

Delivering the Vote

The Political Effect of Free Mail Delivery in Early Twentieth Century America

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Motivation

- The availability of information is important to the choices of both the electorate and politicians, and to voters' social capital
- Research on the relationship between information networks and politics is plagued by the endogeneity of information network creation
- Rural Free Delivery, which rapidly changed the information available to rural communities, provides an opportunity to examine this relationship

Results

- We find that the introduction of RFD into an area:
 - ▶ Leads to a wider distribution of votes across parties, to the benefit of small parties
 - ▶ Causes shifts by candidates towards policies associated with rural communities; immigration restriction and temperance are used as exemplars
 - ▶ Has a negligible effect on voter turnout
- Most of our results only occur in counties with a daily or semi-weekly newspaper, supporting the hypothesis that information transmission is an important mechanism

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Rural Free Delivery

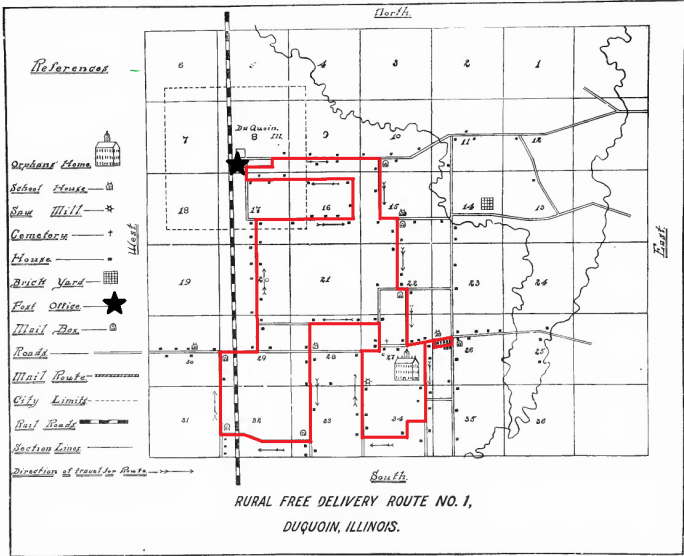
What Is RFD?

- RFD was a massive federal project in the early 1900s with the goal of bringing daily mail delivery to rural residents
- Rural residents often lived too far from a post office to retrieve their mail more than once a week
- In contrast, urban-dwellers enjoyed either to-home delivery or close proximity to post offices

What Is RFD?



RFD Route



Rural Free Delivery and the News

Statement by a postal worker in 1902:

Before free delivery was started there were 13 [subscriptions to] daily papers taken at Turner (OR) post office. Today there are 113. This shows that the farmers are getting in touch with the world and are quick to avail themselves of all educational facilities.



We estimate that one additional route is associated with a 1.77 percent increase in total newspaper readership.

Potential Political Impact

- Why might RFD impact political outcomes?

- ▶ The effective cost of receiving and sending mail decreased
- ▶ Daily newspaper circulation increased in communities that received RFD routes
- ▶ Given the requirement that roads along RFD routes be well-maintained, communities may also have increased quality of roads

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Data

- Our dataset is a panel covering years 1892-1900 (pre-RFD) and 1908-1916 (post-RFD) Rollout
- We constructed a dataset on county-level RFD route allocation, using the 1908 Postal Guide and from the 1900 Report of the Postmaster-General
- For newspaper data, we supplemented an existing dataset (Gentzkow, et.al, ICPSR 30216), which provides data on daily newspaper circulation, adding data of semi-weekly and three times weekly newspapers from N.W. Ayer and Son's American Newspaper Annual
- Voting data comes from ICPSR 08611; county characteristics data from ICPSR 02896

1908 Postal Guide

POST OFFICES BY STATES — NEW HAMPSHIRE, NE

New Market† 1. Rockingham
Newport† Sullivan
Newton* 1 Rockingham
Newton Junction*
 Rockingham
Nippo Strafford
North Barnstead .. Belknap
North Boscawen*
 Merrimack
North Charlestown*
 Sullivan
North Chatham Carroll
North Chichester* 1
 Merrimack
North Conway† 1 .. Carroll
North Danville*
 Rockingham
North Dorchester .. Grafton
North Epping .. Rockingham
North Grantham .. Sullivan
North Groton Grafton
North Hampton* 1
 Rockingham
North Haverhill* 1. Grafton

