

Online Appendix

Inducing Polarization? The Effect of Congressional Procedure and Partisan Lawmaking on Ideal Point Estimation

Austin Bussing & Joshua Y. Lerner

January 22, 2022

Contents

- 1 Structural Topic Model** **3**
- 1.1 Diagnostics 3
- 1.2 Topic Details 7

- 2 Matching** **10**
- 2.1 Matching Details 10
- 2.2 Balance Tables 12
- 2.3 Some Example Matches 17

- 3 Data Collection Details** **20**
- 3.1 Eliminating Bills Considered Under Suspension of the Rules 21

1 Structural Topic Model

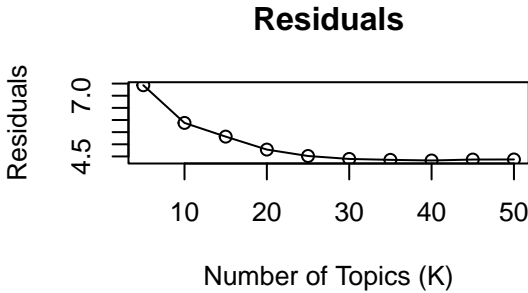
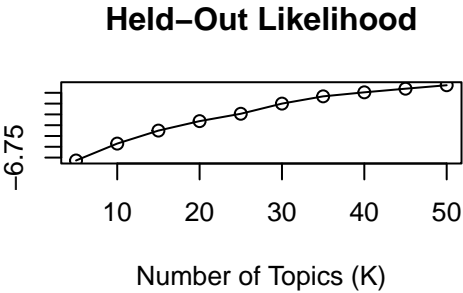
Included in this section are details of the structural topic model runs used to estimate topic proportions for bills used in our matching procedures. The structural topic model was chosen because of its flexibility and representativeness and its use in matching methods (Roberts *et al.* 2014, 2020; Mozer *et al.* 2020). Below, we include diagnostic runs from the searchK function from the STM package, which has been utilized as a K selection approach. Since the number of topics in a topic model is somewhat arbitrary, it is not uncommon to use diagnostic tools like the searchK function to test the relative appropriateness of various different topic configurations. We feel our choice of $k = 21$ is reasonable based on the diagnostic criteria from these functions, as well as from our reading of the top words and top documents associated with each topic.

1.1 Diagnostics

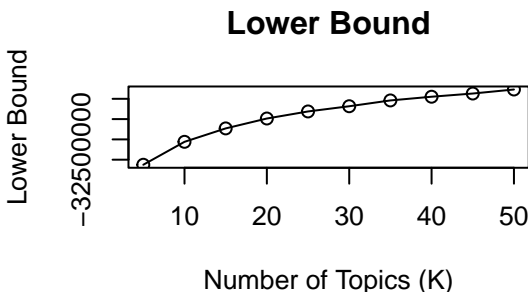
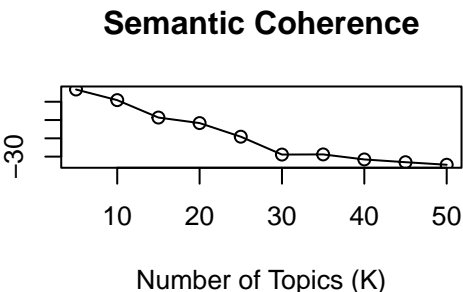
The first set of four plots show the diagnostics for structural topic models fit on our corpus of bill text increasing the number of topics from 5 to 50, in increments of 5. The next plot shows the relationship between semantic coherence and exclusivity for each of these topic models. Based on these diagnostics cumulatively, we wanted to more closely explore a range of options from 18 topics to 25.

