Unintended Consequences of Education Reforms

Julie Berry Cullen

University of California, San Diego

RC MILLS LECTURE

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ACE2025 ECONOMICS FOR A CHANGING WORLD

ESA 100 YEARS CELEBRATING OUR CENTENARY IN 2025

Government Intervention in Education

- **Efficiency motives**
  - Spillovers
  - Imperfect and asymmetric information
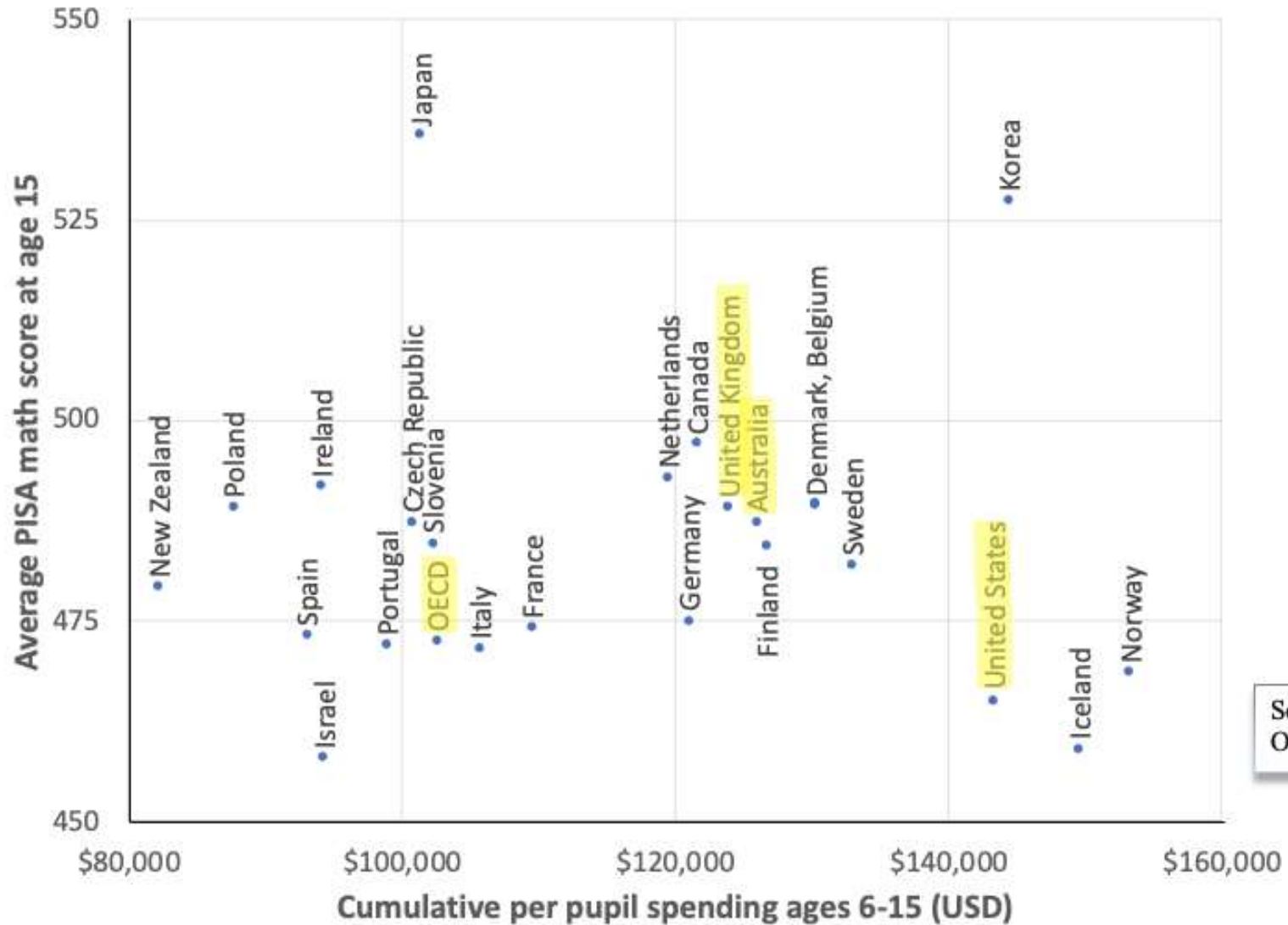 - Credit constraints

