Competition and Ideological Diversity: Historical Evidence from U.S. Newspapers

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Introduction

- What is ideological diversity?
  - Supreme Court, Congress, others: diverse media viewpoints essential for democracy.
  - Many policy interventions in support of diversity of news
- So: what affects a newspaper's choice of ideology?

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- Economic model of media competition and ideological diversity
  - Households demand like-minded news
  - News outlets choose markets and ideological positions strategically
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  - Explicit party affiliations
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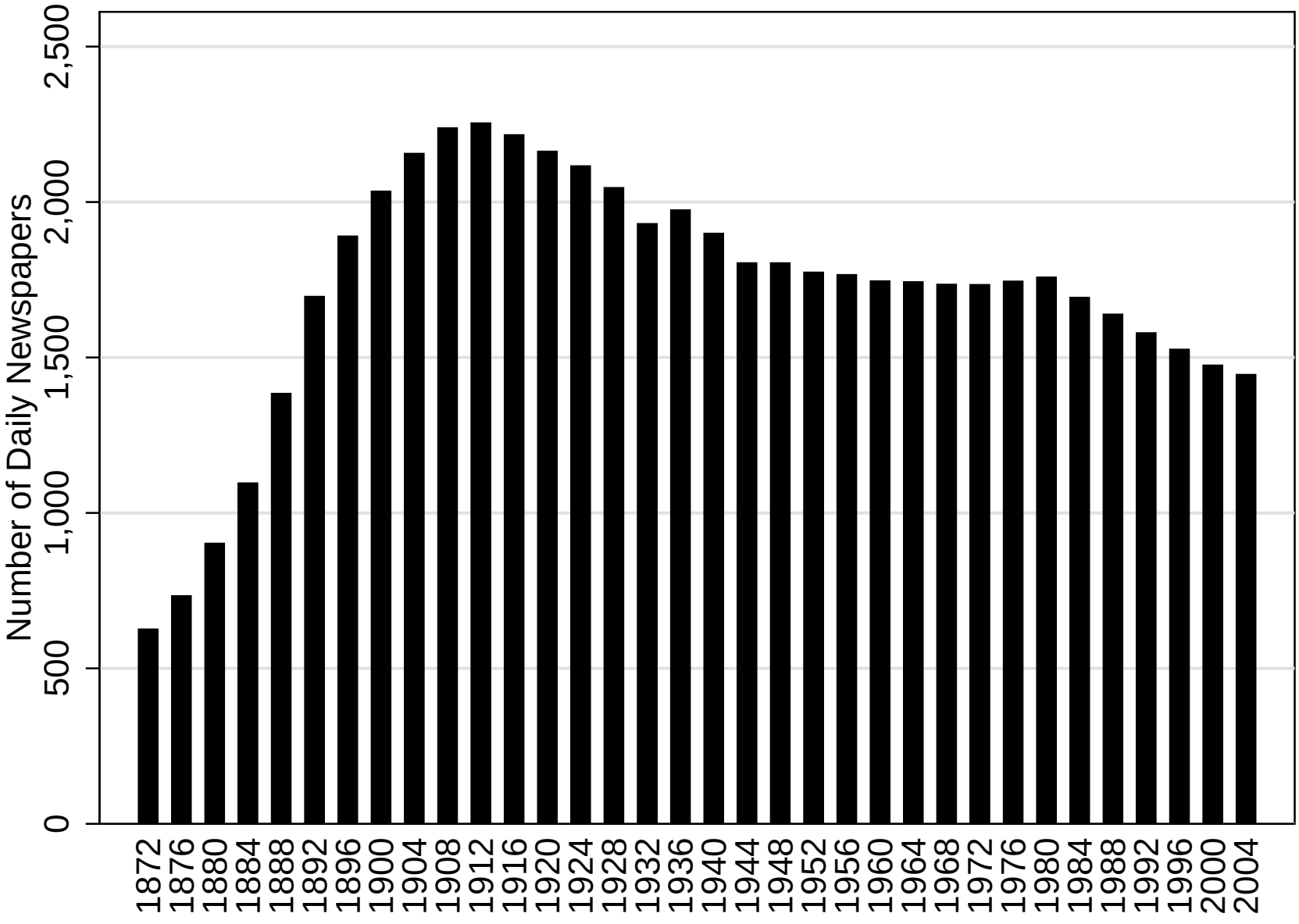
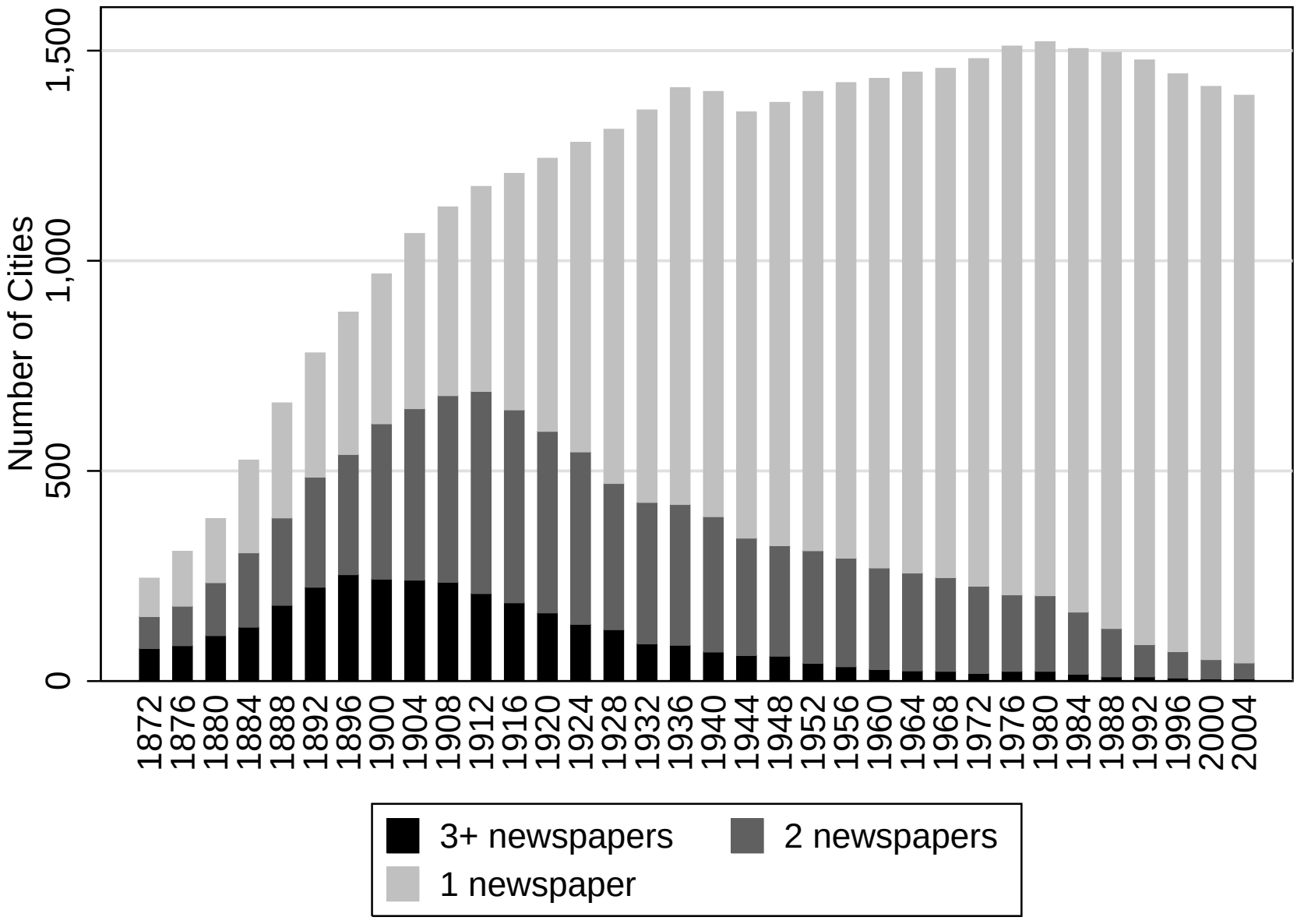
  - Explicit party affiliations
  - Many competitive markets
- Novel strategy to address core identification issue
- Use estimated model to decompose drivers of diversity and evaluate policies

