International Bureaucrats under Transparency: The Case of the WTO TRIPS Council

Sojun Park* Minju Kim†

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*Postdoctoral Associate, Center for International Studies, MIT (`sojunp@mit.edu`)

†Assistant Professor, Department of Political Science, Syracuse University (`mkim71@syr.edu`)

1 Data Source and Structure

Symbol	Description	Publishers	N
IP/*	All documents relevant for the TRIPS agreement	states, the secretariat, IOs	5913
IP/C/*	Minutes, Reports and Decisions, and Working Documents	states, the secretariat, IOs	1845
IP/N/*	Notification of laws and regulations under Article 63.2	states, the secretariat	3687
IP/Q/*	Peer-review of national legislation among WTO members	states	337
IP/D/*	Dispute settlement process related to the TRIPS agreement	states	44

Table 1: **The Classification of Documents Published in the TRIPS Council**

The original data set are summarized in Table 4, where WTO documents are classified based on their symbols. For instance, Paragraph 2 of Article 63 ("Transparency") states that all signatories shall notify changes in their laws and regulation so that the TRIPS Council can better monitor their implementation of TRIPS. All of the documents published to comply with Article 63.2 of the TRIPS agreement have symbols starting with "IP/N." More information about WTO document labeling system can be found under the WTO guide to documentation.

The newspaper coverage on WTO TRIPS was downloaded from the Nexis Uni database under the license of the Princeton University Library. We restricted the publication dates to the period from January 1, 1995, to April 1, 2025, and retrieved all worldwide coverage on WTO TRIPS using the keyword "WTO TRIPS" in the search engine. The final dataset contains 4,928 items, including news articles, aggregated at the country-year level.

Control variables at the country-year level were obtained from publicly available databases. The democracy index is from Boix et al. (2013). Countries' ideal points are from Bailey et al. (2017). Total population is from the Correlates of War project (Singer 1988). GDP per capita is from the World Bank (Bank 1993).

2 Full Model: Proactive Publication

	DV: Proactive Publication (1=YES)		
	(1)	(2)	(3)
after the reform	15.193***	-1.145**	16.099***
	(1.115)	(0.515)	(1.286)
polarized topic	0.729	1.068	0.430
	(0.944)	(0.840)	(0.924)
days until publication (log)	0.223***	0.254***	0.182***
	(0.066)	(0.058)	(0.067)
number of keywords		0.048	0.083**
		(0.034)	(0.035)
number of TRIPS articles		-0.012	-0.005
		(0.024)	(0.033)
number of products		0.019	0.444**
		(0.212)	(0.226)
after the reform × polarized topic	3.307**	3.394***	3.645**
	(1.426)	(1.304)	(1.579)
after the reform × days until publication (log)	0.280**	0.565**	0.328*
	(0.132)	(0.265)	(0.196)
after the reform × number of keywords		0.117	0.135
		(0.099)	(0.183)
after the reform × number of TRIPS articles		-0.083	-0.165
		(0.250)	(0.240)
after the reform × number of products		-0.126	-0.522
		(0.406)	(0.387)
Observations	182	182	182
Year FE	YES	NO	YES
Log Likelihood	-120.662	-314.780	-115.356

Robust standard errors are shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

3 Full Model: Newspaper Coverage

	DV: newspapers on WTO TRIPS by non-governments		
	(1)	(2)	(3)
after the reform	0.113*	-0.032	-0.822
	(0.058)	(0.082)	(0.633)
WTO membership		-0.097	-0.097
		(0.079)	(0.075)
after the reform × WTO membership		0.188**	0.300***
		(0.076)	(0.112)
after the reform × democracy			-0.013
			(0.133)
after the reform × ideal point			0.167
			(0.127)
after the reform × population (log)			0.131**
			(0.052)
after the reform × GDP per capita (log)			-0.081**
			(0.040)
democracy			-0.139
			(0.102)
ideal point			-0.135
			(0.162)
population (log)			0.441**
			(0.184)
GDP per capita (log)			0.103
			(0.094)
Observations	1,539	1,122	1,089
Year FE	YES	YES	YES
Country FE	YES	YES	YES
R^2	0.001	0.006	0.076

Note: Robust standard errors are shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

4 Model Diagnosis: Keyword-assisted Topic Models

The following results are derived using an `R` package developed by Eshima et al. (2020).

