Tariff Evasion and Trade Policies – supplementary files

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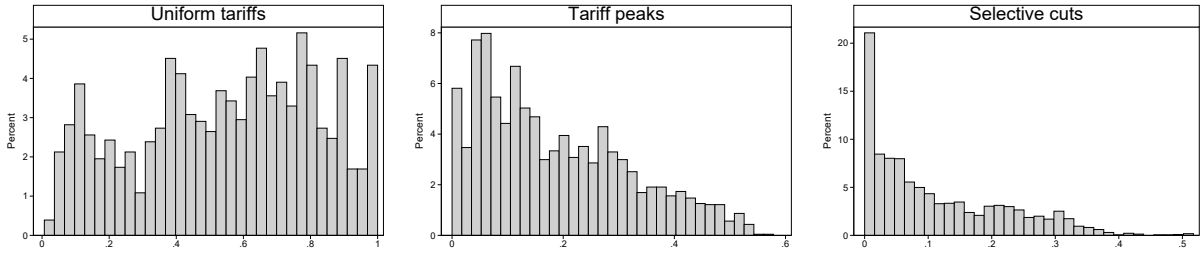

FIGURE 1 Histograms of the dependent variables. Left panel: Share of four-digit tariff categories with uniform tariffs across six-digit products. Middle panel: Share of four-digit tariff categories with tariff peaks (defined as tariff rate one standard deviation above category average). Right panel: Share of four-digit tariff categories with selective trade liberalization (defined as at least one, but less than all, products within a category with a zero tariff). Four-digit product categories with only one six-digit product are omitted from the data.

Figure 1 plots the distribution of the three dependent variables (the supplementary files provide summary statistics). The histograms show substantial variation on all three variables. While some countries have uniform tariff rates across most or even all product categories, others have highly differentiated tariff schedules. Similarly, while some countries have no product categories with tariff peaks, others have tariff peaks in over half of all product categories. And while in some countries partial trade liberalization never occurs, others engage in partial trade liberalization in a large share of product categories. On average, about half of all product categories display uniform tariff rates, almost 20% contain tariff peaks, and about 12% fall into the category of partial liberalization.

Table 1 presents summary statistics for the dependent and independent variables included in the analyses presented in the paper. The summary statistics are presented for the estimation samples used in Table 1 in the main paper.

Figure 2 displays the countries included in the main sample used in Table 1 in dark grey. Countries in light grey are not included because of missing values on the bureaucratic capacity variable (frequently small island countries). Countries in white (mostly members of the European Union during the entire sample period, which were covered by the common trade policy of the European Union/European Communities) have no tariff data reported.

TABLE 1 Summary statistics main sample

Variable	Mean	Std. Dev.	Min.	Max.	N
Uniform tariffs	0.524	0.272	0.007	1	1607
Tariff peaks	0.2	0.138	0	0.578	1607
Selective liberalization	0.118	0.108	0	0.517	1607
Bureaucratic capacity	0.532	0.26	0	1	1607
GDP	1.387	0.798	-3.815	3.273	1607
GDP per capita	9.337	15.374	0.112	102.832	1607
Democracy	0.509	0.5	0	1	1533
Legislature corruption	-0.396	1.276	-3.165	3.381	1538
Trade	4.215	0.518	2.667	6.086	1561
FDI	11.167	29.857	0.001	438.946	1360
Natural resources	8.625	11.487	0	63.49	1607
Manufacturing	15.52	6.653	2.066	33.788	1428
HHI imports	0.025	0.03	0	0.392	1607

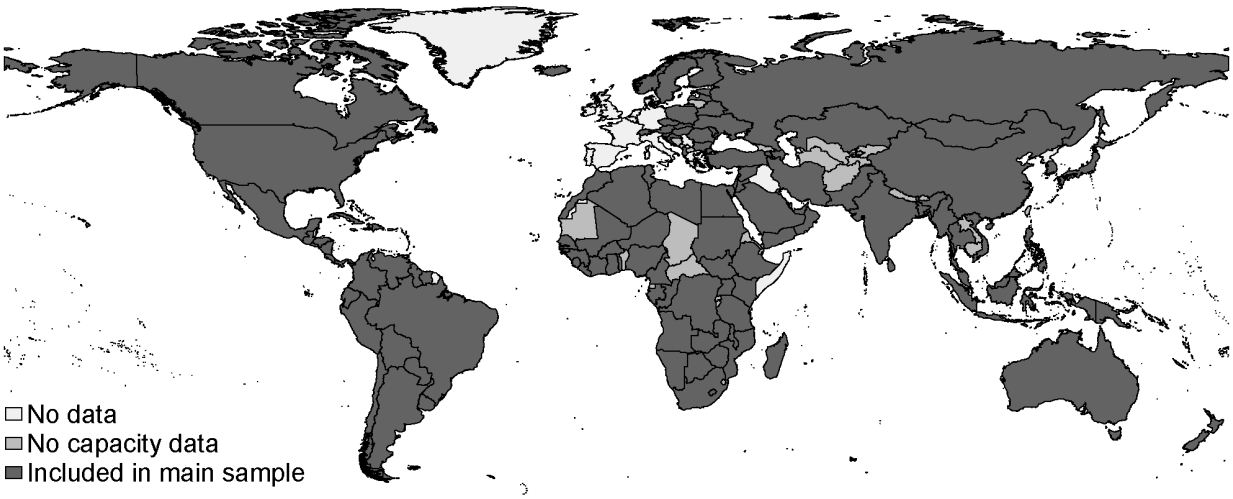

FIGURE 2 Countries with no tariff data (white) and with no capacity data (light grey). Countries included in main sample in dark grey.

