	EU		Eurozone		Non-euro EU	
	(1)	(2)	(3)	(4)	(5)	(6)
	Exports	Imports	Exports	Imports	Exports	Imports
Post-referendum$_{ct}$	0.007	-0.002	0.011	0.003	-0.012	-0.035
	(0.006)	(0.011)	(0.009)	(0.009)	(0.009)	(0.027)
Official$_{ct}$	-0.011	-0.038^{b}	-0.003	-0.032^{c}	-0.081^{a}	-0.143^{b}
	(0.008)	(0.018)	(0.012)	(0.018)	(0.016)	(0.043)
TCA$_{ct}$	0.155^{a}	0.316^{a}	0.158^{a}	0.320^{a}	0.124^{a}	0.302^{a}
	(0.008)	(0.016)	(0.010)	(0.012)	(0.018)	(0.044)
ln Real GDP$_{ct}$	-0.119^{c}	-0.137	-0.076	-0.102	-0.502^{a}	-0.820^{a}
	(0.061)	(0.119)	(0.046)	(0.113)	(0.090)	(0.120)
ln Real exchange rate$_{ct}$	-0.000	0.093	0.034	0.109	-0.017	0.181
	(0.045)	(0.097)	(0.072)	(0.090)	(0.070)	(0.219)
Observations	1901575	704674	1485661	618855	616259	232331
Adj.-R2	0.310	0.075	0.313	0.066	0.326	0.125
Firms	16395	17170	16355	17080	15060	15243
Countries	25	25	17	17	9	9
Products	6090	6291	6075	6283	5831	6014

Note: In odd (even) columns the dependent variable turns one if firm f that exported (imported) at $t-1$ ceased to export (import) at t. All estimations include a firm×product×time fixed effect, a destination×product fixed effect, and a constant. Standard errors clustered at the country level are in parentheses. a, b, and c: statistically significant at 1%, 5%, and 10%, respectively.

Table A.8: Robustness. Poisson pseudo-maximum likelihood estimator

	(1) Exports	(2) Imports
Post-referendum$_{ct}$	-0.067^{a}	-0.042
	(0.021)	(0.038)
Official$_{ct}$	-0.042	-0.087^{c}
	(0.034)	(0.049)
TCA$_{ct}$	-0.259^{a}	-0.197^{a}
	(0.041)	(0.056)
ln Real GDP$_{ct}$	0.894^{a}	0.500^{c}
	(0.163)	(0.264)
ln Real exchange rate$_{ct}$	0.083	-0.290^{b}
	(0.056)	(0.117)
Observations	6771283	7555494
Pseudo R2	0.949	0.956
Firms	53546	76185
Countries	61	61
Products	7854	8220

Note: The dependent variable is the value of exports and imports in columns 1 and 2, respectively. All estimations include a firm×country×product fixed effect, a firm×product×quarter fixed effect, and a constant. Standard errors clustered at the country level are in parentheses. a, b, and c: statistically significant at 1%, 5%, and 10%, respectively.

Table A.9: Robustness. Regular traders with the UK and products with no change in the MFN tariff

	Regular		No change in MFN	
	(1)	(2)	(3)	(4)
	Exports	Imports	Exports	Imports
Post-referendum$_{ct}$	0.007	-0.047^{b}	0.045^{a}	-0.077^{a}
	(0.010)	(0.021)	(0.014)	(0.023)
Official$_{ct}$	-0.004	-0.076^{a}	0.112^{a}	-0.076^{b}
	(0.012)	(0.028)	(0.021)	(0.036)
TCA$_{ct}$	-0.266^{a}	-0.325^{a}	-0.353^{a}	-0.336^{a}
	(0.018)	(0.031)	(0.029)	(0.038)
ln Real GDP$_{ct}$	0.507^{a}	0.545^{a}	0.669^{a}	0.443^{a}
	(0.121)	(0.120)	(0.167)	(0.140)
ln Real exchange rate$_{ct}$	0.208^{a}	-0.083	0.292^{a}	-0.398^{b}
	(0.067)	(0.154)	(0.084)	(0.150)
Observations	3166151	1971231	1958548	2148494
Adj.-R2	0.797	0.759	0.809	0.759
Firms	3952	2715	23837	40912
Countries	61	61	61	61
Products	6467	7037	2152	2243

