Optimal Default Retirement Savings: Theory and Evidence from OregonSaves

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State Perspectives on Retirement Savings

- State governments think people are not saving enough

- 1/3 of private sector employees do not have access to employment-based retirement plans (SIPP, 2012)

Policy initiative to help increase savings:

- Introducing state-sponsored retirement plans

New State Mandates

- Employers **must** provide either an employer-sponsored retirement plan or access to a state-sponsored retirement plan

- 8 states have passed the legislation to launch a state-sponsored retirement plan (OR, CA, IL, MD, CT, NJ, CO, VA)
  - OregonSaves (2017), 5% default saving rate +1% auto-escalation/year up to 10%
  - Employees can opt out of the default rate (or the plan entirely)

Research Question

- Auto-enrollment and the default saving rate increase retirement savings (Madrian and Shea, 2001) and total savings (Chetty et al., 2014)

Question remained:

- What is the optimal default saving rate in state-sponsored retirement plans?

Preview of Findings

- Determinants of optimal default rate:
  - How people respond to the default rate:
    - Half of passive savers stop saving at default when it rises 1 percentage point
  - High default rate when savers are reluctant to make an active choice
  - Low default rate when active undersavers
    - Little evidence of present bias

- Policy recommendation:
  - Implied OregonSaves optimal default rate 7%

OregonSaves

- State-based "Roth IRA" mandated for private sector employers w/o retirement plans
- 5% default contribution with annual auto escalation (to 10%)
- Default investment:
  - First $1,000: Money Market Fund
  - Target-Date Fund
- No employer contributions
- One individual can contribute to the same account through multiple employers

Statistics

- As of April 2020:
  - OregonSaves had accumulated $51 million
  - Average monthly contribution: $120
  - Average account balance (if positive): $750
- OregonSaves covers a low-income population with volatile incomes
  - Largest industries: food services, health care, business support
  - Average annual income: $29,000
- More discussion in Chalmers, Mitchell, Reuter, and Zhong (2021)

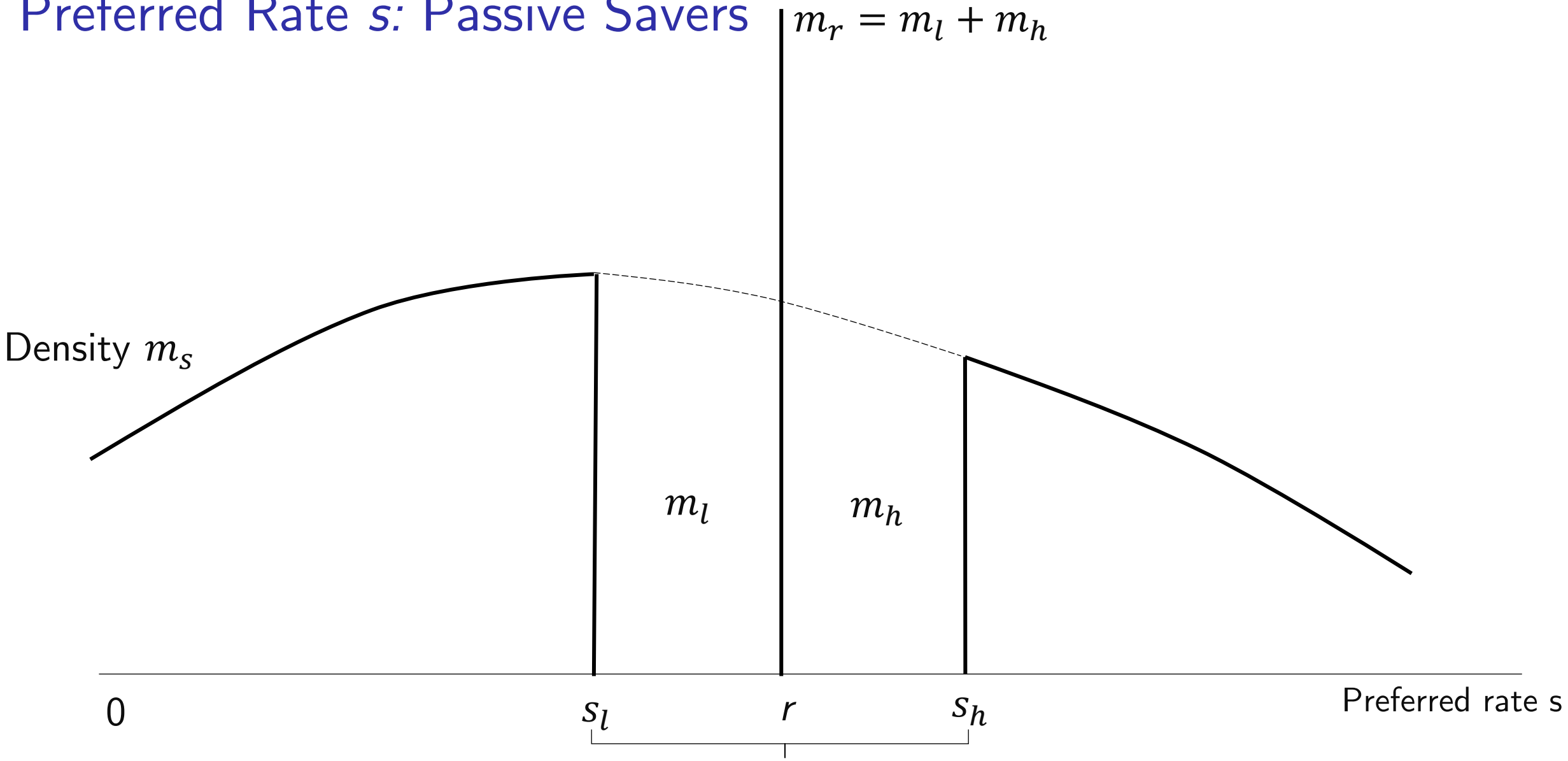
Optimal Default Saving Rate: Model

- Individuals decide between default saving rate r and preferred rate s to maximize their perceived intertemporal utility