4.1 Base: the Number of Topic with no Keywords = 6

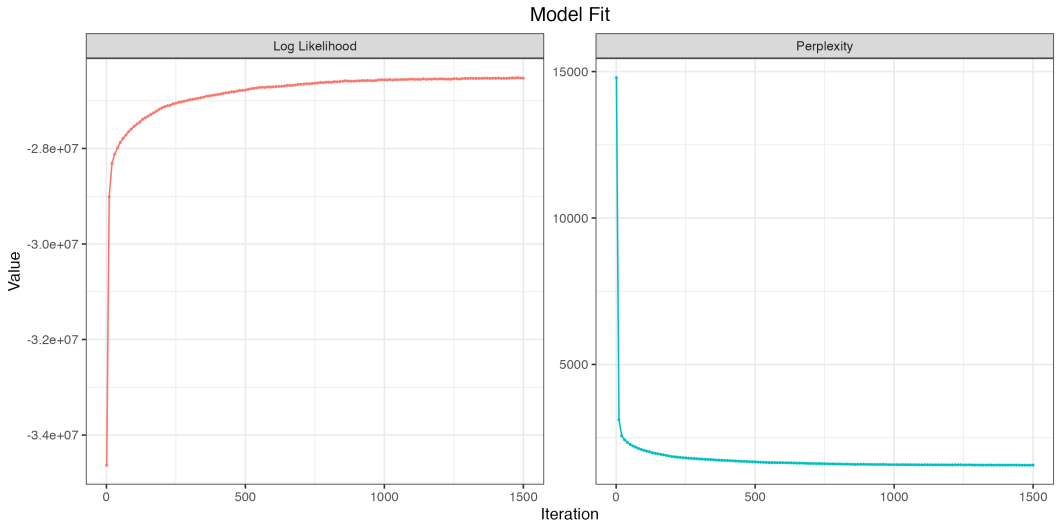


Figure 1: **The With-in Sample Log-likelihood and Perplexity**

4.2 Time-trend: the Number of Topic with no Keywords = 6

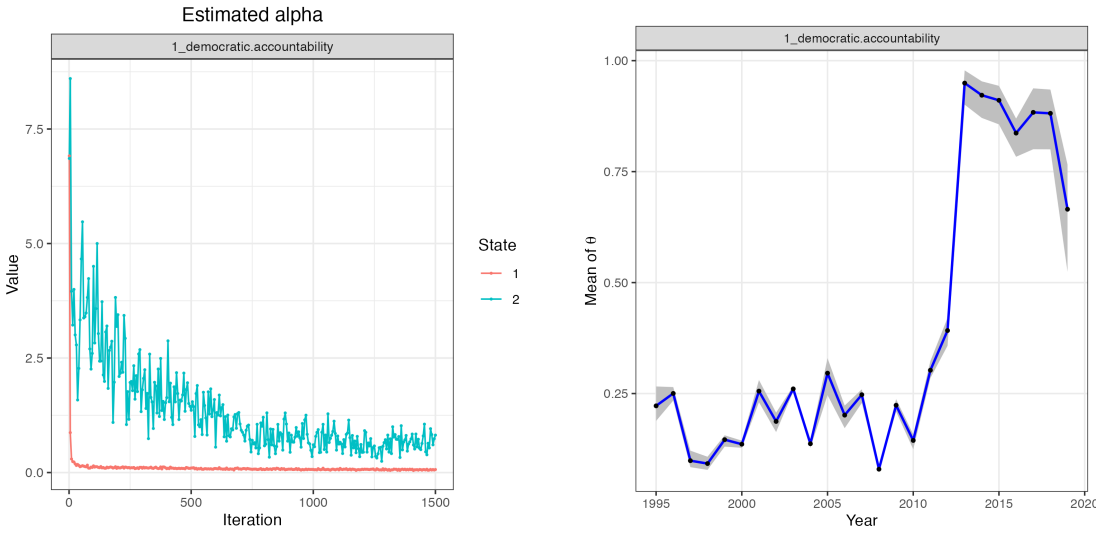
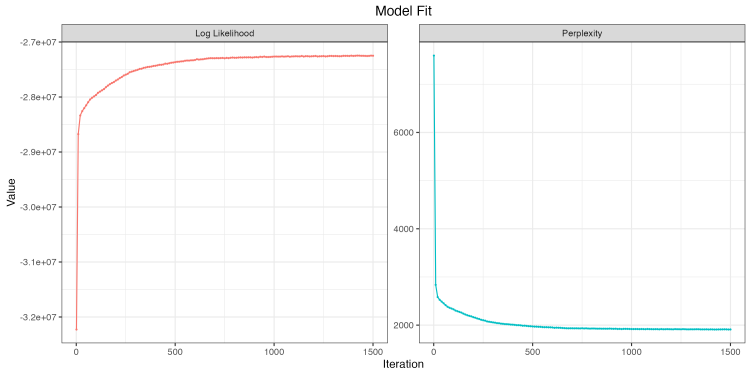
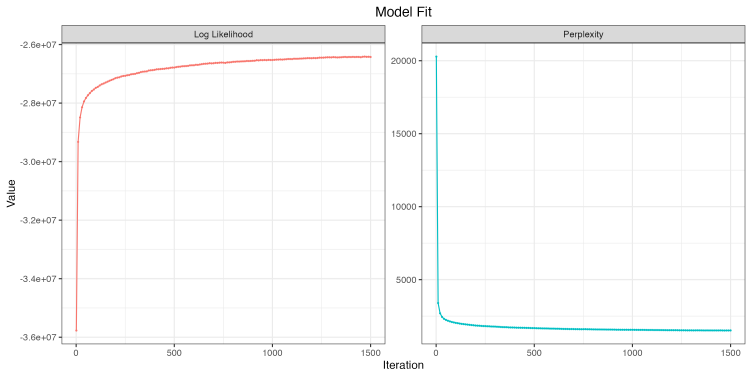


Figure 2: **Changes in the Prevalence of Topics: 1995-2019**

4.3 Changing the Number of Topics with no Keywords

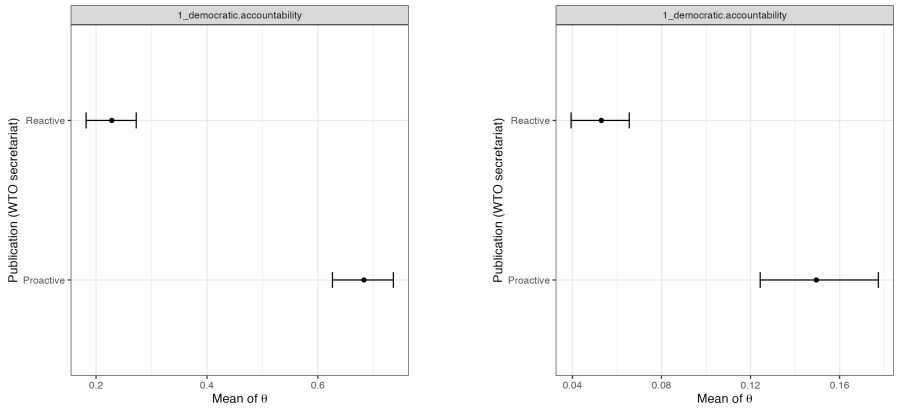


(a) The number of topics with no keywords = 2



(b) The number of topics with no keywords = 10

Figure 3: **The Within-in Samples Log-likelihood and Perplexity**



(a) The number of topics with no keywords = 2

(b) The number of topics with no keywords = 10

Figure 4: **The Means of Document-topic Distributions: Passive vs. Proactive**

5 Results From Structural Topic Models

We also conduct a text analysis to assess whether there is a notable difference in texts between regular and proactive documents published by the WTO secretariat. Specifically, we ran a structural topic model developed by Roberts et al. (2014, 2019). In the model, we regressed the indicator on latent topics of all of the published documents. The number of topics was chosen based on several criteria for the model fit, such as semantic coherence.