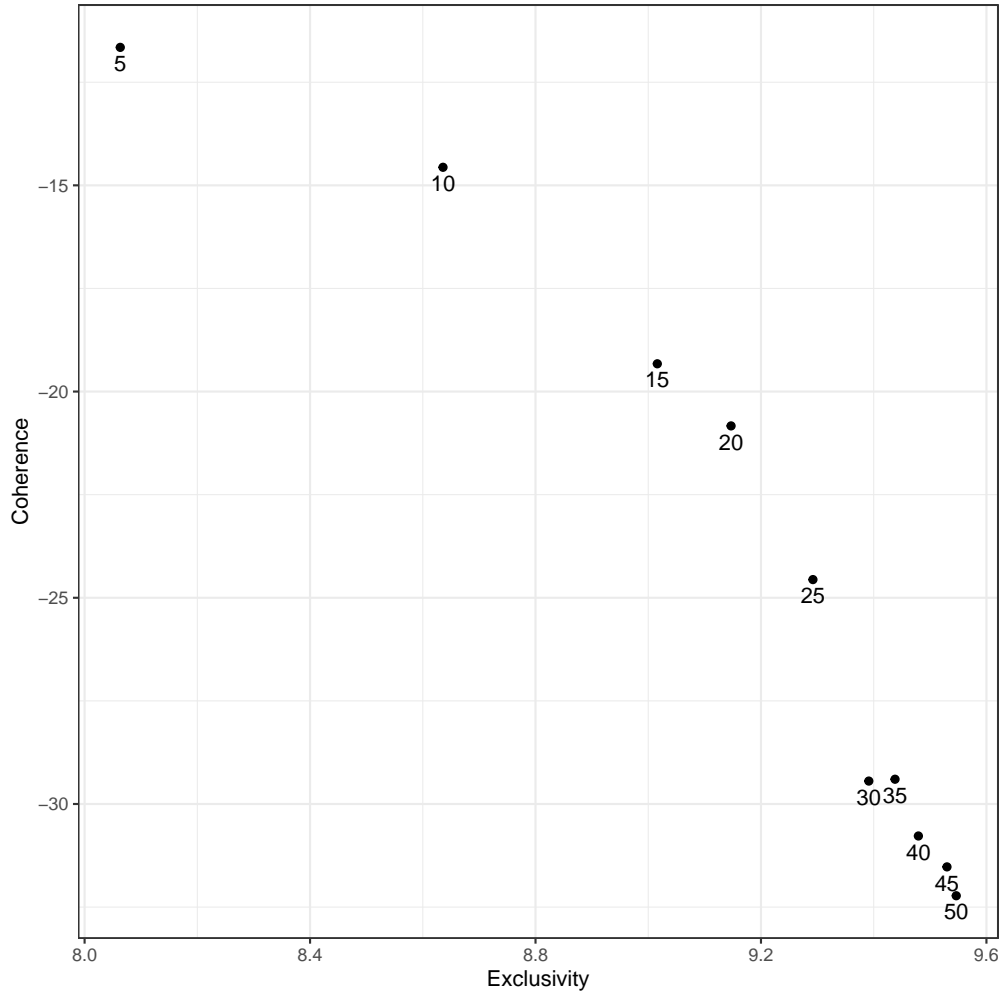
Diagnostic Values by Number of Topics

Held-Out Likelihood



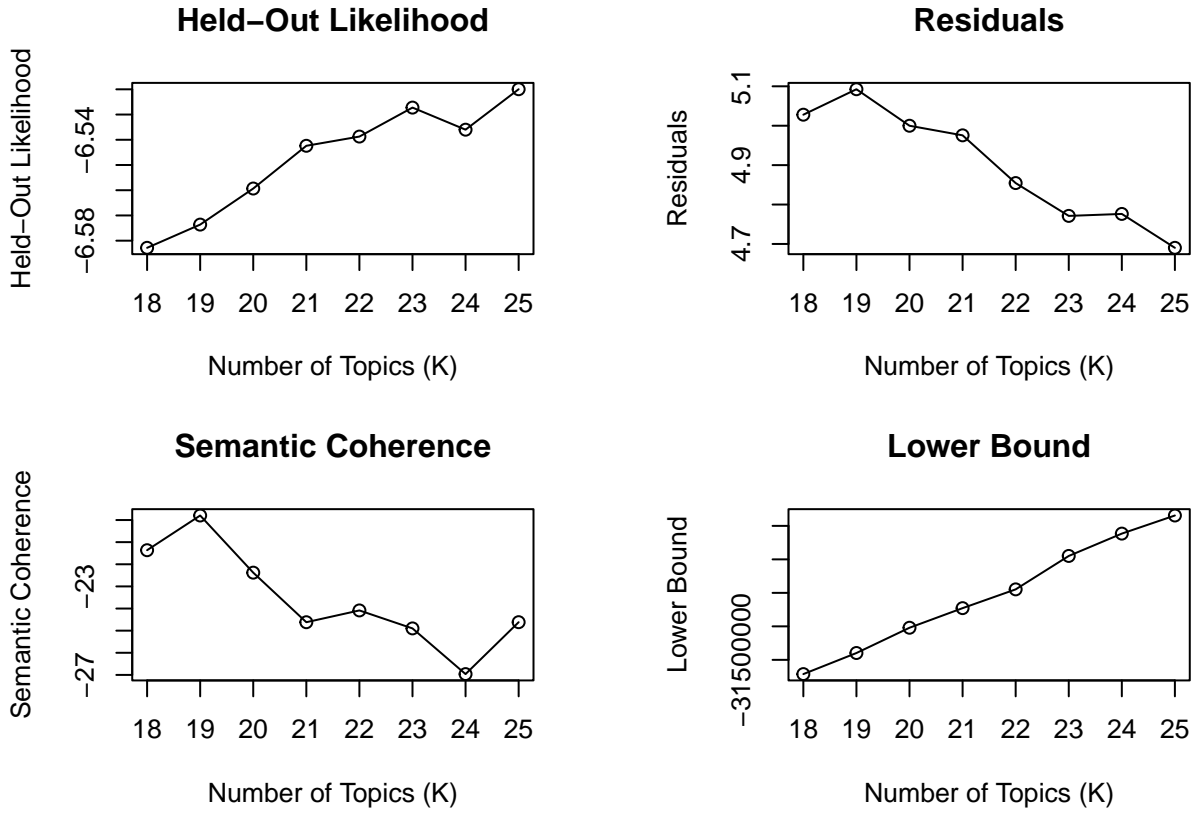
Semantic Coherence

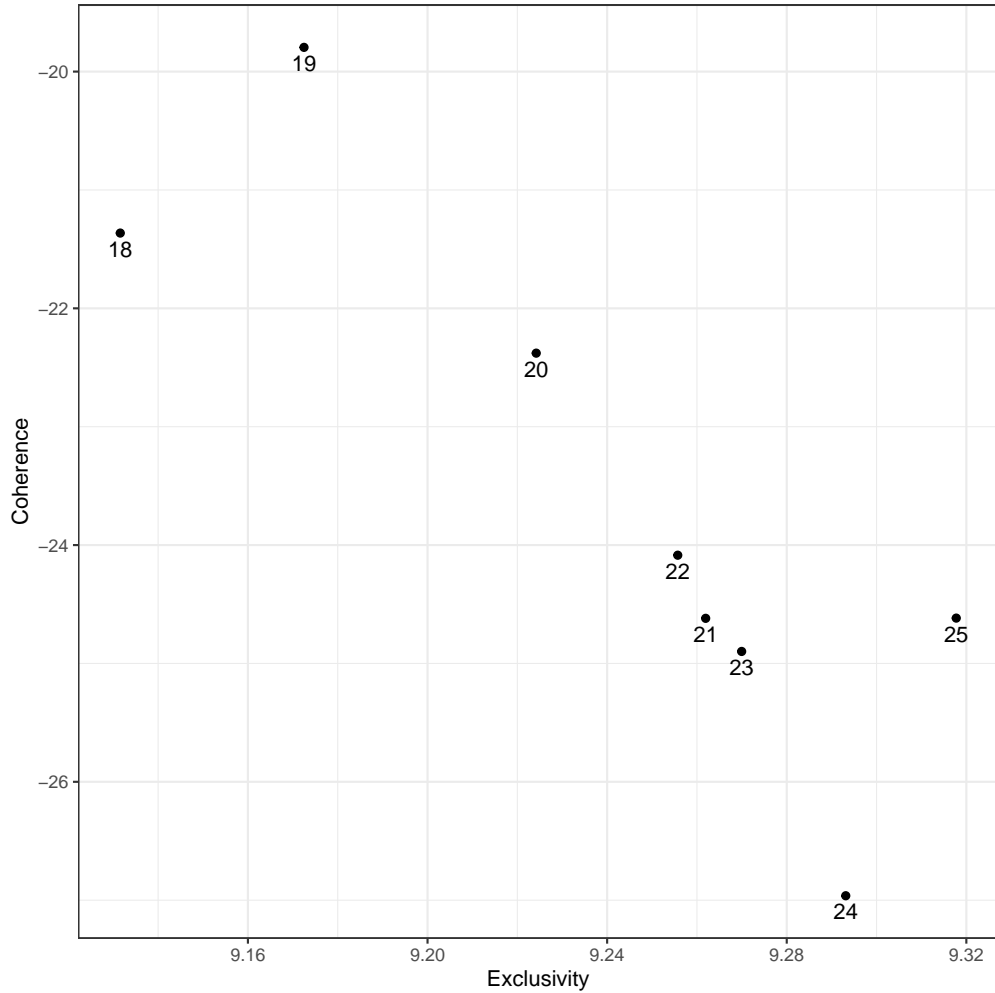




This next set of four plots show the diagnostics for structural topic models fit on our corpus of bill text increasing the number of topics from 18 to 25, by 1. The next plot shows the relationship between semantic coherence and exclusivity for each of these topic models. Based on these diagnostics cumulatively, we chose 21 topics.

Diagnostic Values by Number of Topics





1.2 Topic Details

Below is the output of the final structural topic model run we ended up going with, with $k = 21$. We've included both the high probability words associated with each topic and the "Frex" words, which are the frequent and exclusive words associated with the topics (Roberts *et al.* 2014). We also included our labels for the topics, though we welcome additional thoughts on the labels. These topic labels are re-used in the balance plots and tables in this appendix and the main paper.

Table 1: Structural Topic Model: 21 Topics

Topic	Highest Prob. Words	FREX Words
Boilerplate/Section Headings	ain, subsect, paragraph, the, amended—, subparagraph, follow	ain, andin, iith, iibi, iiith, ato, cin
Trade	agreement, good, unit, state, product, determin, trade	nafta, nonorigin, wto, value-cont, crop, merchandis, dairi
Housing	hous, agenc, public, shall, unit, assist, feder	dwel, hous, rent, mandat, rental, homeownership, multifamili
Bankruptcy	debtor, titl, unit, state, case, shall, agreement	debtor, bankruptci, creditor, trustee, reaffirm, debt, judgeship
Military/Defense	author, unit, titl, state, defens, sec, militari	defense-wid, unspecifi, nato, demilitar, munit, taiwan, navi
Procedural	shall, requir, subsect, secretari, servic, regul, determin	regul, review, permit, requir, final, issu, approv
Funding & Grants	program, secretari, year, fiscal, assist, fund, act	program, assist, grant, fiscal, tribe, develop, elig
Homeland Security	secur, shall, nation, agenc, director, research, act	homeland, space, rifl, terror, sbir, prepared, scienc
Patents & Trademarks	shall, action, act, claim, state, may, court	patent, panel, brought, claimant, plaintiff, claim, class
Loans & Budget	year, shall, loan, amount, administr, act, insur	budget, loan, spend, borrow, small, deficit, guarante
Water Infrastructure	project, secretari, land, shall, act, water, sec	thenc, leve, river, flood, creek, wilder, watersh
Energy/Oil & Gas	energi, shall, secretari, act, leas, feder, gas	combust, dioxid, gas, lamp, electr, energi, oil