Sanbornville† 2 Carroll
Sandown* Rockingham
Sandwich* Carroll
Scott Coos
Seabrook* 1 Rockingham
Shelburne* Coos
Short Falls* Merrimack
Silver Lake* Carroll
Smithtown* Rockingham
Smithville* Hillsboro
Snowville* Carroll
Somersworth† 1 Strafford
Soo Nipi Park† Merrimack
South Acworth* Sullivan
South Barnstead* .. Belknap
South Barrington Strafford
South Charlestown* Sullivan
South Chatham Carroll
South Danbury* Merrimack
South Danville*
 Rockingham
South Deerfield
 Rockingham
South Effingham* Carroll

West Milan* Coos
Westmoreland* Cheshire
Westmoreland Depot*
 Cheshire
West Nottingham
 Rockingham
West Ossipee* Carroll
West Peterboro* .. Hillsboro
Westport* Cheshire
West Rindge* Cheshire
West Rumney* Grafton
Westrye Rockingham
West Salisbury .. Merrimack
West Springfield* Sullivan
West Stewartstown* Coos
West Swanzy* Cheshire
West Thornton* Grafton
Westville* 1 Rockingham
West Windham*
 Rockingham
Whiteface* Carroll
Whitefield† 3 Coos
Whittier Carroll
Wilnot* Merrimack

Table: Means by Year

YEAR	Pre-rollout			Post-rollout		
	1892	1896	1900	1908	1912	1916
Congressional Turnout	68.02 (22.21)	72.15 (21.59)	68.96 (22.97)	60.55 (24.17)	54.56 (21.93)	58.87 (21.38)
Parties >5	2.39 (0.58)	2.19 (0.47)	1.99 (0.36)	2.03 (0.52)	2.63 (0.89)	2.08 (0.59)
Small Party Share	12.59 (16.13)	10.03 (17.20)	2.14 (5.56)	3.15 (5.40)	14.86 (14.77)	5.20 (12.44)
Newspaper Circulation	1,774 (9,869)	2,207 (12,097)	4,356 (42,102)	7,391 (72,529)	9,039 (88,091)	10,988 (102,439)
% Urban	12.46 (20.92)	12.69 (21.21)	14.22 (21.44)	15.98 (22.77)	18.35 (23.62)	19.13 (24.25)
% Improved Farmland	55.64 (22.59)	52.90 (23.56)	52.82 (24.80)	56.14 (24.21)	56.51 (24.41)	57.35 (23.82)
% Non-white	9.92 (17.52)	11.97 (19.93)	11.06 (18.92)	10.67 (18.66)	9.26 (17.30)	8.75 (16.32)
% Foreign-born	11.59 (12.41)	10.77 (11.52)	9.63 (10.47)	9.21 (9.78)	9.38 (9.40)	8.73 (8.73)
Ln(Population)	9.55 (1.12)	9.58 (1.13)	9.62 (1.13)	9.78 (1.00)	9.81 (1.03)	9.84 (1.04)
RFD Routes				14.36 (14.09)		
Percent of Counties with Routes				81 (39)		
Observations				2,422		

Outcomes

- Voter Level:
 - ▶ Voter turnout
 - ▶ Number of parties receiving votes

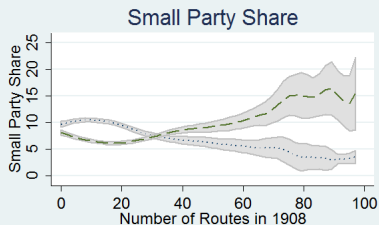
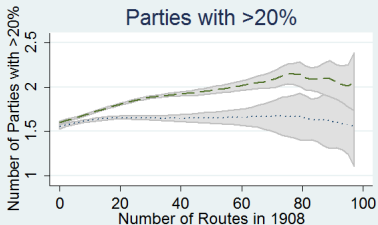
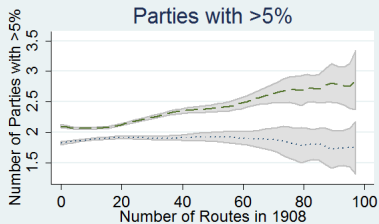
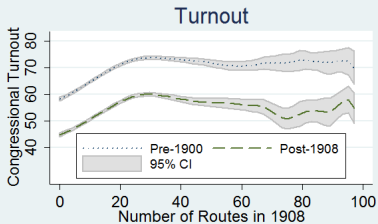
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 - ▶ DW-Nominate Scores
 - ▶ Floor votes on immigration and temperance