- **Equity motives**
  - Education as a basic right
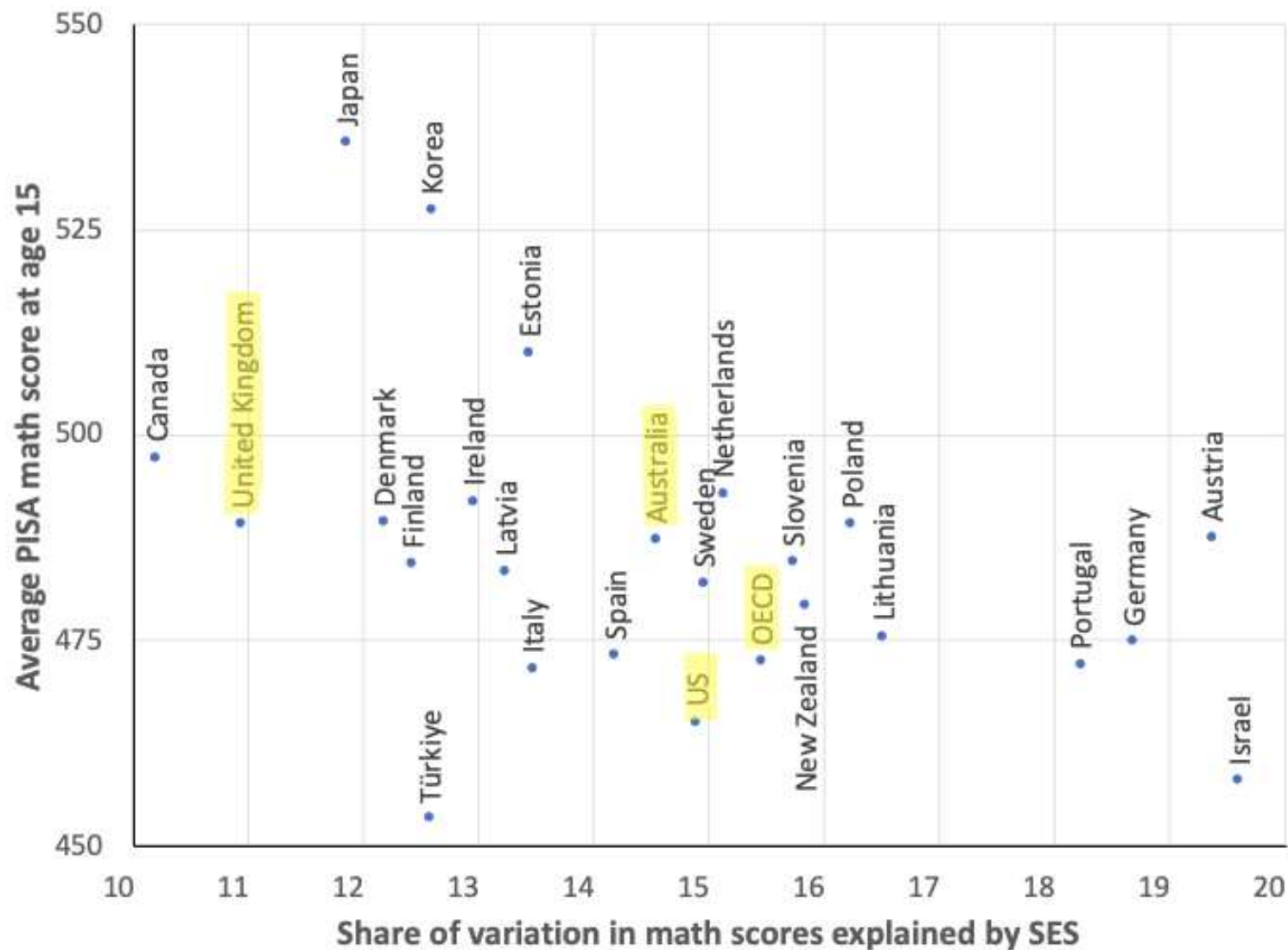
- Interventions can take many forms
  - Public provision, public funding, regulation, setting standards, …
  - Raises the possibility of government failure