The main models use the ICRG bureaucratic capacity measures, which matches the theoretical argument, is frequently used in the literature, and has reasonable coverage across countries and time. The main text also mentions three alternative capacity measures.

First, I use the variable created by Cole (2015), which is based on a factor analysis of thirteen variables, including the ICRG measure of bureaucratic capacity, but also including variables for corruption and a state's material capabilities. Because of the additional underlying variables, the resulting measure has smaller coverarge across countries and time; its advantage is that it captures a broader definition of bureaucratic capacity.

Second, I draw on the International Monetary Fund's (IMF) statistical capacity measure. The variable is an average across three dimensions of the ability of countries to produce accurate economic statistics in a timely manner. The presumption for the validity of this measure is that a government's capacity to produce economic statistics also approximates a government's capacity to monitor trade flows on individual products. The variable is available for a broad cross-section of non-high income countries, but its time coverage is limited to 2004 to 2014.

Third, I rely on a measure of government effectiveness (Kaufmann and Kraay 2016), which reflects a government's ability to implement policies and is in part based on the quality and competence of bureaucracies. This variable has the broadest country coverage, but is only available after 1996.

Tables 2-4 present the results these alternative measures, replicating Table 1 in the main paper. All variables are normalized from zero to one to ease comparison. With the exception of the model using the standard deviation as dependent variable and the IMF statistical capacity measure, the results are robust to using these alternative capacity measures and,therefore, also robust to changing samples. In particular, the sample using the government effectiveness measure from Kaufmann and Kraay (2016) expands to 147 countries.

Table 5 reports results when, instead of relying on effectively applied tariffs, using most-favored nation (MFN) applied rates – i.e., the tariff rates that countries offer to GATT/WTO members, and not taking into account preferential trade agreements or other preferential rates. (These tariffs are different from bound rates, which are the tariff rates to which countries commit as upper bounds during GATT/WTO negotiation rounds. Most, but not all tariff lines are bound for every country. The MFN rate is often considerably lower than the bound rate.)

The three dependent variables rely on disaggregated tariff data from the Harmonized System. The tariff data are missing for several country years. Table 6 reports results when imputing tariff data for missing years with the average values of neighboring years.

Table 7 replicates the main table from the paper, but uses the disaggregated data from the four-digit product categories. Thus, the dependent variables are dummy variables for whether a product category has uniform tariff rates; has at least one tariff peak; or has at least one product liberalized, but not all. As before, all models include year fixed effects. Standard errors are clustered by country. The results are substantively similar to the previous results based on country-year averages across product categories. Even columns include product category fixed effects.

Table 11 presents results using two alternative estimators. Odd columns rely on the GLM estimator with the probit link. As long as the model for the conditional mean is not misspeci-

TABLE 2 Bureaucratic capacity and product-specific tariffs

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-2.10***	2.21***	3.37***	2.24***
(Cole 2015)	(.000)	(.000)	(.000)	(.003)
GDP	-.0011	-.023	-.095	-.042
	(.988)	(.688)	(.101)	(.610)
GDP per capita	.019*	-.013	-.020**	.011
	(.064)	(.106)	(.011)	(.533)
Average tariff				.10***
				(.000)
Constant	1.34***	-2.60***	-4.18***	-.28
	(.005)	(.000)	(.000)	(.814)
Year FE	yes	yes	yes	yes
Number Obs.	998	998	998	998
Number Countries	118	118	118	118

Columns (1-3): GLM, coefficient estimates and *p*-values. Column (4): Linear regression, coefficient estimates and *p*-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

fied, the specific choice of the link function should not affect the consistency of the estimator. Even columns present results from linear regression models, which ignore the bounded nature of the dependent variable. The results are robust to these modifications and are substantively similar in size.

