

# Replicating 'How Newspapers Reveal Political Power'

Adapted from Ban et al. (2019)

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# Introduction

# Motivation

- How to measure power?
  - Difficult to empirically observe power
- Ban et al. (2019) provides an empirical measure of power via newspaper coverage
- Main thesis: relative amount of space dedicated to a particular subject measures the *relative* power of that subject. Why?
- Newsworthiness!
  - Size/impact of story matters
  - Prominence of actors also matters

# Methods

# What kind of power?

- This paper specifically measures whether, and to what extent, political actors and offices possess the resources to influence political process.
  - Provides *cardinal* measure of power
  - Caveat 1: Newsworthiness does not necessarily translate to power, e.g. entertainment
  - Caveat 2: Potential bias from news outlets' ideological preferences
  - **Caveat 3: Does not measure the power of “shadowy” actors**

# Data

- Primarily sourced from [Newspapers.com](#)
- Stratified sample from 50% of archive
- Focuses on years 1877-1977
- Uses OCR tools and [regex](#) to count occurrences of political actors and offices in newspapers texts

Table A.3 – Regular Expressions.

Error Type	Correct Character	OCR	Regex	Example
1:1 Substitution	e	c	[ec]	s[ec]nate
	v	y	[vy]	executi[vy]e
	o	c	[oc]	c[oc]mmittee
	i	l	[il]	comm[il]ttee
	t	l	[tl]	commi[tl][tl]ee
	b	h	[bh]	[bh]udget
	g	y,j,q	[gyjq]	bud[gyjq]et
	f	t	[ft]	o[ft][ft]ice
	a	u,o	[auo]	sen[auo]te
1:2 Substitution	m	rm	[m(rn)]	co[m(rn)][m(rn)]ittee

# **(Validation) Results**

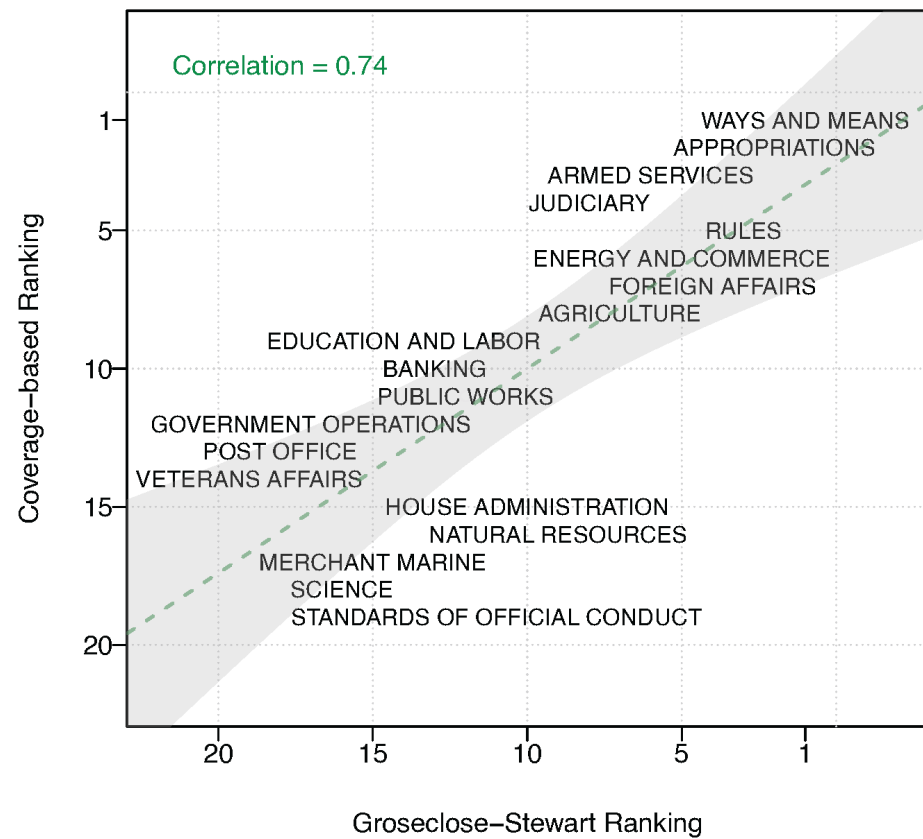
# Validation 1: Valuing congressional committees