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Local Polynomial Smoothed Voter Outcomes



kernel=epanechnikov, degree = 1, bandwidth = 6.67, pwidth = 10

One SD change in routes lead to 0.4 additional parties receiving a competitive percent of the votes.

Specifications

Fixed-effects

$$Y_{ct} = \beta \mathit{Routes}_{ct} + \gamma_c + \delta_t + \mu \mathbf{X}_{ct} + U_{ct}$$

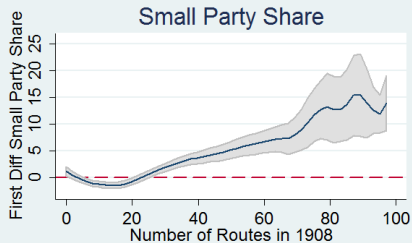
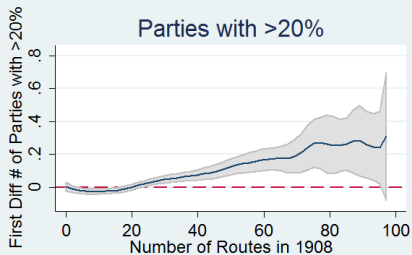
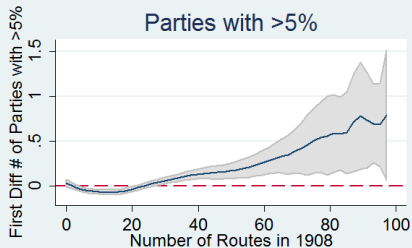
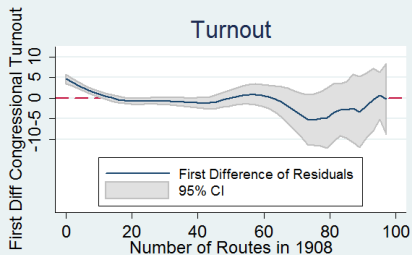
and

First Stage of 2SLS

$$\mathit{Routes}_{ct} = \phi \mathbf{Laws}_c * \mathit{Post}_t + \sigma \mathbf{Z}_c * \mathit{Post}_t + \delta_t + \gamma_c + \beta \mathbf{X}_{ct} + \epsilon_{ct}$$

- Y_{ct} is each of our political outcomes in county c , year t
- Z_c is our county-level instrument; $Laws_c$ is the set of law dummies
 - ▶ Each instrument is interacted with a post-rollout dummy
- γ_c and δ_t are county and year fixed effects, respectively
- \mathbf{X}_{ct} is a set of county characteristics: Ln(population), percent urban (and its square), percent of farmland improved, percent nonwhite, percent foreign-born

Local Polynomial Smoothed First Difference of Voter Outcomes



kernel=epanechnikov, degree = 1, bandwidth = 6.67, pwidth = 10

Instruments

- While all rural communities likely wanted RFD, the ability of a community to successfully petition for the service was a function of the road quality over the period
 - ▶ County-level road spending before the announcement of RFD
County Spending
 - ▶ State laws about roads passed before the announcement of RFD
State Laws
- In the presence of place and time fixed effects, our identifying assumptions include that the instrument is **uncorrelated only with trends in** (not levels of) our outcome variables Parallel Trends