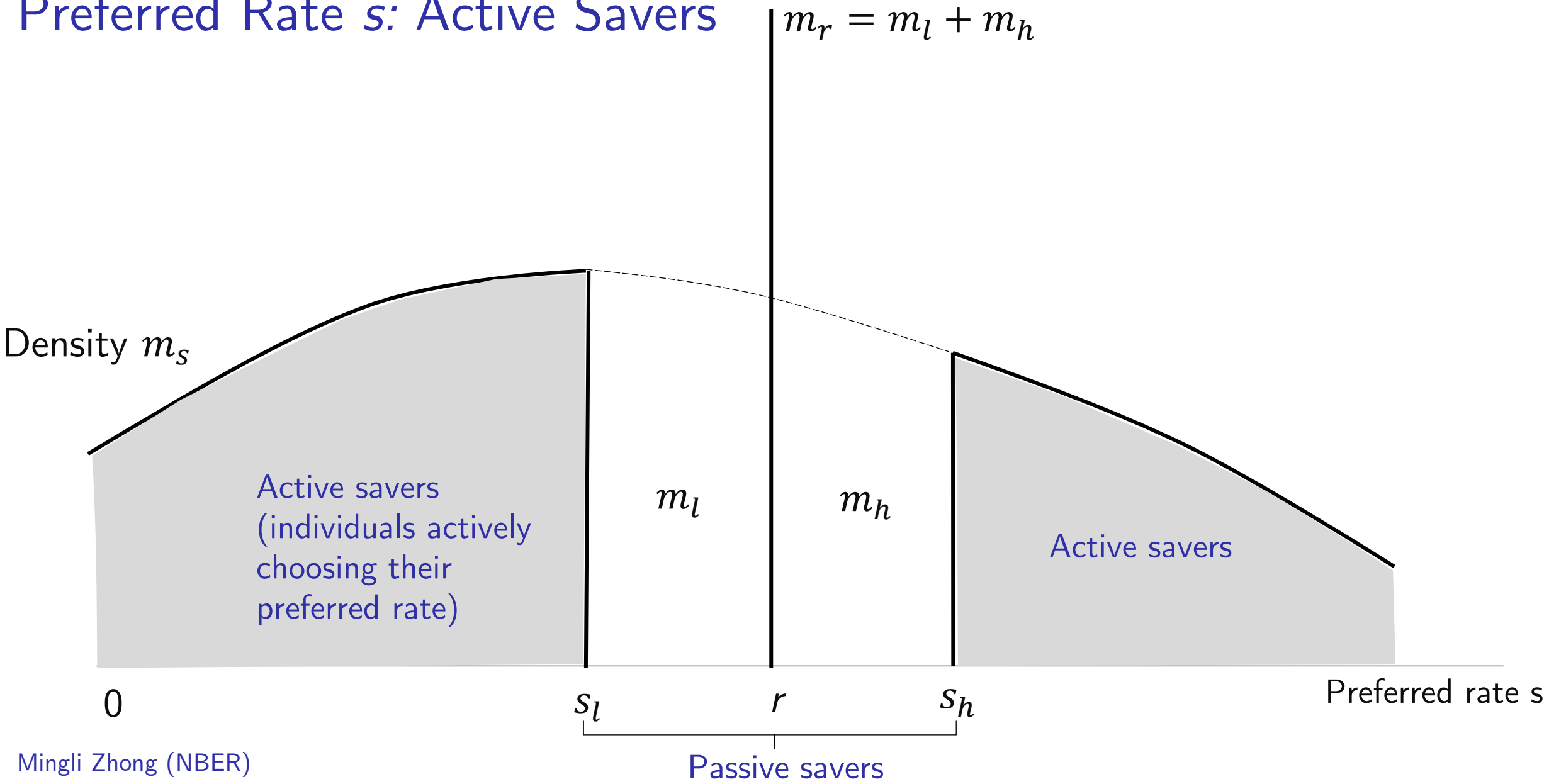
- Given individual choices, the policymaker sets the optimal default rate r^* to maximize the sum of individual actual utility

- Objective: Derive a formula for the optimal default rate depending on statistics that can be empirically estimated