Historical Background

Number of Papers



Market Structure



Political Affiliation

- Determines appeal to readers
  - *Detroit Free Press* (1868): "The *Free Press* alone in this State is able to combine a Democratic point of view of our state politics and local issues with those of national importance."
  - *Detroit Post* (1872): "To meet the demands of the Republicans of Michigan and to advance their cause."
- Strongly related to news content
  - Share of mentions going to Republican presidential candidate (Gentzkow, Shapiro and Sinkinson 2011)
  - Scandal coverage (Gentzkow, Glaeser and Goldin 2006)
- Important source of product differentiation (Scripps 1879)

Data

Cross-Section of Markets

- Universe of potential daily newspaper markets in 1924
  - At least one weekly newspaper
  - Population $\in [3k, 100k]$
- Identify all English-language daily newspapers in 1924
  - Rowell's/Ayer's annual directories of U.S. newspapers
  - Declared political affiliation (Republican/Democrat)
  - Order of entry
  - Subscription price
- Republican share of two-party vote
- Anonymized balance sheets from Inland Press Association

Example of Directory Entry

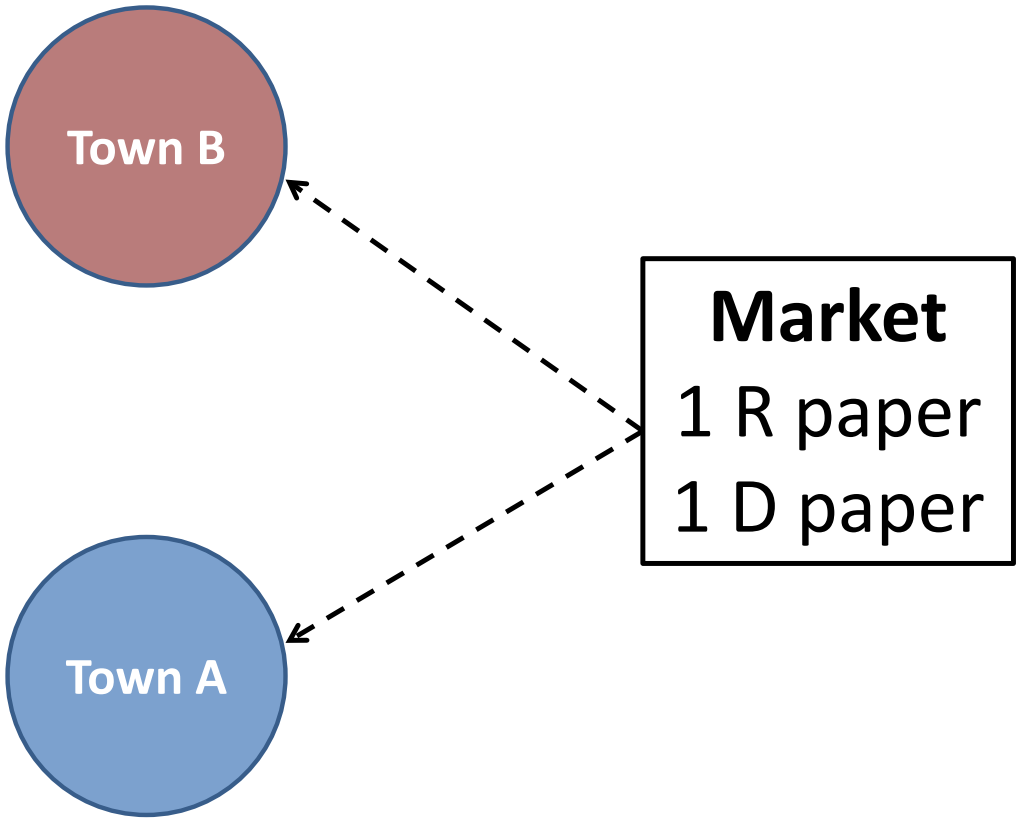
				Estab.	*Pages.*	*Size.*	*Sub.*	*Circ.*
HASTINGS †, (*Continued*)								
Record (*weekly edition of Evening Record*)	Thursday	Republican		1897	4	15×22	1.00	832
Mock Bros., Editors and Publishers.								
Republican	Evg. *ex. Sun*	Republican		1891	4	15×22	2.60	980
Republican	Saturday	Republican		1889	8	18×24	1.00	900
F. A. Watkins, Editor and Publisher.								
Tribune	Friday	Republican		1886	8	16×22	1.00	∗2,500
Adam Breed, Editor and Publisher.								
HAVELOCK, pop. *100 (H 4); Lancaster Co. (S.E.), pop. 76,395. 5 m. N. E. of Lincoln, nearest banking town. Burl. & Mo. Riv.; Chic., R. I. & Pac. R.Rs. Tel. Exp.								
Times	Saturday	Republican		1890	8	13×20	1.00	
E. W. Baughman, Editor and Publisher.								
HAYES CENTRE †, pop. (twp.) 333 (C 4); Hayes Co. (S.W.), pop. 3,953. 35 m. N.W. of McCook. Nearest railroad and tel. sta., Culbertson. Burl. & Mo. Riv. R.R. Exp. Banks. In a farming and grazing section.								
Hayes County Republican	Thursday	Republican		1885	8	15×22	1.50	950
M. J. Abbott, Editor and Publisher.								
Hayes County Times	Thursday	Non-partisan		1886	8	15×22	1.00	‡1,000
C. A. Ready, Editor and Publisher.								
HAY SPRINGS, pop. 378 (B 2); Sheridan Co. (N.W.), pop. 8,687. 12 m. W. of Rushville. Fremont, Elkhorn & Mo. Val. R.R. Tel. Exp. Banks. Has several flour and saw mills. Surrounded by a farming and grazing region.								
Leader	Friday	Populist		1889	4	17×24	1.00	500
E. E. Humphreys, Editor and Publisher.								
HEBRON †, pop. 1,502 (G 4½); Thayer Co. (S.), pop. 12,738. 120 m. S.W. of Lincoln. Burl. & Mo. Riv.; Chic., R. I. & Pac. R.Rs. Tel. Exp. Banks. Has good water power. Fine building stone in vicinity. In an agricultural and stock raising district.								
Journal	Friday	Republican		1871	8	15×22	2.00	850