- Hypothesis: More powerful congressional committees should get more news coverage.
- Ban et al. (2019) validates this hypothesis with committee “value” rankings constructed by Groseclose and Stewart (1998)

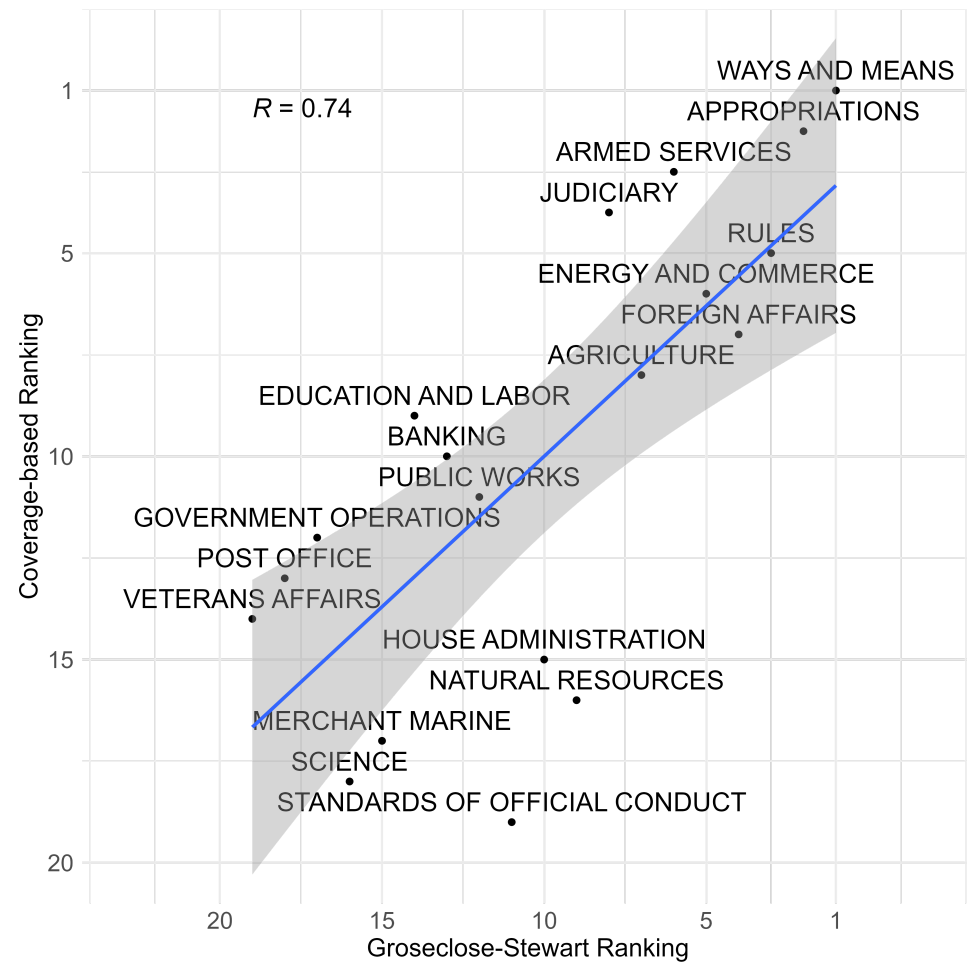
$$\text{Relative Coverage of Committee}_i = \frac{\text{Committee}_i}{\sum_{i=1}^{19} \text{Committee}_i}$$