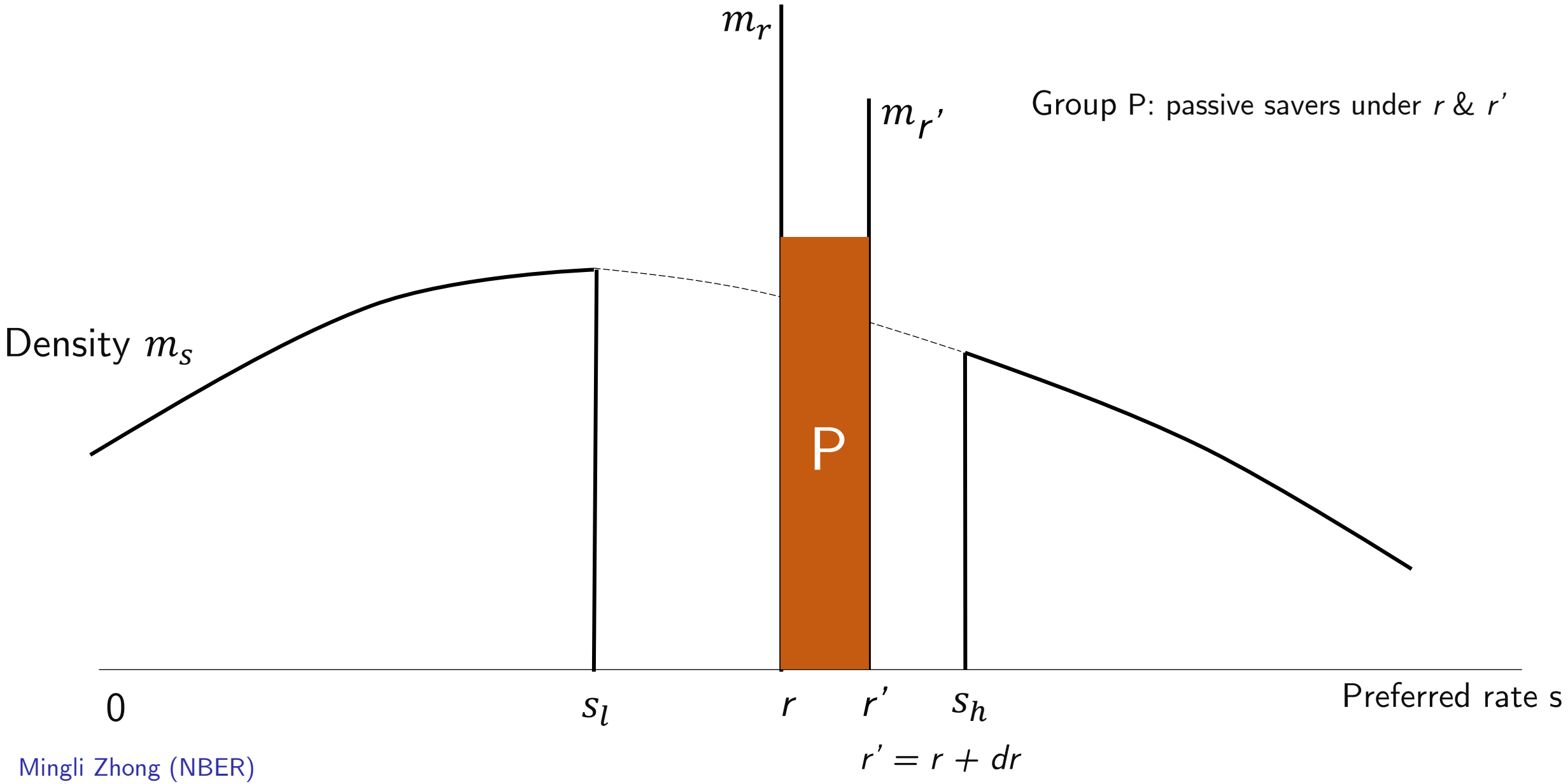
How Individuals Decide between Default Saving Rate *r* and Preferred Rate *s:* Passive Savers



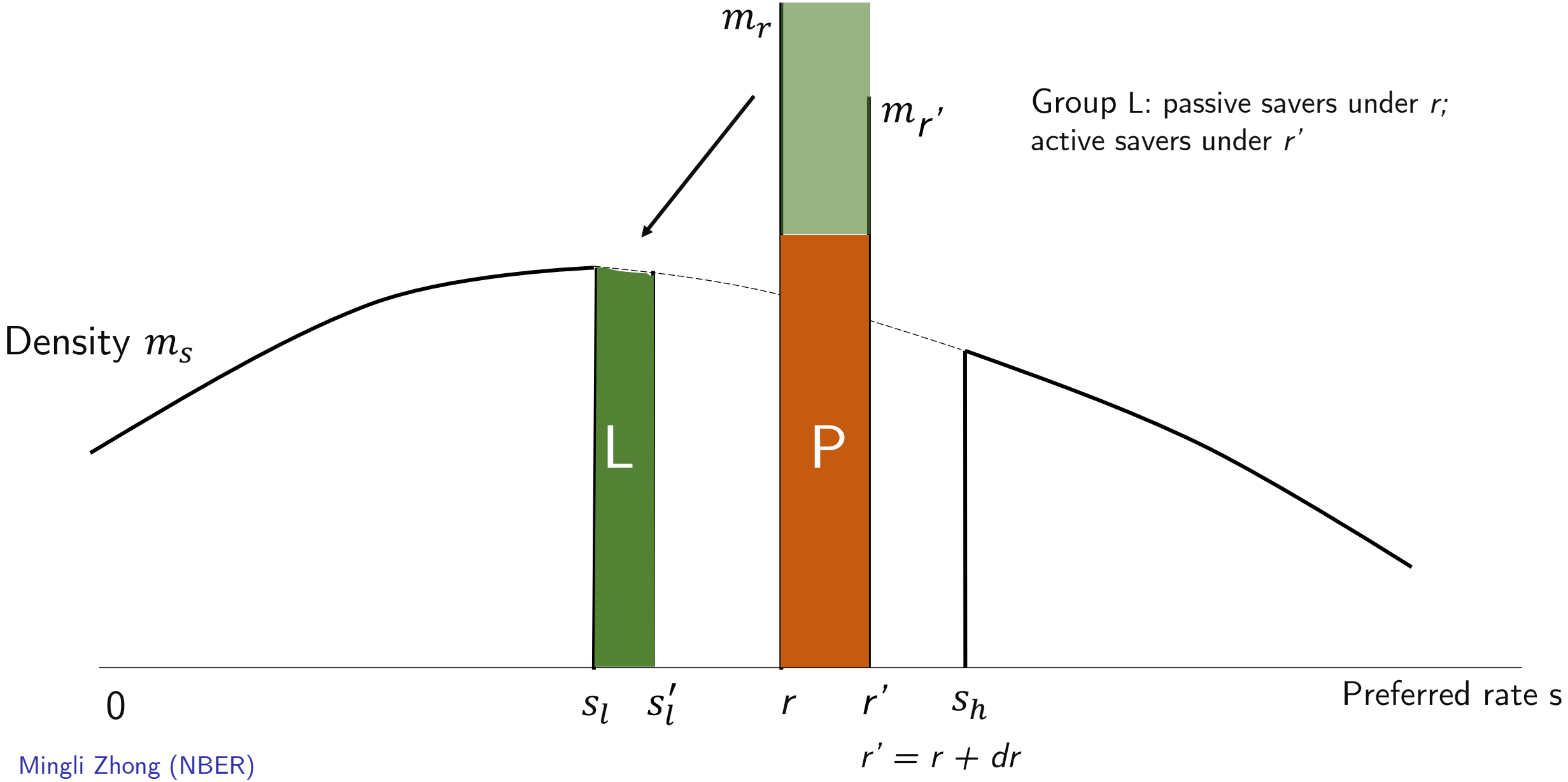
How Individuals Decide between Default Saving Rate *r* and Preferred Rate *s:* Active Savers