TABLE 3 Statistical capacity and product-specific tariffs

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Statistical Capacity	-2.52***	2.25***	1.60***	.66
	(.000)	(.000)	(.000)	(.137)
GDP	-.021	.017	-.033	.019
	(.753)	(.720)	(.559)	(.741)
GDP per capita	-.044**	.043***	.024	.035**
	(.029)	(.002)	(.123)	(.043)
Average tariff				.066***
				(.001)
Constant	1.94***	-3.11***	-3.14***	.75*
	(.000)	(.000)	(.000)	(.076)
Year FE	yes	yes	yes	yes
Number Obs.	1020	1020	1020	1020
Number Countries	129	129	129	129

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

TABLE 4 Gov't effectiveness and product-specific tariff rates

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Government effectiveness	-1.55**	2.18***	2.36***	2.47***
	(.010)	(.000)	(.000)	(.001)
GDP	.016	-.032	-.067	-.11*
	(.759)	(.477)	(.228)	(.068)
GDP per capita	.016**	-.016***	-.017***	-.0018
	(.030)	(.002)	(.001)	(.894)
Average tariff				.12***
				(.000)
Constant	1.23***	-2.73***	-3.70***	-.67
	(.000)	(.000)	(.000)	(.271)
Year FE	yes	yes	yes	yes
Number Obs.	1521	1521	1521	1521
Number Countries	147	147	147	147

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

TABLE 5 MFN applied rates

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.25***	1.37***	1.92***	1.70***
	(.000)	(.000)	(.000)	(.000)
GDP	.12**	-.11**	-.069	-.12
	(.031)	(.034)	(.169)	(.152)
GDP per capita	.008	-.003	-.009*	.024
	(.345)	(.726)	(.089)	(.149)
Average tariff				.10***
				(.000)
Constant	1.09***	-2.34***	-3.62***	.15
	(.002)	(.000)	(.000)	(.908)
Number Obs.	1607	1607	1607	1607
Number Countries	121	121	121	121

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero.

TABLE 6 Imputed tariff rates

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.29***	1.49***	1.66***	1.22***
	(.000)	(.000)	(.000)	(.003)
GDP	.027	-.028	-.060	-.13
	(.630)	(.506)	(.219)	(.122)
GDP per capita	.016**	-.012***	-.011**	.0025
	(.023)	(.009)	(.019)	(.855)
Average tariff				.081***
				(.003)
Constant	.82*	-2.13***	-3.09***	.92
	(.057)	(.000)	(.000)	(.434)
Year FE	yes	yes	yes	yes
Number Obs.	1852	1852	1852	1852
Number Countries	121	121	121	121

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero.

TABLE 7 Disaggregated four-digit data

	(1)	(2)	(3)	(4)	(5)	(6)
	Uniform		Peaks		Cuts	
Bureaucratic Capacity	-1.30***	-1.55***	.28***	.43***	1.64***	1.79***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
GDP	.029***	.025***	-.070***	-.067***	-.070***	-.074***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
GDP per capita	.018***	.020***	-.013***	-.014***	-.012***	-.013***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Constant	.75***	.38**	-3.47***	-2.50***	-3.02***	-1.98***
	(.000)	(.044)	(.000)	(.000)	(.000)	(.000)
Year FE	yes	yes	yes	yes	yes	yes
Product FE	no	yes	no	yes	no	yes
Number Obs.	1,320,433	1,320,433	1,320,433	1,300,647	1,320,433	1,320,433
Number Countries	121	121	121	121	121	121

Logit, coefficient estimates and *p*-values. Standard errors clustered by country-product category. Even columns include product category fixed effects. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: product categories with uniform tariffs. Peaks: product categories with tariff peaks (one standard deviation above mean). Cuts: product categories with at least one, but less than all, tariffs reduced to zero.

Table 8 uses tariff data below the standardized six-digit classification from the Harmonized System to calculate the previous dependent variables. Additionally, column 5 uses the total number in tariff lines as dependent variable as an alternative measure of targeted tariff rates: a larger number of tariff lines allows governments to tailor protection and liberalization more carefully. The results conform with the previous results: higher capacity is associated with less uniform tariff rates, more tariff peaks, more selective cuts, and more dispersion. In addition, higher capacity is associated with more tariff lines.

TABLE 8 Below HS6 classification

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion	(5) Total lines
Bureaucratic Capacity	-1.80***	1.84***	2.89***	1.78***	1.70***
	(.000)	(.000)	(.000)	(.000)	(.000)
GDP	.041	-.053	-.16**	-.21*	.0059
	(.509)	(.474)	(.026)	(.053)	(.882)
GDP per capita	.0066	-.00078	-.0043	.0092	.00061
	(.343)	(.916)	(.688)	(.531)	(.857)
Average tariff				-.000071	
				(.995)	
Constant	1.97***	-2.73***	-3.71***	.81	10.2***
	(.000)	(.000)	(.000)	(.248)	(.000)
Year FE	yes	yes	yes	yes	yes
Number Obs.	1596	1596	1596	1596	1607
Number Countries	120	120	120	120	121

Columns (1-3): GLM, coefficient estimates and *p*-values. Column (4): Linear regression, coefficient estimates and *p*-values. Column (5): Negative binomial regression, coefficient estimates and *p*-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories. Total lines: Total number of tariff lines.

Table 9 controls for the logged number of four-digit tariff categorie. Table 10 instead weights each observation by the number of four-digit categories (observations with more underlying data should have a smaller variance). The results are robust to both modifications.