Structural topic model allows us to assess whether our classification of the documents using the symbols was precise. Recall that we distinguish initiatives set forth by the WTO secretariat from its occupational duties by creating an indicator. Yet, the document symbols may be imperfectly coded or not fully incorporating information hidden in their text. In this respect, the semi-automated text analysis can uncover whether the documents coded as 'proactive' contain any distinct feature in their text.

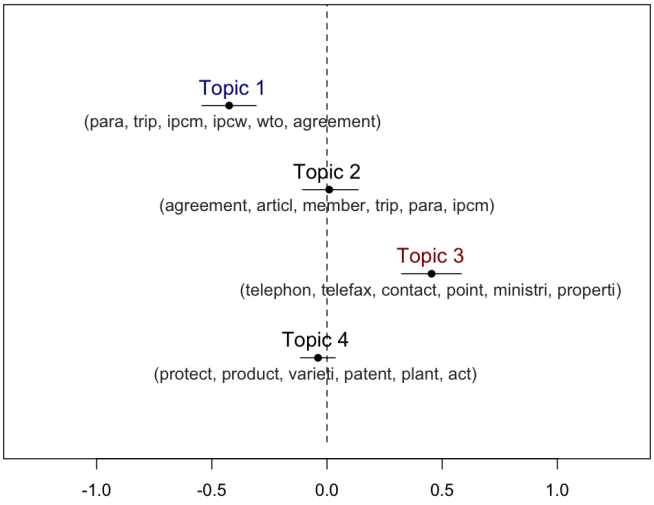


Figure 5: **The Difference in Topic Proportions** ($K = 4$)

The results of text analysis are visualized in Figure 5 and Figure 6. In Figure 5, the negative coefficients correspond to the indicator being 1 and presenting the secretariat's documents coded as 'proactive.' Topic 1 is dominant when the publications are categorized as proactive, while Topic 3 is prevalent when the documents are considered as 'passive.' The

latter case includes keywords many of which describe contact points among WTO member states. On the other hand, the former refers to other documents published as a part of agenda setting, such as "IP/C/M" or "IP/C/W," and cites specific paragraphs under the TRIPS agreement.

It should be noted that "IP/C/W" followed by suffixes are coded as 'passive' in the earlier data generation process. This implies that the keyword is not followed by suffixes under documents classified as 'proactive' and the proposals are likely to be set forth by the secretariat for the first time. Citations of paragraphs in TRIPS also indicate that the secretariat is actively engaged in the agenda setting. This is mainly so because TRIPS does not list any formal course of actions the secretariat must follow under the TRIPS Council.

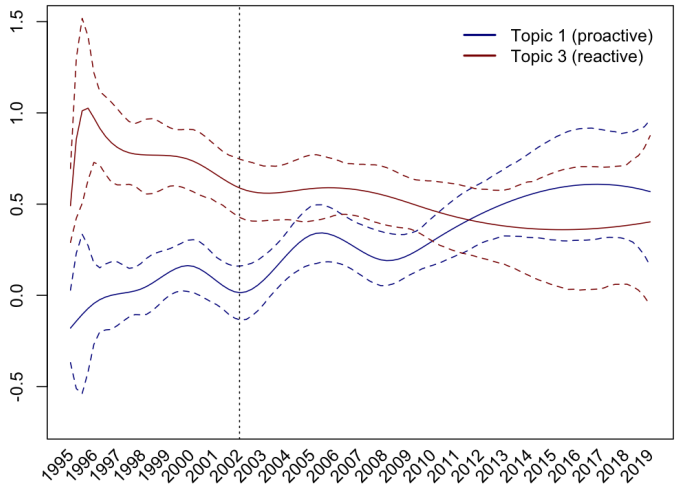


Figure 6: **Time Trend (Before and After the Reform)**

Figure 6 summarizes the time trend of prevalence of each topic. It is worth noticing that the prevalence of Topic 1 starts to take off after 2002 while Topic 3 steadily declines. Although the text analysis does not offer any conclusive evidence, it offers a suggestive evidence on whether the shift is driven by the document de-restriction policy in the WTO.

6 Using Other Communication Detection Methods

	Dependent Variable: Proactive Publication (1=YES)					
	(1)	(2)	(3)	(4)	(5)	(6)
dummy (after the reform)	3.610**	3.893**	3.694**	3.756**	3.845**	3.706**
× **polarized topic**	(1.670)	(1.677)	(1.673)	(1.666)	(1.666)	(1.661)
dummy (after the reform)	0.322*	0.346*	0.324*	0.330*	0.339*	0.323*
× days until publication (days)	(0.195)	(0.195)	(0.196)	(0.195)	(0.193)	(0.194)
dummy (after the reform)	0.129	0.116	0.127	0.124	0.124	0.127
× number of keywords	(0.176)	(0.169)	(0.176)	(0.175)	(0.170)	(0.178)
dummy (after the reform)	-0.214	-0.216	-0.214	-0.212	-0.205	-0.213
× number of articles	(0.245)	(0.243)	(0.244)	(0.242)	(0.242)	(0.242)
dummy (after the reform)	-0.528	-0.535	-0.528	-0.526	-0.540	-0.522
× number of products	(0.386)	(0.386)	(0.388)	(0.386)	(0.384)	(0.386)
dummy (after the reform)	16.141***	16.110***	16.134***	16.117***	16.121***	16.122***
	(1.259)	(1.252)	(1.259)	(1.260)	(1.256)	(1.263)
polarized topic	0.459	0.464	0.402	0.409	0.420	0.390
	(0.922)	(0.924)	(0.925)	(0.930)	(0.913)	(0.933)
days until publication (log)	0.182***	0.182***	0.183***	0.183***	0.182***	0.183***
	(0.066)	(0.067)	(0.066)	(0.067)	(0.067)	(0.067)
number of keywords	0.082**	0.082**	0.082**	0.082**	0.082**	0.082**
	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)
number of articles	-0.005	-0.004	-0.005	-0.005	-0.004	-0.005
	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
number of products	0.442*	0.438*	0.441*	0.440*	0.441*	0.441*
	(0.226)	(0.229)	(0.229)	(0.229)	(0.228)	(0.230)
Observations	182	182	182	182	182	182
Log Likelihood	-115.419	-114.958	-115.407	-115.300	-115.102	-115.411

