Bandwagons in Costly Elections: The Role of Loss Aversion

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Introduction

- Election outcome determinants $\Rightarrow$ Voters' **preferences** or/and **beliefs**?
- Expectations matter $\Rightarrow$ the theory predicts an **Underdog effect** *(Palfrey and Rosenthal, 1985; Herrera et al., 2014)*
- The supporters of the expected winner have lower participation rates than the supporters of the candidate who is expected to lose

Do real-world candidates act against their own interests when trying to convince the electorate about their superiority in pre-election polling?

Introduction

Several empirical and experimental evidence ⇒ Bandwagon effect

(Irwin and Van Holsteyn, 2000; Klor and Winter, 2007; Großer and Schram, 2010; Morton et al., 2015; Agranov et al., 2018)

Potential explanations:

- Desire to vote for the winner *(Agranov et al., 2018; Morton and Ou, 2015)*
- Other-regarding preferences *(Morton and Ou, 2015)*
- Risk aversion *(Grillo, 2017)*

Loss Aversion

Agranov et al. (2018) and Herrmann et al. (2019) rule out loss aversion ⇒ **Exogenous reference points**

Our model

- **Expectation-based reference points** (Koszegi and Rabin, 2006)
- Loss aversion is a force pushing for bandwagons

  Supporters of the expected winner ⇒ high payoff as a reference point ⇒ abstention endangers a large loss
- When voters are sufficiently loss averse and the society is large, then bandwagons may emerge in equilibrium

Model

- Majority rule
- The size of the electorate is uncertain but finite
  Poisson distribution with mean $N > 0$
- Two political parties, A and B
- Citizens' Preferences (exogenous)

$$\text{Each citizen} \Rightarrow \begin{cases} \text{type } A \text{ with a probability } \phi \in \left(0, \frac{1}{2}\right) \\ \\ \text{type } B \text{ with a probability } (1-\phi) \end{cases}$$

Model

- Payoffs $\Rightarrow \begin{cases} \text{Winner's supporters} \rightarrow 1 \\ \text{Loser's supporters} \rightarrow 0 \\ \text{Tie} \rightarrow \frac{1}{2} \end{cases}$

- Citizen's actions $\Rightarrow$ Vote for party A, party B or abstain

- Cost of voting c_i $\Rightarrow$ uniform distribution F with support $[0, 1]$

- Individual's preferences and voting costs are private knowledge, but their distributions are common knowledge

Reference dependence (Koszegi and Rabin 2006)

Overall utility = Actual utility + Gain-loss utility

- Actual utility = payoff − cost

- Gain-loss utility

$$\mu(x) = \begin{cases} \eta x, & \text{if } x \geqslant 0 \\ \eta \lambda x, & \text{if } x < 0 \end{cases},$$

where $\eta > 0$ is the weight attached to the extra gain or loss

$\lambda > 1$ is the coefficient of loss aversion

x = actual utility - reference point

Reference points = Expected payoffs (Rational Expectations)

- Voting $\Rightarrow p_i \in [0,1]$ chance of winning and $(1-p_i)$ chance of losing
- Abstain $\Rightarrow q_i \in [0,1]$ chance of winning and $(1-q_i)$ chance of losing

where $p_i > q_i$

Expected Utility conditional on voting

$$EU_i = p_i - c_i + \eta p_i \left[1 - c_i - (p_i - c_i)\right] + \eta\lambda(1-p_i)\left[0 - c_i - (p_i - c_i)\right]$$

Expected Utility conditional on abstaining

$$EU_i = q_i + \eta q_i \left[1 - q_i\right] + \eta\lambda(1-q_i)\left[-q_i\right]$$

- **Equilibria** $\Rightarrow$ threshold costs (c_A^*, c_B^*)

$$c_i^* = (p_i - q_i)\Big[1 - \eta(\lambda - 1)\Big(1 - (p_i + q_i)\Big)\Big] \equiv MB_i$$

- Assumption: $\eta < \frac{1}{\lambda - 1}$

- $\alpha \Rightarrow$ supporters of A who vote for $A \Rightarrow (c_A < c_A{}^*)$

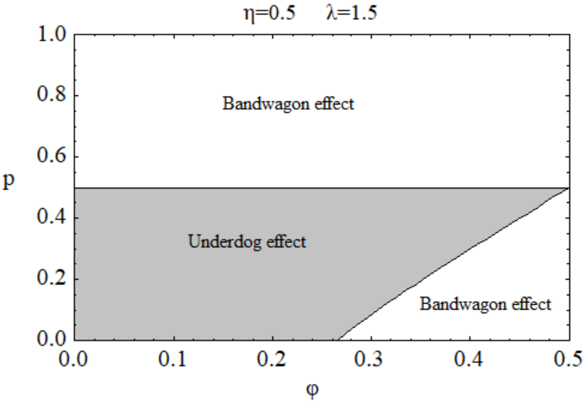
  $\beta \Rightarrow$ supporters of B who vote for $B \Rightarrow (c_B < c_B{}^*)$

Large societies ($N \to \infty$) $\Rightarrow$ Properties of equilibria $(\alpha_N, \beta_N) \Rightarrow$

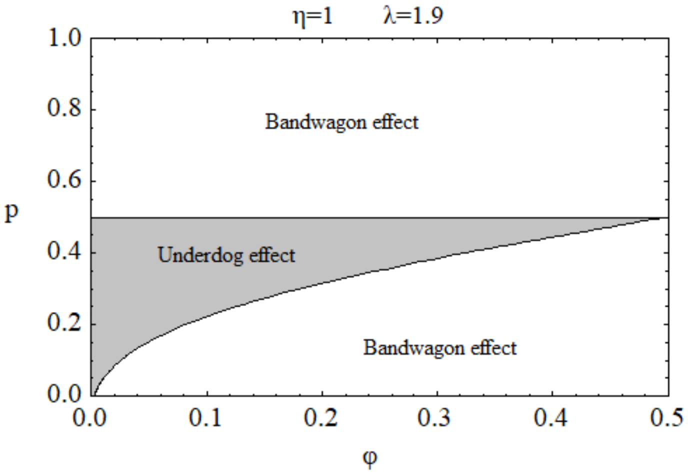
$$\Rightarrow p_A \simeq q_A = p \ \text{ and } \ p_B \simeq q_B \simeq (1-p)$$

$$\text{Bandwagon} \Rightarrow \begin{cases} A = \text{the expected winner } (p \geqslant \frac{1}{2}) \text{ and } \alpha_N > \beta_N \\ \\ \text{or} \\ \\ B = \text{the expected winner } (p < \frac{1}{2}) \text{ and } \alpha_N < \beta_N \end{cases}$$

Results



For every fixed admissible pair of parameters (η, λ), there exists a $\hat{\phi} < \frac{1}{2}$, such that a bandwagon effect emerges in large societies in all sequences of equilibria when $\phi \in (\hat{\phi}, \frac{1}{2})$



Higher loss aversion makes bandwagons more likely

Conclusions

- We introduce expectation-based loss-aversion (Koszegi and Rabin, 2006) in costly voting
- When the voters are sufficiently loss averse and the society is large, then bandwagons may emerge in equilibrium
- An alternative rationale behind bandwagons that it can be empirically distinguished from other plausible explanations

Thank you for your attention!