MEDIA COMPETITION AND THE SOURCE OF DISAGREEMENT

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MAIN QUESTION

How does **competition** among information providers affect the efficiency of electoral outcomes?

A **classic** view

- Beneficial effects: A competitive *marketplace for ideas*.

A **modern** critique

- Effects of competition not so obviously beneficial.

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MAIN RESULT

We identify a novel channel through which market fails.

Our Main Result:

> As competition increases, the equilibrium share of votes going to the socially optimal candidate decreases.

In our model:

(*a*) Agents are Bayesian utility maximizer.

(*b*) Information Providers are profit maximizers.

OVERVIEW

Agents seek to learn how two political candidates compare on several **issues**.

Agents may **disagree** on:

1. Which issues are important to them. (*agenda*)
2. How each issue in their agenda should be addressed. (*slant*)

OVERVIEW

- Competition forces firms to **differentiate** the *type* of information they produce.
- Differentiation leads to more information on issues where there is higher **disagreement** in the electorate.
- Voters become **individually** better informed.
- Yet, the share of votes going to the socially optimal candidate decreases.

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MODEL

PRIMITIVES

- Two ex-ante unknown **candidates** (A and B) running for office.
- Focus on *relative* comparison $\boldsymbol{\theta}$.
- Two components: $\boldsymbol{\theta} := (\theta_v, \theta_{id}) \sim \mathcal{N}\big(0, I_2\big)$. (Common Prior)
- Continuum of **agents**, $t \sim \mathcal{U}(T)$ with preferences

$$u(\boldsymbol{\theta}, t) := \quad \lambda\, \theta_v + (1-\lambda)\, f(\theta_{id}, t)$$

Preferences on θ_v are homogeneous. *Valence* (Stokes, 1963).
Preferences on θ_{id} are heterogeneous. *Ideology* (Downs, 1957).

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VOTERS HETEROGENEITY REVISITED

In this paper, we want f to generate a **richer** space of heterogeneity.

We allow ideology θ_{id} to be multi-dimensional: $(\vartheta_1, \vartheta_2)$.

We want to capture two **key aspects**:

(*Slant*) Voters disagree on whether more ϑ_k is good?

(*Agenda*) Voters disagree on what's more important: ϑ_1 vs ϑ_2.