Table 12 replicates the model with control variables from Table 2 in the main paper, but drops the political control variables. Only the economic control variables are retained. Columns 4-6 lag the control variables by one period.

Table 13 drops products without imports or exports before calculating the dependent variables. The results are almost identical.

TABLE 9 Control for number of four-digit categories

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.35***	1.57***	1.65***	1.29***
	(.000)	(.000)	(.000)	(.001)
GDP	.023	-.029	-.061	-.093
	(.695)	(.502)	(.219)	(.145)
GDP per capita	.018**	-.014***	-.012**	.0040
	(.016)	(.005)	(.012)	(.771)
Number HS4 categories	-1.52	.80	-1.14	1.52
	(.589)	(.722)	(.701)	(.706)
Average tariff				.089***
				(.000)
Constant	11.7	-7.88	5.03	-10.1
	(.561)	(.624)	(.812)	(.726)
Year FE	yes	yes	yes	yes
Number Obs.	1607	1607	1607	1607
Number Countries	121	121	121	121

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

Table 14 includes, in columns 1-3, instead of clustered standard errors country fixed effects in the generalized linear models. Because the model is non-linear, the fixed effects cannot be differenced out as is the case in linear models. To avoid the potential incidental parameter problem – the need to estimate many individual parameters – columns 4-6 instead estimate linear fixed effects models. The coefficients decrease in size, but retain their sign and statistical significance.

Because tariffs are costly to voters, policy-makers have incentives to rely on less transparent policy levers, such as non-tariff barriers, instead of tariff barriers (Kono 2006). This explanation should mostly have implications for average tariff rates. Nonetheless, if policy-makers are better able to implement such substitution in high-capacity states, a similar empirical pattern as the one documented in this paper may arise – not because lower capacity implies an inability to enforce differentiated tariff rates, but because lower capacity implies an inability to implement alternative means of protection. Yet, this explanation could not account for the results for extreme tariff rates. If low capacity prevents policy-makers from implementing alterna-

TABLE 10 Number of four-digit categories as weights

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.34***	1.57***	1.65***	.78**
	(.000)	(.000)	(.000)	(.031)
GDP	.023	-.030	-.061	-.11
	(.688)	(.499)	(.221)	(.141)
GDP per capita	.018**	-.014***	-.012**	-.0053
	(.016)	(.004)	(.012)	(.726)
Constant	.84*	-2.16***	-3.06***	2.49**
	(.059)	(.000)	(.000)	(.017)
Year FE	yes	yes	yes	yes
Number Obs.	1607	1607	1607	1607
Number Countries	121	121	121	121

Columns (1-3): GLM, coefficient estimates and *p*-values. Column (4): Linear regression, coefficient estimates and *p*-values. Standard errors clustered by country. Observations weighted by number of four-digit categories. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

tive means of protection, they should rely mostly on unusually high tariff rates for protection. Likewise, policy-makers in high-capacity states would have less need to implement such visible means of protection and instead could substitute them effectively with less visibile non-tariff barriers.

To empirically address the potential for policy substitution, I construct a measure of non-tariff barriers with potential protectionist intentions from WTO reports. Governments have the possibility to file specific trade concerns with the WTO. Specific trade concerns, STCs, identify potential violations of a trading partner's WTO commitments in the form of non-tariff barriers. Since 1995, they can be raised by governments with the Technical Barriers to Trade (TBT) Committee and with the Sanitary and Phytosanitary (SPS) Committee. As informal complaints, they fall short of the formal dispute settlement procedure, and they are often raised to obtain information and clarification on newly implemented and more complex policies. The variable has the advantage over other measures that it explicitly captures potential protectionist trade policies as substitutes for tariffs. I include the variable on STCs raised against a government by its trading partners to account for the government's prevalence of non-tariff barriers and limit the sample to WTO members. As expected, non-tariff barriers are associated with less uniform tariff rates, but also with significantly more tariff peaks (which suggests that the variable may proxy for policy-making capacity more generally). The coefficients on the capacity variables

TABLE 11 Alternative estimators

	(1)	(2)	(3)	(4)	(5)	(6)
	Uniform		Peaks		Cuts	
Bureaucratic Capacity	-.83***	-.32***	.89***	.23***	.87***	.15***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
GDP	.014	.0055	-.016	-.0047	-.032	-.0068
	(.702)	(.696)	(.531)	(.487)	(.233)	(.184)
GDP per capita	.011**	.0042**	-.0079***	-.0020***	-.0062**	-.0011**
	(.014)	(.015)	(.005)	(.008)	(.016)	(.044)
Constant	.52*	.70***	-1.28***	.099*	-1.75***	.031
	(.059)	(.000)	(.000)	(.084)	(.000)	(.378)
Year FE	yes	yes	yes	yes	yes	yes
Estimator	GLM	OLS	GLM	OLS	GLM	OLS
Number Obs.	1607	1607	1607	1607	1607	1607
Number Countries	121	121	121	121	121	121

Odd columns: GLM, coefficient estimates, probit link, and p-values. Even columns: Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero.

retain their sign and statistical significance.

