

# Spatial Competition: A case of Linear Markets

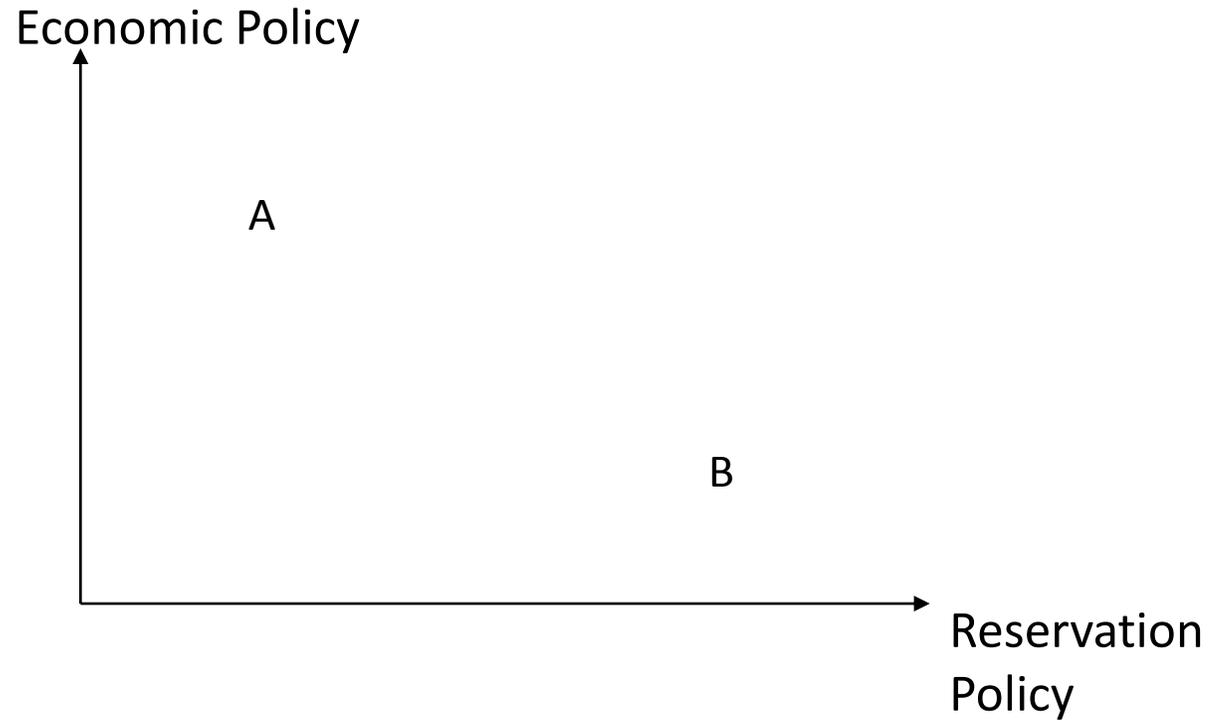
---

Dr. Vimal Kumar, Assistant Professor of Economics

Indian Institute of Technology Kanpur, [vimalk@gmail.com](mailto:vimalk@gmail.com)

# Two Political parties

---



Which policy platform a new political party should offer?

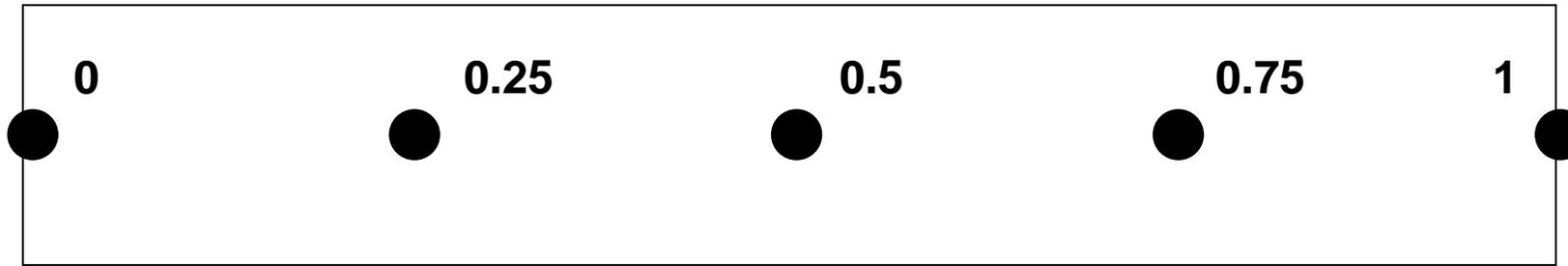
# Hotelling Model

---

- Simple Linear Problem.
- Linear beach: Like Juhu Chaupati [Say 1 km long]
- Large number of consumers in every part of Chaupati. Everyone wants one and only one icecream.
- Uniform Distribution: In every part of the Chaupati, same number of consumers.
- Price of One Ice-cream is INR 10. Each 100 meters walk gives disutility equal to INR 1.
- Two ice-cream wallah with only one kind of icecream: where should they park their cart?

# Ice-cream Wallah Location

---



Players= $\{A,B\}$

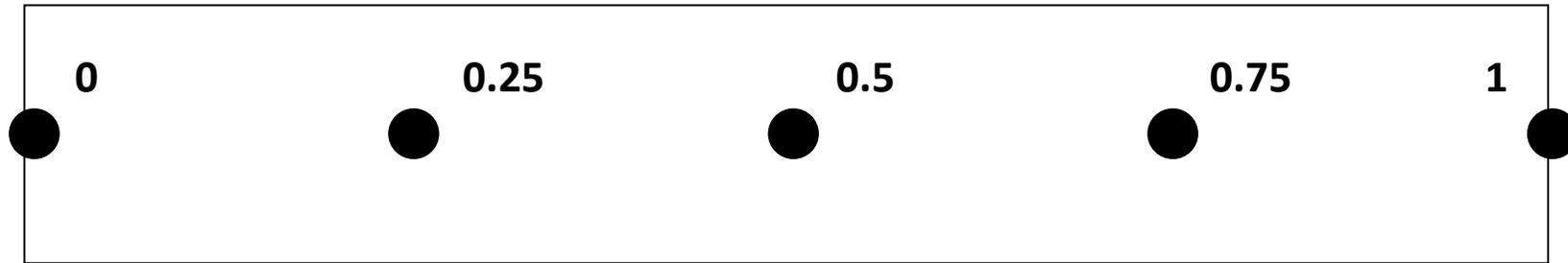
Strategy of player  $i=\{0, .25,0.5, 0.75, 1\}$  or  $=[0,1]$ ,  $i \in \{A,B\}$

Pay-offs=Market Share.

Let us assume that everyone buys exactly one ice-cream.

# Cost of Buying Icecream

---



# Nash Equilibrium

---

# Linear Model of Two-Party Competition

---

- Two parties situated on this ideological spectrum. (Spectrum may denote...Tax rates, Reservation policy)
- Parties aim to maximize their voting support and adjust their ideological positions in order to attract more votes.
- Voters vote for the party located closest to their ideal policy position.

## Assumptions

- Majority Rule
- Single-peaked Preferences
- Voters are uniformly distributed over the ideological spectrum.
- What if voters are not uniformly distributed?

# Single Peaked Preference

---

# Generalized Models of Linear Competition

---

- A population of individuals with varying traits. [Not players]
- Individuals with likings (preferences) over several possibilities
- (Active) Players align themselves with a particular possibility.
- Given players choice of different possibilities, each individual selects a particular player who is closest to that particular individual's liking.
- Players have likings (preferences) associated over different possibilities and individuals' choices.