# **Result 1: Coverage vs Groseclose-Stewart rankings**



Original

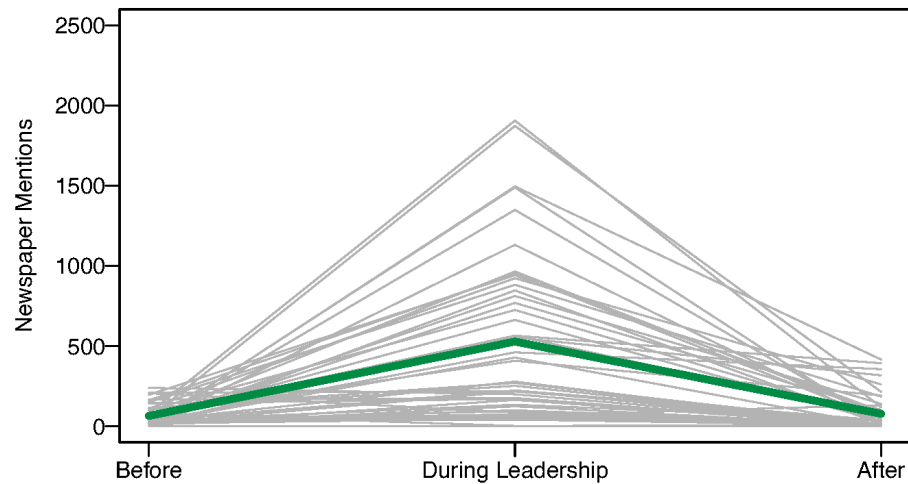


Replication

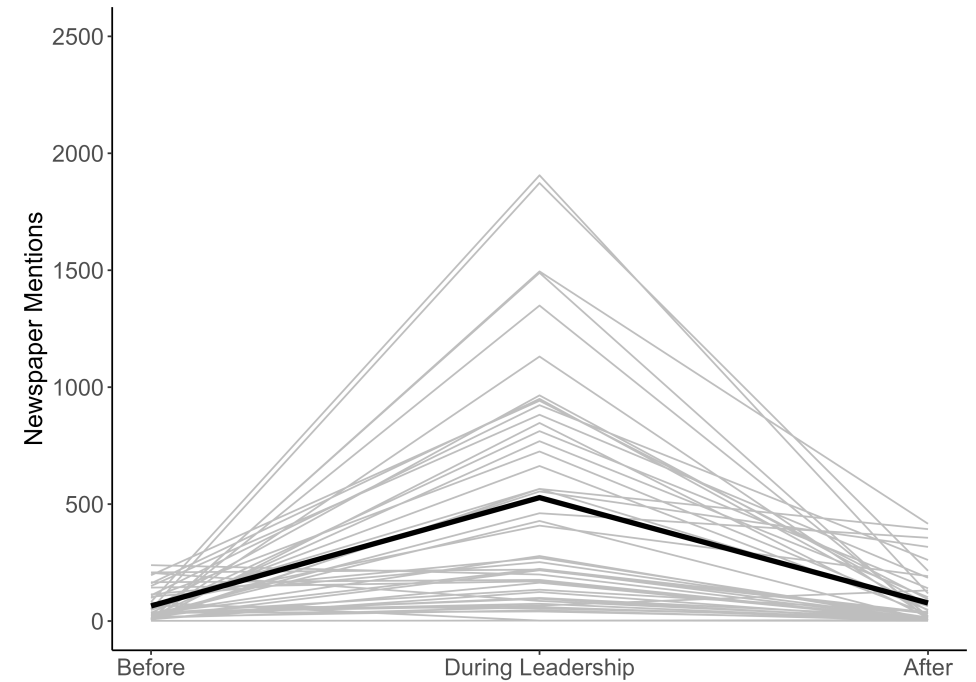
# Validation 2: Newspaper coverage of House Speakers

Hypothesis: There should be spike in coverage in the periods where senators serve as party leaders