It is possible that countries with higher capacity are better able to aggregate diverse constituency preferences and to translate those into differentiated tariff rates. For trade disputes, I rely on Reinhardt (1996) and the most recent update of Horn and Mavroidis (2011). I obtain information on specific trade concerns raised with the Technical Barriers to Trade (TBT) Committee and with the Sanitary and Phytosanitary (SPS) Committee from the World Trade Organization website. Tables 16 and 17 include variables to account for a government's ability to aggregate diverse constituency preferences, using the initiation of trade disputes, in Table 16, and the launching of specific trade concerns over policies maintained by other governments, in Table 17 (only WTO members are included in the samples; for the specific trade concerns, the sample only starts in 1995 and ends in 2011, the latest year for which data on specific trade concerns are available).

Both trade disputes and even more so specific trade concerns, which address complex trade barriers with high informational requirements, frequently rely on input from domestic interest groups. They thus account for a government's ability to aggregate information from domestic interest groups involved in international trade. Note that both trade disputes and specific trade concerns are usually raised over specific products, following the Harmonized System six-digit

classification. The results in Tables 16 and 17 conform with expectations: governments that file more trade disputes and specific trade concerns also have less uniform tariff rates and more targeted protection and liberalization. The coefficient on bureaucratic capacity retains its sign and statistical significance in all models.

TABLE 12 Only economic control variables

	(1)	(2)	(3)	(4)	(5)	(6)
				Lagged control variables		
	Uniform	Peaks	Cuts	Uniform	Peaks	Cuts
Bureaucratic Capacity	-1.27***	1.40***	1.22***	-1.26***	1.50***	1.21***
	(.002)	(.000)	(.001)	(.004)	(.000)	(.001)
GDP	.043	-.030	-.023	.016	-.021	-.035
	(.442)	(.420)	(.634)	(.794)	(.613)	(.498)
GDP per capita	.006	-.005	-.002	.007	-.007	-.004
	(.371)	(.403)	(.815)	(.315)	(.193)	(.612)
Exports	.17	-.0099	.36**	.25	-.045	.36**
	(.247)	(.935)	(.027)	(.118)	(.719)	(.033)
FDI	.019***	-.015***	-.014***	.020***	-.015***	-.014***
	(.000)	(.000)	(.001)	(.000)	(.000)	(.001)
Natural resources	.001	-.008	-.036***	-.006	-.004	-.032***
	(.915)	(.221)	(.000)	(.478)	(.602)	(.000)
Manufacturing	-.046***	.028***	-.015	-.050***	.029***	-.016
	(.000)	(.004)	(.273)	(.000)	(.002)	(.224)
HHI imports	7.90**	-9.09***	-12.8***	6.59*	-8.70***	-14.2***
	(.014)	(.001)	(.000)	(.056)	(.006)	(.000)
Constant	1.17*	-2.55***	-3.35***	1.58***	-2.94***	-3.77***
	(.064)	(.000)	(.000)	(.007)	(.000)	(.000)
Year FE	yes	yes	yes	yes	yes	yes
Number Obs.	1169	1169	1169	1005	1005	1005
Number Countries	100	100	100	95	95	95

GLM, coefficient estimates and *p*-values. Standard errors clustered by country. Columns (4-6) with lagged control variables. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero.

TABLE 13 Drop products without trading activity

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.33***	1.56***	1.64***	1.29***
	(.000)	(.000)	(.000)	(.001)
GDP	.023	-.030	-.059	-.094
	(.694)	(.496)	(.238)	(.141)
GDP per capita	.018**	-.014***	-.012**	.004
	(.016)	(.004)	(.012)	(.772)
Average tariff				.090***
				(.000)
Constant	.83*	-2.16***	-3.06***	.65
	(.062)	(.000)	(.000)	(.563)
Year FE	yes	yes	yes	yes
Number Obs.	1595	1595	1595	1595
Number Countries	121	121	121	121

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

TABLE 14 Fixed effects models

	(1)	(2)	(3)	(4)	(5)	(6)
		GLM FE			OLS FE	
	Uniform	Peaks	Cuts	Uniform	Peaks	Cuts
Bureaucratic Capacity	-.61***	.50***	.96***	-.14***	.079***	.056***
	(.007)	(.002)	(.001)	(.005)	(.001)	(.002)
GDP	.014	-.015	.018	.0042	-.0034	.000
	(.634)	(.433)	(.424)	(.515)	(.265)	(.990)
GDP per capita	.030***	-.026***	-.033***	.006***	-.003***	-.002***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Constant	1.31***	-2.22***	-3.08***	.59***	.18***	.073***
	(.001)	(.000)	(.000)	(.000)	(.000)	(.005)
Year FE	yes	yes	yes	yes	yes	yes
Country FE	yes	yes	yes	yes	yes	yes
Number Obs.	1607	1607	1607	1607	1607	1607
Number Countries	121	121	121	121	121	121