Robust standard errors are shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

In this section, each column represents the findings using Newman and Girvan (2004), Clauset and Moore (2004), Pons and Latapy (2005), Newman (2006), Raghavan et al. (2007), and Blondel et al. (2008), respectively.

7 Using Other Proxies for Proactive Publications

	Dependent variable: Proactive Publication		
	(1)	(2)	(3)
after the reform	16.211***	1.954*	16.472***
	(1.076)	(1.144)	(1.180)
polarized topic	1.623	-1.458	-1.554
	(2.097)	(2.217)	(1.979)
days until publication (days)	0.390***	0.538**	1.400**
	(0.126)	(0.247)	(0.691)
number of keywords		-0.082	-0.093
		(0.098)	(0.223)
number of articles		0.093	0.087
		(0.063)	(0.184)
number of products		0.770***	0.552
		(0.157)	(0.923)
after the reform × polarized topic	2.490	5.560**	4.977**
	(2.321)	(2.376)	(2.137)
after the reform × days until publication (days)		-4.366***	-5.740***
		(0.365)	(0.744)
after the reform × number of keywords		0.364***	0.450*
		(0.116)	(0.266)
after the reform × number of articles		0.016	-0.008
		(0.100)	(0.204)
after the reform × number of products		-0.512**	-0.337
		(0.211)	(0.941)
Observations	182	182	182
Year FE	YES	NO	YES
Log Likelihood	-67.869	-189.601	-57.882

Robust standard errors are shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

This table presents the results using a new indicator, which takes the value of 1 if a document published by the WTO Secretariat begins with the sentence: "This document has been prepared under the Secretariat's own responsibility and without prejudice to the positions of Members and to their rights and obligations under the WTO."

8 Early Post-Reform Effects

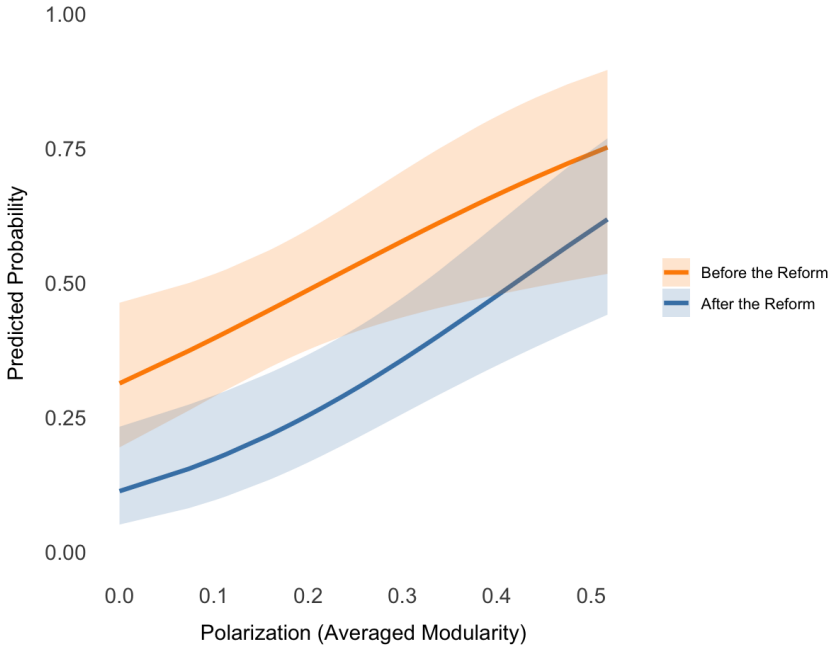
The results in (1) and (2) were derived from documents published by the WTO Secretariat between 1995 and 2013. The results in (3) and (4) were derived from documents published by the WTO Secretariat between 1995 and 2008. The increases in magnitudes in (3) and (4) suggest that the effect of the document derestriction reform diminishes as the period moves further away from 2002.

	DV: Proactive Publication (YES = 1)			
	(1)	(2)	(3)	(4)
after the reform × polarized topic	3.360**	3.488**	4.079**	4.649**
	(1.474)	(1.670)	(1.640)	(1.895)
after the reform × days until publication (log)	0.516*	0.306	0.593**	0.413*
	(0.267)	(0.195)	(0.285)	(0.232)
after the reform × number of keywords	0.083	0.126	0.071	0.077
	(0.102)	(0.175)	(0.099)	(0.135)
after the reform × number of TRIPS articles	-0.033	-0.214	-0.172	-0.405**
	(0.215)	(0.244)	(0.204)	(0.194)
after the reform × number of products	0.019	-0.521	-0.123	-0.724**
	(0.409)	(0.384)	(0.426)	(0.337)
after the reform	-1.311**	16.188***	-1.164*	16.604***
	(0.564)	(1.256)	(0.661)	(1.184)
polarized topic	1.068	0.459	1.068	0.459
	(0.838)	(0.922)	(0.842)	(0.922)
days until publication (log)	0.254***	0.182***	0.256***	0.182***
	(0.058)	(0.066)	(0.059)	(0.066)
number of keywords	0.048	0.082**	0.048	0.082**
	(0.034)	(0.035)	(0.034)	(0.035)
number of articles	-0.013	-0.005	-0.013	-0.005
	(0.024)	(0.033)	(0.024)	(0.033)
number of products	0.019	0.442*	0.017	0.442*
	(0.212)	(0.226)	(0.213)	(0.226)
Observations	175	175	143	143
Year FE	NO	YES	NO	YES
Log Likelihood	-284.259	-115.241	-239.857	-102.484

