Targeted Advertising in Elections

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March 28, 2022

MOTIVATION

- **Targeted Advertising** was an important part of winning campaigns in recent U.S. Presidential Elections:
  - **2016 Trump**: used voter data from Cambridge Analytica
  - **2008 Obama**: first social media campaign
  - **2000 Bush**: targeting voters by mail

CAN TARGETED ADVERTISING SWING ELECTIONS? $\rightarrow$ Yes

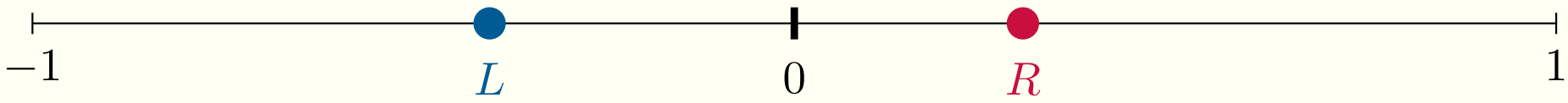
THIS PAPER

- with targeted advertising, politicians can win elections which they 100% lose otherwise
- odds of winning increase as voters become more extreme / electorate becomes more polarized

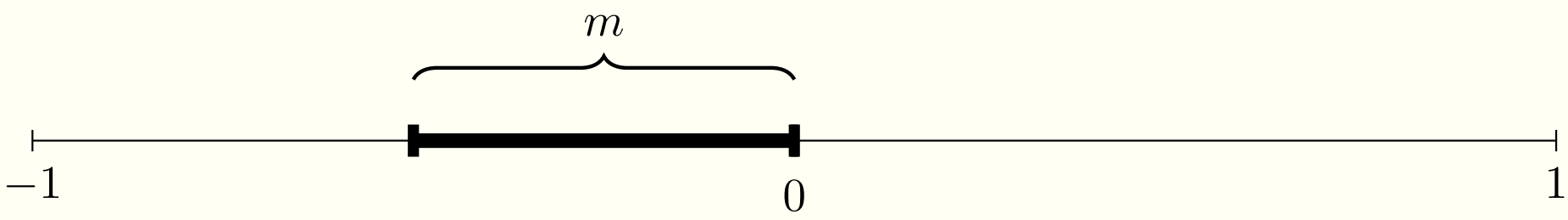
BASELINE MODEL

BASELINE MODEL SETUP

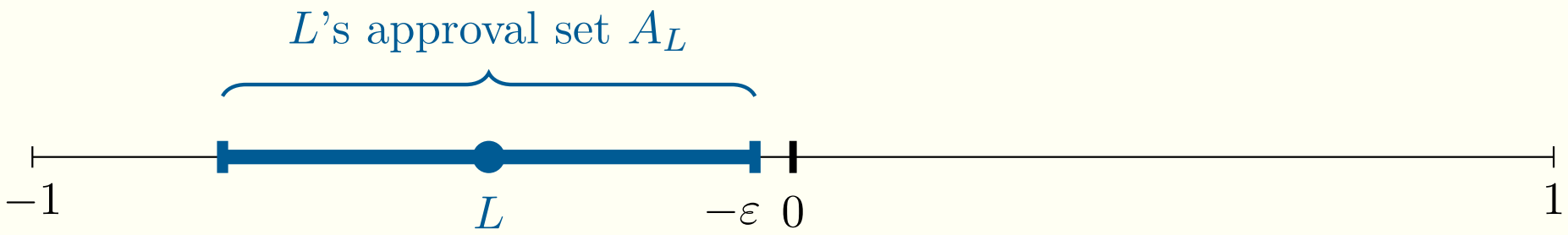
- policy space $X := [-1, 1]$
  - policies range from far left (-1) to far right (1)
- status quo policy is 0 (fixed and known)
- players:
  - politician who challenges status quo (challenger)
  - two voters, L and R, with $L < 0 < R$