Continuation of Table 2

Topic	Highest Prob. Words	FREX Words
Immigration & Sexual Violence	unit, state, shall, alien, general, attorney, law	alien, violenc, immigr, victim, sexual, stalk, assault
Taxes	shall, year, amend, amount, tax, taxabl, appli	taxabl, taxpay, expatri, reit, dividend, generalparagraph, deduct
Transportation	transport, shall, year, project, carrier, state, fiscal	highway, airport, faa, rail, federal-aid, carrier, passeng
Foreign Aid & Diplomacy	unit, state, act, commiss, shall, govern, intern	voter, candid, postal, hivaid, diplomaci, broadcast, hawaiian
Healthcare	health, shall, servic, care, provid, plan, coverag	medicar, physician, medicare-choic, hospit, medicaid, prescript, health
Pension, Retirement, & Investment	plan, year, shall, benefit, employe, provid, employ	sequenc, multiemploy, cas, numer, fiduciari, amort, pension
Boilerplate/Procedural	insert, amend, strike, paragraph, follow, subsect, act	insert, strike, amend, redesign, follow, end, read
Education	educ, agenc, school, shall, student, local, institut	teacher, student, school, educ, academ, literaci, elementari
Financial Services	compani, financi, bank, act, insur, shall, feder	compani, bank, security-bas, swap, depository, dealer, subsidiari

2 Matching

2.1 Matching Details

We use the ‘MatchIt’ package in R for all matching in this paper. We use six different matching regimes, varying both the subset of variables we include and the distance argument. We split up our variables into text-based and feature-based subsets. Our text-based variables are the 21 topic proportions extracted from our structural topic model, and our feature-based variables are:

- Policy Agendas Project topic areas
- Important bill indicator
- Number of cosponsors
- Number of referral committees
- Majority party sponsor
- Cmte. chair sponsor
- Subcmte. chair sponsor
- Absolute value of the distance between the sponsor and median majority party member (first dimension DW-NOMINATE)
- Primary referral committee
- Days left in Congress from bill introduction
- Party priority bill indicator (HR. 1-10)

In all of our matching procedures, we also include a factor variable for Congress. We perform propensity score matching separately using all text-based variables, all feature-based variables, and a combination of text-based and feature-based variables. We then do the

same with Mahalanobis distance matching. Our combination matching procedures include the following variables:

- Topic proportions
- Important bill indicator
- Majority party sponsor
- Days left in Congress
- Party priority bill (HR 1-10)

2.2 Balance Tables

Table 2: Balance Table: Propensity Score Matching with Topic Proportions and Congress Factor

	Ctrl Mean (Unadj.)	Treat Mean (Unadj.)	Std Mean Dif (Unadj.)	Ctrl Mean (Adj.)	Treat Mean (Adj.)	Std Mean Dif (Adj.)
Topic: Boilerplate/Headers	0.03	0.03	0.02	0.02	0.03	0.03
Topic: Trade	0.03	0.01	-0.38	0.01	0.01	-0.01
Topic: Housing	0.03	0.02	-0.20	0.04	0.02	-0.20
Topic: Bankruptcy	0.01	0.01	-0.13	0.01	0.01	0.04
Topic: Military/Defense	0.05	0.04	-0.13	0.03	0.04	0.04
Topic: Procedural	0.09	0.07	-0.24	0.07	0.07	0.02
Topic: Funding & Grants	0.06	0.04	-0.30	0.04	0.04	-0.00
Topic: Homeland Security	0.07	0.04	-0.27	0.03	0.04	0.06
Topic: Patents & Trademarks	0.08	0.07	-0.08	0.07	0.07	0.01
Topic: Loans & Budget	0.05	0.08	0.22	0.09	0.08	-0.02
Topic: Water Infrastructure	0.06	0.03	-0.25	0.04	0.03	-0.01
Topic: Energy/Oil & Gas	0.04	0.05	0.07	0.06	0.05	-0.06
Topic: Immigration & Sex Viol	0.05	0.07	0.07	0.07	0.07	-0.03
Topic: Taxes	0.05	0.10	0.24	0.11	0.10	-0.06
Topic: Transportation	0.02	0.02	-0.07	0.01	0.02	0.05
Topic: Foreign Aid & Diplomacy	0.07	0.08	0.05	0.08	0.08	-0.03
Topic: Healthcare	0.03	0.08	0.32	0.06	0.08	0.09
Topic: Pension, Retire, & Invest	0.02	0.03	0.09	0.02	0.03	0.03
Topic: Boilerplate/Procedural	0.08	0.11	0.22	0.10	0.11	0.08
Topic: Education	0.04	0.01	-0.62	0.01	0.01	-0.07
Topic: Financial Services	0.03	0.02	-0.18	0.02	0.02	0.03
103rd Congress	0.07	0.01	-0.06	0.01	0.01	-0.00
104th Congress	0.09	0.08	-0.01	0.08	0.08	-0.00
105th Congress	0.09	0.09	0.00	0.09	0.09	-0.00
106th Congress	0.12	0.06	-0.06	0.08	0.06	-0.02
107th Congress	0.07	0.11	0.04	0.12	0.11	-0.01
108th Congress	0.08	0.12	0.04	0.08	0.12	0.04
109th Congress	0.09	0.09	0.01	0.10	0.09	-0.01
110th Congress	0.13	0.10	-0.03	0.11	0.10	-0.01
111th Congress	0.07	0.10	0.03	0.08	0.10	0.02
112th Congress	0.10	0.09	-0.01	0.09	0.09	-0.00
113th Congress	0.10	0.15	0.05	0.15	0.15	-0.01

Table 3: Balance Table: Mahalanobis Distance Matching with Topic Proportions and Congress Factor

	Ctrl Mean (Unadj.)	Treat Mean (Unadj.)	Std Mean Dif (Unadj.)	Ctrl Mean (Adj.)	Treat Mean (Adj.)	Std Mean Dif (Adj.)
Topic: Boilerplate/Headers	0.03	0.03	0.02	0.03	0.03	-0.00
Topic: Trade	0.03	0.01	-0.38	0.01	0.01	-0.04
Topic: Housing	0.03	0.02	-0.20	0.02	0.02	0.02
Topic: Bankruptcy	0.01	0.01	-0.13	0.01	0.01	0.04
Topic: Military/Defense	0.05	0.04	-0.13	0.03	0.04	0.03
Topic: Procedural	0.09	0.07	-0.24	0.08	0.07	-0.13
Topic: Funding & Grants	0.06	0.04	-0.30	0.05	0.04	-0.07
Topic: Homeland Security	0.07	0.04	-0.27	0.05	0.04	-0.11
Topic: Patents & Trademarks	0.08	0.07	-0.08	0.07	0.07	0.02
Topic: Loans & Budget	0.05	0.08	0.22	0.07	0.08	0.11
Topic: Water Infrastructure	0.06	0.03	-0.25	0.05	0.03	-0.09
Topic: Energy/Oil & Gas	0.04	0.05	0.07	0.05	0.05	0.00
Topic: Immigration & Sex Viol	0.05	0.07	0.07	0.08	0.07	-0.06
Topic: Taxes	0.05	0.10	0.24	0.11	0.10	-0.03
Topic: Transportation	0.02	0.02	-0.07	0.02	0.02	0.02
Topic: Foreign Aid & Diplomacy	0.07	0.08	0.05	0.08	0.08	0.02
Topic: Healthcare	0.03	0.08	0.32	0.06	0.08	0.12
Topic: Pension, Retire, & Invest	0.02	0.03	0.09	0.03	0.03	-0.01
Topic: Boilerplate/Procedural	0.08	0.11	0.22	0.09	0.11	0.12
Topic: Education	0.04	0.01	-0.62	0.02	0.01	-0.13
Topic: Financial Services	0.03	0.02	-0.18	0.02	0.02	-0.05
103rd Congress	0.07	0.01	-0.06	0.01	0.01	-0.00
104th Congress	0.09	0.08	-0.01	0.09	0.08	-0.01
105th Congress	0.09	0.09	0.00	0.09	0.09	-0.00
106th Congress	0.12	0.06	-0.06	0.08	0.06	-0.02
107th Congress	0.07	0.11	0.04	0.10	0.11	0.01
108th Congress	0.08	0.12	0.04	0.09	0.12	0.03
109th Congress	0.09	0.09	0.01	0.09	0.09	-0.00
110th Congress	0.13	0.10	-0.03	0.12	0.10	-0.02
111th Congress	0.07	0.10	0.03	0.08	0.10	0.02
112th Congress	0.10	0.09	-0.01	0.09	0.09	-0.00
113th Congress	0.10	0.15	0.05	0.16	0.15	-0.01