Government Intervention in Education

Source: OECD 2023

Government Intervention in Education

Scatter plot — X-axis: "Share of variation in math scores explained by SES" (range 10 to 20); Y-axis: "Average PISA math score at age 15" (range 450 to 550). Source: OECD 2023.
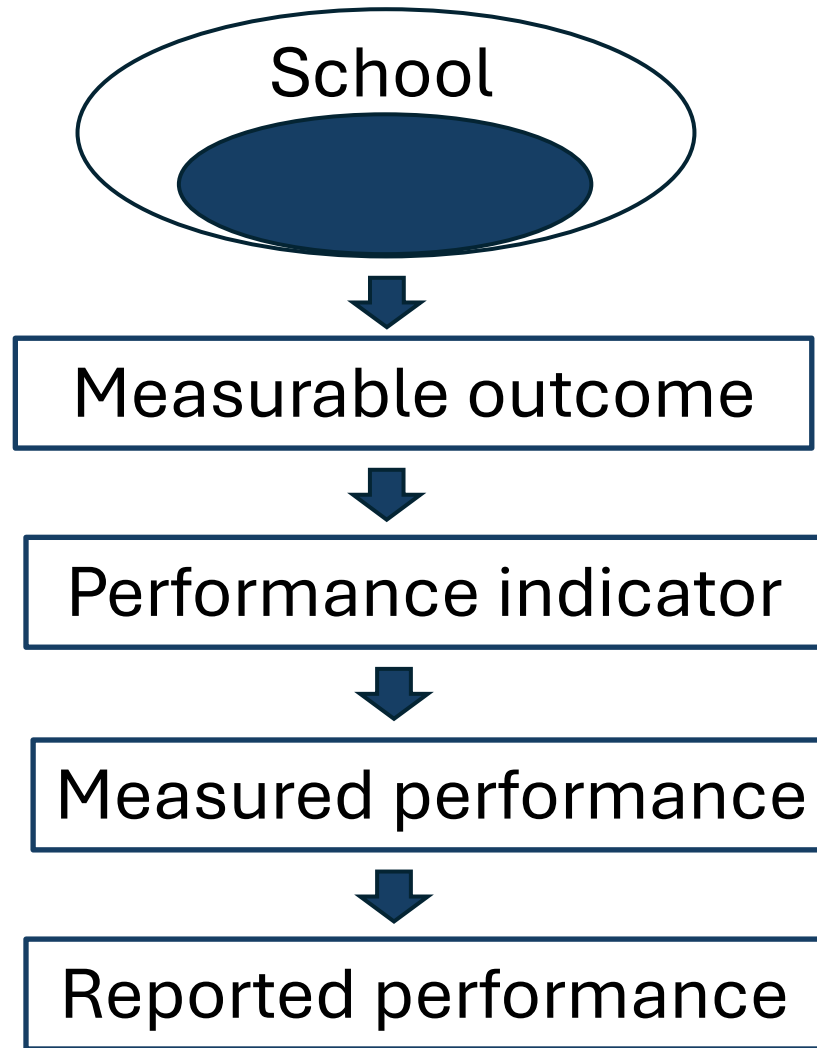
Government Intervention in Education

- Concerns about equity and efficiency have led to continuous reform efforts

- Examples (from TX context)
  - **Efficiency**: School accountability
  - **Equity**: School finance equalization; College access equalization

- Economists play an important role by elucidating the incentives associated with and evaluating the causal effects of policies

School Accountability – Pitfalls

School

↓

Measurable outcome

↓

Performance indicator

↓

Measured performance

↓

Reported performance

School Accountability – School Gaming

- **Research question**
  - ➤ *Narrow*: To what extent do schools manipulate the composition of students in the test-taking pool to maximize ratings?
  - ➤ *Broad*: How to best adjust performance assessments and/or standards for differences in case-mix?