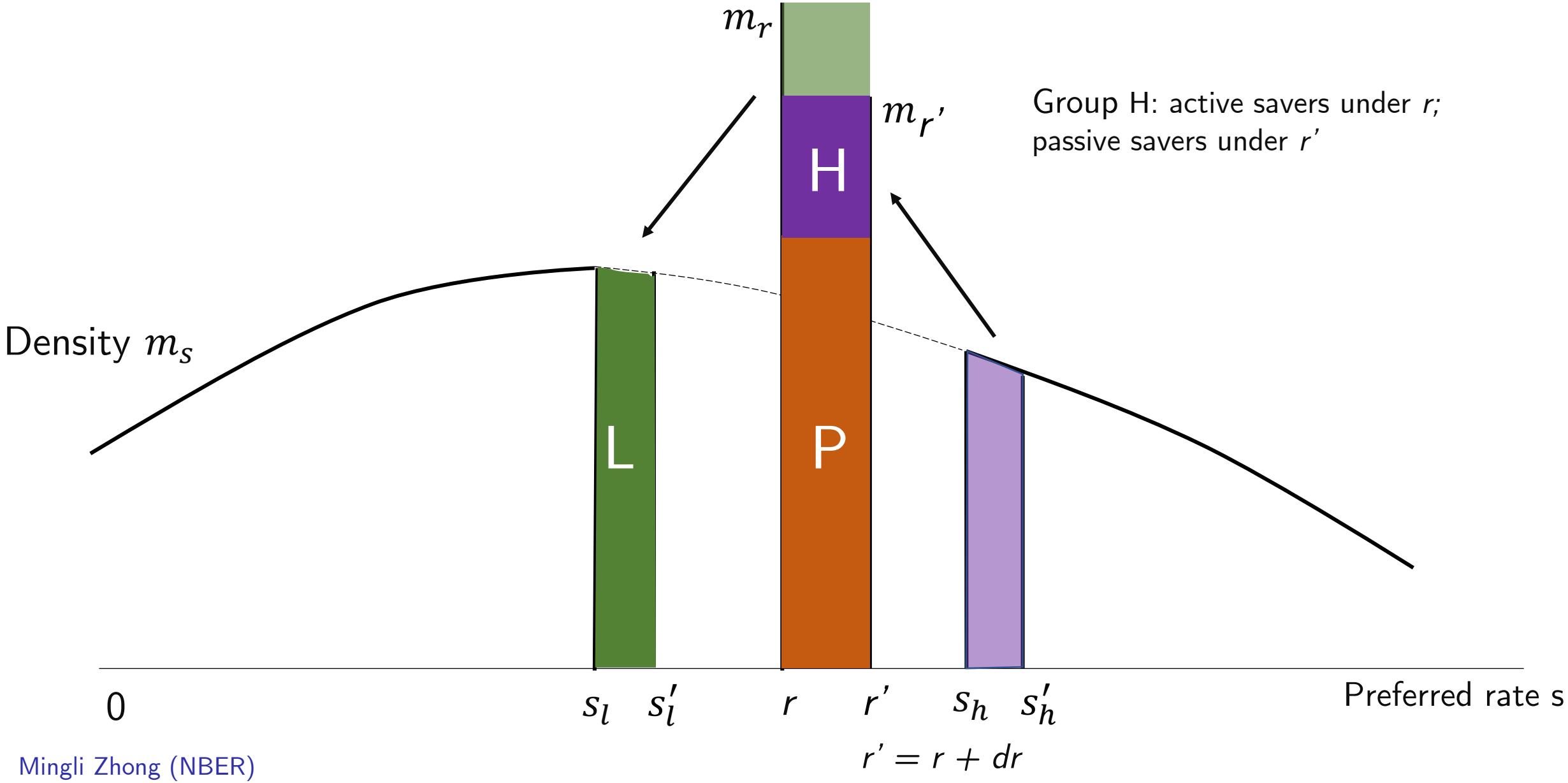
Shifting Composition when Default Changes from r to r'