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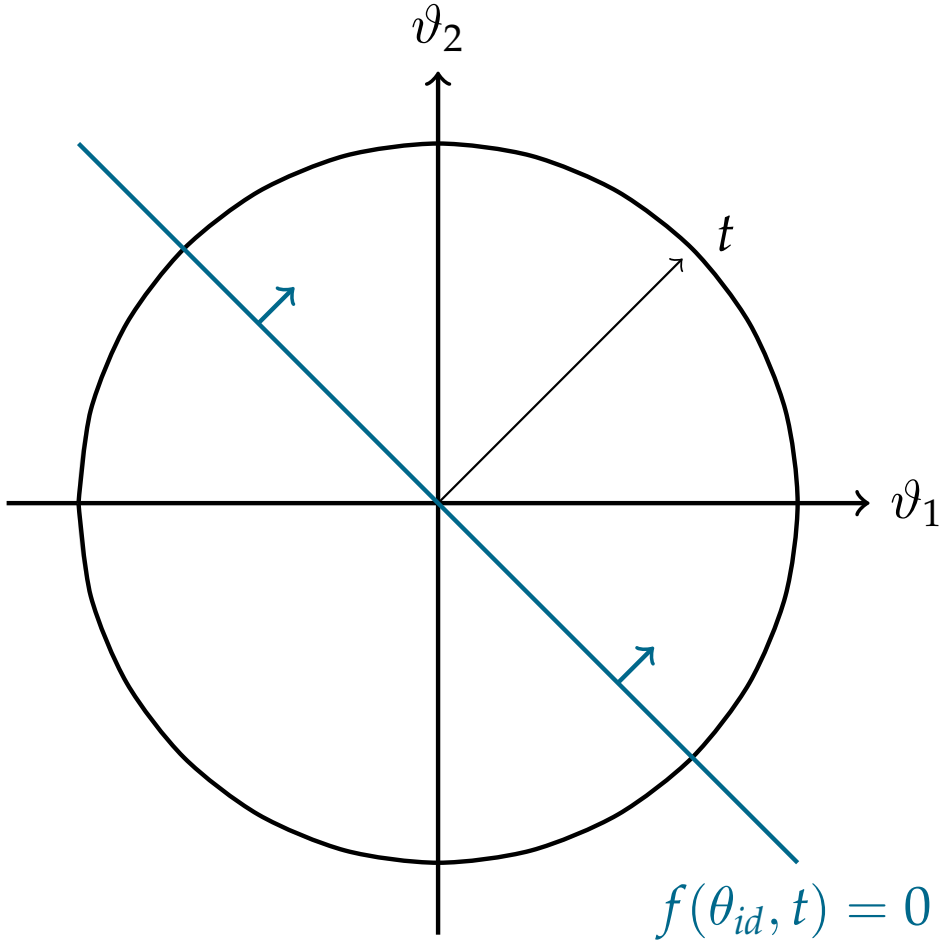
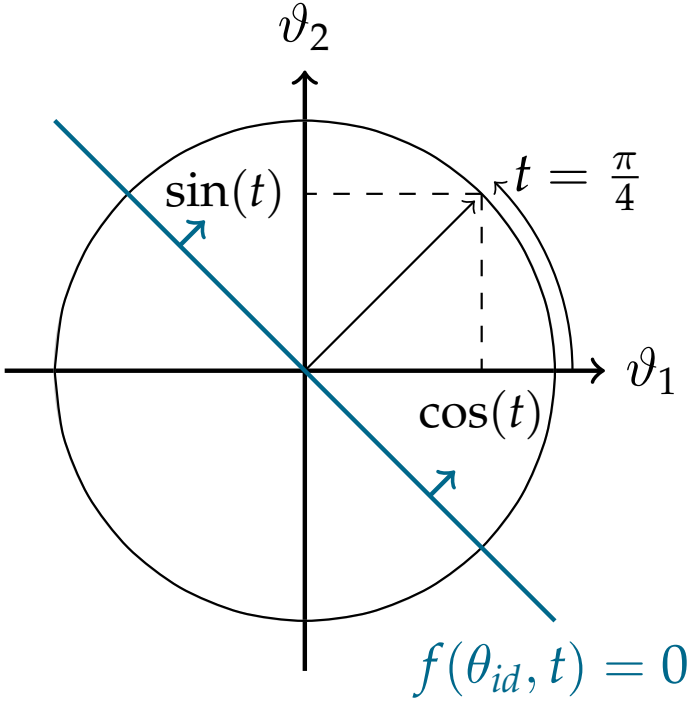


VOTERS HETEROGENEITY REVISITED

We assume that $\theta_{id} := (\vartheta_1, \vartheta_2)$.

Type space is $T := [-\pi, \pi]$.



Ideological preferences are defined as follows:

$$f(\theta_{id}, t) := \vartheta_1 \cos(t) + \vartheta_2 \sin(t)$$

VOTERS PREFERENCES

Summing up:

$$u(\boldsymbol{\theta}, t) := \lambda\, \theta_v + (1 - \lambda)\, f(\theta_{id}, t).$$

Convenient features:

1. *Ideological Distance*: $\rho_t(t') = \cos(t - t')$.
2. Spatial model.
3. Polarization.

EFFICIENCY

Social planner maximizes total welfare.

That is, she chooses

$$r^{SP}(\boldsymbol{\theta}) = \begin{cases} A & \text{if } \frac{1}{2\pi}\int_T u(\boldsymbol{\theta}, t)dt > 0 \\ B & \text{else.} \end{cases}$$

PROPOSITION 1 (First Best): Planner selects candidate A iff $\theta_v > 0$.

INFORMATION PROVIDERS

Information providers produce two signals on θ_v and θ_{id} that agents can acquire.

Constraints:

1. *Precision* is bounded.
2. *Coverage* is bounded.

Strategy space:

$$\textit{Precision}\text{: } \tau \in [0,1] \qquad \textit{Location}\text{: } x \in T$$

Two *independent* signals:

$$s_{\mathrm{v}} \sim \mathcal{N}\left(\theta_v, \tau^{-1}\right) \quad \text{and} \quad s_{\mathrm{id}} \sim \mathcal{N}\left(f(\theta_{id}, x), (1-\tau)^{-1}\right).$$