Table 4: Balance Table: Propensity Score Matching with Feature Variables and Congress Factor

	Ctrl Mean (Unadj.)	Treat Mean (Unadj.)	Std Mean Dif (Unadj.)	Ctrl Mean (Adj.)	Treat Mean (Adj.)	Std Mean Dif (Adj.)
Important Bill	0.98	0.98	-0.01	0.98	0.98	-0.00
Number of Cosponsors	44.25	44.69	0.01	46.36	44.69	-0.03
Number of Referral Cmtes.	3.01	3.57	0.25	3.30	3.57	0.12
PAP Topic: Macroeconomics	0.05	0.18	0.13	0.14	0.18	0.04
PAP Topic: Civil Rights	0.03	0.04	0.01	0.07	0.04	-0.03
PAP Topic: Health	0.04	0.17	0.13	0.12	0.17	0.05
PAP Topic: Agriculture	0.01	0.01	0.00	0.01	0.01	-0.00
PAP Topic: Labor	0.07	0.06	-0.01	0.03	0.06	0.03
PAP Topic: Education	0.06	0.02	-0.04	0.03	0.02	-0.01
PAP Topic: Environment	0.05	0.02	-0.04	0.02	0.02	-0.00
PAP Topic: Energy	0.04	0.07	0.03	0.07	0.07	-0.00
PAP Topic: Immigration	0.00	0.01	0.01	0.00	0.01	0.01
PAP Topic: Transportation	0.06	0.04	-0.01	0.07	0.04	-0.02
PAP Topic: Law and Crime	0.08	0.03	-0.05	0.04	0.03	-0.01
PAP Topic: Social Welfare	0.02	0.04	0.03	0.04	0.04	-0.00
PAP Topic: Housing	0.02	0.01	-0.01	0.01	0.01	-0.00
PAP Topic: Domestic Commerce	0.12	0.04	-0.08	0.04	0.04	-0.00
PAP Topic: Defense	0.07	0.06	-0.01	0.09	0.06	-0.03
PAP Topic: Technology	0.04	0.02	-0.02	0.02	0.02	-0.01
PAP Topic: Foreign Trade	0.04	0.01	-0.03	0.00	0.01	0.01
PAP Topic: International Affairs	0.04	0.04	0.01	0.05	0.04	-0.01
PAP Topic: Government Operations	0.09	0.09	0.00	0.12	0.09	-0.03
PAP Topic: Public Lands	0.09	0.03	-0.06	0.03	0.03	-0.01
PAP Topic: Other/Unassigned	0.00	0.01	0.01	0.00	0.01	0.01
Majority Party Sponsor	0.99	0.98	-0.00	0.99	0.98	-0.01
Cmte. Chair Sponsor	0.37	0.43	0.06	0.43	0.43	0.01
Subcmte. Chair Sponsor	0.39	0.25	-0.14	0.28	0.25	-0.03
103rd Congress	0.07	0.01	-0.06	0.01	0.01	-0.00
104th Congress	0.09	0.08	-0.01	0.09	0.08	-0.01
105th Congress	0.09	0.09	0.00	0.12	0.09	-0.03
106th Congress	0.12	0.06	-0.06	0.06	0.06	-0.00
107th Congress	0.07	0.11	0.04	0.12	0.11	-0.01
108th Congress	0.08	0.12	0.04	0.08	0.12	0.04
109th Congress	0.09	0.09	0.01	0.09	0.09	-0.00
110th Congress	0.13	0.10	-0.03	0.10	0.10	-0.00
111th Congress	0.07	0.10	0.03	0.10	0.10	-0.00
112th Congress	0.10	0.09	-0.01	0.11	0.09	-0.02
113th Congress	0.10	0.15	0.05	0.13	0.15	0.02
(Sponsor-Maj. Party Median)	0.17	0.17	0.03	0.16	0.17	0.10
Committee on Intelligence	0.02	0.00	-0.02	0.00	0.00	-0.00
Committee on Agriculture	0.02	0.02	-0.00	0.02	0.02	-0.00
Committee on Armed Services	0.04	0.04	0.00	0.07	0.04	-0.03
Committee on Financial Services	0.08	0.04	-0.04	0.03	0.04	0.01
Committee on the Budget	0.01	0.05	0.04	0.04	0.05	0.01
Committee on Education and Labor	0.11	0.06	-0.05	0.06	0.06	-0.00
Committee on Foreign Affairs	0.04	0.03	-0.01	0.05	0.03	-0.02
Committee on Oversight and Reform	0.04	0.04	0.00	0.04	0.04	-0.00
Committee on House Administration	0.01	0.02	0.01	0.03	0.02	-0.01
Committee on Homeland Security	0.01	0.02	0.01	0.02	0.02	-0.01
Committee on Energy and Commerce	0.08	0.19	0.11	0.17	0.19	0.02
Committee on Natural Resources	0.11	0.07	-0.04	0.06	0.07	0.01
Committee on the Judiciary	0.15	0.11	-0.04	0.12	0.11	-0.01
Committee on the Merchant Marine	0.01	0.00	-0.01	0.00	0.00	-0.00
Committee on the Post Office and Civil Service	0.00	0.00	-0.00	0.00	0.00	-0.00
Committee on Trans. and Infrastructure	0.08	0.04	-0.04	0.06	0.04	-0.02
Committee on Rules	0.01	0.00	-0.01	0.00	0.00	-0.00
Committee on Small Business	0.01	0.00	-0.01	0.00	0.00	-0.00
Committee on Science, Space, and Technology	0.04	0.02	-0.02	0.02	0.02	-0.00
Committee on Veterans' Affairs	0.00	0.00	-0.00	0.00	0.00	-0.00
Committee on Ways and Means	0.12	0.25	0.13	0.22	0.25	0.03
Days left in Congress	529.21	414.10	-0.54	435.94	414.10	-0.10
Party Priority Bill (HR 1-10)	0.06	0.12	0.06	0.08	0.12	0.03

Table 5: Balance Table: Mahalanobis Distance Matching with Feature Variables and Congress Factor