Note: Regulars traders are those firms that exported (imported) to the UK in each of the years covered in the sample (2014-2022). Products with no change in the MFN are those in which the UK did not change the MFN tariff parallel to the implementation of the TCA in January 2021. The dependent variable is the (log) value of exports in the odd columns and the (log) value of imports in the even columns. All estimations include a firm×country×product fixed effect, a firm×product×quarter fixed effect, and a constant. Standard errors clustered at the country level are in parentheses. a, b, and c: statistically significant at 1%, 5%, and 10%, respectively.

Table A.10: Robustness. Manufacturers

	Value		Entry				Exit			
	Firm-country-product		Firm-country		Firm-country-product		Firm-country		Firm-country-product	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
Post-referendum$_{ct}$	-0.035^{a}	-0.060^{a}	-0.000	-0.000	-0.011^{a}	0.001	0.005^{c}	0.013^{b}	-0.000	-0.004
	(0.008)	(0.016)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.005)	(0.003)	(0.009)
Official$_{ct}$	-0.088^{a}	-0.068^{b}	0.010^{a}	0.002	0.006^{b}	0.006	0.031^{a}	0.019^{b}	0.021^{a}	-0.017
	(0.010)	(0.032)	(0.003)	(0.005)	(0.003)	(0.009)	(0.005)	(0.007)	(0.005)	(0.012)
TCA$_{ct}$	-0.193^{a}	-0.244^{a}	-0.033^{a}	-0.097^{a}	-0.092^{a}	-0.233^{a}	0.045^{a}	0.154^{a}	0.082^{a}	0.172^{a}
	(0.015)	(0.045)	(0.004)	(0.005)	(0.006)	(0.018)	(0.005)	(0.007)	(0.003)	(0.015)
ln Real GDP$_{ct}$	0.370^{a}	0.573^{a}	0.051^{a}	0.083^{a}	0.059^{a}	0.153^{a}	-0.070^{a}	-0.068	-0.089^{a}	-0.115^{b}
	(0.074)	(0.156)	(0.013)	(0.026)	(0.014)	(0.038)	(0.019)	(0.041)	(0.022)	(0.051)
ln Real exchange rate$_{ct}$	0.171^{a}	0.048	0.040^{a}	-0.024	0.035^{a}	-0.005	-0.037^{b}	0.011	-0.042^{a}	-0.023
	(0.057)	(0.136)	(0.011)	(0.021)	(0.009)	(0.019)	(0.016)	(0.016)	(0.012)	(0.032)
Observations	2918426	2173944	1876411	720358	3045431	613642	969583	363629	1376873	288808
Adj.-R2	0.791	0.758	0.032	0.002	0.118	0.037	0.104	0.007	0.256	0.095
Firms	7355	6677	5007	3852	4975	3563	5010	3856	4985	3572
Countries	61	61	61	61	61	61	61	61	61	61
Products	6587	7210								

Note: The dependent variable is the (log) value of exports and imports in columns 1 and 2, respectively. In column 3 (column 4) the dependent variable turns one if firm f that did not export (import) at $t-1$ began exporting (importing) at t. In column 5 (column 6) the dependent variable turns one if firm f exported (imported) at $t-1$ ceased to export (import) at t. All estimations include a log real GDP and a log real bilateral exchange rate variable. In columns 1 and 2 estimations include a firm×country×product fixed effect, a firm×time fixed effect, and a constant. In columns 3 to 6, estimations include a firm×time fixed effect, a country fixed effect, and a constant. Standard errors clustered at country level are in parentheses. a, b, and c: statistically significant at 1%, 5%, and 10%, respectively.