Town-Level Circulation Data

- Circulation of daily newspapers in 1924 in 12,198 towns
  - Use to estimate demand system
- Supplement with detailed readership surveys for a small number of markets
  - Use to validate model predictions for overlap in readership

Descriptive Evidence

Demand for Partisanship



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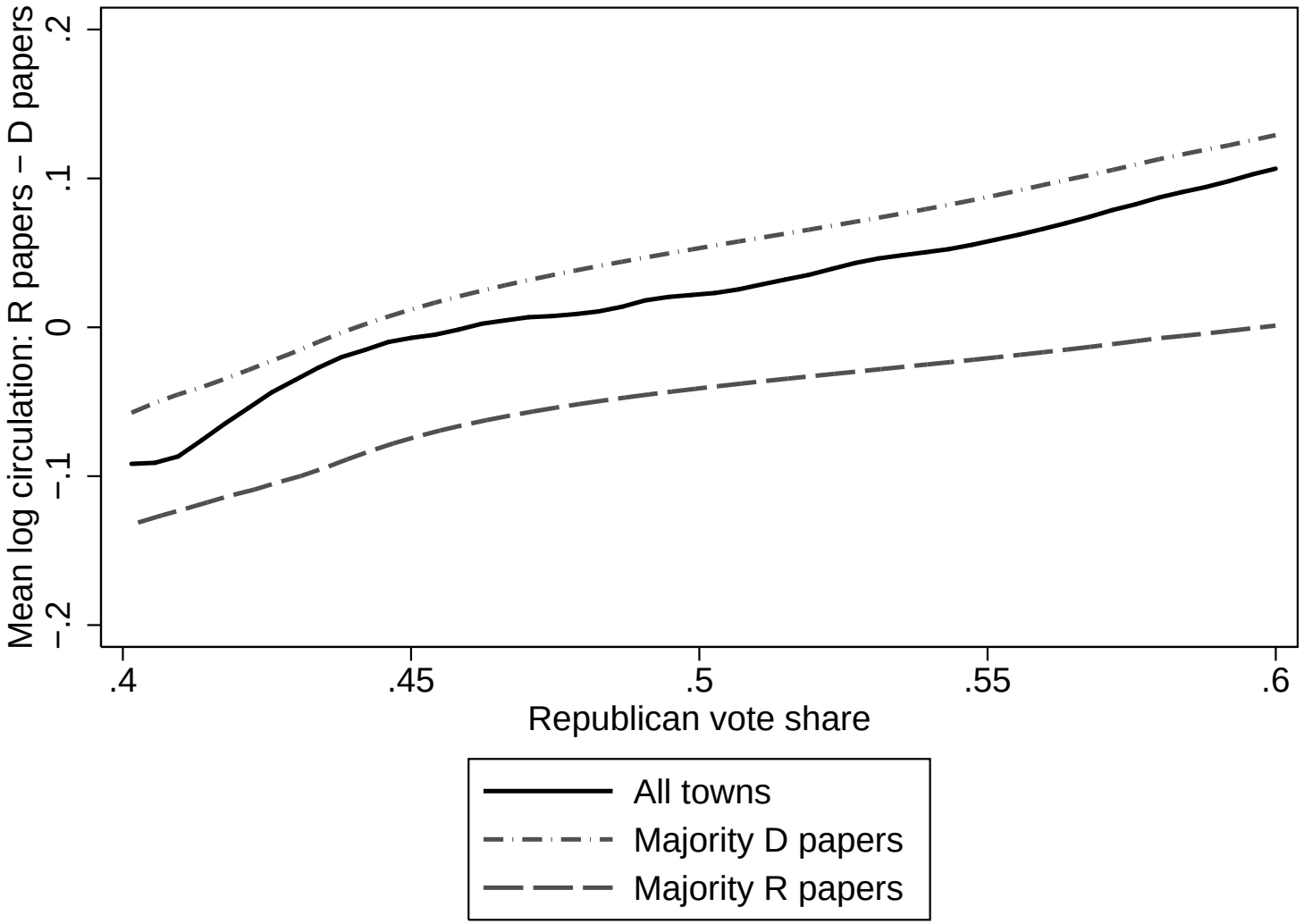
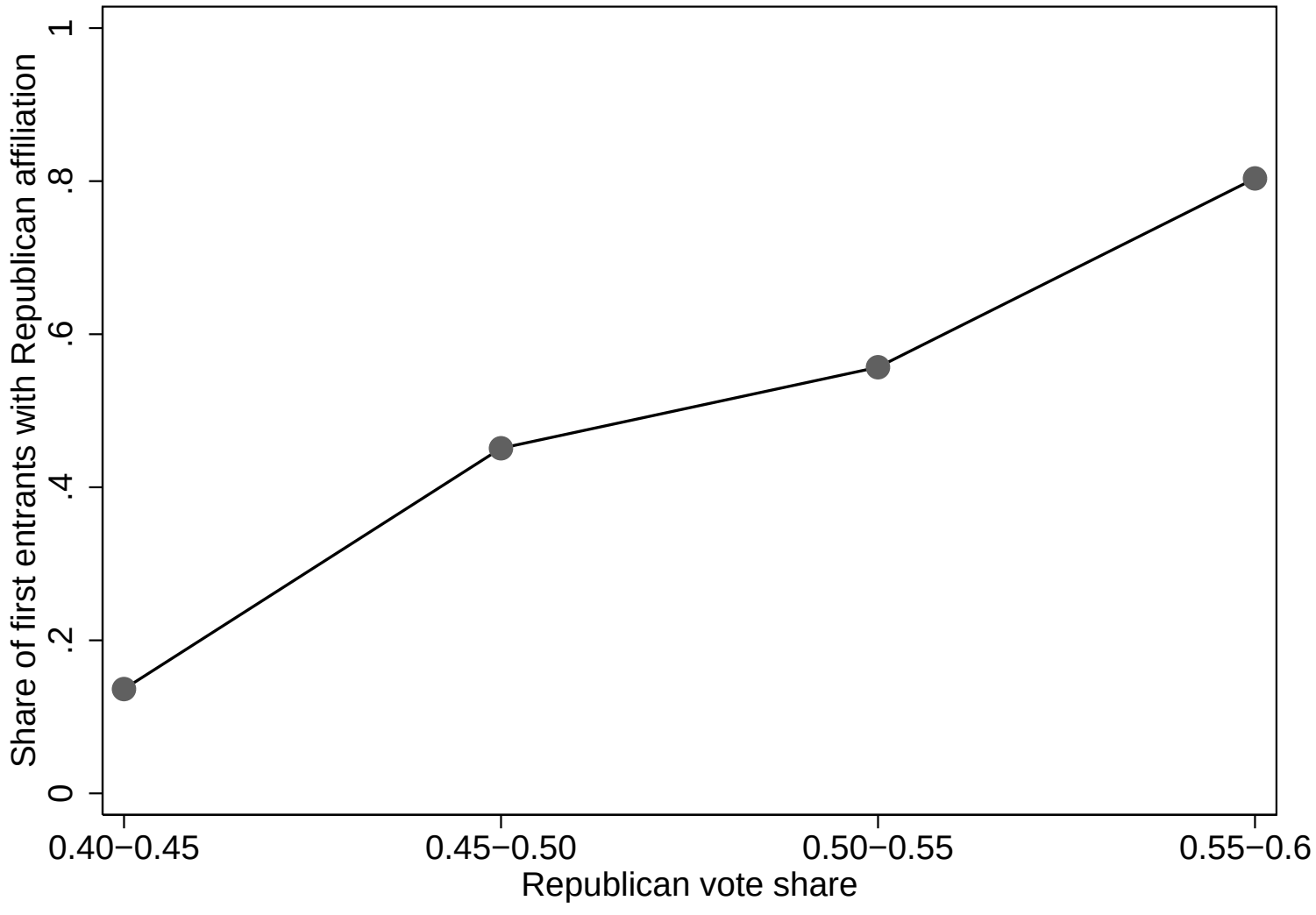
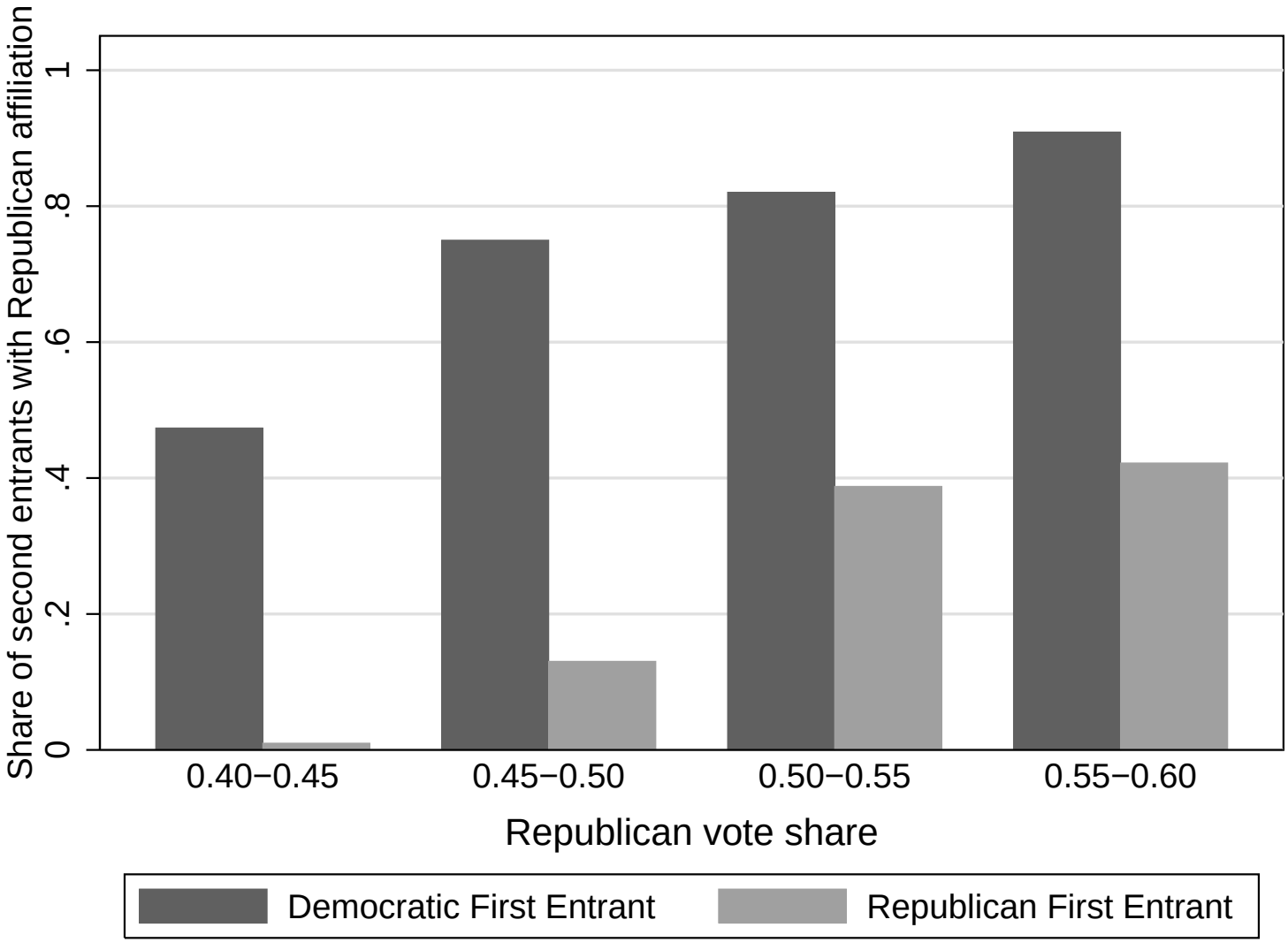