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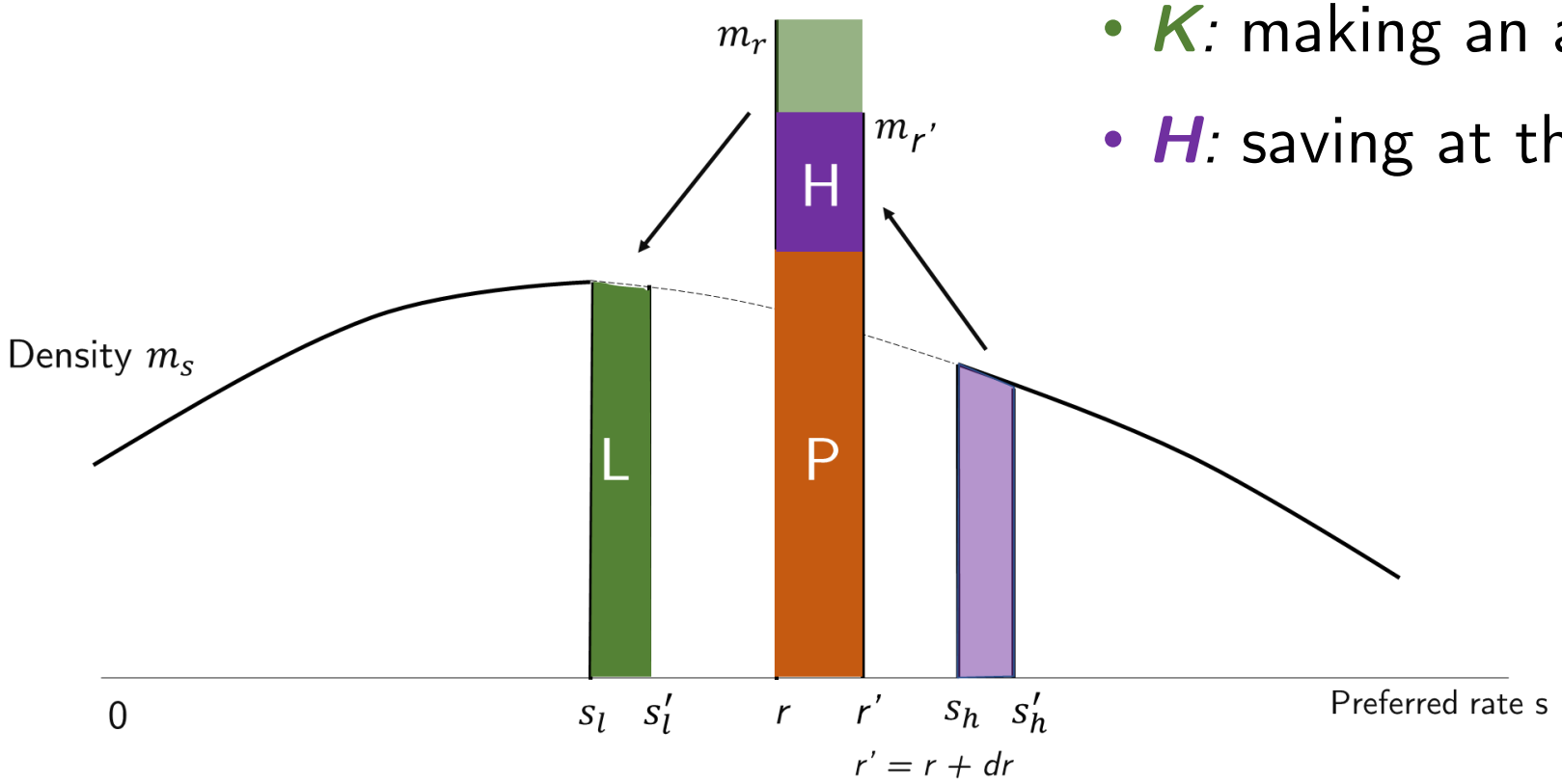
Shifting Composition when Default Changes from r to r'



Group H: active savers under r; passive savers under r'

Formula for the Optimal Default Saving Rate r^*

$$r^* = \frac{P - L + K}{-H}$$



r^* is determined by

- ***P***: saving at the default
- ***L***: choosing the preferred rate
- ***K***: making an active choice
- ***H***: saving at the default

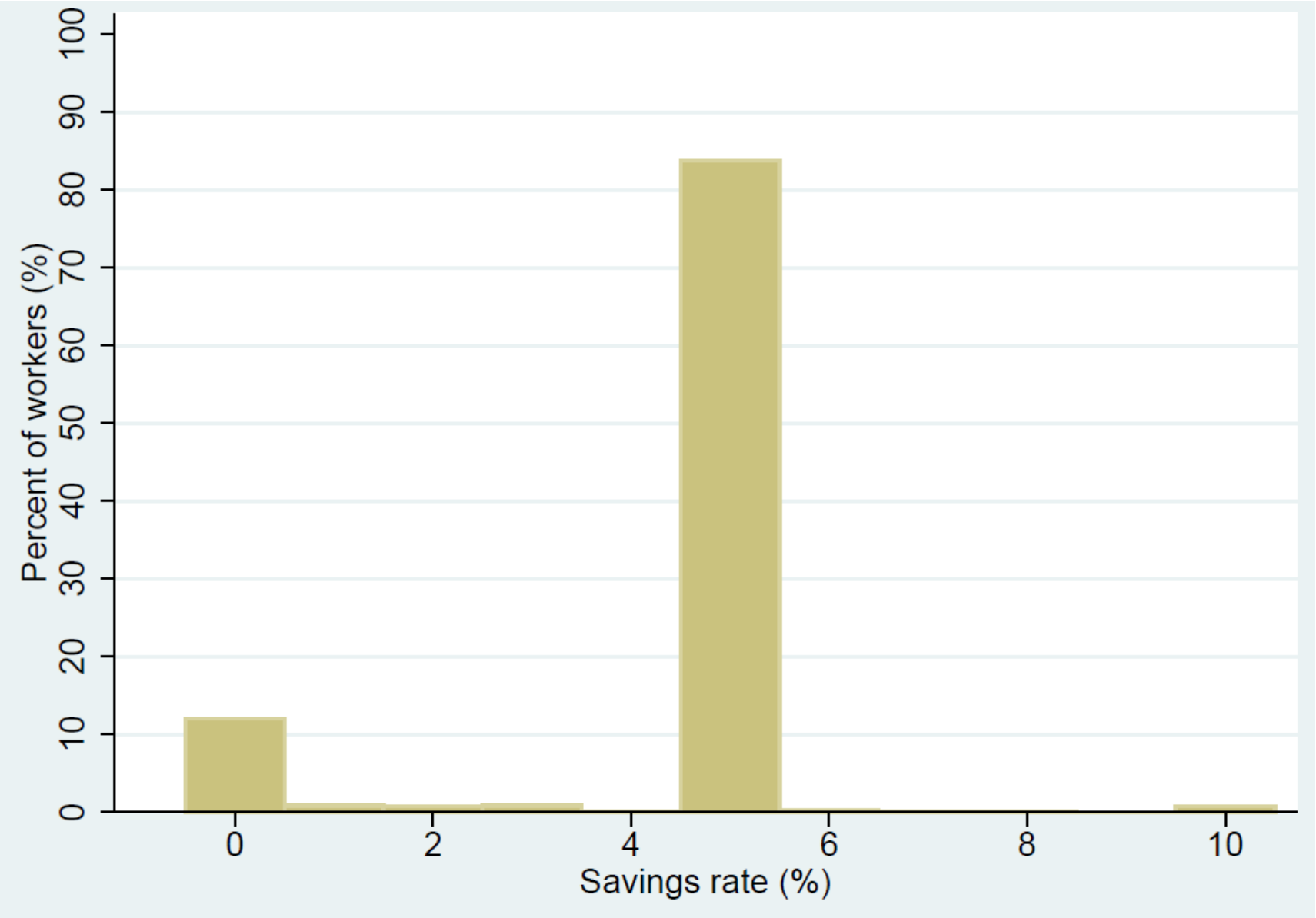
Optimal Default Saving Rate: Empirical Estimation