	Ctrl Mean (Unadj.)	Treat Mean (Unadj.)	Std Mean Dif (Unadj.)	Ctrl Mean (Adj.)	Treat Mean (Adj.)	Std Mean Dif (Adj.)
Important Bill	0.98	0.98	-0.01	0.98	0.98	-0.00
Number of Cosponsors	44.25	44.69	0.01	46.36	44.69	-0.03
Number of Referral Cmtes.	3.01	3.57	0.25	3.30	3.57	0.12
PAP Topic: Macroeconomics	0.05	0.18	0.13	0.14	0.18	0.04
PAP Topic: Civil Rights	0.03	0.04	0.01	0.07	0.04	-0.03
PAP Topic: Health	0.04	0.17	0.13	0.12	0.17	0.05
PAP Topic: Agriculture	0.01	0.01	0.00	0.01	0.01	-0.00
PAP Topic: Labor	0.07	0.06	-0.01	0.03	0.06	0.03
PAP Topic: Education	0.06	0.02	-0.04	0.03	0.02	-0.01
PAP Topic: Environment	0.05	0.02	-0.04	0.02	0.02	-0.00
PAP Topic: Energy	0.04	0.07	0.03	0.07	0.07	-0.00
PAP Topic: Immigration	0.00	0.01	0.01	0.00	0.01	0.01
PAP Topic: Transportation	0.06	0.04	-0.01	0.07	0.04	-0.02
PAP Topic: Law and Crime	0.08	0.03	-0.05	0.04	0.03	-0.01
PAP Topic: Social Welfare	0.02	0.04	0.03	0.04	0.04	-0.00
PAP Topic: Housing	0.02	0.01	-0.01	0.01	0.01	-0.00
PAP Topic: Domestic Commerce	0.12	0.04	-0.08	0.04	0.04	-0.00
PAP Topic: Defense	0.07	0.06	-0.01	0.09	0.06	-0.03
PAP Topic: Technology	0.04	0.02	-0.02	0.02	0.02	-0.01
PAP Topic: Foreign Trade	0.04	0.01	-0.03	0.00	0.01	0.01
PAP Topic: International Affairs	0.04	0.04	0.01	0.05	0.04	-0.01
PAP Topic: Government Operations	0.09	0.09	0.00	0.12	0.09	-0.03
PAP Topic: Public Lands	0.09	0.03	-0.06	0.03	0.03	-0.01
PAP Topic: Other/Unassigned	0.00	0.01	0.01	0.00	0.01	0.01
Majority Party Sponsor	0.99	0.98	-0.00	0.99	0.98	-0.01
Cmte. Chair Sponsor	0.37	0.43	0.06	0.43	0.43	0.01
Subcmte. Chair Sponsor	0.39	0.25	-0.14	0.28	0.25	-0.03
103rd Congress	0.07	0.01	-0.06	0.01	0.01	-0.00
104th Congress	0.09	0.08	-0.01	0.09	0.08	-0.01
105th Congress	0.09	0.09	0.00	0.12	0.09	-0.03
106th Congress	0.12	0.06	-0.06	0.06	0.06	-0.00
107th Congress	0.07	0.11	0.04	0.12	0.11	-0.01
108th Congress	0.08	0.12	0.04	0.08	0.12	0.04
109th Congress	0.09	0.09	0.01	0.09	0.09	-0.00
110th Congress	0.13	0.10	-0.03	0.10	0.10	-0.00
111th Congress	0.07	0.10	0.03	0.10	0.10	-0.00
112th Congress	0.10	0.09	-0.01	0.11	0.09	-0.02
113th Congress	0.10	0.15	0.05	0.13	0.15	0.02
(Sponsor-Maj. Party Median)	0.17	0.17	0.03	0.16	0.17	0.10
Committee on Intelligence (Permanent Select)	0.02	0.00	-0.02	0.00	0.00	-0.00
Committee on Agriculture	0.02	0.02	-0.00	0.02	0.02	-0.00
Committee on Armed Services	0.04	0.04	0.00	0.07	0.04	-0.03
Committee on Financial Services	0.08	0.04	-0.04	0.03	0.04	0.01
Committee on the Budget	0.01	0.05	0.04	0.04	0.05	0.01
Committee on Education and Labor	0.11	0.06	-0.05	0.06	0.06	-0.00
Committee on Foreign Affairs	0.04	0.03	-0.01	0.05	0.03	-0.02
Committee on Oversight and Reform	0.04	0.04	0.00	0.04	0.04	-0.00
Committee on House Administration	0.01	0.02	0.01	0.03	0.02	-0.01
Committee on Homeland Security	0.01	0.02	0.01	0.02	0.02	-0.01
Committee on Energy and Commerce	0.08	0.19	0.11	0.17	0.19	0.02
Committee on Natural Resources	0.11	0.07	-0.04	0.06	0.07	0.01
Committee on the Judiciary	0.15	0.11	-0.04	0.12	0.11	-0.01
Committee on the Merchant Marine	0.01	0.00	-0.01	0.00	0.00	-0.00
Committee on the Post Office and Civil Service	0.00	0.00	-0.00	0.00	0.00	-0.00
Committee on Transportation and Infrastructure	0.08	0.04	-0.04	0.06	0.04	-0.02
Committee on Rules	0.01	0.00	-0.01	0.00	0.00	-0.00
Committee on Small Business	0.01	0.00	-0.01	0.00	0.00	-0.00
Committee on Science, Space, and Technology	0.04	0.02	-0.02	0.02	0.02	-0.00
Committee on Veterans' Affairs	0.00	0.00	-0.00	0.00	0.00	-0.00
Committee on Ways and Means	0.12	0.25	0.13	0.22	0.25	0.03
Days Left in Congress	529.21	414.10	-0.54	435.94	414.10	-0.10
Party Priority Bill (HR 1-10)	0.06	0.12	0.06	0.08	0.12	0.03

Table 6: Balance Table: Propensity Score Matching with Topic Proportions, Selected Feature Variables, and Congress Factor

	Ctrl Mean (Unadj.)	Treat Mean (Unadj.)	Std Mean Dif (Unadj.)	Ctrl Mean (Adj.)	Treat Mean (Adj.)	Std Mean Dif (Adj.)
Topic: Boilerplate/Headers	0.03	0.03	0.02	0.03	0.03	-0.02
Topic: Trade	0.03	0.01	-0.38	0.02	0.01	-0.10
Topic: Housing	0.03	0.02	-0.20	0.02	0.02	0.05
Topic: Bankruptcy	0.01	0.01	-0.13	0.01	0.01	0.03
Topic: Military/Defense	0.05	0.04	-0.13	0.03	0.04	0.01
Topic: Procedural	0.09	0.07	-0.24	0.07	0.07	-0.03
Topic: Funding & Grants	0.06	0.04	-0.30	0.04	0.04	-0.03
Topic: Homeland Security	0.07	0.04	-0.27	0.04	0.04	-0.05
Topic: Patents & Trademarks	0.08	0.07	-0.08	0.07	0.07	0.03
Topic: Loans & Budget	0.05	0.08	0.22	0.09	0.08	-0.02
Topic: Water Infrastructure	0.06	0.03	-0.25	0.04	0.03	-0.01
Topic: Energy/ Oil & Gas	0.04	0.05	0.07	0.05	0.05	0.01
Topic: Immigration & Sex Viol	0.05	0.07	0.07	0.08	0.07	-0.06
Topic: Taxes	0.05	0.10	0.24	0.11	0.10	-0.04
Topic: Transportation	0.02	0.02	-0.07	0.02	0.02	-0.04
Topic: Foreign Aid & Diplomacy	0.07	0.08	0.05	0.09	0.08	-0.09
Topic: Healthcare	0.03	0.08	0.32	0.06	0.08	0.15
Topic: Pension, Retire, & Invest	0.02	0.03	0.09	0.02	0.03	0.09
Topic: Boilerplate/Procedural	0.08	0.11	0.22	0.10	0.11	0.06
Topic: Education	0.04	0.01	-0.62	0.01	0.01	0.01
Topic: Financial Services	0.03	0.02	-0.18	0.02	0.02	0.02
Important Bill	0.98	0.98	-0.01	0.98	0.98	-0.01
Majority Party Sponsor	0.99	0.98	-0.00	0.99	0.98	-0.01
103rd Congress	0.07	0.01	-0.06	0.00	0.01	0.01
104th Congress	0.09	0.08	-0.01	0.08	0.08	0.01
105th Congress	0.09	0.09	0.00	0.09	0.09	-0.01
106th Congress	0.12	0.06	-0.06	0.10	0.06	-0.04
107th Congress	0.07	0.11	0.04	0.12	0.11	-0.01
108th Congress	0.08	0.12	0.04	0.09	0.12	0.03
109th Congress	0.09	0.09	0.01	0.09	0.09	-0.00
110th Congress	0.13	0.10	-0.03	0.09	0.10	0.01
111th Congress	0.07	0.10	0.03	0.10	0.10	-0.01
112th Congress	0.10	0.09	-0.01	0.09	0.09	-0.00
113th Congress	0.10	0.15	0.05	0.14	0.15	0.01
Days Left in Congress	529.21	414.10	-0.54	421.46	414.10	-0.03
Party Priority Bill (HR 1-10)	0.06	0.12	0.06	0.09	0.12	0.02