Columns (1-3): GLM, coefficient estimates and *p*-values. Columns (4-6): Linear fixed effects model, coefficient estimates and *p*-values. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

TABLE 15 Control for non-tariff barriers

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.47***	1.65***	1.72***	1.64***
	(.000)	(.000)	(.000)	(.000)
GDP	-.0095	-.017	-.050	-.096
	(.878)	(.706)	(.331)	(.187)
GDP per capita	.023***	-.017***	-.012**	.01
	(.003)	(.002)	(.030)	(.490)
NTB defendant	-.16***	.100***	.005	-.042
	(.005)	(.008)	(.938)	(.578)
Average tariff				.12***
				(.000)
Constant	.82***	-2.33***	-3.68***	-.48
	(.006)	(.000)	(.000)	(.446)
Year FE	yes	yes	yes	yes
Number Obs.	1184	1184	1184	1184
Number Countries	105	105	105	105

Columns (1-3): GLM, coefficient estimates and *p*-values. Column (4): Linear regression, coefficient estimates and *p*-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

TABLE 16 Preference aggregation: trade disputes

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.26***	1.52***	1.60***	1.37***
	(.000)	(.000)	(.000)	(.001)
GDP	.016	-.033	-.068	-.088
	(.799)	(.472)	(.194)	(.211)
GDP per capita	.018**	-.015***	-.013***	.0043
	(.013)	(.002)	(.006)	(.751)
GATT/WTO disputes initiated	-.20***	.12***	.096***	-.042
	(.000)	(.000)	(.000)	(.398)
Average tariff				.090***
				(.000)
Constant	.87**	-2.16***	-3.05***	.58
	(.050)	(.000)	(.000)	(.609)
Year FE	yes	yes	yes	yes
Number Obs.	1526	1526	1526	1526
Number Countries	109	109	109	109

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

TABLE 17 Preference aggregation: Specific Trade Concerns

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.37***	1.58***	1.60***	1.64***
	(.000)	(.000)	(.000)	(.001)
GDP	-.022	-.0085	-.049	-.099
	(.716)	(.847)	(.355)	(.181)
GDP per capita	.025***	-.019***	-.013***	.010
	(.002)	(.000)	(.007)	(.485)
STCs initiated	-.16***	.095***	.060***	-.024
	(.000)	(.000)	(.010)	(.562)
Average tariff				.12***
				(.000)
Constant	.76***	-2.28***	-3.60***	-.48
	(.010)	(.000)	(.000)	(.456)
Year FE	yes	yes	yes	yes
Number Obs.	1184	1184	1184	1184
Number Countries	105	105	105	105

Columns (1-3): GLM, coefficient estimates and *p*-values. Column (4): Linear regression, coefficient estimates and *p*-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

Table 2 in the main text controls for democracy, using a dichotomous variable coded from the polity score. Tables 18, 19, and 20 instead include the Freedom House political rights variable (obtained from the VDEM data set), the Cheibub, Gandhi, Vreeland democracy variable (also obtained from the VDEM data set), and the continuous polity score. The results for the bureaucratic capacity variable are robuts to these alternative measures of democracy.

TABLE 18 Democracy: Freedom House Political Rights

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.38***	1.44***	.97**	1.09***
	(.000)	(.000)	(.010)	(.009)
GDP	.031	-.036	-.062	-.098
	(.595)	(.408)	(.219)	(.138)
GDP per capita	.015**	-.013**	-.015***	.0025
	(.040)	(.013)	(.008)	(.832)
Freedom House	.013	-.036	-.15***	-.029
	(.771)	(.310)	(.000)	(.592)
Legislative corruption	.049	-.0091	.084	.085
	(.548)	(.884)	(.205)	(.353)
Average tariff				.098***
				(.000)
Constant	.64	-1.88***	-2.11***	1.08
	(.194)	(.000)	(.000)	(.358)
Year FE	yes	yes	yes	yes
Number Obs.	1538	1538	1538	1538
Number Countries	117	117	117	117

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

Table 21 presents results from instrumental variable models, estimated using two-stage least squares, that treat bureaucratic capacity as endogenous. The instrument is the difference in expected years of education between men and women (obtained from the World Bank). The underlying assumption for the validity of the instrument is that countries with more equal educational opportunities can, for any given educational level, draw on a broader set of qualified candidates for recruitment into the bureaucracy. At the same time, differences in educational opportunities across boys and girls should not have a direct effect on the structure of tariff rates

TABLE 19 Democracy: Cheibub, Gandhi, Vreeland variable

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.51***	1.58***	1.45***	1.24**
	(.000)	(.000)	(.001)	(.013)
GDP	-.023	-.013	-.076	-.076
	(.734)	(.803)	(.177)	(.346)
GDP per capita	.014	-.011	-.016**	.010
	(.156)	(.139)	(.040)	(.498)
CGV democracy	-.22	.17	.34*	-.092
	(.181)	(.215)	(.081)	(.706)
Legislative corruption	.053	-.015	.14*	.077
	(.519)	(.820)	(.070)	(.491)
Average tariff				.097***
				(.000)
Constant	1.04**	-2.27***	-3.11***	.86
	(.015)	(.000)	(.000)	(.502)
Year FE	yes	yes	yes	yes
Number Obs.	1064	1064	1064	1064
Number Countries	115	115	115	115

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

across products. The instrument is reasonably strong, with an F-statistic on the instrument in the first stage of over 7. The coefficients on bureaucratic capacity all retain their sign, and, with the exception of the model in column, their statistical significance.