Key statistics:

- Fraction of passive savers becoming active savers as the default rate changes
  - Individual-level administrative records in OregonSaves
  - Exogenous increase in the default rate:
    - 5% to 6% in 2019
    - 6% to 7% in 2020

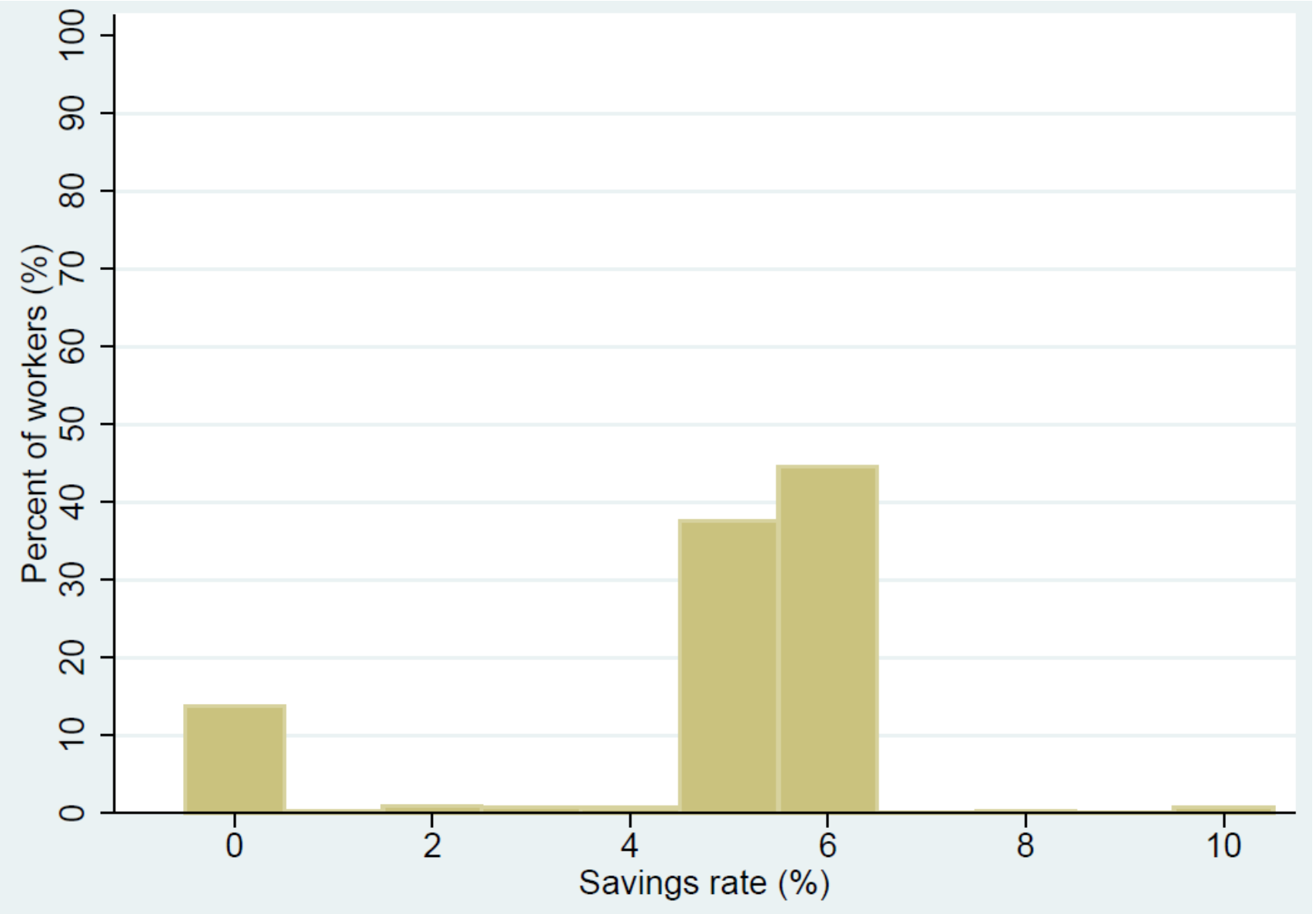
- Degree of undersaving if becoming active savers
  - Survey data to measure present bias