- **Approach**
  - ➤ Changes in exemption/absence rates across campus-years (and student subgroups) with differential returns in terms of the likelihood of attaining a given rating
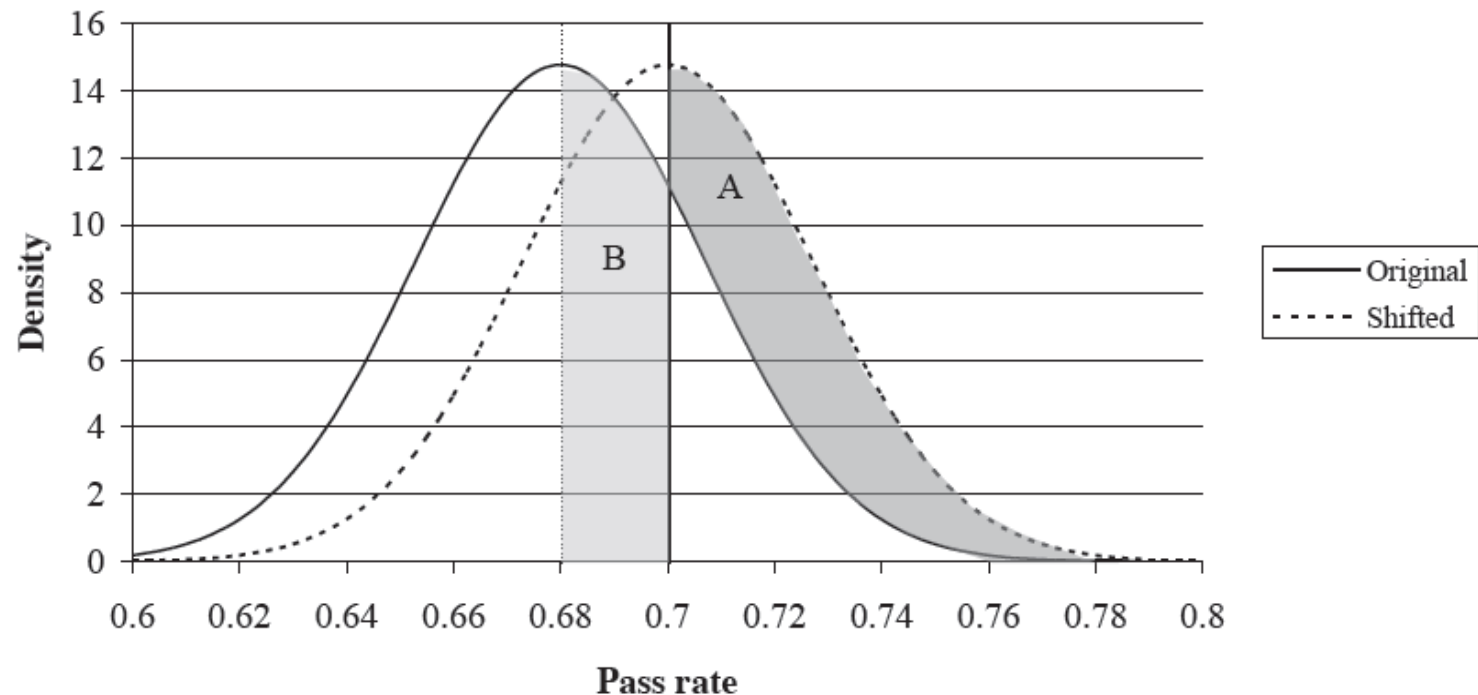
- **Key finding**
  - ➤ Moderate degree of gaming on this dimension

School Accountability – School Gaming

- ## Ratings incentives
  - ➢ The likelihood of increasing exemptions between consecutive years should be systematically related to local upward/downward shifts in the marginal benefit curve

School Accountability – Labor Market Distortions

- **Research question**
  - ➤ **_Narrow_**: How do observable school performance metrics affect school principal labor market outcomes?
  - ➤ **_Broad_**: How to best measure and convey information about public sector performance?