Table 7: Balance Table: Mahalanobis Distance Matching with Topic Proportions, Selected Feature Variables, and Congress Factor

	Ctrl Mean (Unadj.)	Treat Mean (Unadj.)	Std Mean Dif (Unadj.)	Ctrl Mean (Adj.)	Treat Mean (Adj.)	Std Mean Dif (Adj.)
Topic: Boilerplate/Headers	0.03	0.03	0.02	0.03	0.03	-0.04
Topic: Trade	0.03	0.01	-0.38	0.02	0.01	-0.11
Topic: Housing	0.03	0.02	-0.20	0.03	0.02	-0.05
Topic: Bankruptcy	0.01	0.01	-0.13	0.01	0.01	0.02
Topic: Military/Defense	0.05	0.04	-0.13	0.04	0.04	-0.00
Topic: Procedural	0.09	0.07	-0.24	0.08	0.07	-0.12
Topic: Funding & Grants	0.06	0.04	-0.30	0.05	0.04	-0.06
Topic: Homeland Security	0.07	0.04	-0.27	0.05	0.04	-0.09
Topic: Patents & Trademarks	0.08	0.07	-0.08	0.07	0.07	0.04
Topic: Loans & Budget	0.05	0.08	0.22	0.07	0.08	0.07
Topic: Water Infrastructure	0.06	0.03	-0.25	0.06	0.03	-0.23
Topic: Energy/Oil & Gas	0.04	0.05	0.07	0.04	0.05	0.07
Topic: Immigration & Sex Viol	0.05	0.07	0.07	0.07	0.07	-0.00
Topic: Taxes	0.05	0.10	0.24	0.10	0.10	-0.00
Topic: Transportation	0.02	0.02	-0.07	0.02	0.02	0.03
Topic: Foreign Aid & Diplomacy	0.07	0.08	0.05	0.08	0.08	0.01
Topic: Healthcare	0.03	0.08	0.32	0.06	0.08	0.14
Topic: Pension, Retire, & Invest	0.02	0.03	0.09	0.02	0.03	0.02
Topic: Boilerplate/Procedural	0.08	0.11	0.22	0.09	0.11	0.10
Topic: Education	0.04	0.01	-0.62	0.01	0.01	-0.07
Topic: Financial Services	0.03	0.02	-0.18	0.02	0.02	-0.07
Important Bill	0.98	0.98	-0.01	0.98	0.98	-0.00
Majority Party Sponsor	0.99	0.98	-0.00	0.98	0.98	-0.00
103rd Congress	0.07	0.01	-0.06	0.02	0.01	-0.01
104th Congress	0.09	0.08	-0.01	0.09	0.08	-0.01
105th Congress	0.09	0.09	0.00	0.09	0.09	-0.00
106th Congress	0.12	0.06	-0.06	0.07	0.06	-0.01
107th Congress	0.07	0.11	0.04	0.10	0.11	0.01
108th Congress	0.08	0.12	0.04	0.08	0.12	0.04
109th Congress	0.09	0.09	0.01	0.08	0.09	0.01
110th Congress	0.13	0.10	-0.03	0.13	0.10	-0.03
111th Congress	0.07	0.10	0.03	0.08	0.10	0.02
112th Congress	0.10	0.09	-0.01	0.10	0.09	-0.02
113th Congress	0.10	0.15	0.05	0.15	0.15	-0.01
Days Left in Congress	529.21	414.10	-0.54	485.41	414.10	-0.34
Party Priority Bill (HR 1-10)	0.06	0.12	0.06	0.07	0.12	0.04

2.3 Some Example Matches

We have taken a number of matched bill pairs from our matching algorithm using Mahalanobis distance and a combination of feature and text variables to qualitatively demonstrate the performance of our matching. While the balance tables and Love plots presented in the

body of the paper and in these appendices give a systematic overview of the overall performance of the matching algorithms in terms of improving covariate balance, this section is meant to provide readers with an idea of the kinds of bill-to-bill matches being made.

The inclusion of topic proportions from our structural topic model allowed for matches that were substantively similar. For example, the Helping Empower Low-Income Parents (HELP) Scholarship Amendments of 1997 was matched with the Charter School Expansion Act of 1998. Both of these bills dealt with charter schools, with the Charter School Expansion Act boosting federal funding for public charter schools, and the HELP Scholarship Amendments seeking to establish a scholarship program for low-income parents to send their children to charter schools. Both bills were sponsored by Frank Riggs (R-CA), the chairman of the House Education and Workforce Committee—likely a result of including sponsor-level features in the matching algorithm. The Charter School Expansion Act was reported out of Riggs’ committee, while the HELP Scholarship Amendments—strongly supported by Speaker Newt Gingrich and other House Republican leaders—bypassed committee consideration and was brought directly to the floor (CQ 2002, pg. 528).

Another example of a matched pair comes from House Republicans’ two attempts to pass a farm bill during the 113th Congress. The first attempt was the Federal Agriculture Reform and Risk Management of 2013, which was considered and reported by the House Agriculture Committee, failed on the House floor. Speaker Boehner, knowing that some of the more conservative members of his conference would balk at the \$940 billion authorized for agricultural programs over the next five years, had been counting on passing the bill with Democratic votes (Kasperowicz *et al.* 2013). However, the bill’s cuts to the Supplemental Nutrition Assistance Program (SNAP) alienated enough Democrats that the bill failed. Our algorithm matched this bill with the Agricultural Act of 2014, which was introduced weeks after the previous bill had failed, and bypassed committee to come to the floor. These bills were both sponsored by Frank D. Lucas (R-OK), chair of the House Agriculture Committee, and were very similar substantively—although the Agriculture Act of 2014 did not cut SNAP

as deeply.