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VOTER'S PROBLEM

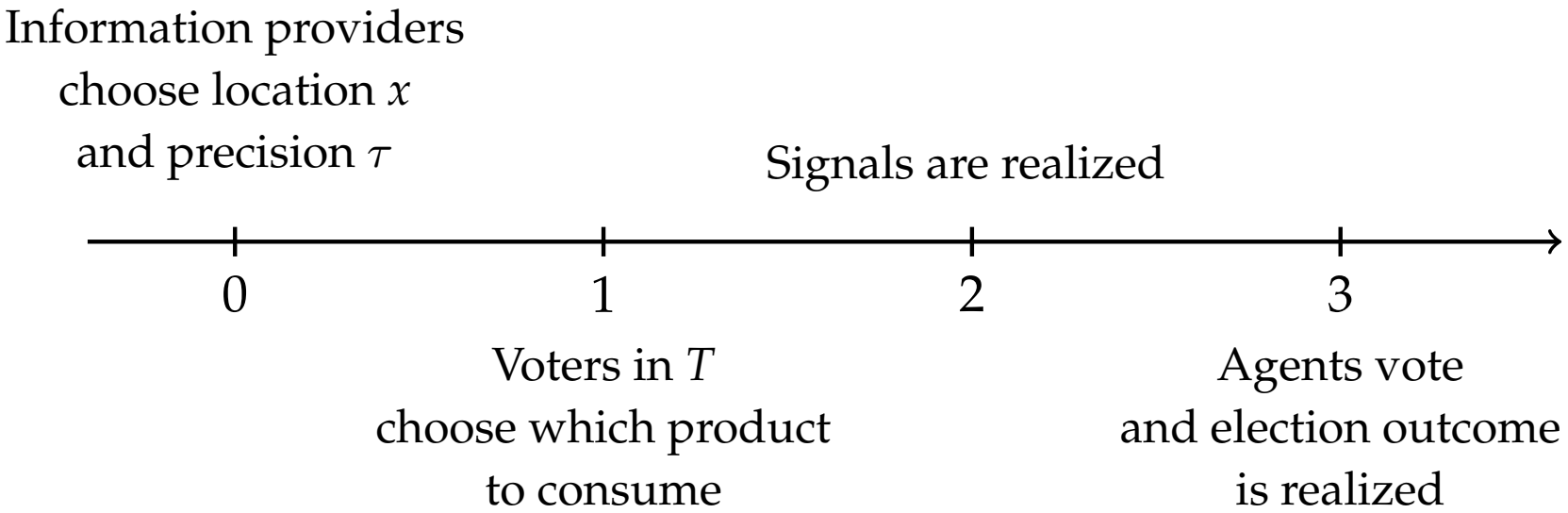
Agents vote **sincerely**.

Value of information (τ, x) for type t is $V(\tau, x \mid t)$.

Agents acquire *the* information structure with highest value.