Table A.11: Robustness analysis. Impact of Brexit on Spanish firms' entry and exit in the UK. Value threshold set at 1,500 euro instead of 10,000 euro

	Entry				Exit			
	Firm-destination		Firm-destination-product		Firm-destination		Firm-destination-product	
	(1) Exports	(2) Imports	(3) Exports	(4) Imports	(5) Exports	(6) Imports	(7) Exports	(8) Imports
Post-referendum$_{ct}$	-0.001	-0.005	0.001	-0.002	0.002	0.007^{b}	0.000	-0.002
	(0.002)	(0.003)	(0.002)	(0.004)	(0.002)	(0.003)	(0.002)	(0.004)
Official$_{ct}$	0.024^{a}	0.002	0.030^{a}	0.020^{a}	0.020^{a}	0.004	-0.009^{b}	-0.034^{a}
	(0.003)	(0.005)	(0.003)	(0.007)	(0.003)	(0.005)	(0.004)	(0.009)
TCA$_{ct}$	-0.030^{a}	-0.116^{a}	-0.125^{a}	-0.297^{a}	0.058^{a}	0.177^{a}	0.135^{a}	0.268^{a}
	(0.005)	(0.006)	(0.009)	(0.022)	(0.003)	(0.006)	(0.004)	(0.010)
ln Real GDP$_{ct}$	0.044^{a}	0.077^{b}	0.049^{a}	0.126^{b}	-0.075^{a}	-0.057^{c}	-0.109^{a}	-0.119^{a}
	(0.013)	(0.029)	(0.015)	(0.049)	(0.018)	(0.032)	(0.023)	(0.042)
ln Real exchange rate$_{ct}$	0.046^{a}	-0.011	0.041^{a}	-0.015	-0.038^{a}	0.017	-0.038^{b}	0.042
	(0.009)	(0.019)	(0.009)	(0.019)	(0.012)	(0.012)	(0.015)	(0.026)
Observations	5208303	3097756	10181762	3351765	2680005	1494193	4691422	1539041
Adj.-R2	0.051	0.019	0.126	0.021	0.117	0.039	0.270	0.078
Firms	17216	22053	17141	21853	17320	22277	17276	22198
Countries	61	61	61	61	61	61	61	61
Products			6361	6830			6378	6862

Note: In columns 1 and 3 (columns 2 and 4) the dependent variable turns one if firm f that did not export (import) at $t-1$ began exporting (importing) at t. In column 5 and 7 (columns 6 and 8) the dependent variable turns one if firm f exported (imported) at $t-1$ ceased to export (import) at t. Estimations at the firm level include a firm×country×product fixed effect, a firm×product×quarter fixed effect, and a constant. Standard errors clustered at the country level are in parentheses. a, b, and c: statistically significant at 1%, 5%, and 10%, respectively.

Table A.12: Harmonized System Chapters 1 to 16

HS Chapter	Description
1	Live animals
2	Meat and edible meat offal
3	Fish and crustaceans, molluscs and other aquatic invertebrates
4	Dairy produce; birds eggs; natural honey; edible products of animal origin, not elsewhere specified or included
5	Products of animal origin, not elsewhere specified or included
6	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage
7	Edible vegetables and certain roots and tubers
8	Edible fruit and nuts; peel of citrus fruit or melons
9	Coffee, tea, maté and spices
10	Cereals
11	Products of the milling industry; malt; starches; insulin; wheat gluten
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruits; industrial or medicinal plants; straw and fodder
13	Lac; gums, resins and other vegetable saps and extracts
14	Vegetable plaiting materials; vegetable products not elsewhere specified or included
15	Animal or vegetable fats and oils and their cleavage products prepared edible fats; animal or vegetable waxes
16	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates

Table A.13: Robustness. Impact of Brexit on low- and high-productive firms based on Ackerberg et al. (2015) productivity measure