- **Approach**
  - ➤ Regression discontinuity approach to estimate causal impact of ratings per se paired with standard regression analysis
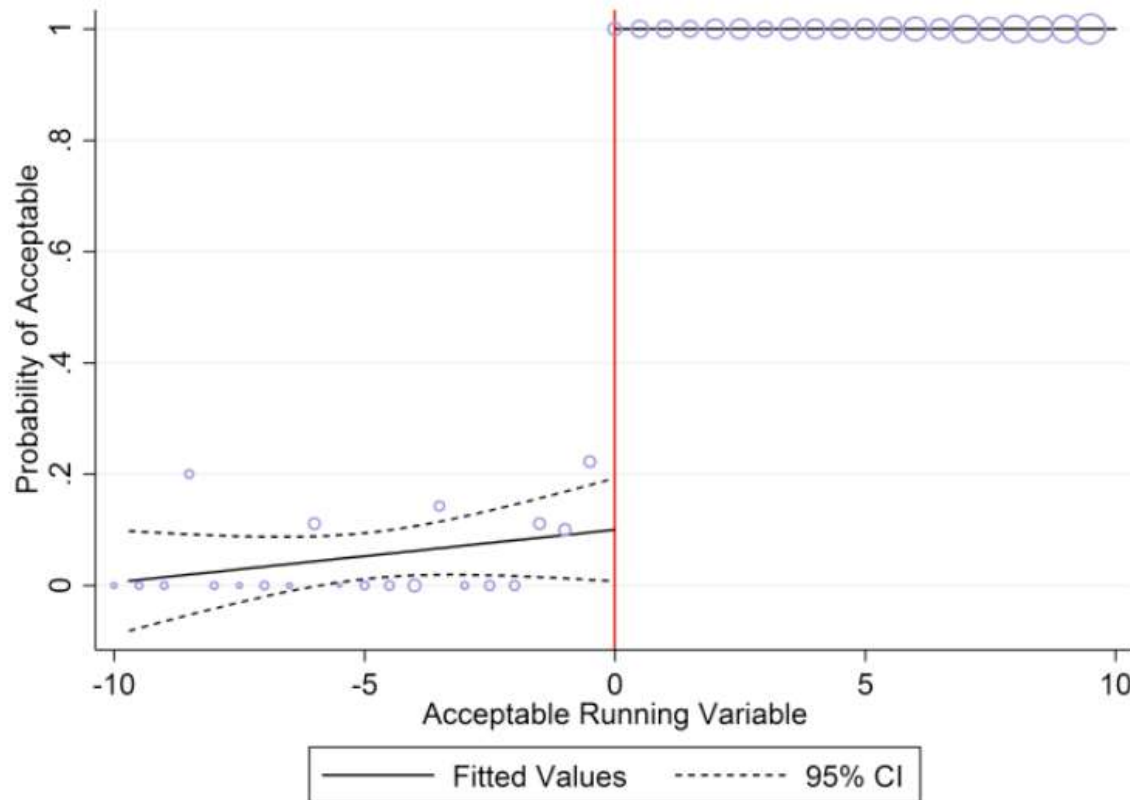
- **Key finding**
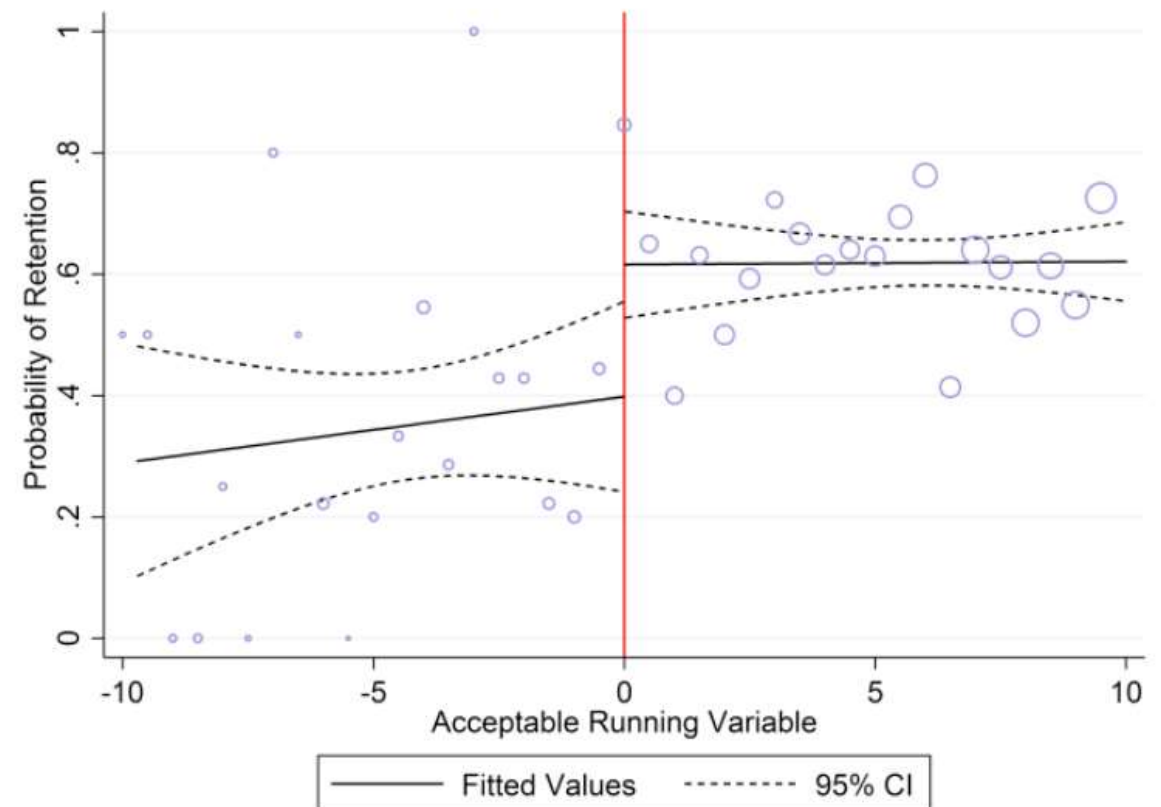 - ➤ Penalty for receipt of lowest rating within home district puts principals serving disadvantaged districts at risk