In the same Congress, our matching algorithm paired the American Energy Solutions for Lower Costs and More American Jobs Act with the Federal Lands Jobs and Energy Security Act of 2013. As is clear from their titles, both of these bills were substantively focused on job creation through relaxation of restrictions on oil and gas drilling. The Federal Lands Jobs and Energy Security Act was introduced first, and was reported favorably out of the House Committee on Natural Resources. The bill, sponsored by Doug Lamborn (R-CO), passed the House on what was close to a perfect party-line vote, with only one Republican voting against and seven Democrats voting in support. Terry Lee (R-NE) introduced the American Energy Solutions for Lower Costs and More American Jobs Act—which included language from Lamborn’s bill—nearly a year later. Lee’s bill was brought to the floor under a special rule for consideration reported out of the Rules Committee just three days after it was introduced, bypassing all consideration in any of the five committees to which it was referred.¹ This bill also passed the House on a highly partisan vote, with only seven Republicans voting against it and nine Democrats voting for it. These bills were substantively similar, both introduced by midwestern Republicans, and, judging by their passage votes in the House, similar in their propensity to evoke partisan divisions.²

Ultimately, the success of our matching algorithms should be judged holistically based on improvements in covariate balance as well as qualitative comparisons between matched bills. Our inclusion of topic proportions in our matching procedures has allowed us to find pairs of bills that are similar to one another on substance in a fairly granular way. We would argue that this is an improvement over what can be done with topic codes that categorize an entire bill as fully one topic or fully another. While we cannot fully overcome the issue inherent to observational studies—that our treatment and control groups of bills are not

¹House Committee on Natural Resources; House Committee on Energy and Commerce; House Committee on Transportation and Infrastructure; House Committee on the Judiciary; House Committee on Science, Space, and Technology

²Of course, we do not use the passage vote information in our matching algorithm, as it is post-treatment—but here we take the similar passage votes as part of a body of evidence that the two matched bills are indeed similar on multiple dimensions.

literally identical on all relevant dimensions—our use of multiple matching procedures helps us to mitigate against whatever selection bias may be present in the decision to bypass committee.

3 Data Collection Details

For this project we only consider House-sponsored (H.R.) bills that received a recorded roll call vote on the House floor. This eliminates any Senate-sponsored legislation, as well as House Resolutions (H.Res.), House Joint Resolutions (H.J.Res.), and House Concurrent Resolutions (H.Con.Res.). We also eliminate any House-sponsored (H.R.) legislation that reached the floor under suspension of the rules, for reasons elaborated upon below.

Because our treatment is committee bypass, we only want to consider bills that could potentially bypass committee. This requires us to eliminate appropriations and certain reconciliation bills, since these are reported to the House by the Appropriations and Budget committees, respectively. These types of bills never exist in an “introduced” version; the first form in which they exist is as they are reported to the floor. While these bills technically have individual sponsors, they are products of their respective committees, and because they only exist once they are reported from committee, it is impossible for them to bypass committee.

We are left with a dataset of 951 H.R. bills from the 103rd–113th Congresses. We define our treatment—committee bypass—by identifying bills that reach the floor without being reported by a committee. These bills are referred to a committee, or multiple committees, but are brought to the floor under a special rule for consideration reported by the Rules Committee before they are marked up and reported by any of the committees to which they were referred. The table below shows the breakdown of bypass and non-bypass bills by Congress.

Congress	Non-Bypass Bills	Bypass Bills	Percent Bypass
103	55	2	3.51
104	71	15	17.44
105	68	16	19.05
106	92	10	9.80
107	51	20	28.17
108	62	22	26.19
109	66	17	20.48
110	99	18	15.38
111	52	18	25.71
112	79	16	16.84
113	75	27	26.47

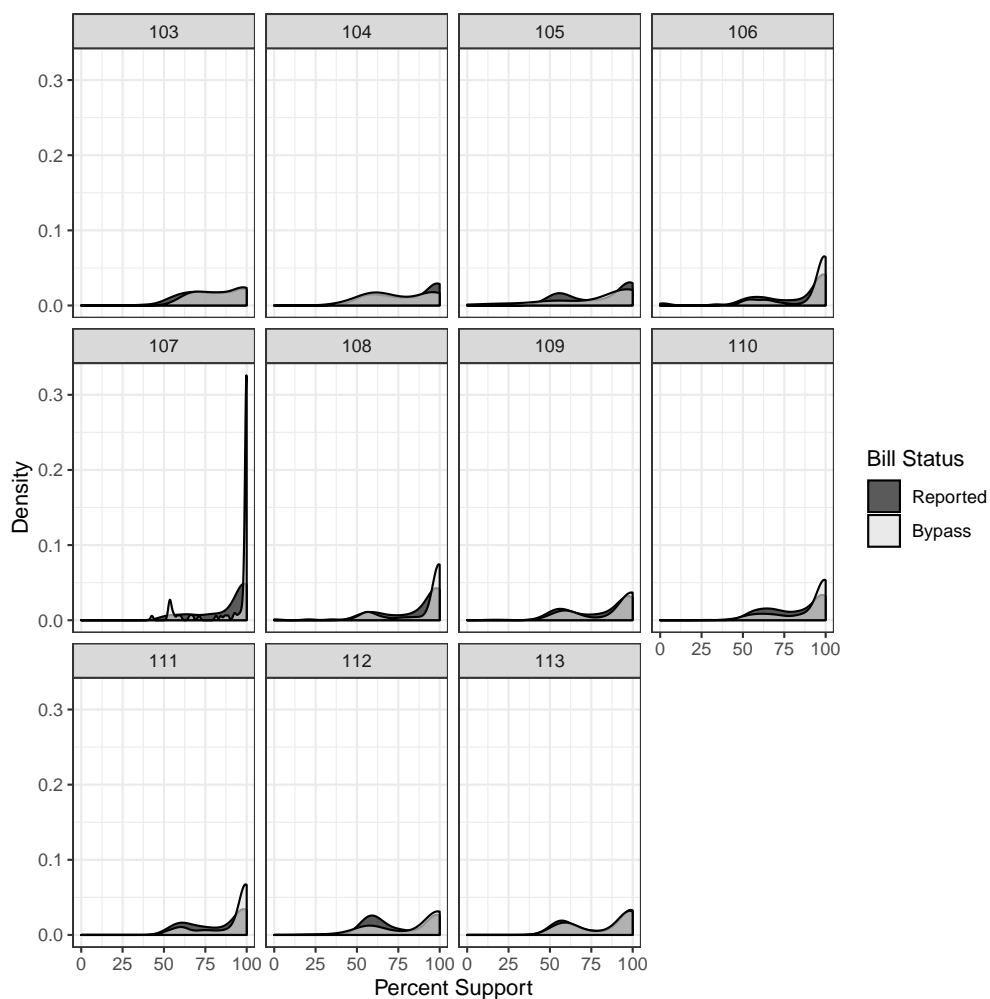
3.1 Eliminating Bills Considered Under Suspension of the Rules

Our primary goal in pre-processing our data is to end up with two comparable subsets of bills—those that made it to the floor by bypassing committee, and those that were reported out of at least one standing committee. We suspect that, for the most part, bills that come to the floor under suspension of the rules will be substantively different from bills that come to the floor through other routes. The two-thirds supermajority requirement for passage under suspension of the rules affects the types of bills that take that route to the floor. If it is the case that suspension bills are less likely than other bills to divide the two parties on the floor *and* are more likely to reach the floor under bypass than regular order, this could be problematic both substantively and methodologically. Relatedly, if bills that come to the floor without a committee report (bypass bills) are disproportionately suspension bills, it may be difficult for any matching procedure to find non-bypassed matches that are substantively similar to these bypassed suspension bills. Below, we explore the relationship between committee bypass, suspension of the rules, and floor votes—and ultimately decide to remove suspension bills from our analyses.

The density plots below are generated using data on passage votes in the House. Bills are categorized based on how they reached the floor—either by bypassing committee or by being reported out of committee. With a few exceptions, these two types of bills exhibit similar patterns, with a local mode just above 50% support, and another local mode around

the 90-100% range.