	Value		Entry		Exit	
	(1)	(2)	(3)	(4)	(5)	(6)
	Exports	Imports	Exports	Imports	Exports	Imports
Post-referendum$_{ct}$	-0.023^{b}	-0.028	-0.005^{c}	0.008^{c}	-0.003	-0.005
	(0.010)	(0.022)	(0.003)	(0.004)	(0.004)	(0.007)
Post-referendum$_{ct}$ x High-TFP$_{f}$	-0.022^{a}	-0.063^{a}	0.009^{a}	-0.015^{a}	0.015^{a}	0.037^{a}
	(0.008)	(0.020)	(0.002)	(0.005)	(0.005)	(0.006)
Official$_{ct}$	-0.112^{a}	-0.024	0.014^{a}	0.016^{a}	0.012^{c}	0.004
	(0.013)	(0.040)	(0.004)	(0.005)	(0.007)	(0.009)
Official$_{ct}$ x High-TFP$_{f}$	0.043^{a}	-0.089^{b}	-0.008^{b}	-0.026^{a}	0.035^{a}	0.029^{a}
	(0.011)	(0.037)	(0.004)	(0.005)	(0.008)	(0.010)
TCA$_{ct}$	-0.172^{a}	-0.216^{a}	-0.027^{a}	-0.099^{a}	0.031^{a}	0.145^{a}
	(0.014)	(0.057)	(0.005)	(0.005)	(0.005)	(0.009)
TCA$_{ct}$ x High-TFP$_{f}$	-0.036^{a}	-0.055	-0.010^{a}	0.004	0.025^{a}	0.017^{b}
	(0.011)	(0.037)	(0.004)	(0.004)	(0.005)	(0.008)
Observations	2918426	2173944	1876411	720358	969583	363629
Adj.-R2	0.791	0.758	0.032	0.002	0.104	0.007
Firms	7355	6677	5007	3852	5010	3856
Countries	61	61	61	61	61	61
Products	6587	7210				

Note: The dependent variable is the (log) value of exports and imports in columns 1 and 2, respectively. In column 3 (column 4) the dependent variable turns one if firm f that did not export (import) at $t-1$ began exporting (importing) at t. In column 5 (column 6) the dependent variable turns one if firm f exported (imported) at $t-1$ ceased to export (import) at t. All estimations include a log real GDP and a log real bilateral exchange rate variable. In columns 1 and 2 estimations include a firm×country×product fixed effect, a firm×time fixed effect, and a constant. In columns 3 to 6, estimations include a firm×time fixed effect, a country fixed effect, and a constant. Standard errors clustered at country level are in parentheses. a, b, and c: statistically significant at 1%, 5%, and 10%, respectively.

Table A.14: Robustness. Impact of Brexit on low- and high-productive firms based on Gandhi et al. (2020) productivity measure

	Value		Entry		Exit	
	(1)	(2)	(3)	(4)	(5)	(6)
	Exports	Imports	Exports	Imports	Exports	Imports
Post-referendum$_{ct}$	-0.044^{a}	-0.017	-0.005^{c}	-0.006	-0.010^{b}	0.017^{a}
	(0.007)	(0.024)	(0.003)	(0.004)	(0.004)	(0.006)
Post-referendum$_{ct}$ x High-Productivity$_{f}$	0.015^{b}	-0.067^{a}	0.009^{a}	0.010^{a}	0.027^{a}	-0.007
	(0.007)	(0.023)	(0.002)	(0.004)	(0.005)	(0.005)
Official$_{ct}$	-0.097^{a}	0.007	-0.003	-0.008	0.020^{a}	0.034^{a}
	(0.010)	(0.047)	(0.004)	(0.006)	(0.006)	(0.010)
Official$_{ct}$ x High-Productivity$_{f}$	0.015	-0.118^{a}	0.025^{a}	0.017^{a}	0.019^{a}	-0.025^{b}
	(0.010)	(0.044)	(0.004)	(0.005)	(0.006)	(0.011)
TCA$_{ct}$	-0.160^{a}	-0.151^{a}	-0.035^{a}	-0.099^{a}	0.017^{a}	0.146^{a}
	(0.017)	(0.050)	(0.004)	(0.006)	(0.005)	(0.009)
TCA$_{ct}$ x High-Productivity$_{f}$	-0.056^{a}	-0.152^{a}	0.004	0.005	0.053^{a}	0.014
	(0.010)	(0.044)	(0.005)	(0.005)	(0.005)	(0.009)
Observations	2918426	2173944	1876411	720358	969583	363629
Adj.-R2	0.791	0.758	0.032	0.002	0.104	0.007
Firms	7355	6677	5007	3852	5010	3856
Countries	61	61	61	61	61	61
Products	6587	7210				