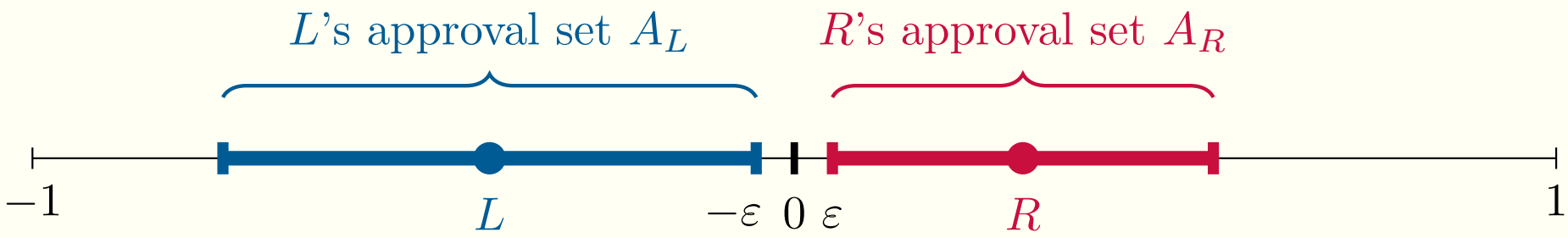
- **challenger (he/him)**
  - ◇ privately observes his policy $x \in [-1, 1]$
    - x drawn from common prior $p > 0$ over $[-1, 1]$
  - ◇ gets 1 if both voters approve, 0 otherwise
    - office-motivated, preferences do not depend on x
  - ◇ privately advertises his policy to voters
    - message m is subset of policy space, $x \subseteq [-1, 1]$
    - cannot send m if $x \notin m$
    - example: $m = \left[-\frac{1}{2}, 0\right]$, "*my policy is moderately left*"



- **voter $v \in \{L, R\}$ (she/her)**:
  - chooses to approve challenger's policy, or to reject it
  - her approval set is $A_v := \{x \in [-1, 1] \text{ s.t. } |v - x| \leq |v| - \varepsilon\}$
    - approves policies that are closer than status quo to v by at least ε
    - $\varepsilon > 0$ is status quo bias



UNWINNABLE ELECTION



Lemma 1

L and R never both vote to approve challenger's policy under common belief

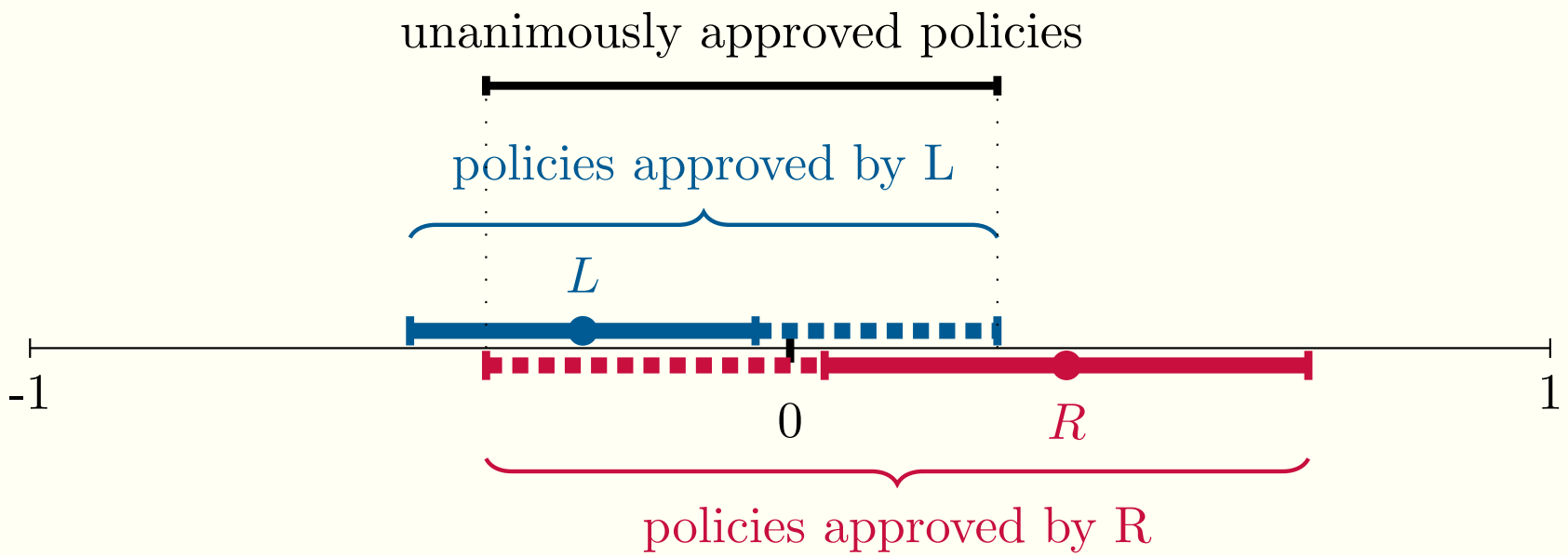
- this election is unwinnable for challenger *without targeted advertising*
  - e.g. with no advertising or with public advertising

BASELINE MODEL: RESULTS

Proposition 1: Swinging Unwinnable Elections

In challenger-preferred PBE,

- each voter approves an interval of policies
- an interval of sufficiently moderate policies is approved unanimously
- challenger's odds of winning are strictly positive