# Result 2: Coverage of speakers before, during and after leadership



Original



Replication

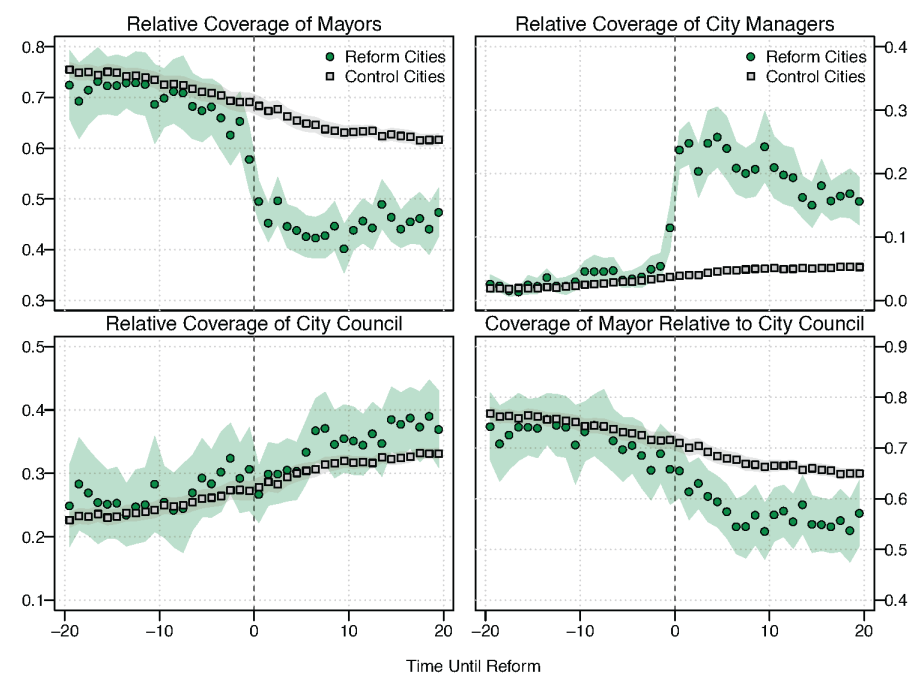
# Validation 3: Strong vs. weak mayors

- *Strong* mayors (mayor-council):
  - Mayor and city council are elected separately
  - Mayor has broad executive authority
- *Weak* mayors (council-manager):
  - City council is the only elected office
  - Council appoints city manager to oversee executive branch
  - Mayor has little to no executive authority
- Hypothesis: Weaker mayor authority upon transition to council-manager setting, thus lower mentions in newspapers.

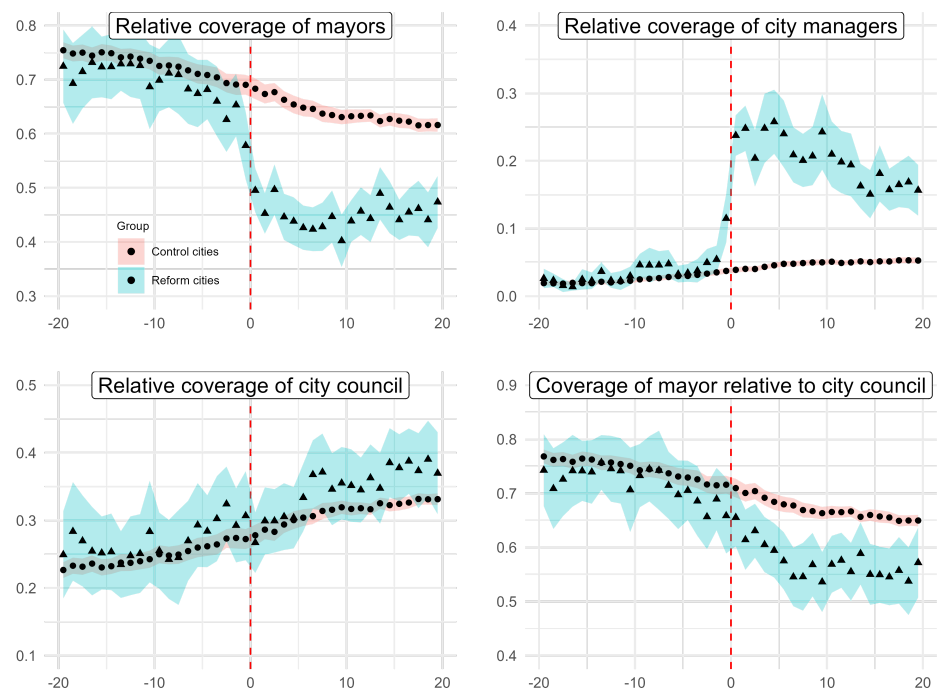
$$\hat{Y}_{ijt} = \frac{N_{ijt}}{\sum_{j=1}^J N_{ijt}}$$