Table: IV Regression

VARIABLES	Turnout	> 5%	> 10%	> 20%	Small Party
RFD Routes	0.130 (0.321)	0.0238** (0.0115)	0.0247*** (0.00782)	0.0132** (0.00585)	0.831** (0.355)
% Urban	-0.153** (0.0631)	-0.00501* (0.00286)	-0.00174 (0.00174)	-0.00107 (0.00155)	-0.0153 (0.0632)
% Urban Squared	0.000116 (0.00203)	6.87e-05 (8.72e-05)	-1.71e-05 (5.92e-05)	-3.73e-06 (4.68e-05)	-0.00103 (0.00258)
% Improved Farmland	0.0407 (0.0961)	-0.00590* (0.00345)	-0.00564** (0.00255)	-0.00384** (0.00190)	-0.137* (0.0830)
% Non-white	-0.100 (0.225)	-0.00181 (0.00882)	-0.00437 (0.00815)	-0.00179 (0.00564)	-0.453* (0.248)
% Foreign-born	-0.298 (0.275)	9.20e-05 (0.00895)	-0.00573 (0.00643)	-0.00688 (0.00488)	-0.0257 (0.241)
Ln(Population)	1.993 (3.612)	0.425*** (0.127)	0.319*** (0.0913)	0.170** (0.0740)	8.781** (3.823)
Observations	22,212	22,212	22,212	22,212	22,212
Counties	2,403	2,403	2,403	2,403	2,403
F Stat.	10.66	10.66	10.66	10.66	10.66

Standard errors, clustered at state level, in parentheses. The cluster-robust Kleibergen-Paap Wald rk F statistic is reported.

Fixed Effects Results

First Stage



Newspapers

- Using data on newspapers, we break our sample into counties with newspapers by 1900 and counties without papers by 1900
- This reveals that the effect of RFD on our voting behavior outcome depends on the presence of a newspaper

Table: Effects By Newspaper Presence

Newspaper	Turnout NO	Turnout YES	> 5% NO	> 5% YES	> 20% NO	> 20% YES	Small Party NO	Small Party YES
RFD Routes	-0.182 (0.375)	0.0951 (0.253)	-0.000831 (0.0129)	0.0329*** (0.00982)	0.00506 (0.00678)	0.0167*** (0.00576)	0.553 (0.382)	0.600** (0.293)
% Urban	-0.118 (0.0873)	-0.219* (0.130)	0.00220 (0.00357)	-0.00940* (0.00537)	3.92e-05 (0.00236)	-0.00232 (0.00266)	-0.0195 (0.119)	-0.165* (0.0902)
% Urban Squared	0.00120 (0.00139)	0.00294 (0.00203)	4.61e-05 (6.70e-05)	2.96e-05 (9.08e-05)	1.97e-05 (3.48e-05)	6.76e-06 (5.78e-05)	0.00166 (0.00130)	0.00144 (0.00222)
% Imp. Farmland	0.0432 (0.0987)	-0.00223 (0.0731)	-0.00452 (0.00350)	-0.0114*** (0.00295)	-0.00383* (0.00208)	-0.00430** (0.00172)	-0.133 (0.0814)	-0.174** (0.0753)
% Non-white	-0.0788 (0.197)	-0.0338 (0.366)	-0.00112 (0.00648)	0.00427 (0.0224)	-0.00243 (0.00514)	0.00486 (0.0154)	-0.354* (0.212)	-0.318 (0.553)
% Foreign-born	-0.297 (0.261)	-0.219 (0.288)	-0.00694 (0.00768)	0.00470 (0.0113)	-0.00798* (0.00429)	-0.00729 (0.00713)	-0.0747 (0.252)	0.148 (0.292)
Ln(Population)	0.967 (3.793)	-9.935** (4.192)	0.187* (0.110)	0.710*** (0.230)	0.112 (0.0746)	0.134 (0.129)	5.652 (3.456)	7.002 (4.931)
Observations	15,214	6,998	15,214	6,998	15,214	6,998	15,214	6,998
F Stat.	14.62	10.1	14.62	10.1	14.62	10.1	14.62	10.1

Additional controls include county and year fixed effects, and dummy variables indicating the presence of Jim Crow laws, women's suffrage, and secret ballots.

Standard errors, clustered at state level, in parentheses. The cluster-robust Kleibergen-Paap Wald rk F statistic is reported.

*** p<0.01, ** p<0.05, * p<0.1

Policy Decisions

Does the introduction of RFD (information access) change elected officials' policy positions?