First Entrant Affiliation

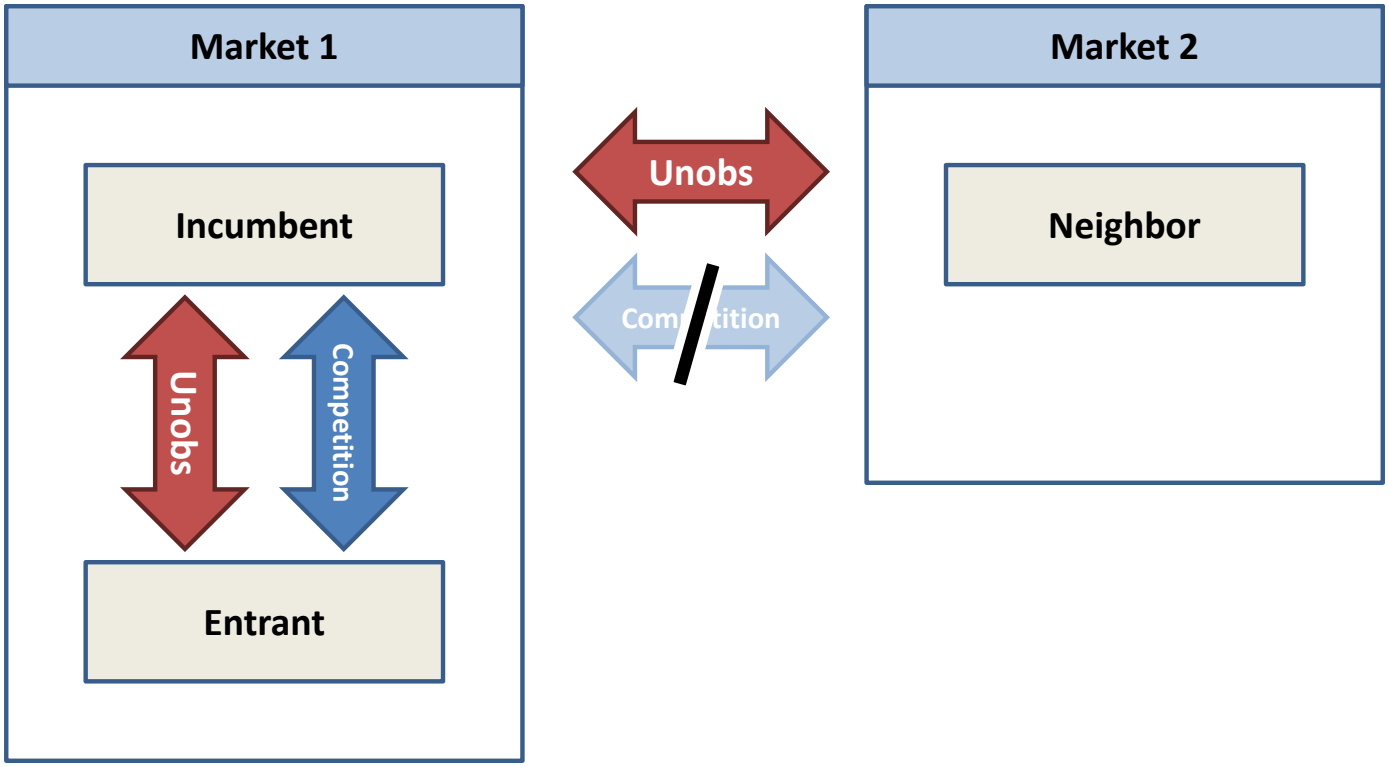


Second Entrant Affiliation



Identification

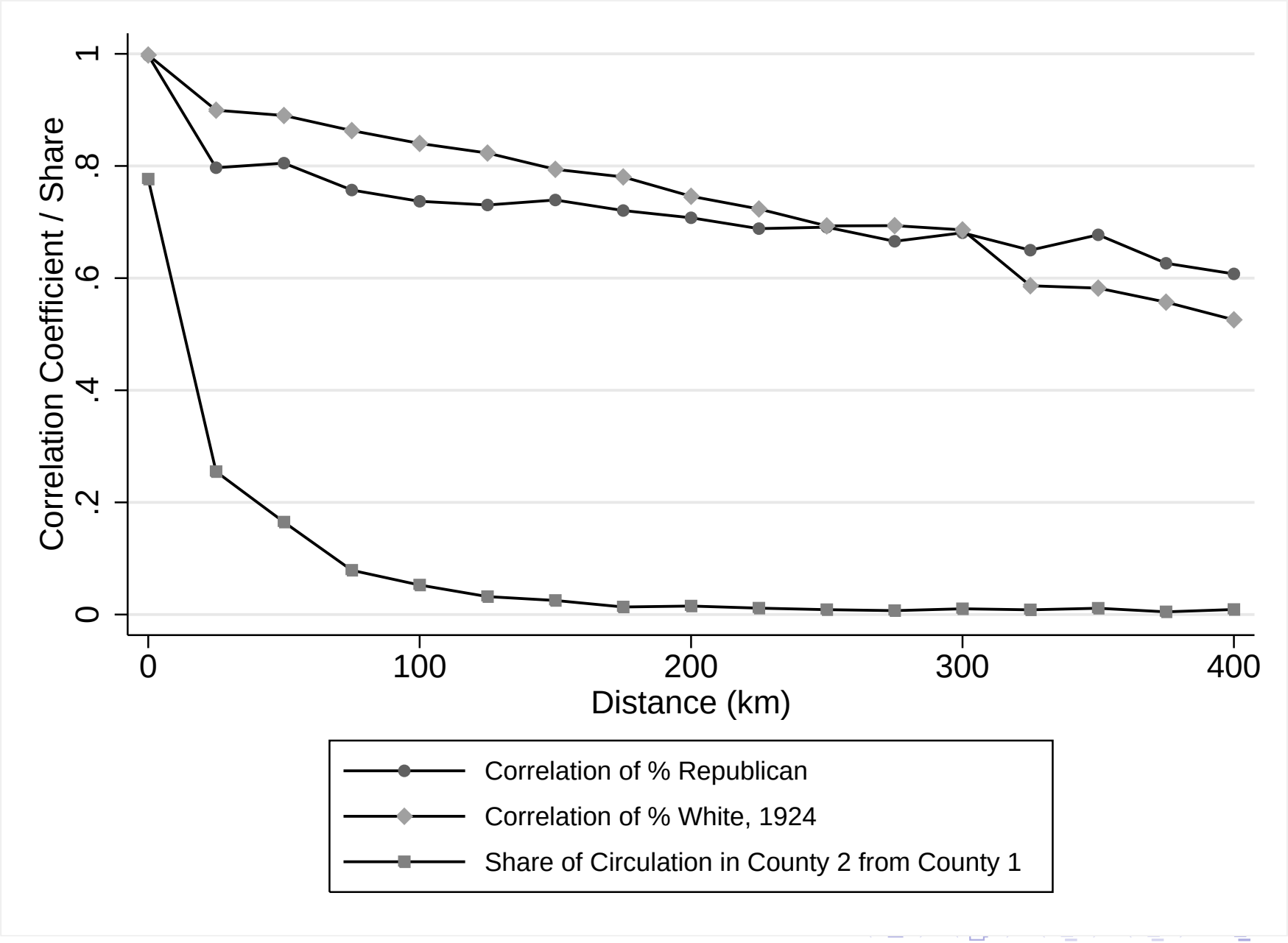
Separating Competition and Unobservables



Separating Competition and Unobservables

	Incumbent Affiliation	
	Democratic	Republican
Share of Entrants Choosing R		
Incumbent's Own Market	.50	.53
Neighboring Market	.33	.66

Spatial Correlation



Economic Model

Order of Moves

1. Entry decision
2. Sequential choice of affiliations
3. Simultaneous choice of prices
4. Simultaneous choice of ad rates
5. Households make purchase decisions
6. Profits realized

- Start at the end and work backwards...