Table 22 drops homogeneous products (those traded on organized exchanges or that are reference-priced), such that only differentiated products remain (using the classification of Rauch 1999).

Table 23 limits the sample to upper-middle income and high-income countries. The results remain robust to this sample limitation.

Through trade agreements, governments agree to tariff cuts and to eliminate tariff peaks. Moreover, countries with lower state capacity may be members to fewer trade agreements. I therefore include variables for membership in the General Agreement on Tariffs and Trade/the World Trade Organization (nearly all countries in the sample are WTO members), and a vari-

TABLE 20 Democracy: Continuous polity

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.39***	1.44***	.98**	1.02**
	(.000)	(.000)	(.011)	(.018)
GDP	.033	-.029	-.045	-.094
	(.573)	(.518)	(.386)	(.156)
GDP per capita	.014*	-.012**	-.013*	.0046
	(.071)	(.043)	(.052)	(.716)
Polity (continuous)	-.002	.012	.051***	.018
	(.879)	(.288)	(.000)	(.340)
Legislative corruption	.044	-.0012	.11*	.092
	(.600)	(.985)	(.095)	(.334)
Average tariff				.10***
				(.000)
Constant	.71*	-2.09***	-2.92***	.87
	(.100)	(.000)	(.000)	(.486)
Year FE	yes	yes	yes	yes
Number Obs.	1493	1493	1493	1493
Number Countries	114	114	114	114

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

able for the number of a country's preferential trade agreements, obtained from the Design of Trade Agreements database (Dür, Baccini and Elsig 2014). The results, reported in Table 24, are robust to adding these control variables.

Participation in loan programs of the International Monetary Fund (IMF) likewise may have consequences for tariff rates. Some IMF loan programs require governments to standardize and unify their tariff schedules, resulting in an elimination of tariff peaks and flattening tariff rates across broad product categories. At the same time, it is plausible that IMF programs are more frequently implemented in low-capacity states. I therefore include a variable for the presence of an IMF program for at least five months, obtained from Dreher (2006). The results, reported in Table 25, show that IMF programs indeed result in more uniform tariff rates, fewer tariff peaks, and less dispersed tariff rates; they have no significant effect on partial liberalization. The coefficients on the capacity variables retain their sign and significance.

TABLE 21 2SLS results

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.28**	.70**	.61**	.67
	(.019)	(.015)	(.019)	(.848)
GDP	-.014	.0014	.0031	-.12
	(.644)	(.919)	(.782)	(.334)
GDP per capita	.015***	-.007**	-.005**	.020
	(.007)	(.012)	(.032)	(.515)
Average tariff				.10***
				(.004)
Constant	1.36***	-.23	-.31	.68
	(.004)	(.373)	(.136)	(.809)
Year FE	yes	yes	yes	yes
First stage *F*	7.2	7.2	7.2	7.2
Number Obs.	847	847	847	847
Number Countries	105	105	105	105

2SLS, instrument for bureaucratic capacity using gender gap in schooling between men and women. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero.

TABLE 22 Only differentiated products

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.46***	1.59***	1.80***	1.18***
	(.000)	(.000)	(.000)	(.002)
GDP	.012	-.021	-.054	-.058
	(.849)	(.644)	(.280)	(.248)
GDP per capita	.019**	-.014***	-.013**	-.011*
	(.025)	(.009)	(.021)	(.057)
Average tariff				.098***
				(.001)
Constant	.84*	-2.14***	-3.25***	-.15
	(.071)	(.000)	(.000)	(.856)
Year FE	yes	yes	yes	yes
Number Obs.	1607	1607	1607	1607
Number Countries	121	121	121	121

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

TABLE 23 Only upper-middle and high-income countries

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-.64	1.15***	1.93***	1.37**
	(.223)	(.002)	(.000)	(.024)
GDP	.049	-.030	-.040	-.13
	(.518)	(.554)	(.487)	(.121)
GDP per capita	.018**	-.016***	-.019***	.005
	(.017)	(.001)	(.000)	(.742)
Average tariff				.12***
				(.000)
Constant	-.00055	-1.70***	-3.13***	.88
	(.999)	(.000)	(.000)	(.552)
Year FE	yes	yes	yes	yes
Number Obs.	946	946	946	946
Number Countries	71	71	71	71

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero. Dispersion: average standard deviation acrosstariffs within product categories.