School Accountability – Labor Market Distortions

- **Effects on principal retention**

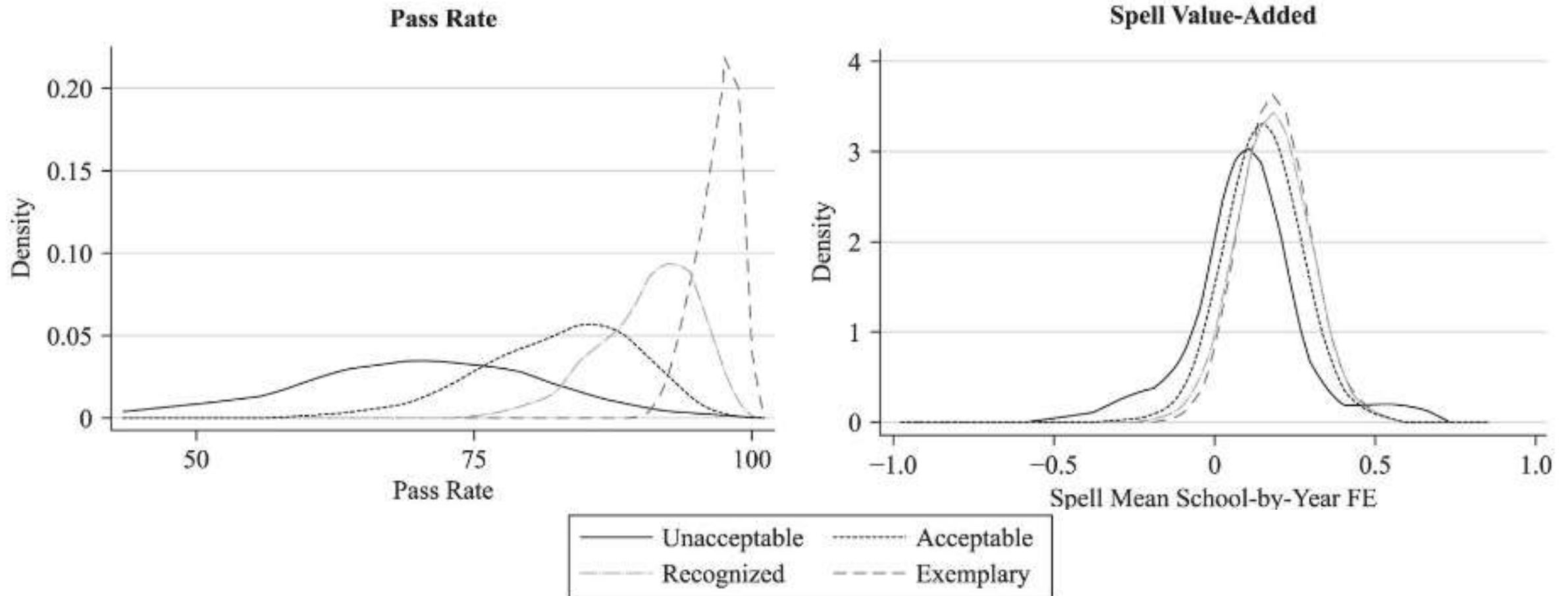# School Accountability – Labor Market Distortions

- **Effects on school effectiveness**

School Finance Equalization

- **Research question**
  - ➤ ***Narrow***: How responsive are student disability rates to incentives in pupil-weighted school finance formulas?
  - ➤ ***Broad***: How to best adjust public funding for differences in case-mix?

- **Approach**
  - ➤ Relate policy-induced variation in the amount of state aid generated across school districts to changes disability rates