Distribution Before Increase: 5% Default, Dec. 2018



N = 15,974

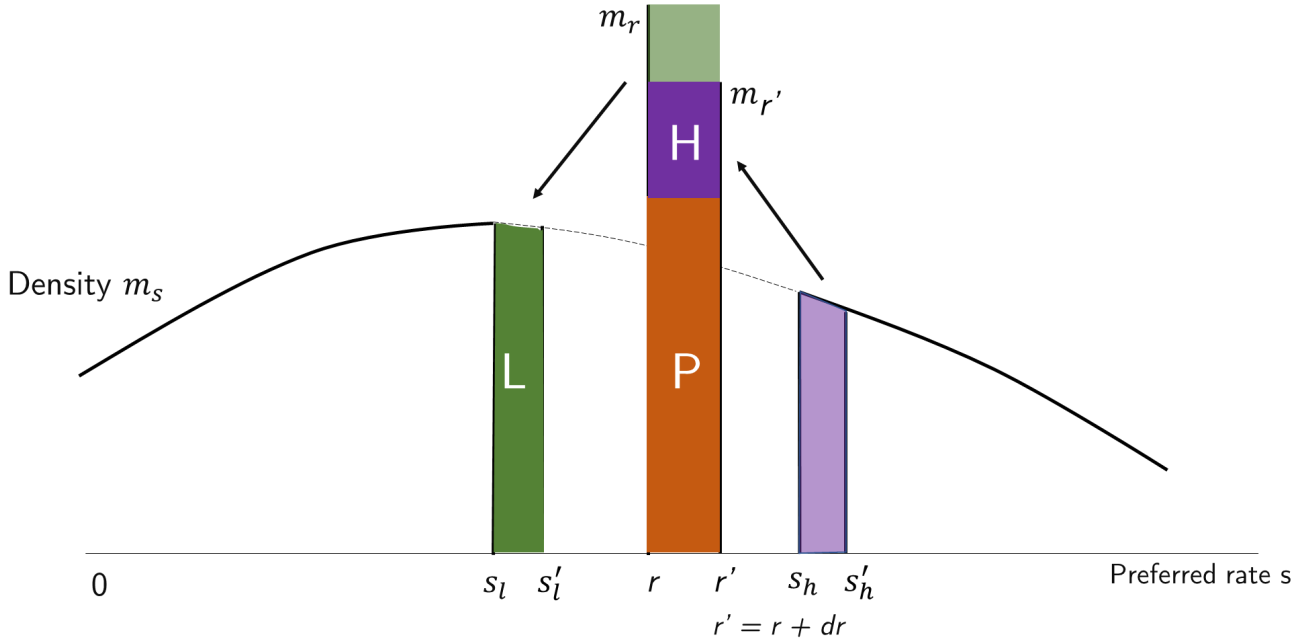
Distribution After Increase: 6% Default, March 2019



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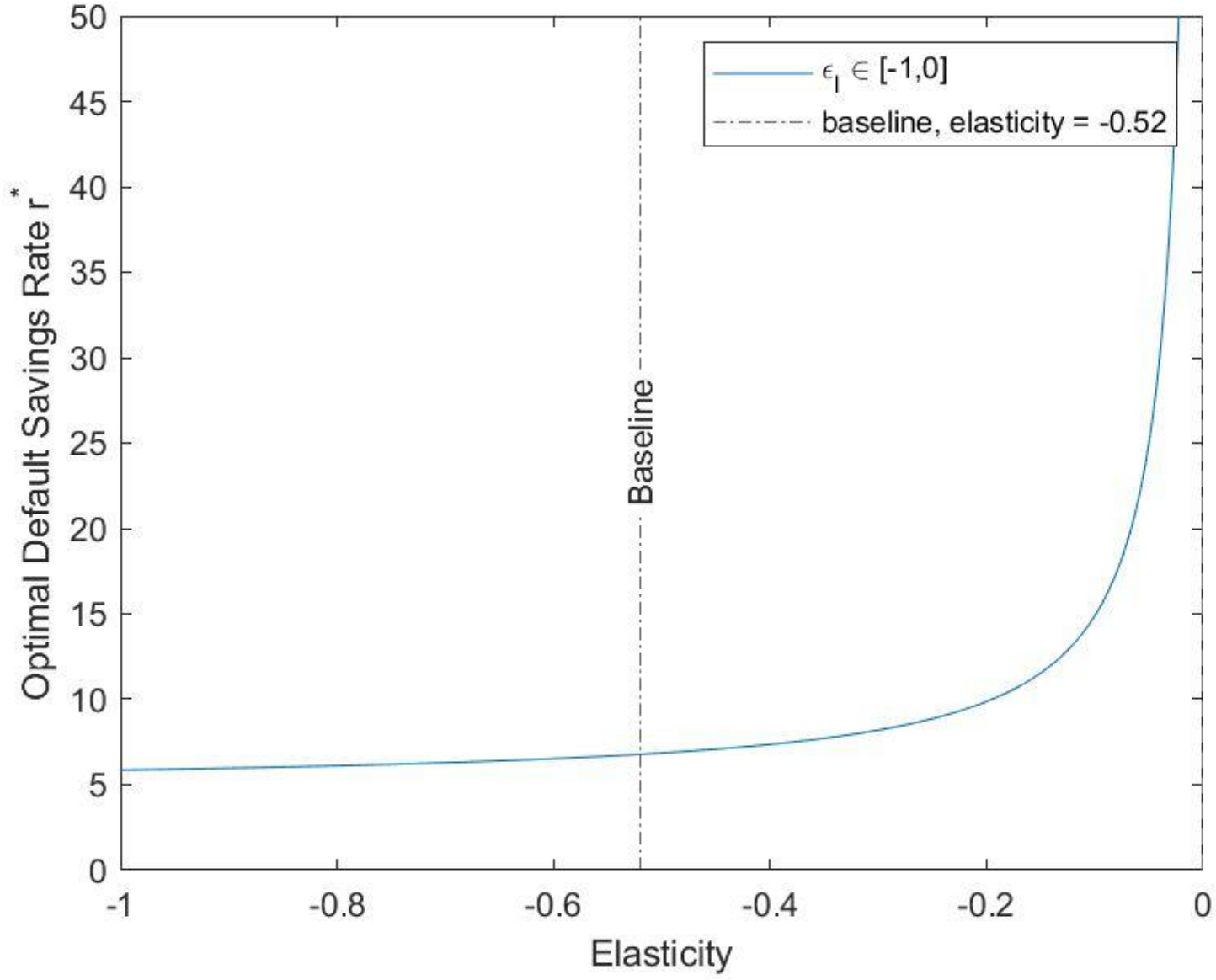
Computing Optimal Default r^*