▸ Robustness

TIMELINE

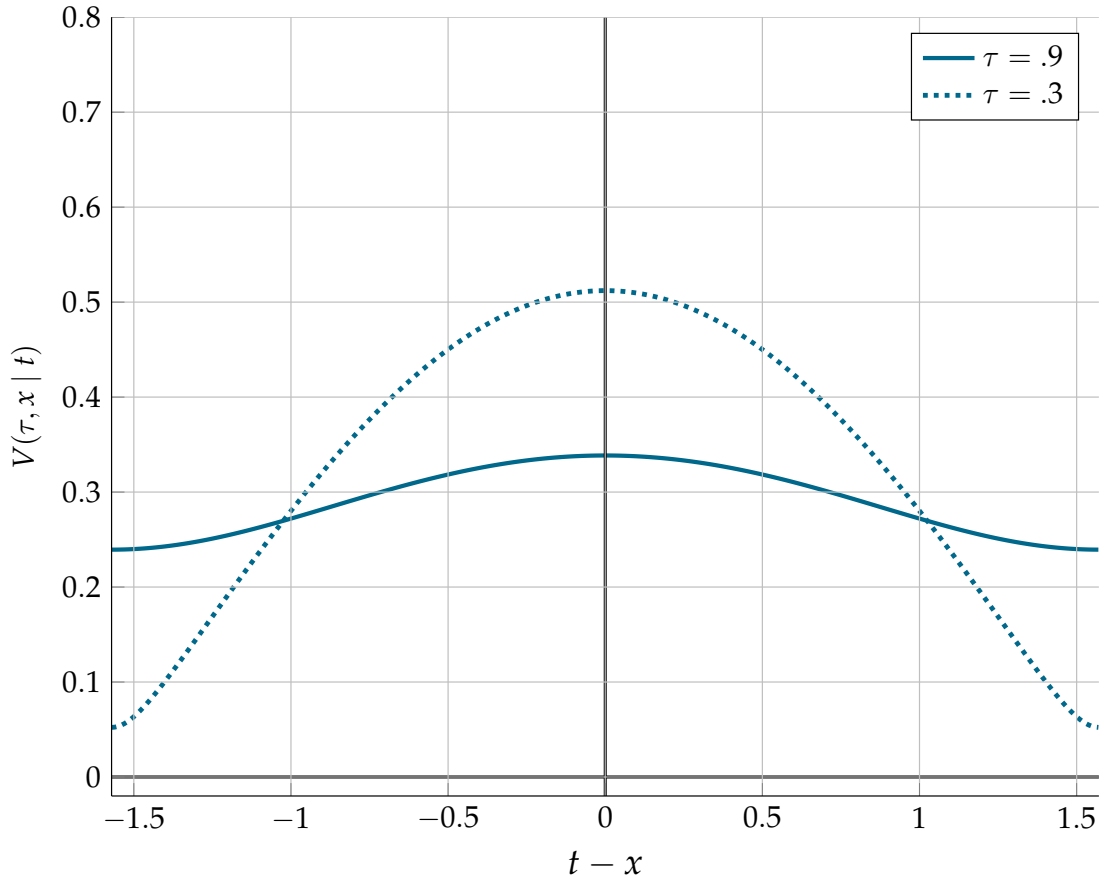

Information providers
choose location x
and precision τ
Signals are realized
0
1
2
3
Voters in T
choose which product
to consume
Agents vote
and election outcome
is realized

EQUILIBRIUM

VALUE OF INFORMATION

LEMMA 1: Value of information (τ, x) for type t:

$$V(\tau, x|t) := \sqrt{2/\pi}\ \ \sigma(\tau, x|t)$$



VALUE OF INFORMATION

$$\sigma^2(\tau, x|t) = \lambda^2 \boxed{g(\tau)} + (1-\lambda)^2 \boxed{\cos^2(t-x)g(1-\tau)}$$

– *Valence* works as **public** good.

It increases value for *all* voters.

– *Ideology* works as **local** good.

It increases value for *closeby* voters.

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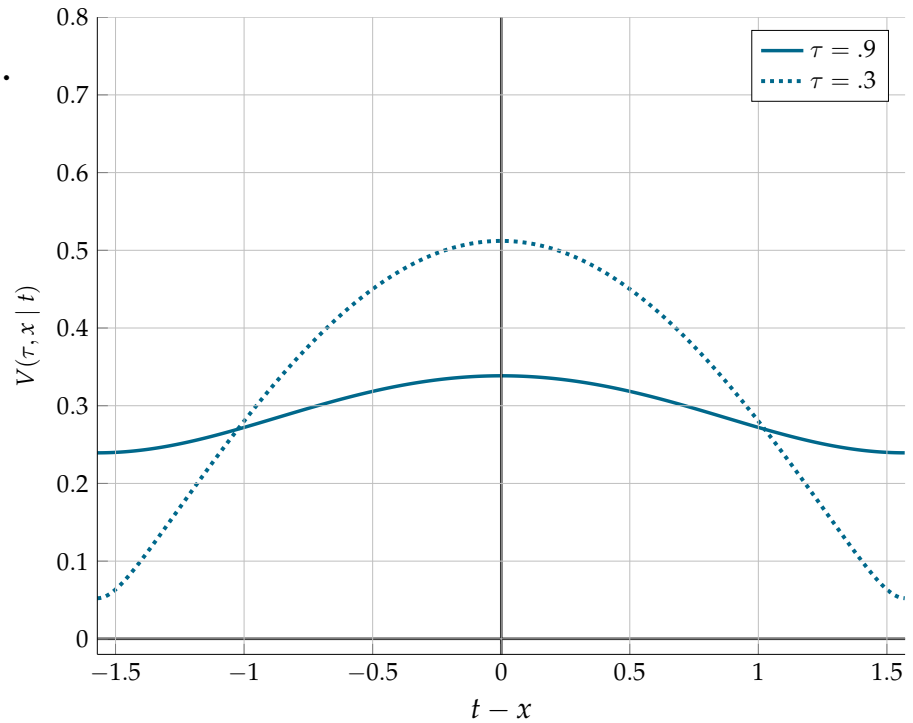


INFORMATION PROVIDER'S PROBLEM

Information providers simultaneously maximize **market capture**.