- **Key finding**
  - ➤ Elasticity of 0.2 can explain 40% of observed growth

School Finance Equalization

- **Fiscal incentives**

$$\text{Tier 1 Revenue}_{it} = N_{it}(D_{it}) \times f_{it} - r_t \times W_{it}$$

$$\text{Tier 2 Revenue}_{it} = E_{it}(N_{it}(D_{it}) \times g_{it} - 0.0001 \times W_{it})$$
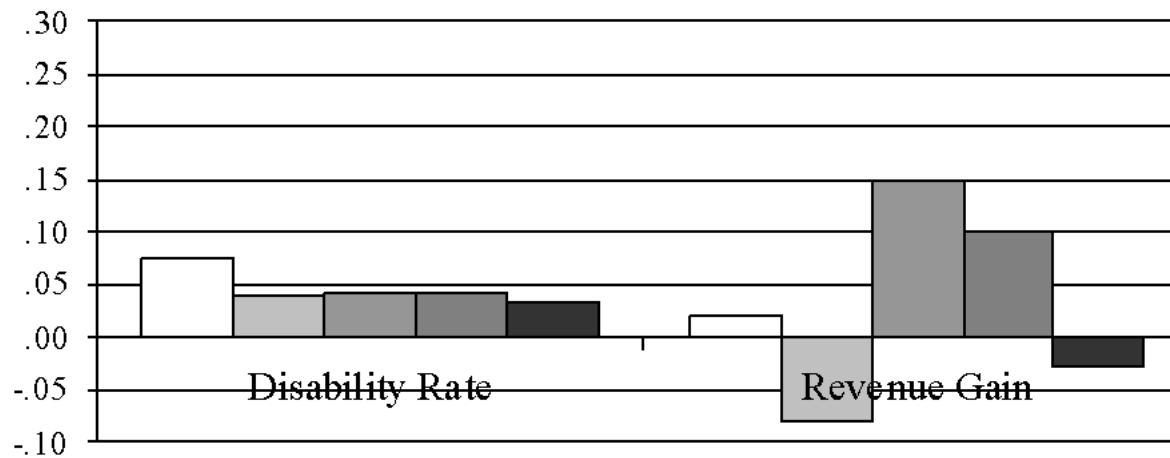
$$E_{it} = \text{Min}[(t_{it} - r_t) \times 10,000, cap_t]$$

$$\text{Gain}_{it} = \frac{\partial N_{it}}{\partial D_{it}} \times (f_{it} + E_{it} \times g_{it})$$
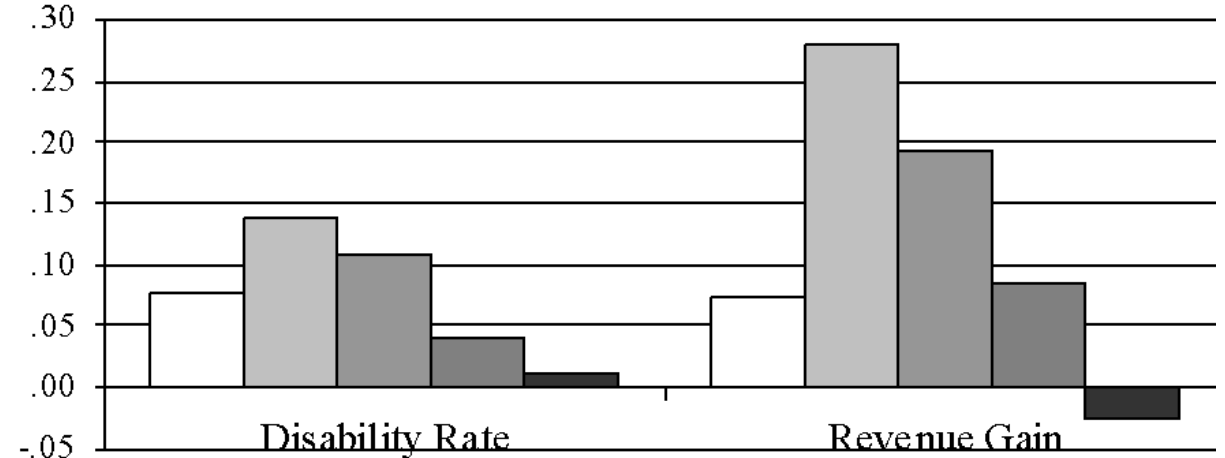
School Finance Equalization

- **Changes in caseloads and incentives across years**

Low wealth districts

High wealth districts

College Access Equalization

- **Research question**
  - ➢ *Narrow*: To what extent did the Texas top-10% plan induce high school students to choose lower achieving schools?
  - ➢ *Broad*: General scope for endogenous group membership when eligibility depends on one's group

- **Approach**
  - ➢ Difference-in-differences analysis of 8th to 10th grade transitions for TX students with differing incentives after the policy change

- **Key finding**
  - ➢ Among those with motive and opportunity, 5% enroll at a different high school