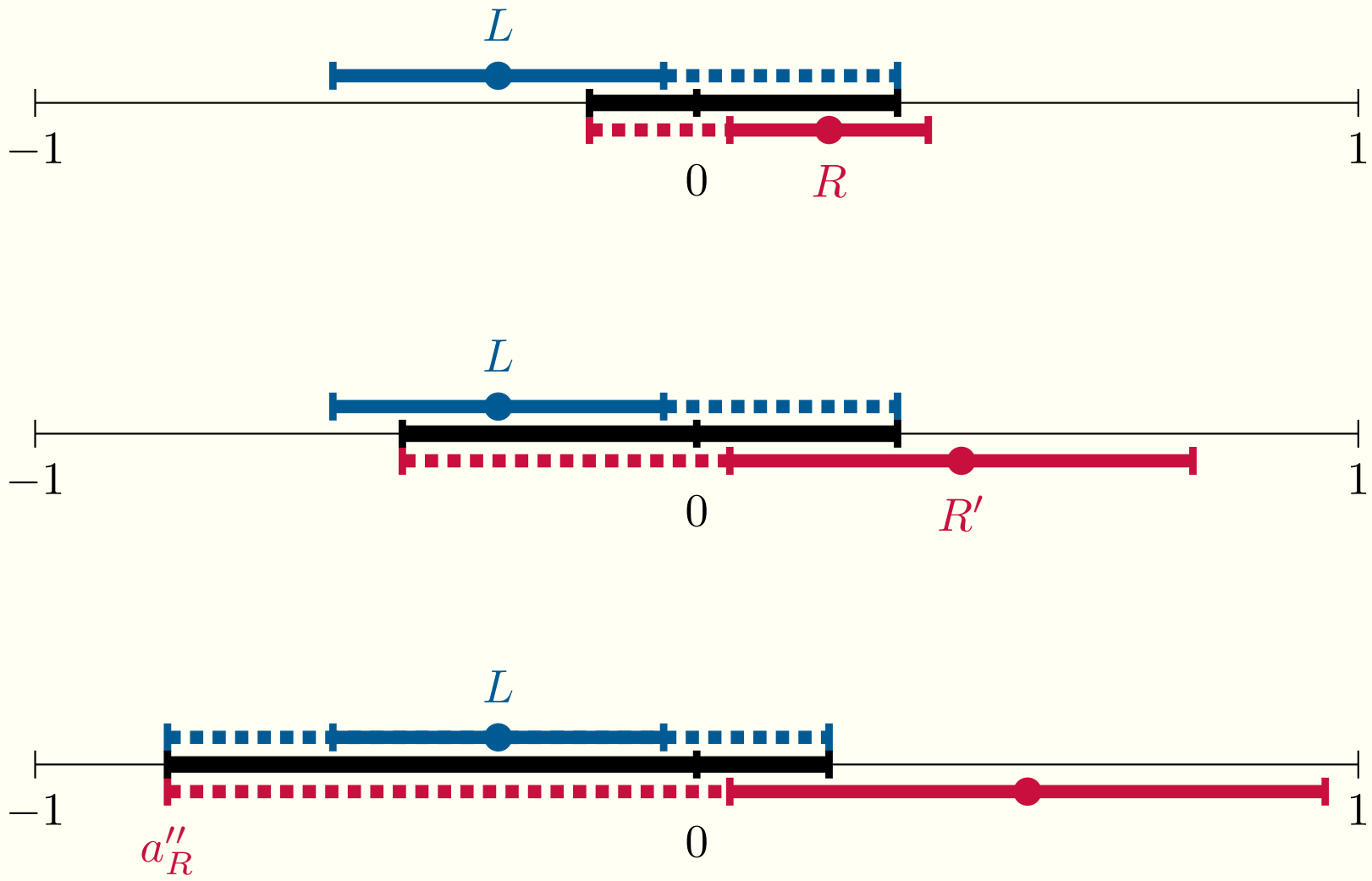


- voter $v \in \{L, R\}$ becomes more extreme if $|v|$ increases
- electorate becomes more polarized if R increases and/or L decreases

Proposition 2: Comparative Statics

Challenger's odds of winning increase as electorate becomes more polarized.

Comparative statics: Illustration



EXTENSIONS

- strategic voting
  - ◇ sincere voting is weakly dominant if there is uncertainty about electorate
- other communication protocols
  - ◇ partial verifiability of messages OR (some) commitment power
- strategic incumbent
  - ◇ (negative) public ads by incumbent
- more voters
  - ◇ L and R are jointly pivotal $\Longrightarrow$ election is unwinnable
- 2+ dimensional policy space

CONCLUSION

- targeted advertising changes electoral outcomes
- challenger's odds of winning increase if electorate becomes more polarized

Thank You!