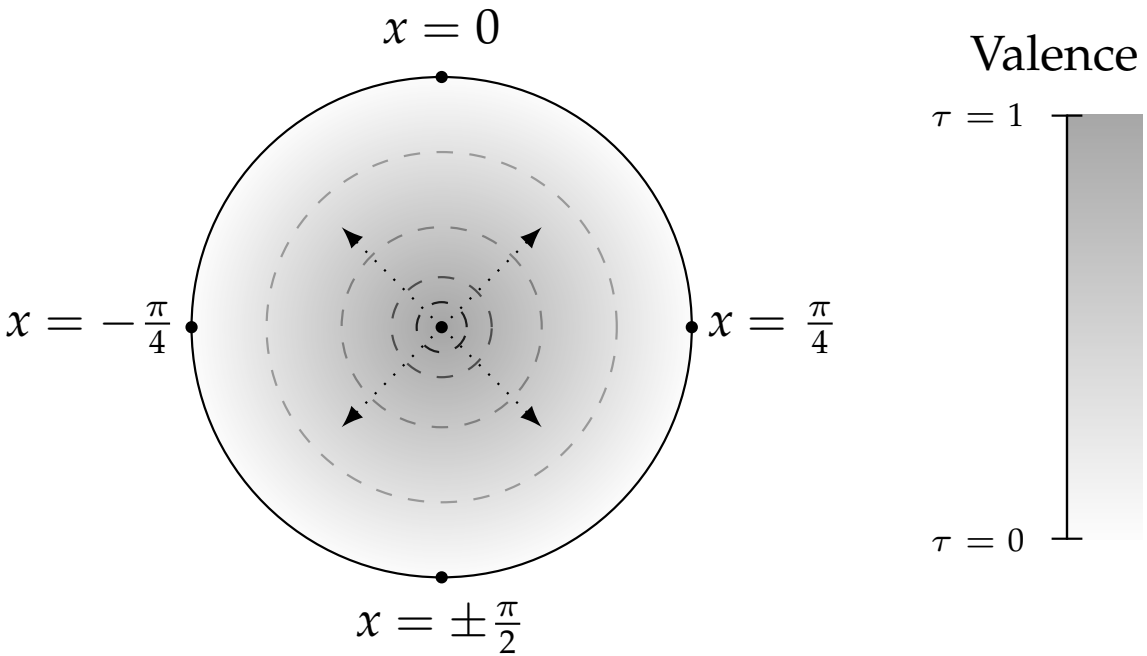
▸ Prices

DEFINITION 1:

A Nash equilibrium $(\boldsymbol{\tau}, \boldsymbol{x})$ is **symmetric** if:

- For all $i \in N$, $\tau_i = \tau^\star$.
- Firms are located equidistantly in T.

INFORMATION PROVIDER'S PROBLEM



RESULTS

EQUILIBRIUM

PROPOSITION 2:
There exists a symmetric Nash equilibrium $(\boldsymbol{\tau}^\star, \boldsymbol{x}^\star)$.
For $n > 2$, it is unique* in the class of symmetric equilibria.

PROPOSITION 3:
As n increases, firms become less informative on valence, i.e. $\tau^\star$ decreases.

Intuition: As n increases,

- Your market shrinks.
- And becomes more homogeneous.