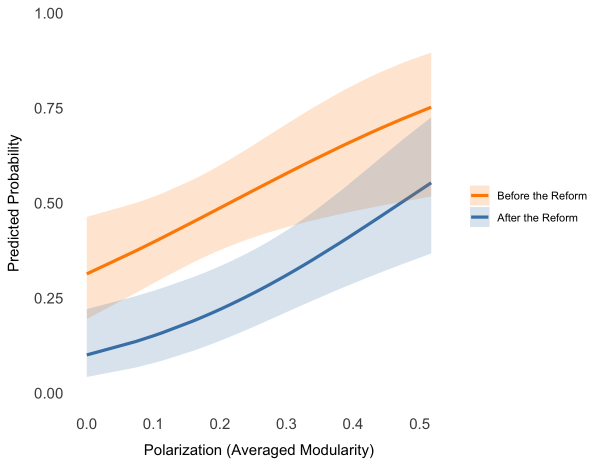
Note: Robust standard errors are shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

Table 2: Effects of the document de-restiction reform with different time bandwidth

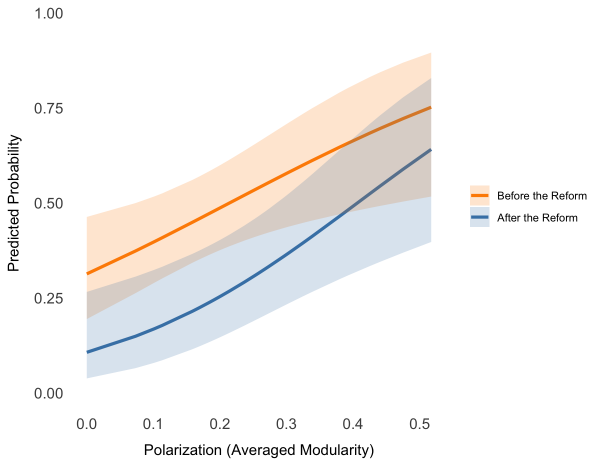
Figure 7 visualizes the predicted probabilities of documents published by the Secretariat being proactive. The steeper slope for documents published after the reform, colored in blue, suggests that the likelihood of the Secretariat's documents being proactive increases more sharply as they address more polarizing issues following the reform. These patterns get more pronounced as we narrow the time bandwidth, evidencing the direct effect of the reform.



(a) DV: If Proactive Publication (1995-2019)



(b) DV: If Proactive Publication (1995-2013)



(c) DV: If Proactive Publication (1995-2008)

Figure 7: Predicted Probabilities

9 The Placebo Test

	Dependent variable: number of keywords		
	(1)	(2)	(3)
after the reform × polarized topic	−2.03	−1.23	−1.44
	(1.41)	(1.70)	(0.94)
after the reform × days until publication (log)		−0.85	−0.57**
		(0.62)	(0.27)
after the reform × number of TRIPS articles		−0.28*	−0.31**
		(0.15)	(0.13)
after the reform × number of products		0.58	0.07
		(0.57)	(0.62)
after the reform	1.42***	0.42	1.57***
	(0.24)	(0.47)	(0.23)
polarized topic	3.62***	2.64*	2.70***
	(1.29)	(1.36)	(0.85)
days until publication (log)	0.57	0.25***	0.27
	(0.37)	(0.09)	(0.25)
number of TRIPS articles		0.52***	0.52***
		(0.04)	(0.09)
number of products		0.46	0.32
		(0.31)	(0.60)
Observations	182	182	182
Year FE	Yes	No	Yes
R squared	0.33	0.64	0.69

Robust standard errors are shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

	Dependent variable: number of pages		
	(1)	(2)	(3)
after the reform × polarized topic	4.35	−6.07	6.55
	(7.18)	(14.07)	(8.42)
after the reform × days until publication (log)		−11.08**	−8.67*
		(5.06)	(4.22)
after the reform × number of keywords		1.11	−1.15
		(1.35)	(1.67)
after the reform × number of TRIPS articles		1.25	2.41*
		(1.32)	(1.28)
after the reform × number of products		12.54***	10.05
		(4.77)	(7.51)
after the reform	−49.34***	−1.24	−57.98***
	(1.41)	(4.19)	(4.59)
polarized topic	−7.25	−5.17	−14.35*
	(4.79)	(11.26)	(7.23)
days until publication (log)	0.33	−0.71	−0.14
	(0.67)	(0.75)	(0.50)
number of keywords		0.22	0.37
		(0.74)	(0.31)
number of TRIPS articles		0.18	0.20
		(0.51)	(0.21)
number of products		4.31*	5.40*
		(2.51)	(2.77)
Observations	182	182	182
Year FE	Yes	No	Yes
R squared	0.24	0.17	0.35

Robust standard errors are shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