Examine Congressional Representative's:

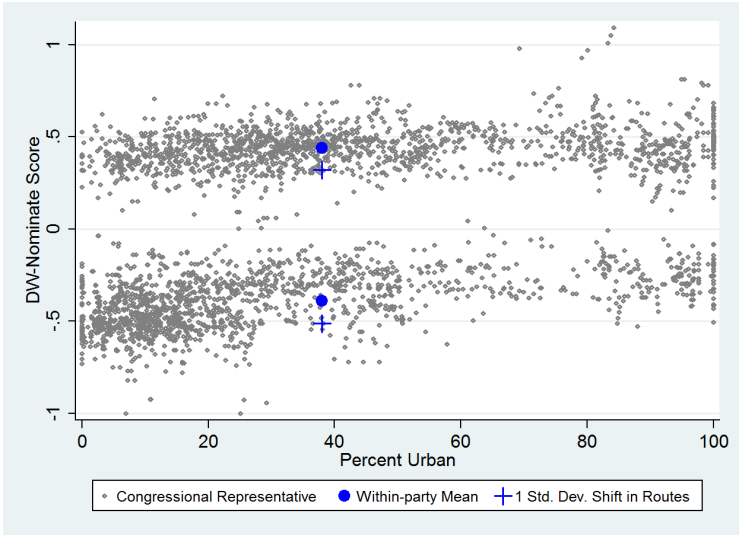
- DW-Nominate Score (first dimension)
- Floor votes on Temperance
- Floor votes on Immigration
 - ▶ Pushes for immigration restrictions and the prohibition of alcohol were associated with rural Protestants

Table: Policy Decisions and Route Allocation

VARIABLES	OLS	IV
Routes	0.0000271 (0.000298)	-0.00108* (0.000553)
% Urban	0.000713 (0.00272)	0.00258 (0.0000259)
% Urban Squared	8.30e-07 (0.0000286)	-0.0000177 (0.0000273)
% Nonwhite	-0.00324 (0.00473)	-0.00665 (0.0050)
% Foreign-born	-0.00605* (0.00330)	-0.0895** (0.00378)
Ln(Population)	0.0220 (0.0287)	-0.00838 (0.0276)
Observations	2,795	2,785
Districts	368	359
States	38	37
F Stat.	-	6.71+

+ When standard errors are clustered at the district level the corresponding F statistic is 17.3.

DW-Nominate Scores and Urban/Rural Makeup



A one SD change in routes lead to a negative shift of 0.71 standard deviations in a Representative's DW-Nominate score.

Table: Policy Decisions and Route Allocation: Temperance

VARIABLES	For OLS	For IV	Against OLS	Against IV
Routes	0.00567*** (0.00107)	0.0135*** (0.00313)	-0.00568*** (0.000974)	-0.0123*** (0.00284)
% Urban	0.00761 (0.0106)	-0.00834 (0.0105)	0.00262 (0.00967)	0.0161** (0.00799)
% Non-white	0.0436 (0.0309)	0.0696** (0.0310)	-0.0269 (0.0272)	-0.0490** (0.0238)
% Foreign-born	0.0755** (0.0300)	0.0994*** (0.0294)	-0.0613** (0.0272)	-0.0815*** (0.0256)
Ln(Population)	-0.202 (0.178)	-0.109 (0.165)	0.515*** (0.131)	0.436*** (0.110)
Observations	2,062	2,053	2,062	2,053
Districts	368	359	368	359
States	38	38	38	38
F Stat.		3.908 ⁺		3.908 ⁺

⁺ When standard errors are clustered at the district level the corresponding F statistic is 10.124.
Standard errors, clustered at state level, in parentheses.

A one SD change in routes leads to 0.9 more votes for temperance per congressional session.
One session has about 3 such votes.

Table: Policy Decisions and Route Allocation: Immigration Restrictions

VARIABLES	For OLS	For IV	Against OLS	Against IV
Routes	0.00169 (0.00131)	0.00916** (0.00398)	-0.00132 (0.000899)	-0.00891* (0.00461)
% Urban	0.0225** (0.0109)	0.0101 (0.0115)	-0.0251** (0.0106)	-0.0126 (0.0113)
% Non-white	0.00785 (0.0181)	0.0307 (0.0234)	-0.0248 (0.0177)	-0.0480* (0.0257)
% Foreign-born	0.0296** (0.0141)	0.0498*** (0.0185)	-0.0377*** (0.0136)	-0.0583*** (0.0216)
Ln(Population)	-0.317** (0.143)	-0.256* (0.146)	0.387*** (0.107)	0.325*** (0.106)
Observations	2,373	2,364	2,373	2,364
Districts	368	359	368	359
States	38	38	38	38
F Stat.		5.029 ⁺		5.029 ⁺

⁺ When standard errors are clustered at the district level the corresponding F statistic is 13.415.