Estimation

Econometric Assumptions

- Spatial strategy (both supply and demand)
  - Group towns / markets into spatially proximate pairs
  - Unobservable component of ρ correlated within pairs
  - Within-pair correlation the same for observable and unobservable components
- Infer price coefficient (α) from monopoly papers' FOC
- Calibrate monopoly ad rate and marginal cost using financial data
- Estimate via two-step maximum likelihood

Results

Key Demand Model Parameters

Price coefficient (α)	0.1802
	(0.0025)
Mean utility for different-affiliation paper ($\underline{\beta}$)	-0.1887
	(0.0592)
Mean utility for same-affiliation paper ($\overline{\beta}$)	0.7639
	(0.0664)
Substitutability between same-type papers (Γ)	0.2438
	(0.0561)

- Good fit to reduced-form facts
  - Key regression results
  - Average overlap: 19 percent (model) vs 16 percent (readership surveys)
  - Overlap greater between same-affiliation papers (also consistent with surveys)

Key Supply Model Parameters

Advertising revenue ($ per year) for:	
Exclusive reader (a_h)	13.2811
Non-exclusive reader (a_l)	6.5121
	(0.8944)
Standard deviation of affiliation cost shocks (σ_ξ)	0.1054
	(0.0874)

- Good fit to reduced-form facts
  - Key regression results
  - Average fixed cost: $8.87 (model) vs $7.56 (balance sheet data)
  - Fixed costs per capita decline slowly with market size (also consistent with balance sheet data)

Determinants of Diversity

	Markets with Diverse Papers	Share of Hhlds Reading Diverse Papers
Baseline	140	0.036

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Ignore household ideology	208	0.048

Determinants of Diversity

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Determinants of Diversity

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Baseline	140	0.036
When choosing affiliation:		
Ignore competitors' choices	87	0.022
Ignore household ideology	208	0.048
Ignore cost shocks (ξ)	106	0.030
Owners chosen at random from local households and newspaper type equals owner type	150	0.038

Equilibrium vs Social Planner

	Baseline	Social Planner: Post-Entry	Social Planner: Entry & Post-Entry
Multi-paper markets	249	249	1884
Avg. annual subscription price	6.22	0.33	0.78
Consumer surplus	3.35	6.87	19.55
Firm+advertiser profit	0.91	2.78	-9.53
Total surplus	4.26	9.65	10.02
Markets w/ diverse papers	140	182	1590
Hhlds reading diverse papers	3.6%	12.3%	53%

- No conflict between traditional economic welfare and ideological diversity
  - Entrants don't internalize full benefit to consumers (Spence 1975)
  - Business-stealing externality (Mankiw and Whinston 1986) small due to overlap

Competition Policy

	Baseline	Allow Price Collusion	Allow JOAs
Multi-paper markets	249	277	465
Avg. annual subscription price	6.22	7.92	6.83
Consumer surplus	3.35	2.96	4.25
Firm profit	0.40	0.41	0.58
Advertiser profit	0.51	0.41	0
Total surplus	4.26	3.77	4.83
Markets w/ diverse papers	140	151	282
Hhlds reading diverse papers	3.6%	2.8%	6.8%

- Effects of competition policy depend on two-sidedness
  - Advertising collusion lowers prices and spurs entry
  - Collusion increases social surplus (even before accounting for externalities)

Ownership Regulation

	Baseline	Allow Joint Ownership
Multi-paper markets	249	167
Avg. annual subscription price	6.22	6.37
Consumer surplus	3.35	2.87
Firm profit	0.40	0.89
Advertiser profit	0.51	0
Total surplus	4.26	3.76
Markets w/ diverse papers	140	94
Hhlds reading diverse papers	3.6%	2.2%

Subsidies

- Newspaper subsidies common around the world
- Focus on two specific policies
  - Fixed cost subsidy for second and later entrant modeled after policy in Sweden
  - Marginal cost subsidy for all papers modeled after US postal subsidies

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  - Marginal cost subsidy for all papers modeled after US postal subsidies
- Key conclusion: Optimal marginal cost subsidy qualitatively similar to allowing advertising collusion, with quantitatively bigger gains
  - Total surplus \$4.26 $\rightarrow$ \$6.60
  - % reading diverse papers 3.6% $\rightarrow$ 21%

Conclusion

- Key qualitative findings:
  1. Competition is a key driver of diversity
  2. No tradeoff between economic and political policy goals
  3. Policy evaluation depends crucially on two-sided market effects