10 Correlation Analysis

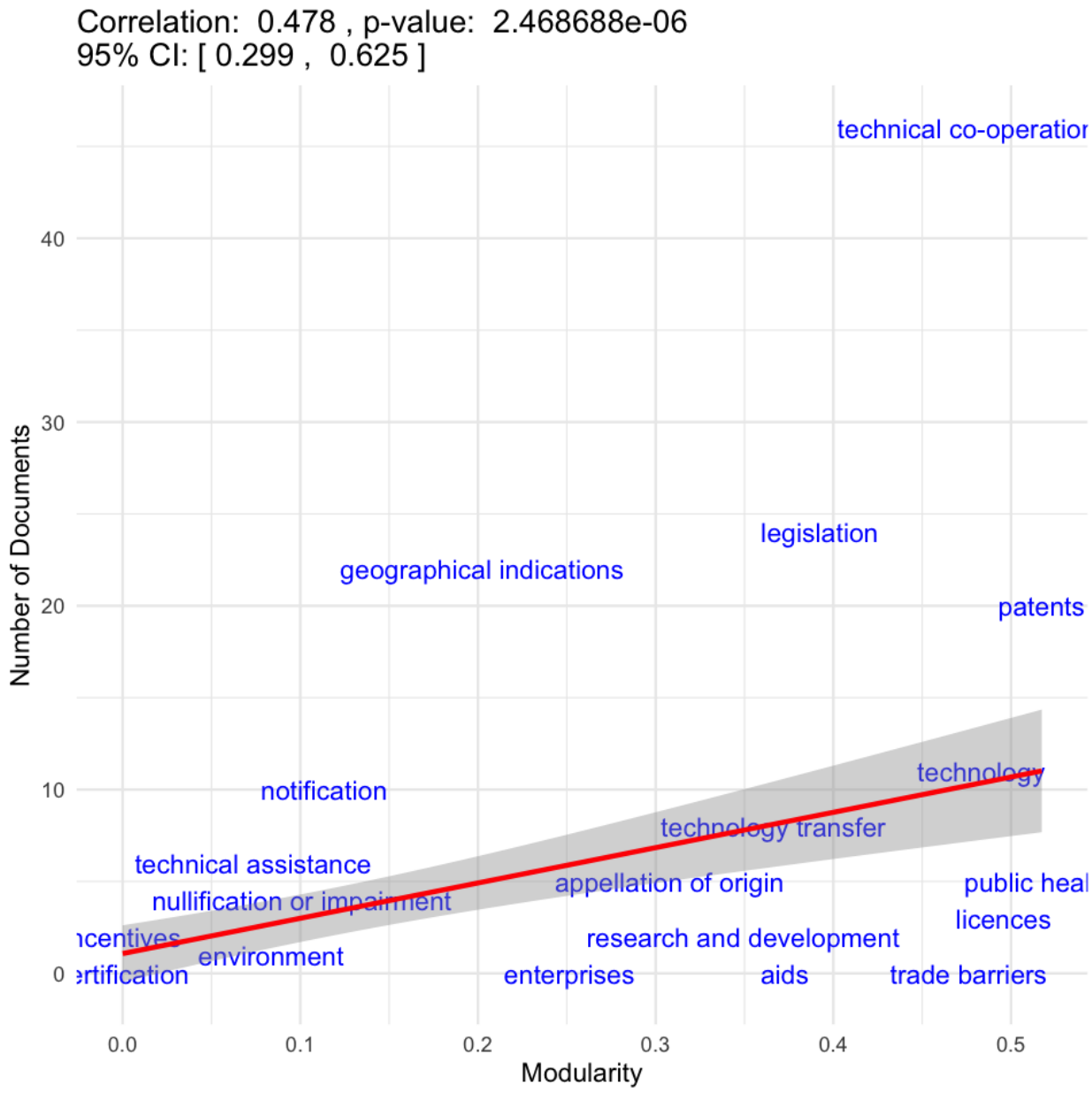


Figure 8: **Correlation between the Modularity Score and Number of Documents**

11 Distribution of Keywords Across Years

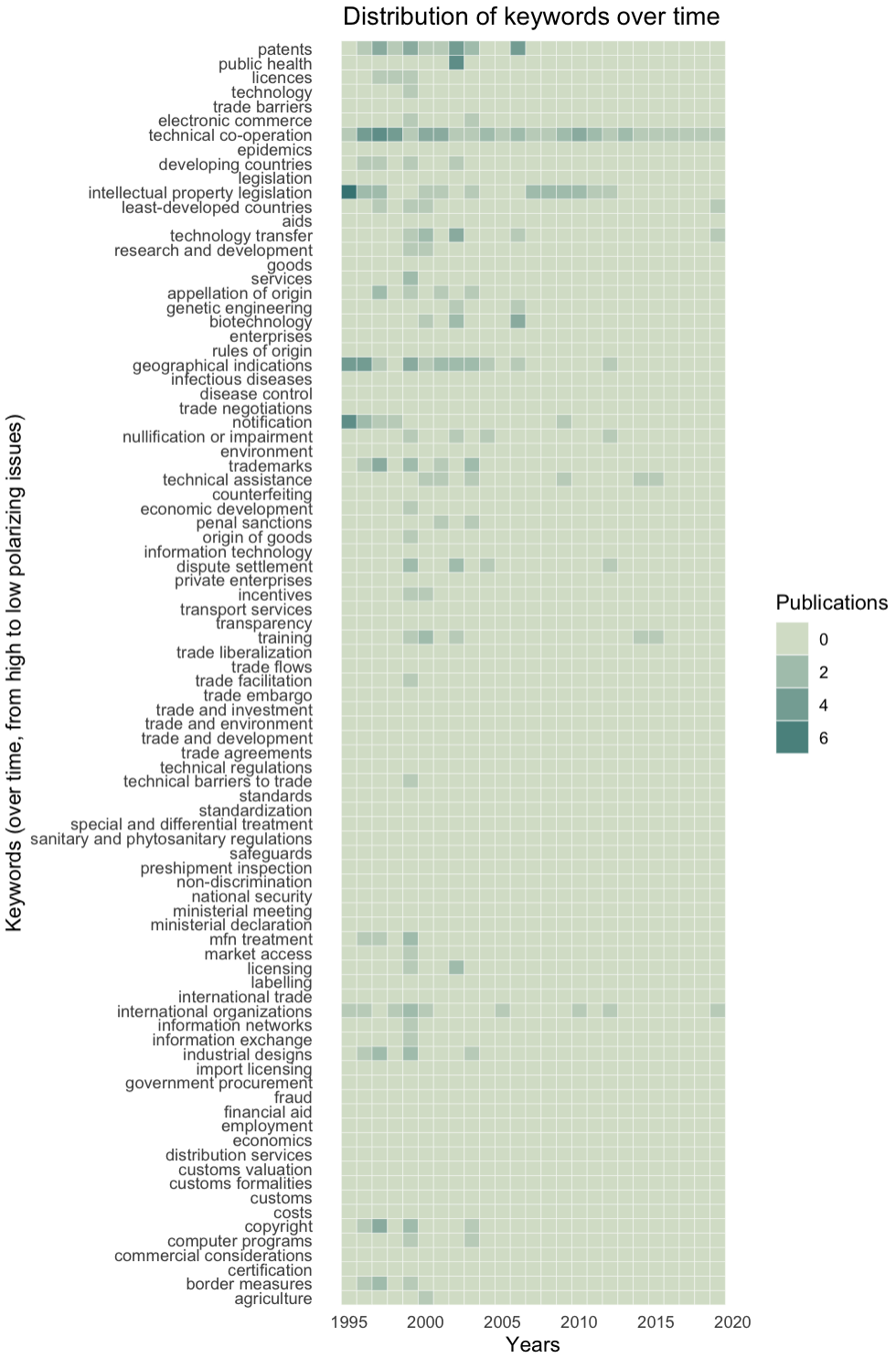


Figure 9: **Distribution of Keywords Addressed by the Secretariat**

12 Accounting For Geopolitical Alignments

	DV: Proactive Publication (YES = 1)		
	(1)	(2)	(3)
after the reform × polarized topic	3.077**	3.306**	3.362*
	(1.397)	(1.442)	(1.721)
after the reform × days until publication (log)	0.297**	0.783**	0.437**
	(0.139)	(0.351)	(0.198)
after the reform × number of keywords		0.057	0.086
		(0.121)	(0.184)
after the reform × number of TRIPS articles		-0.114	-0.230
		(0.234)	(0.238)
after the reform × number of products		-0.286	-0.640*
		(0.518)	(0.387)
after the reform × averaged ideal points		0.215	1.841
		(2.223)	(1.496)
after the reform	15.119***	-0.851	16.344***
	(1.131)	(0.596)	(1.250)
polarized topic	0.801	1.030	0.470
	(0.940)	(0.887)	(0.918)
days until publication (log)	0.221***	0.205***	0.177***
	(0.066)	(0.068)	(0.067)
number of keywords		0.068*	0.084**
		(0.036)	(0.035)
number of TRIPS articles		-0.025	-0.007
		(0.024)	(0.033)
number of products		-0.050	0.402*
		(0.207)	(0.235)
averaged ideal points		1.687*	0.410
		(0.865)	(0.653)
Observations	182	182	182
Year FE	Yes	No	Yes
Log Likelihood	-121.020	-312.304	-114.200

Robust standard errors are shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

The averaged ideal points were calculated following these steps. First, for each keyword addressed by the Secretariat, we identified the list of WTO member countries that published documents addressing the same keyword and averaged their ideal points using the dataset from Bailey et al. (2017). Next, we aggregated the mean ideal points and calculated their average again if the Secretariat addressed more than one keyword in its documents.

13 Results: Subsample Analysis

13.1 Main Results

	Proactive publication by the Secretariat (1=Yes)					
	Before the 2002 reform			After the 2002 reform		
	(1)	(2)	(3)	(4)	(5)	(6)
polarized topic	2.242	1.282	0.562	5.367***	5.329***	5.882***