Figure 1: Density of Support for Bypass and Reported Bills (All Passage Roll Calls)



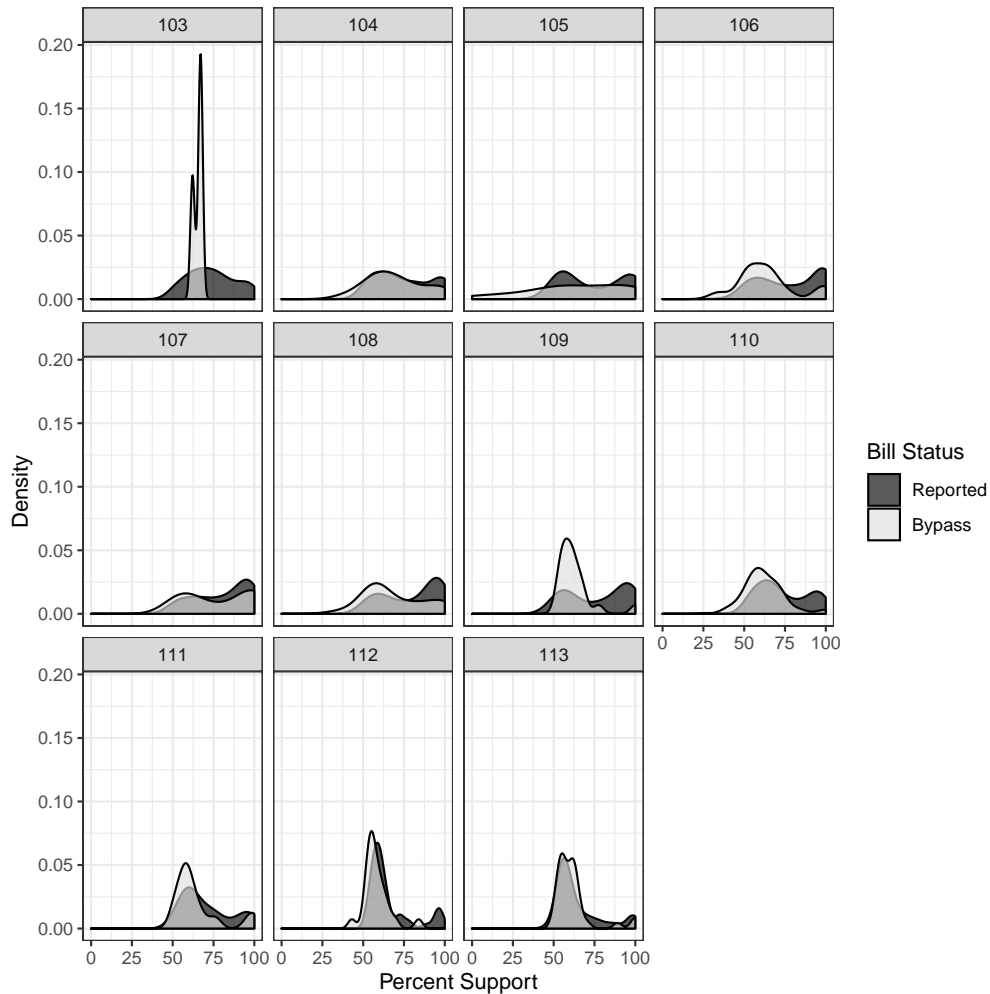
To the extent that there are occasional differences between bypass and reported bills that show up in certain Congresses, it is usually the case that the density of bypass bills is disproportionately shifted towards unanimous or near-unanimous passage votes. This may be a reflection of the fact that suspension of the rules—typically used for noncontroversial bills—is a common method of committee bypass in the House (Bussing 2020). The table below shows the breakdown of bills by route to the floor (Regular Order or Bypass) and method of floor consideration (Suspension or Non-Suspension). Raw numbers of bills are reported in each cell, with row-percentages reported below in parentheses. Pooling across all Congresses

from the 103rd-113th, just over 76% of bills that bypassed committee were considered under suspension of the rules on the floor. Bills that reached the floor through regular order (by being reported out of a committee) are much more balanced across method of floor consideration, with around 54% of such bills being considered through non-suspension procedures, and around 46% being considered under suspension of the rules.

	Non-Suspension	Suspension
Regular Order	1034 (.538)	889 (.462)
Bypass	221 (.233)	728 (.767)

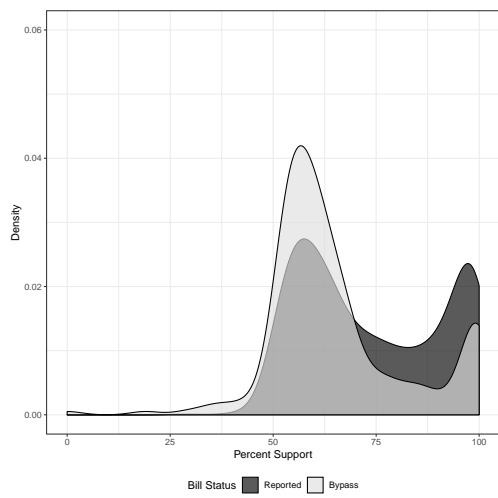
The density plots below look only at bills that were considered by non-suspension procedures. This subset of bills are more likely to deal with issues that may split the two parties.

Figure 2: Density of Support for Bypass and Reported Bills (Non-Suspension Passage Roll Calls)

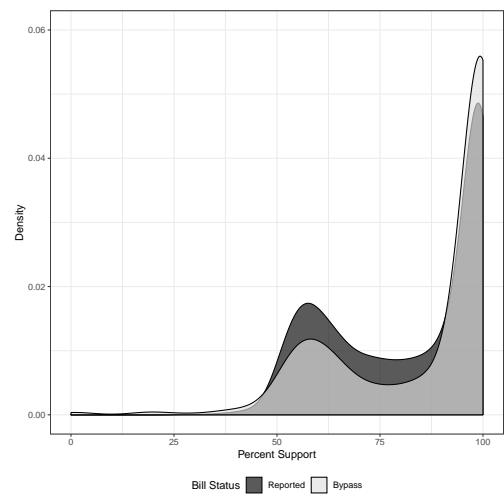


These density plots tell a different story than those presented in Figure 1. A common trend that appears in most, but not all, of the Congresses examined is that the density of bypass bills peaks just to the right of the 50% mark—indicating that many of these bills are passing with bare (likely partisan) majorities.

The two figures below show density plots for bills pooled across all Congresses from the 103rd-113th. The plot on the left includes only non-suspension bills that received roll call votes, while the plot on the right includes all bills that received roll call votes. Ultimately, we chose to exclude suspension bills because it is clear that their exclusion drastically cuts down on the proportion of bills that are unanimously or nearly-unanimously supported.



(a) Support Density (Non-Suspension Passage Roll Calls)



(b) Support Density (All Passage Roll Calls)

References

- Bussing, Austin. 2020. Majority Party Strategy and Suspension of the Rules in the House. *Legislative Studies Quarterly*, **Online Early View**, 1–39.
- CQ. 2002. *Congress and the Nation, 1997-2000, Volume X: The 105th and 106th Congresses*. CQ Press.
- Kasperowicz, Pete, Wasson, Erik, & Berman, Russell. 2013. House Rejects Farm Bill, 195-234. *The Hill*.
- Mozer, Reagan, Miratrix, Luke, Kaufman, Aaron Russell, & Anastasopoulos, L Jason. 2020. Matching with text data: An experimental evaluation of methods for matching documents and of measuring match quality. *Political Analysis*, **28**(4), 445–468.
- Roberts, Margaret E, Stewart, Brandon M, Tingley, Dustin, Lucas, Christopher, Leder-Luis, Jetson, Gadarian, Shana Kushner, Albertson, Bethany, & Rand, David G. 2014. Structural topic models for open-ended survey responses. *American Journal of Political Science*, **58**(4), 1064–1082.
- Roberts, Margaret E, Stewart, Brandon M, & Nielsen, Richard A. 2020. Adjusting for confounding with text matching. *American Journal of Political Science*, **64**(4), 887–903.