EQUILIBRIUM

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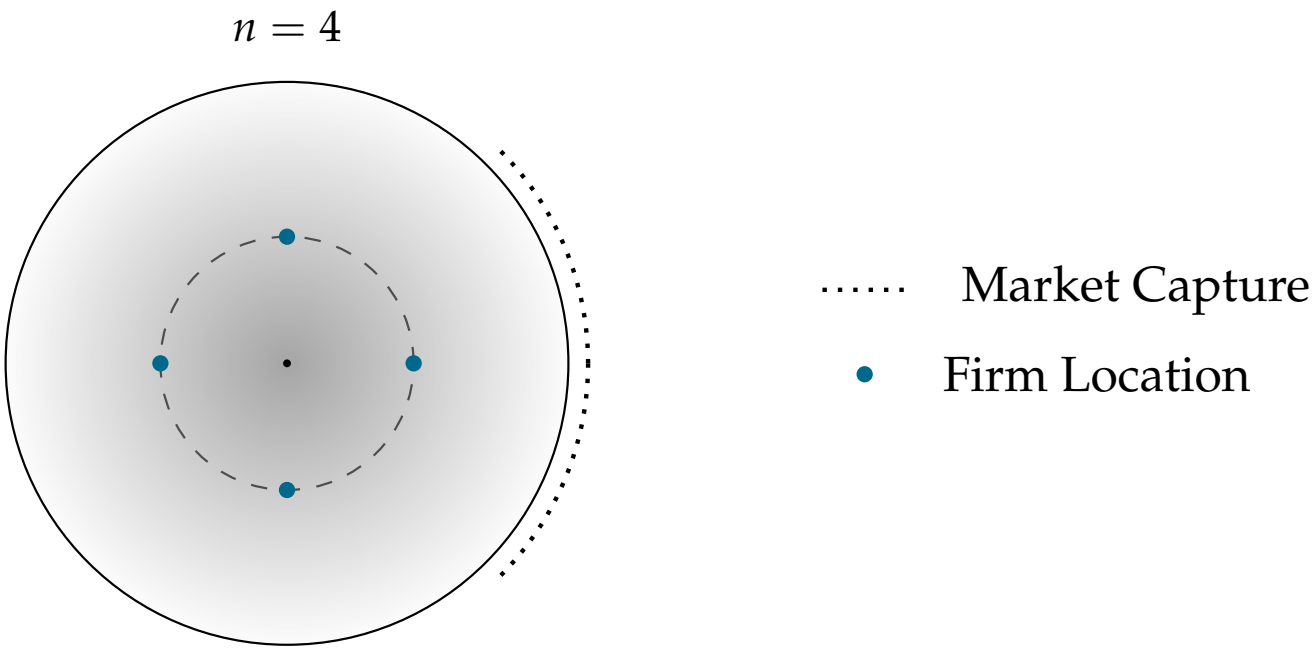

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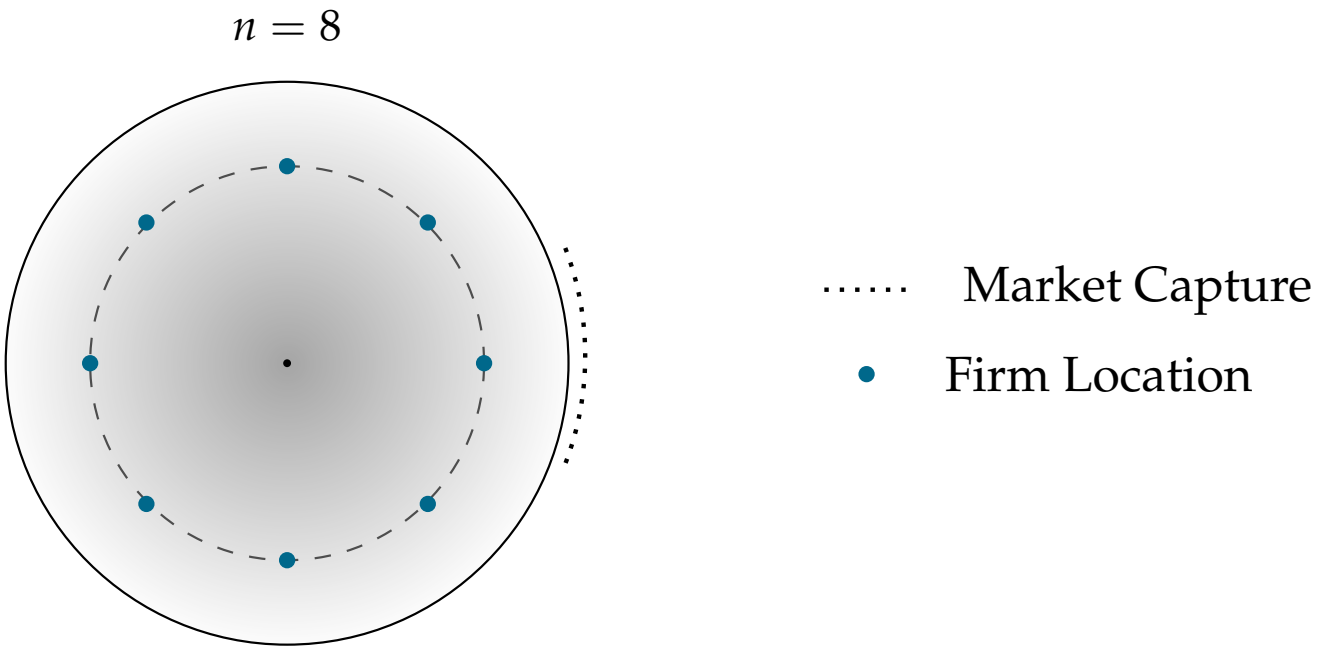