where  $j \in \{\text{Mayor, City Manager, City Council}\}$ ,  $N$ , and  $\hat{Y}$  denote mentions and relative proportions, respectively.

# Result 3A: Coverage of city offices, before and after reforms



Original



Replication

# Result 3B: Effect of switching from Mayor-Council to Council-Manager

TABLE 1      *Impact of Switch from Mayor-Council to Council-Manager City Government*

	All Mentions		Using City Name Filter	
	Relative Coverage of Mayor	Relative Coverage of City Manager	Relative Coverage of Mayor	Relative Coverage of City Manager
Council-manager government form	-0.18	0.18	-0.25	0.29
<i>N</i>	(0.02) 3540	(0.02) 3540	(0.04) 2376	(0.03) 2376
City fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes

Original

# Result 3B: Effect of switching from Mayor-Council to Council-Manager

	Rel. Coverage of Mayor	Rel. Coverage of City Manager	Rel. Coverage of Mayor	Rel. Coverage of City Manager
	All Mentions		Using City Name Filter	
	(1)	(2)	(3)	(4)
Council-manager government form	-0.18*** (0.02)	0.18*** (0.02)	-0.25*** (0.04)	0.29*** (0.03)
Observations	3,540	3,540	2,376	2,376
R <sup>2</sup>	0.76	0.70	0.70	0.68
Within R <sup>2</sup>	0.15	0.29	0.11	0.26
Year fixed effects	✓	✓	✓	✓
City fixed effects	✓	✓	✓	✓

Replication



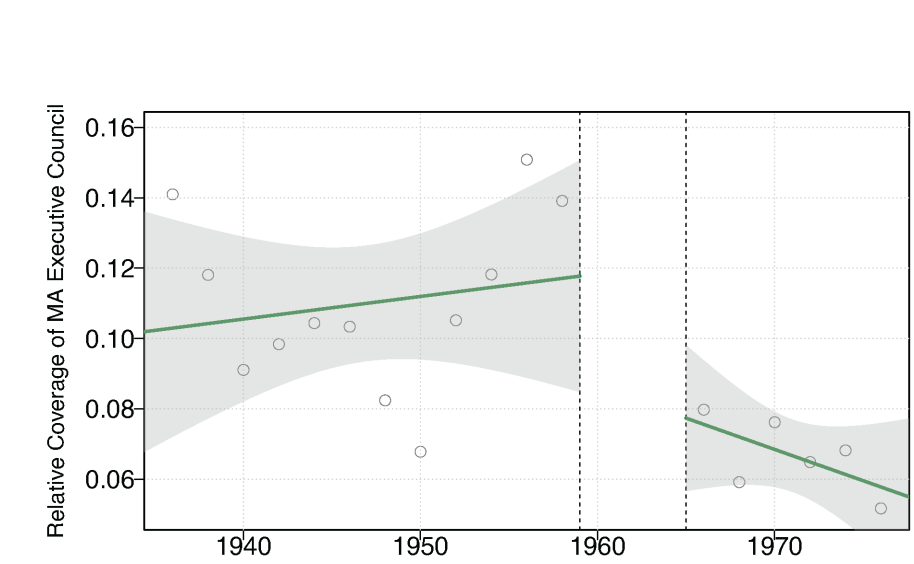
# Validation 4: Coverage of Massachusetts Executive Council