A one SD change in routes leads to 0.6 for immigration restrictions per congressional session. About one half is from incumbents adapting their positions, the other half is from changes in the identity of the Representative.

Conclusions

- RFD led to significant changes in the way rural homes received and exchanged news and ideas
 - ▶ Like the internet, mail is a bi-directional medium. It allows individuals to share information, and serves as a conduit for mass media
- The impact of RFD on voter outcomes depended on the presence of a newspaper, suggesting that primary mechanism of action is increasing information flows
- Suggesting that rural voters increased their social capital, changing the inequality of that capital across the urban/rural divide

Conclusions

- RFD led to increasing support of small parties and shifting the position of candidates towards stances associated with rural communities
- A standard deviation change in routes resulted in:
 - ▶ 0.4 additional parties receiving a competitive percent of the votes
 - ▶ A negative shift of 0.71 standard deviations in a Representative's DW-Nominate score
 - ▶ 0.9 more votes for temperance, 0.6 for immigration restrictions per congressional session
 - ★ About one half is from incumbents adapting their positions, the other half is from changes in the Representative

Thank You

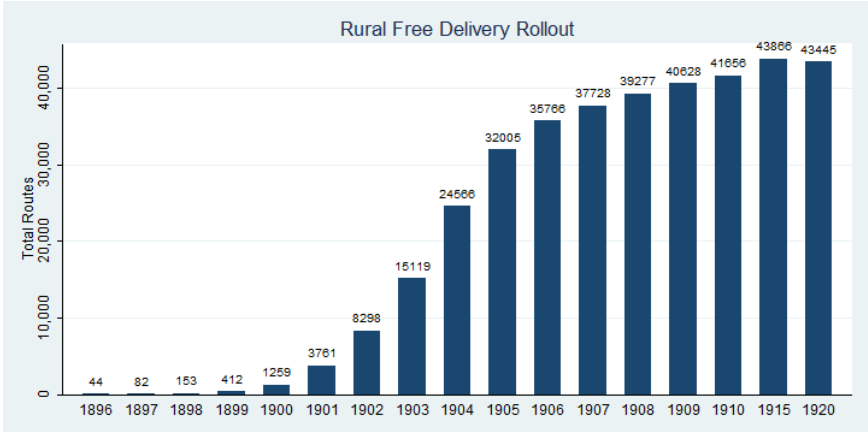


What Is RFD?

- Each RFD route left from and terminated at a post office, and typically covered no more than 25 miles
- Routes usually served between 60 and 120 rural homes
- Homes were “served” if they erected a mailbox anywhere along the route

◀ Back

RFD Route Over Time



[Timeline](#) [← Back](#)

Timeline

- 1896: RFD introduced on an experimental basis
- 1898: Formal petition system established to allocate routes, requiring a petition from the community and approval of congressperson and local post office
- 1902: RFD made a permanent service
- 1900 - 1908: The number of RFD routes skyrocketed from 1,259 to 39,277
- 1909: President Taft drastically reduced post office budgets; almost complete cessation of new route establishment

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◀ Back

County Spending

- From the "Wealth, Debt, and Taxation" book of 1890, we construct a variable of the amount, in dollars, of spending within a county on roads and bridges in that year
- This period is one of particular neglect of roads by states and the federal government, leaving most road building to counties or townships
- The Office of Road Inquiry, which would become the Federal Highway Administration, was established in 1893, which removed the county from most road-related decisions
- Since we are considering 1890 values, this variable affects road quality throughout our sample; however, counties that invested more before the announcement and creation of RFD will enjoy more routes