	(1.485)	(1.594)	(1.564)	(1.317)	(1.409)	(1.564)
delays in publication (days)	0.008***	0.006***	0.006	0.297	0.309	0.282***
	(0.002)	(0.002)	(0.008)	(24.257)	(24.257)	(0.046)
Controls	No	Yes	Yes	No	Yes	Yes
Year FE	No	No	Yes	No	No	Yes
Observations	85	85	85	97	97	97
Log Likelihood	-44.877	-41.538	-31.128	-48.348	-46.848	-36.101

Standard errors are shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

13.2 Robustness Check: Using Different Indicators

	Proactive Publication by the Secretariat					
	Before the 2002 reform			After the 2002 reform		
	(1)	(2)	(3)	(4)	(5)	(6)
polarized topic	0.171	-1.426	0.166	5.703***	6.458***	6.777**
	(2.586)	(4.772)	(0.885)	(1.213)	(2.080)	(3.386)
days until publication (log)	0.004***	0.006***	0.008	-0.230	-0.210	-0.218***
	(0.002)	(0.002)	(0.012)	(24.257)	(39.992)	(0.056)
Controls	No	Yes	Yes	No	Yes	Yes
Year FE	No	No	Yes	No	No	Yes
Observations	49	49	49	90	90	90
Log Likelihood	-22.992	-13.378	-9.957	-51.231	-26.251	-19.519

Standard errors are shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

This table presents the results using a new indicator, which takes the value of 1 if a document published by the WTO Secretariat begins with the sentence: "This document has been prepared under the Secretariat's own responsibility and without prejudice to the positions of Members and to their rights and obligations under the WTO."

13.3 Robustness Check: Changing Communication Detection Methods

	Model 1	Model 2	Model 3	Model 4	Model 5	1cModel 6
polarized topic	0.56	0.45	0.44	0.42	0.51	0.40
	(1.56)	(1.63)	(1.62)	(1.66)	(1.55)	(1.67)
days until publication (log)	0.01	0.01	0.01	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
number of keywords	0.61	0.61	0.61	0.61	0.61	0.61
	(0.59)	(0.60)	(0.60)	(0.60)	(0.59)	(0.60)
number of articles	0.06	0.06	0.06	0.06	0.06	0.06
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
number of products	0.20	0.20	0.20	0.20	0.20	0.20
	(0.67)	(0.67)	(0.67)	(0.68)	(0.67)	(0.68)
Num. obs.	84	84	84	84	84	84
Log Likelihood	-31.13	-31.14	-31.14	-31.14	-31.14	-31.15
Pseudo R^2	0.27	0.27	0.27	0.27	0.27	0.27