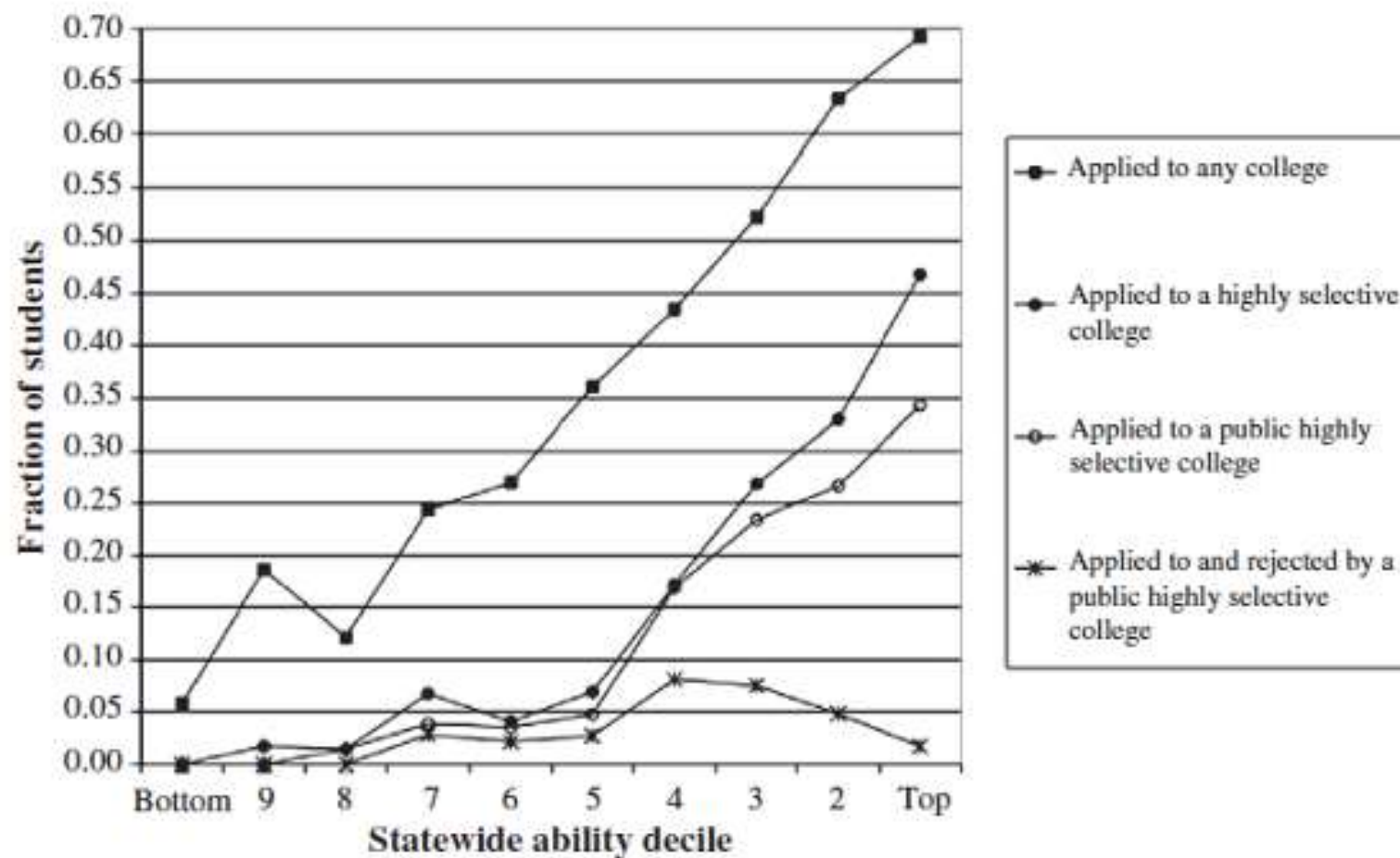# College Access Equalization

- **Admission incentives**
  - ➢ Those schools where the child has a greater chance of being in the top-ten percent become relatively more attractive

$$p_{ik} = Post \times [\tau_{ik} \times 1 + (1 - \tau_{ik})a_{ik}] + (1 - Post) \times a_{ik}$$

$$\Delta p_{ik} = \tau_{ik} \times (1 - a_{ik})$$

College Access Equalization

- **Admission incentives**

Conclusion

- Behavior is responsive at all the margins studied, none of which has to do with the primary intention of the policy

- When designing policies to improve the equity and/or efficiency of education systems, it is important to recognize the potential for unintended consequences and to incorporate strategies to address them