- Massachusetts Executive Council is comprised of eight individuals elected from districts
- In late 1964, the council was stripped of its statutory powers following corruption and bribery charges
- Hypothesis: lower newspapers coverage on the Executive Council following the reform

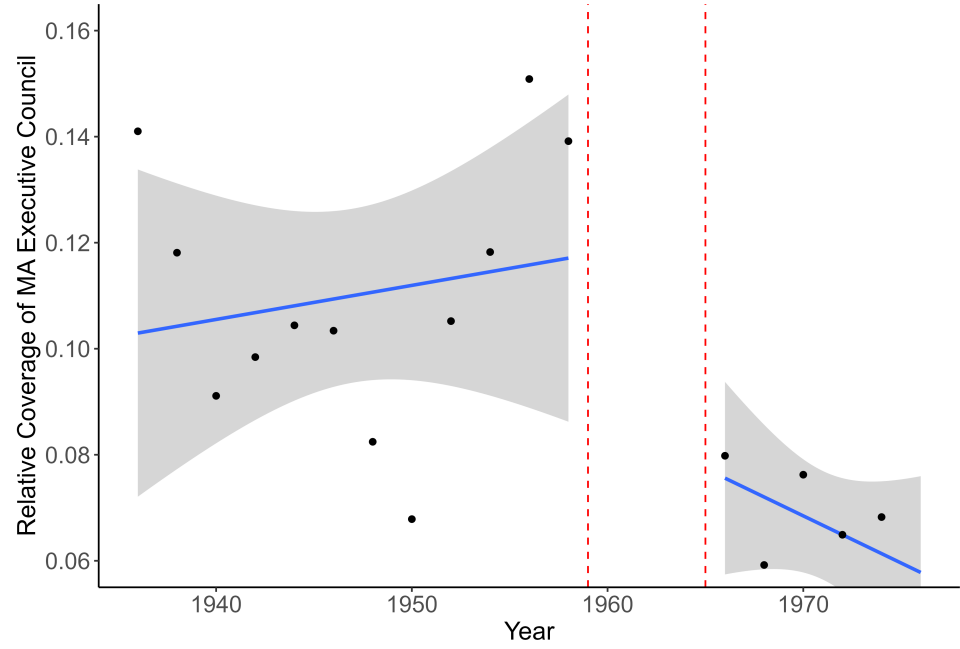
$$EC_t = \frac{EC_t}{EC_t + G_t}$$

where  $EC$  and  $G$  denote mentions of the Executive Council and the Governor in all available Massachusetts newspapers, respectively.