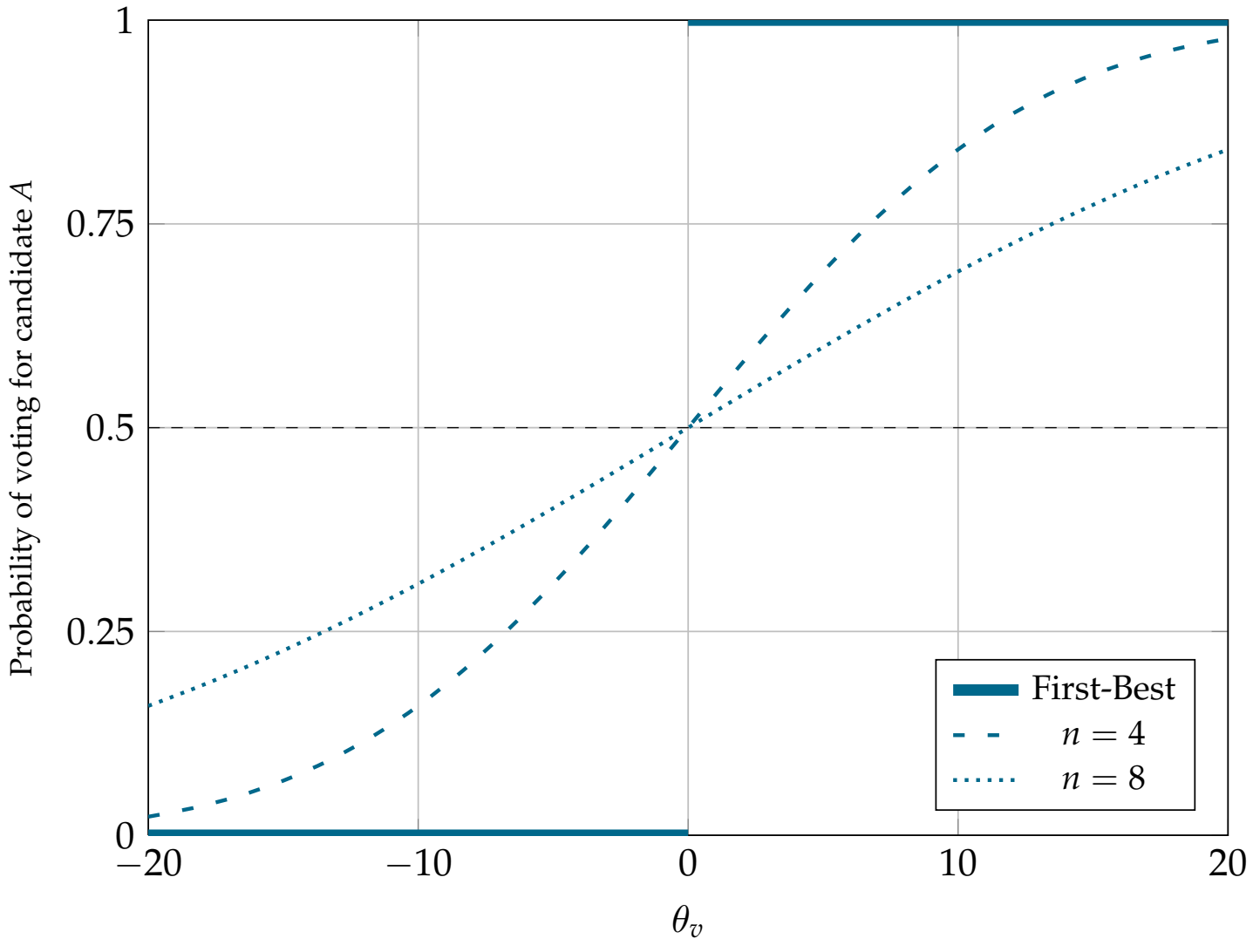
INDIVIDUAL VOTING BEHAVIOR

What is the effect of competition on **individual** behavior?

PROPOSITION 3: As n increases,

- Voters become individually *more informed*.
- The voting behavior of each type becomes increasingly *ideological*.
- The voting behavior of each type becomes increasingly uncorrelated with the first best.

INDIVIDUAL VOTING BEHAVIOR



AGGREGATE VOTING BEHAVIOR

What is the effects of competition on **aggregate** behavior?