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 3: Sub-sample analysis (before the document derestriction reform)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
polarized topic	5.88**	6.35***	5.92**	6.01**	6.20***	5.90**
	(1.84)	(1.89)	(1.85)	(1.84)	(1.85)	(1.83)
days until publication (log)	0.28***	0.28***	0.28***	0.28***	0.28***	0.28***
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.04)
number of keywords	0.24	0.22	0.24	0.23	0.24	0.23
	(0.29)	(0.28)	(0.29)	(0.29)	(0.28)	(0.29)
number of articles	-0.19	-0.19	-0.19	-0.19	-0.17	-0.19
	(0.56)	(0.56)	(0.56)	(0.55)	(0.55)	(0.54)
number of products	-0.13	-0.16	-0.14	-0.14	-0.16	-0.13
	(0.85)	(0.85)	(0.85)	(0.85)	(0.86)	(0.85)
Num. obs.	92	92	92	92	92	92
Log Likelihood	-36.10	-35.46	-36.07	-35.95	-35.62	-36.10
Pseudo R^2	0.01	0.02	0.01	0.02	0.02	0.01

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 4: Sub-sample analysis (after the document derestriction reform)

13.4 Robustness Check: Keyword-by-Year as the Unit of Analysis

	Proactive Publication by the Secretariat (frequency)							
	Before the 2002 reform				After the 2002 reform			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Polarized topic	0.403	-0.165	0.645*	0.494	0.148***	-0.221	0.147***	-0.189
	(0.367)	(0.533)	(0.353)	(0.515)	(0.034)	(0.144)	(0.033)	(0.140)
Year FE	NO	NO	YES	YES	NO	NO	YES	YES
Keyword FE	NO	YES	NO	YES	NO	YES	NO	YES
Observations	176	176	176	176	1,481	1,481	1,481	1,481
R^2	0.007	0.001	0.019	0.009	0.013	0.002	0.014	0.001

Standard errors are shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

13.5 Robustness Check: Accounting For Geopolitical Alignments

	Before the 2002 reform			After the 2002 reform		
	(1)	(2)	(3)	(4)	(5)	(6)
polarized topic	2.248	1.271	0.593	5.371***	5.296***	5.867***
	(1.490)	(1.598)	(1.538)	(1.319)	(1.404)	(1.844)
days until publication (log)	0.008***	0.006***	0.008	0.297	0.308	0.046***
	(0.002)	(0.002)	(0.009)	(24.257)	(24.257)	(0.045)
Controls	No	Yes	Yes	No	Yes	Yes
Year FE	No	No	Yes	No	No	Yes
Observations	85	85	85	97	97	97
Log Likelihood	-44.879	-41.545	-31.124	-48.359	-46.946	-36.153

Standard errors are shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

Table 5: Sub-sample Analysis: using the modularity calculated without the US

	Before the 2002 reform			After the 2002 reform		
	(1)	(2)	(3)	(4)	(5)	(6)
polarized topic	1.936	-0.246	0.562	5.394***	5.256***	5.586***
	(1.419)	(1.607)	(1.332)	(1.325)	(1.400)	(1.857)
days until publication (log)	0.008***	0.007***	0.007	0.297	0.306	0.277***
	(0.002)	(0.002)	(0.009)	(24.257)	(24.257)	(0.045)
Controls	No	Yes	Yes	No	Yes	Yes
Year FE	No	No	Yes	No	No	Yes
Observations	85	85	85	97	97	97
Log Likelihood	-45.091	-41.783	-31.158	-48.373	-47.093	-36.228

Standard errors are shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

Table 6: Sub-sample Analysis: using the modularity calculated without China

References

Bailey, Michael A, Anton Strezhnev, and Erik Voeten (2017). Estimating dynamic state preferences from united nations voting data. *Journal of Conflict Resolution 61*(2), 430–456.

Bank, World (1993). *World Development Report 1993: Investing in Health, Volume1*. The World Bank.

Blondel, Vincent D, Jean-Loup Guillaume, Renaud Lambiotte, and Etienne Lefebvre (2008). Fast unfolding of communities in large networks. *Journal of statistical mechanics: theory and experiment 2008*(10), P10008.

Boix, Carles, Michael Miller, and Sebastian Rosato (2013). A complete data set of political regimes, 1800–2007. *Comparative political studies 46*(12), 1523–1554.

Clauset, Aaron and Cristopher Moore (2004). Finding community structure in very large networks. *Physical review E 70*(6), 066111.

Eshima, Shusei, Kosuke Imai, and Tomoya Sasaki (2020). Keyword-assisted topic models. *American Journal of Political Science*.

Newman, Mark EJ (2006). Finding community structure in networks using the eigenvectors of matrices. *Physical review E 74*(3), 036104.

Newman, Mark EJ and Michelle Girvan (2004). Finding and evaluating community structure in networks. *Physical review E 69*(2), 026113.

Pons, Pascal and Matthieu Latapy (2005). Computing communities in large networks using random walks. In *Computer and Information Sciences-ISCIS 2005: 20th International Symposium, Istanbul, Turkey, October 26-28, 2005. Proceedings 20*, pp. 284–293. Springer.

Raghavan, Usha Nandini, Réka Albert, and Soundar Kumara (2007). Near linear time algorithm to detect community structures in large-scale networks. *Physical review E 76*(3), 036106.

Roberts, Margaret E, Brandon M Stewart, and Dustin Tingley (2019). Stm: An r package for structural topic models. *Journal of Statistical Software 91*, 1–40.

Roberts, Margaret E, Brandon M Stewart, Dustin Tingley, Christopher Lucas, Jetson Leder-Luis, Shana Kushner Gadarian, Bethany Albertson, and David G Rand (2014). Structural topic models for open-ended survey responses. *American journal of political science 58*(4), 1064–1082.

Singer, J David (1988). Reconstructing the correlates of war dataset on material capabilities of states, 1816–1985. *International Interactions 14*(2), 115–132.