# Result 4: Coverage of Massachussets Executive Council



Original



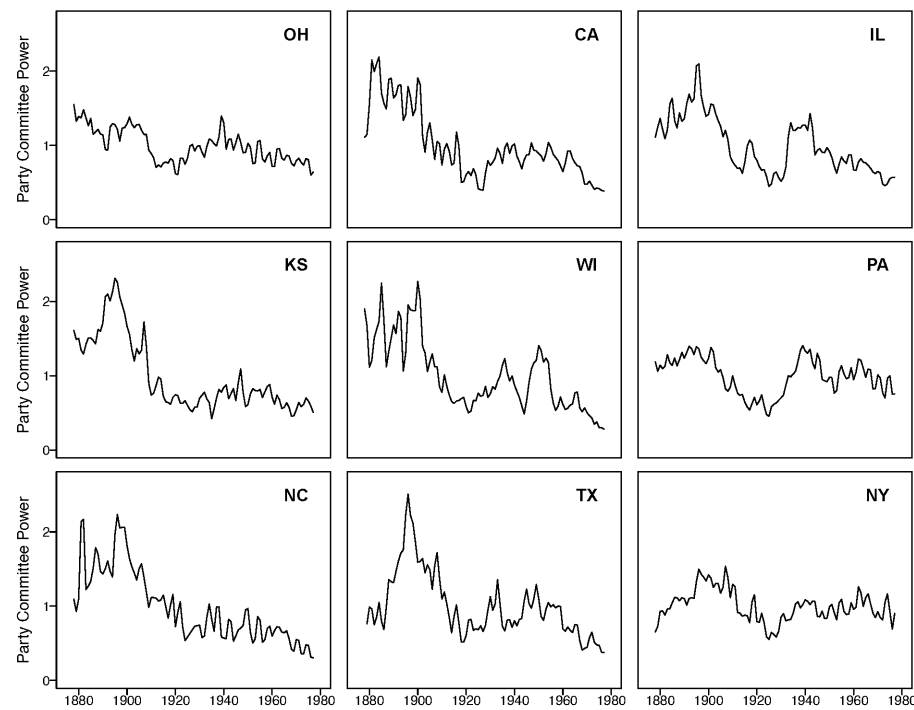
Replication

# Application: Measuring the power of state party committees

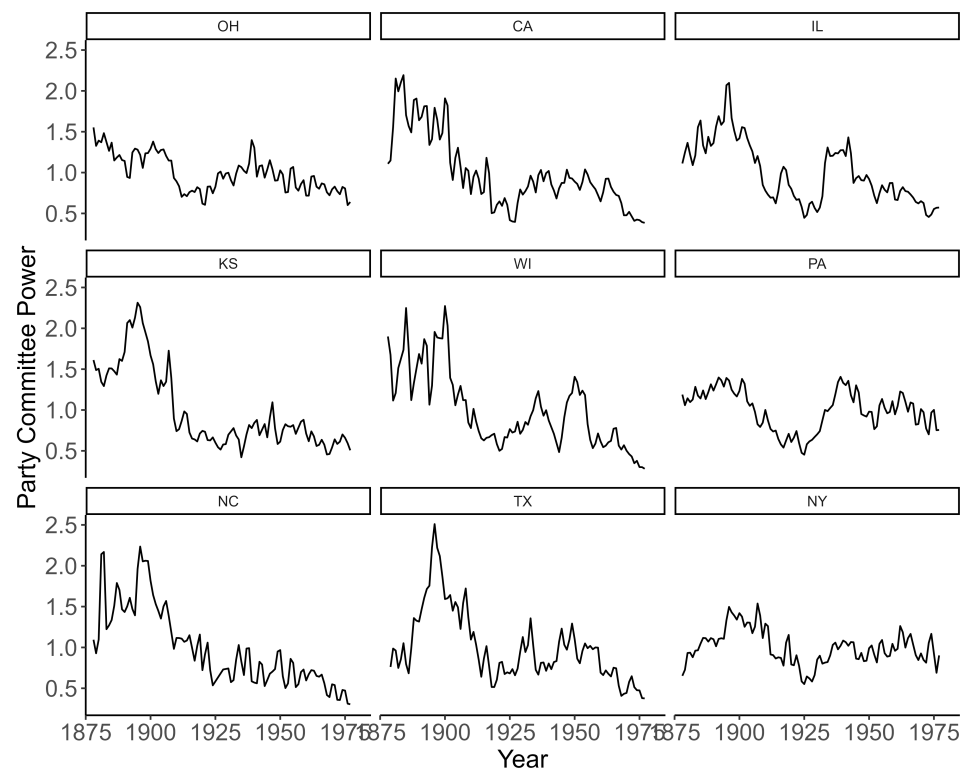
- Prediction: State committees are no longer as powerful as they once were
- Ban et al. (2019) uses newspaper coverage to measure the power of state committees relative to local committees

$$\text{Relative Party Mentions}_{it} = \frac{\text{Party}_{it}}{\text{Party}_{it} + \text{Candidates}_{it}}$$

# Result 5: Party Committee Power in 9 U.S. States



Original



Replication

# **A Closer Look at the Replication Exercise**

# Differences from the original results

- Able to replicate all of the main findings
- Minor differences in standard errors reported in regression table 3B

# Replication diagnosis

- The authors could not provide access to the raw newspapers data since they are proprietary data.
- They only provide cleaned, aggregated term counts across years, states, etc.
- As such, I wasn't able to replicate the crucial first half of the paper, i.e., pre-processing the text.