◀ Back

State Laws

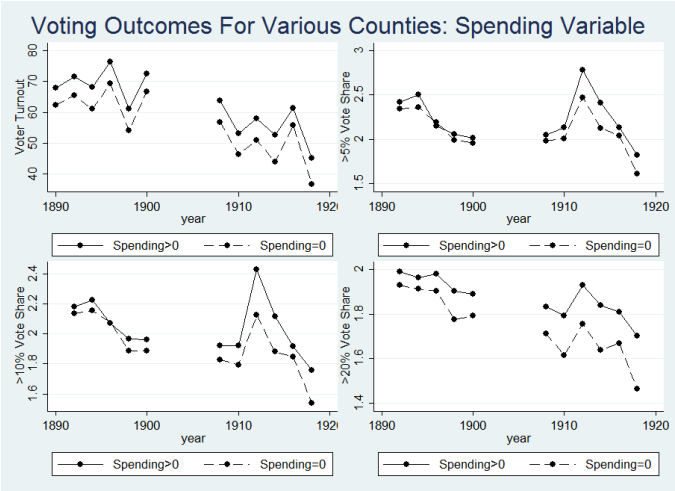
- Dummy variables indicating whether a state had passed specific laws relating to road building in the years 1888-1894
- These laws created the statutory environment that made rural road construction either easier or (depending on the law) more difficult
- Because laws only vary at the state level, we cannot use it alone. However, used in conjunction with the county-level variables (especially spending, which has many zeros), it provides additional variation

◀ Back

Parallel Trends

- By including county fixed effects, the identifying assumption is only that our instruments are uncorrelated with trends in our outcome variables
- Though this assumption is still untestable, we can compare the trends (pre and post-rollout) of our outcome variables across different values of the instruments
- Valid instruments should be independent of time shocks, and therefore the trends should be parallel

Trends: Voter Outcomes



◀ Back

Table: Fixed Effects Results

VARIABLES	Turnout	>5 %	>10 %	>20 %	Small Party
RFD Routes	-0.0945 (0.0613)	0.00421* (0.00229)	0.00545*** (0.00155)	0.00345*** (0.00105)	0.111** (0.0461)
% Urban	-0.165** (0.0701)	-0.00630** (0.00263)	-0.00302** (0.00143)	-0.00173 (0.00158)	-0.0671 (0.0559)
% Urban Squared	0.00162 (0.00144)	0.000203*** (5.01e-05)	0.000116*** (3.01e-05)	6.30e-05* (3.30e-05)	0.00391*** (0.000998)
% Improved Farmland	0.0335 (0.0971)	-0.00609 (0.00367)	-0.00578** (0.00279)	-0.00397* (0.00209)	-0.146* (0.0781)
% Non-white	-0.0221 (0.211)	0.00512 (0.00736)	0.00266 (0.00637)	0.00174 (0.00528)	-0.187 (0.176)
% Foreign-born	-0.304 (0.277)	0.000114 (0.00925)	-0.00554 (0.00685)	-0.00687 (0.00464)	-0.0201 (0.253)
Ln(Population)	-0.273 (2.898)	0.224*** (0.0685)	0.121* (0.0656)	0.0707 (0.0700)	1.456 (1.417)
Observations	22,433	22,433	22,433	22,433	22,433
Counties	2,403	2,403	2,403	2,403	2,403
R-squared	0.806	0.430	0.430	0.519	0.369

Additional controls included. Standard errors, clustered at state level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table: First Stage Regression

VARIABLES	Instrument: Spending	Instrument: State Laws
Road Spending	0.000121*** (0000385)	-
Oversight	-	2.713 (2.35)
Governance	-	5.198* (2.949)
Road Districts	-	-7.001*** (2.497)
State Money	-	-6.865* (3.98)
% Urban	-0.0350 (0.0431)	-0.102** (0.0448)
% Urban Squared	0.00595*** (0.00131)	0.00708*** (0.00122)
% Nonwhite	0.341*** (0.157)	0.335** (0.157)
Ln(Population)	-10.00*** (1.62)	-10.34*** (1.602)
Observations	22,212	22,212
Countries/States	2403	43
F-Stat (excluded instruments)	9.93	3.56
R-squared	0.768	0.775

Additional controls included.

Standard errors, clustered at the state level, in parentheses.

*** p<0.01, ** p<0.05, * p<0.1