TABLE 24 Trade agreements

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.26***	1.49***	1.52***	1.15***
	(.001)	(.000)	(.000)	(.003)
GDP	-.00074	-.011	-.050	-.080
	(.990)	(.803)	(.302)	(.206)
GDP per capita	.016*	-.012**	-.010**	.0058
	(.052)	(.022)	(.042)	(.662)
WTO member	.32	-.16	.059	-.20
	(.104)	(.332)	(.813)	(.494)
PTAs	-.042***	.032***	.024***	.029**
	(.000)	(.000)	(.001)	(.017)
Average tariff				.088***
				(.000)
Constant	.69	-2.12***	-3.16***	.81
	(.166)	(.000)	(.000)	(.497)
Year FE	yes	yes	yes	yes
Number Obs.	1591	1591	1591	1591
Number Countries	119	119	119	119

Columns (1-3): GLM, coefficient estimates and *p*-values. Column (4): Linear regression, coefficient estimates and *p*-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero.

Table 26 re-estimates the main models when averaging the data for each country across all available years. The coefficient estimates retain their size and statistical significance in the sample.

Table 27 takes advantage of the inclusion of apparel products in the Harmonized System that are differentiated solely by gender. I identify 65 product pairs where differentiation by gender occurs on otherwise identical products. Column 1 presents results at the country-year-level, where the dependent variable is the share of product categories with identical tariff rates for otherwise similar men's and women's items. Column 2 disaggregates the data to the country-product pair-year and shows that the results are identical there. Column 3 includes product fixed effects; the results remain robust to this change. Column 4, finally, uses the absolute difference in tariff rates between men's and women's items, again at the level of the country-product pair-year. The results corroborate the previous findings: higher capacity is associated with fewer identical tariff rates on these products, and in addition with larger

TABLE 25 Control for IMF programs

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.39***	1.54***	1.68***	1.08**
	(.000)	(.000)	(.000)	(.011)
GDP	-.00051	-.021	-.068	-.077
	(.993)	(.642)	(.170)	(.278)
GDP per capita	.021***	-.015***	-.012**	.0059
	(.005)	(.005)	(.032)	(.696)
IMF program	.23**	-.21**	-.13	-.31**
	(.022)	(.011)	(.240)	(.013)
Average tariff				.089***
				(.000)
Constant	.86*	-2.13***	-3.08***	.79
	(.064)	(.000)	(.000)	(.492)
Year FE	yes	yes	yes	yes
Number Obs.	1310	1310	1310	1310
Number Countries	116	116	116	116

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero.

(absolute) differences in tariff rates across otherwise similar products.

TABLE 26 Cross-section, averages

	(1) Uniform	(2) Peaks	(3) Cuts	(4) Dispersion
Bureaucratic Capacity	-1.11***	1.48***	1.24***	1.00**
	(.007)	(.000)	(.001)	(.034)
GDP	-.038	.078	-.18	-.12
	(.872)	(.687)	(.366)	(.618)
GDP per capita	.013	-.012**	-.010*	.0042
	(.106)	(.023)	(.058)	(.782)
Average tariff				.098***
				(.000)
Constant	.65	-2.21***	-2.38***	.48
	(.143)	(.000)	(.000)	(.307)
Number Obs.	121	121	121	121

Columns (1-3): GLM, coefficient estimates and p-values. Column (4): Linear regression, coefficient estimates and p-values. Robust standard errors. All variables averaged across all available time periods. *** significant at 1%, ** significant at 5%, * significant at 10%. Uniform: share of product categories with uniform tariffs. Peaks: share of product categories with tariff peaks (one standard deviation above mean). Cuts: share of product categories with at least one, but less than all, tariffs reduced to zero.

TABLE 27 Identical apparel tariff rates, matched pairs

	(1) Country	(2) Product	(3) Product & FE	(4) Abs. Diff
Bureaucratic Capacity	-2.95***	-2.74***	-2.78***	2.69**
	(.000)	(.000)	(.000)	(.025)
GDP	.024	.059	.058	-.20
	(.797)	(.546)	(.553)	(.518)
GDP per capita	.00058	.0017	.0015	-.054***
	(.957)	(.878)	(.890)	(.007)
Constant	3.06***	2.76***	2.97***	-.43
	(.000)	(.001)	(.001)	(.736)
Year FE	yes	yes	yes	yes
Number Obs.	1,586	83,429	83,429	83,429
Number Countries	120	120	120	120

Column (1): GLM, country level. Share of product pairs with identical tariff rate for men's and women's product. Column (2): Logit, matched product pairs. Dependent variable coded one for product pairs with identical tariffs. Column (3): Logit, matched product pairs. Dependent variable coded one for product pairs with identical tariffs. Product fixed effects included. Column (4): OLS, matched product pairs. Absolute difference in tariff rate for men's and women's product. Coefficient estimates and p-values. Standard errors clustered by country. *** significant at 1%, ** significant at 5%, * significant at 10%.

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