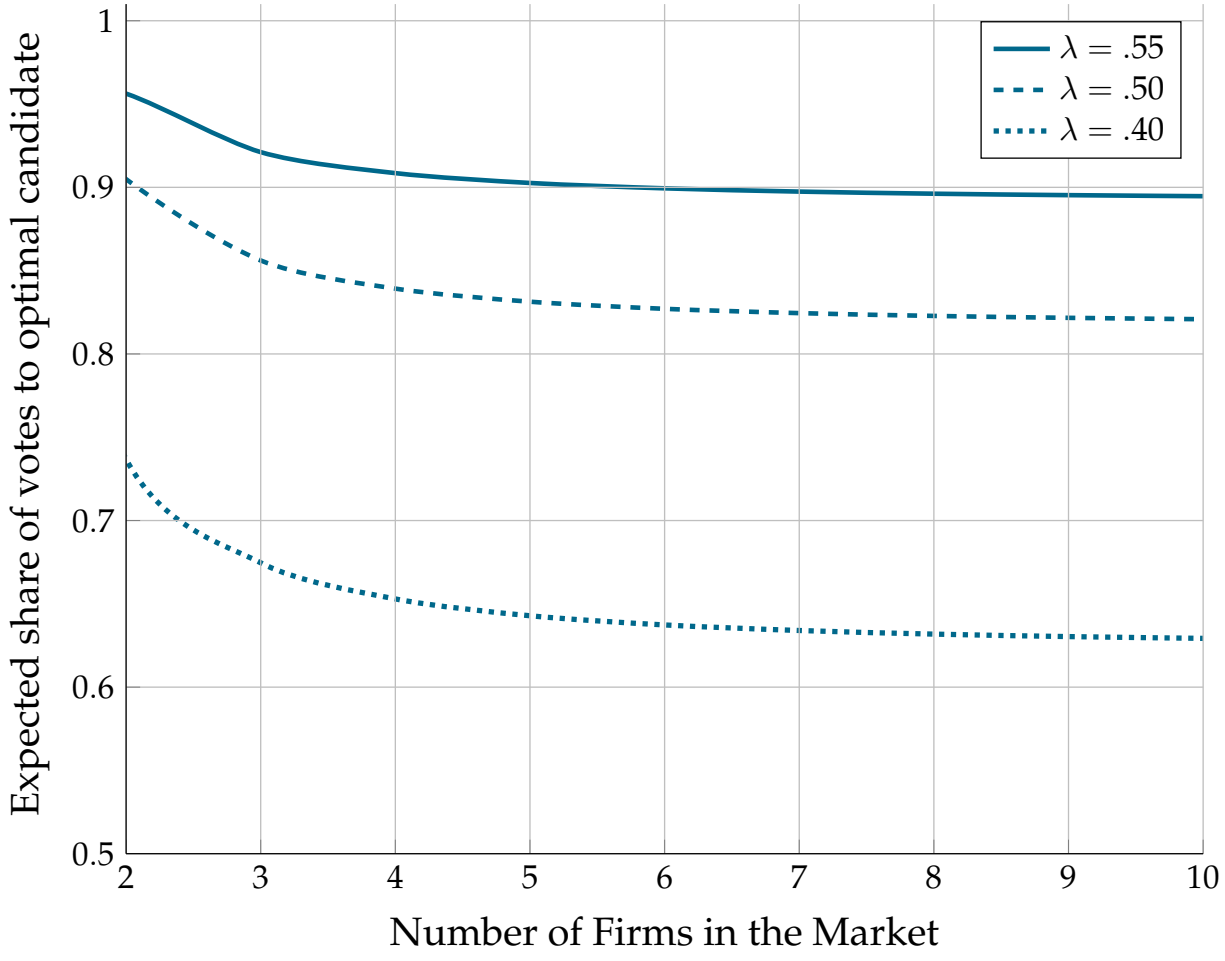
PROPOSITION 4:

As competition increases, the share of votes received by the socially optimal candidate decreases.

PROPOSITION 5:

For all n, preference polarization magnifies this inefficiency.

AGGREGATE VOTING BEHAVIOR



CONCLUSION

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We studied a model in which competition leads to **welfare loss**.

- Competition leads to differentiation.
- Differentiation leads to more *ideological* voting.

Not quite a market failure.

- As n increases, voters get what they want.
- Competition does not create, but simply *uncovers* the heterogeneity in voters' preferences.
- Media serve as a *driver* for disagreement.

Market Capture

Motivations:

1. Price competition generally highly regulated.
2. Price for political news is often negligible. Rather than price, content.
3. Price competition would set an even stronger case for differentiation.

Back

Robustness

Discussion:

- Robust to strategic voting.
- Robust to consumption of a finite number of new sources.
- Continuum of voters and simple value of information.

Back