1. Key Statistics:
   - Half of passive savers stop saving at default when it rises 1 percentage point
   - Present bias parameter = 0.995
2. Determinants as functions of the statistics
3. Optimal default as a function of determinants

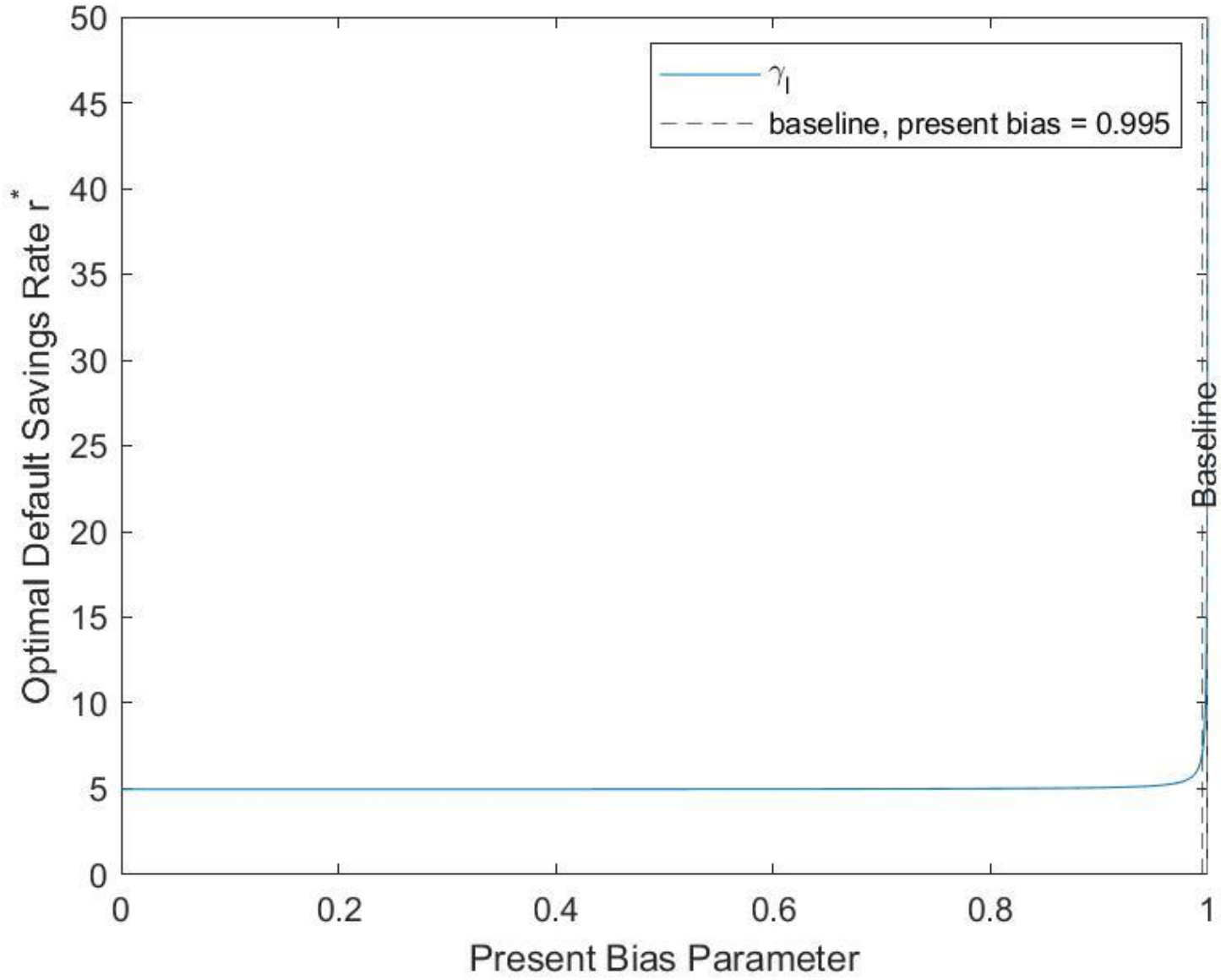


$$r^* = \frac{P - L + K}{-H} = 7\%$$

Sensitivity Analysis: Responsiveness to the Default



Sensitivity Analysis: Present Bias Parameter



Conclusion

- Baseline optimal default rate in OregonSaves: 7%
  - Sensitivity analysis shows the optimal default between 5-10%
  - The optimal formula could be applied to any auto-enrollment plans provided by state governments or private sector employers

- Policy recommendation:
  - More participants: low default
  - More savings per participant: high default

Appendix

Decision Utility vs. Normative Utility

- Individual saving choice: $p = \{r, s\}$
- Decision utility:

$$U(c, p) = u(c) + \lambda\delta v(p) - k\mathbf{1}\{p = s\}$$

  - Normative time preference: δ
  - Behavioral time preference: λ
  - Total perceived opt-out cost: k

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Social Welfare Function

- Policymaker selects the optimal default rate r^* to maximize aggregate normative utility across all types θ:

$$W = \max_{\{c,p\}} \int N(c, p; \theta) d\theta$$

- Perturbation approach: At optimal default r^*

$$\frac{dW(r^*)}{dr} = 0$$