	year	agriculture	appropria...	armed_s...	banking	budget	education	energy	foreign_a...	governm...	house_a...	judiciary	merchant...	natural_r...	post_office	public_w...
1	1877	3	69	0	17	0	5	12	43	0	0	103	0	0	7	0
2	1878	12	121	0	111	0	42	62	30	0	0	313	0	0	29	1
3	1879	30	199	0	49	0	33	82	20	0	0	193	0	0	5	0
4	1880	40	167	0	20	1	18	140	26	0	0	133	0	0	16	0
5	1881	20	61	0	2	2	8	48	37	0	0	89	0	0	5	1
6	1882	23	164	0	42	1	62	214	237	0	0	247	0	0	20	3
7	1883	8	53	0	1	1	10	59	35	0	0	171	0	0	3	1
8	1884	70	248	0	73	1	29	102	132	0	0	201	0	0	35	0
9	1885	12	142	0	3	1	7	10	51	0	0	90	0	0	7	0
10	1886	95	138	0	47	1	65	100	173	0	0	210	0	0	19	0
11	1887	38	84	0	10	0	17	33	81	0	0	175	0	0	1	0
12	1888	155	129	0	44	4	40	156	177	0	0	215	38	0	18	0
13	1889	26	105	0	0	0	15	13	70	0	0	169	8	0	3	1
14	1890	173	195	0	62	0	36	153	95	0	0	439	33	0	44	1
15	1891	23	108	0	11	0	50	42	59	0	0	257	1	0	8	0
16	1892	213	320	0	36	0	15	101	200	0	0	352	16	0	28	0
17	1893	50	246	0	260	0	31	77	182	0	0	293	1	1	4	0
18	1894	168	269	0	299	2	4	254	206	0	0	874	12	0	24	1
19	1895	39	254	0	56	1	49	39	109	0	0	358	5	0	1	0
20	1896	85	289	2	133	1	22	252	525	0	0	404	20	1	42	1
21	1897	35	293	0	250	10	56	115	176	0	2	249	0	0	10	1
22	1898	29	374	0	246	8	15	121	707	0	2	214	8	1	21	0
23	1899	27	247	1	81	5	44	132	36	0	0	358	20	6	10	0
24	1900	91	150	0	37	0	8	222	142	0	0	379	93	69	39	1
25	1901	19	186	0	80	5	51	90	26	0	0	240	13	21	17	0

# Replication diagnosis

- The authors used Stata to pre-process the term counts to generate measures of interest and R to visualize the output
- I convert all Stata codes to R, posted all codes and output images/tables on [GitHub](#).
- I find one minor error in their code:

```
1 ... %>%
2   mutate(
3     # Generate relative proportions
4     rel_mayor_council_total = r_city_council + r_mayor,
5     rel_mayor_council_control_total = r_control_sum_city_council + r_control_sum_mayor,
6     rel_mayor_council = r_mayor / rel_mayor_council_total,
7     rel_mayor_council_control = r_control_sum_mayor / rel_mayor_council_control_total,
8
9     # In the original paper, r_mayor was used instead of r_mayor_x
10    rel_mayor_council_total_x = r_city_council_x + r_mayor_x,
11    rel_mayor_council_x = r_mayor_x / rel_mayor_council_total_x
12  ) %>%
13  ...
```



# Possible extensions

- Possible extensions:

- Application to the Indonesian case: rapid decentralization in 1998 shifts political power from central government to local government
- Possible extension to other mediums, e.g., news broadcast?
- Robustness checks to the DiD regression under new approaches by Callaway & Sant'Anna (2020), Chaisemartin & D'Haultfoeulle (2020)

- Limitations for extension:

- Limited nuance of the power being measured
- Limited use in developing country context due to pervasive power of “shadowy” political actors
- Limited use of newspapers in modern context, and possible changes to the incentive structure of newspaper outlets