Note: The dependent variable is the (log) value of exports and imports in columns 1 and 2, respectively. In column 3 (column 4) the dependent variable turns one if firm f that did not export (import) at $t-1$ began exporting (importing) at t. In column 5 (column 6) the dependent variable turns one if firm f exported (imported) at $t-1$ ceased to export (import) at t. All estimations include a log real GDP and a log real bilateral exchange rate variable. In columns 1 and 2 estimations include a firm×country×product fixed effect, a firm×time fixed effect, and a constant. In columns 3 to 6, estimations include a firm×time fixed effect, a country fixed effect, and a constant. Standard errors clustered at country level are in parentheses. a, b, and c: statistically significant at 1%, 5%, and 10%, respectively.

B Construction of the rules of origin stringency index

We use Trade and Cooperation Agreement's (TCA) Annexes 2, 3, and 5 to identify the rules of origin (RoO) applied to each (HS) good. The TCA uses ten different RoO categories. Borrowing from the ITC-WCO-WTO Rules of Origin Facilitator and Annex 2 of the TCA, Table B.1 list the RoO categories and their definitions.

Table B.1: Rules of origin categories used by the TCA

Category	Definition
WO	"The good is wholly obtained or manufactured in one country without using any non-originating materials."
CC	"Any non-originating material used in the production of the product must be classified under a chapter (2-digit level of the Harmonized System) other than that of the product (i.e. a change in Chapter)."
CTH	"Any non-originating material used in the production of the product must be classified under a heading (4-digit level of the Harmonized System) other than that of the product (i.e. a change in heading)."
CTSH	"Any non-originating material used in the production of the product must be classified under a subheading (6-digit level of the Harmonised System) other than that of the product (i.e. a change in subheading)."
RVC	"A good obtains originating status if a defined regional value content percentage has been reached".
RVP	"A good obtains originating status if a defined regional value content percentage on a part or parts has been reached."
RQP	"A good obtains originating status if a defined regional quantity content percentage on a part or parts has been reached."
SP	"A good originates in the country where a defined technical requirement, i.e. a specific working or processing, has taken place."
Other	"Origin criteria other than related to wholly obtained, CTC, value (quantity) content, or specified process."
ECT	"The originating status cannot be conferred to a good if the non-originating inputs are from HS codes listed under exception."

Source: authors own elaboration using definitions provided by Annex 2 of the TCA (available at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22021A0430(01)&from=EN)and ITC-WCO-WTO Rules of Origin Facilitator (available at http://findrulesoforigin.org).

We use a methodology similar to Estevadeordal (2000) to calculate the stringency of each RoO category. We rank the stringency of the RoO categories, from the bottom to the top, in the following order: Other, SP, RQP & RVP, RVC, CTSH, CTH, CC, and WO. The stringency of each category corresponds to its position in the rank. For example, the stringency of Other is 1, whereas the stringency of WO is 8. The stringency of a product corresponds to the stringency of its maximum-stringency RoO category. If a product has the option to select among some RoO categories, we take the value of the category with the minimum stringency. If the product has exceptions, we add 0.5 points to the stringency index.

Table B.2: Number of products by RoO stringency index

RoO stringency	No. of products	% of products
0	219	4.06
1	22	0.41
2	1,418	26.29
2.5	20	0.37
3	13	0.24
4	1,754	32.52
4.5	228	4.23
5	37	0.69
6	795	14.74
6.5	172	3.19
7	1	0.02
7.5	35	0.65
8	654	12.13
8.5	25	0.46
Total	5,393	100.00

Table B.2 lists the number of products for each stringency index. Category 4 concentrates most of products (32.5%), followed by categories 2, 6, and 8. Note that the top two stringency indexes account for a non-negligible percentage of products (12.6%). These indexes correspond to animals, plants, and food products. Finally, a 4% of products are not subject to any RoO.

Interested readers can download a Stata file with the RoO stringency index for each HS 6-digit product from https://paginaspersonales.deusto.es/aminondo/Research.htm.

References

Estevadeordal, A. (2000). Negotiating preferential market access: The case of the North American Free Trade Agreement. *Journal of World Trade*, 34(1):141–166.