The Impact of School Tax Referenda on District Administration and Student Achievement

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April 28, 2015
Setting the Stage

- Widespread adoption of local tax and expenditure limits (TELs)
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- Example: Massachusetts Proposition 2 $^{1/2}$
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- Common feature: Voter override provision
Voters and Taxes

- Do voters rationally weigh costs and benefits when considering tax increases?
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- Or do they overestimate savings from cutting Department of Waste, Fraud, and Abuse?
The state government has been facing large budget deficits over the past several years. Some people believe that by simply eliminating waste and inefficiencies our state government can provide roughly the same level of services that it currently does, even if its budget has to be cut by $20-$25 billion dollars. Do you agree with this view?
Voters and Taxes

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Statewide: 57%

Table: Field Poll of California Voters (Oct. 2009)
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**Statewide:** 57%

Democrats: 49%

Republicans: 69%
When Voters Say "No"

- How do the decisions voters make on Election Day affect service quality?
- How do public administrators respond to the failure of tax proposals?
- If cuts are necessary, what types of expenditures are targeted and how do these cuts affect services?
- How do voters respond to these cuts?
Application

- Application: Local tax referenda determining school district revenue
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- Hard case: Academic consensus that average spending levels do not affect student learning
  - All school district tax referenda in Ohio from 2003-2013 (over 3,300 proposals)
  - Combine election results with district-level administrative data, including “value added” measures of student achievement
Motivation

Empirical Strategy

Impact on Finances

Impact on Achievement

Lessons

Percent Voting Yes on Levy Proposal

Density
Regression Discontinuity Design

- Challenge for causal inference: Service quality both a cause \textit{and} effect of voter decisions
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Regression Discontinuity Design

- Challenge for causal inference: Service quality both a cause and effect of voter decisions
- Treatment status — levy failure — changes discontinuously at 50 percent vote threshold
- Approximate randomized experiment: Compare school districts where levies barely pass to those where they barely fail
Total Revenue

Future Total Revenue per Pupil

Years Elapsed

-600 -400 -200 0 200 400 600

1 2 3 4 5 6

Estimated Effect

95 Percent Confidence Interval
Building Support Expenditures

Future Building Support Expenditures per Pupil

-200-150-100-50050100150200

Years Elapsed

1 2 3 4 5 6

Estimated Effect 95 Percent Confidence Interval
Instructional Expenditures

Future Instructional Expenditures per Pupil

-200 -150 -100 -50 0 50 100 150 200

Years Elapsed

-200 -150 -100 -50 0 50 100 150 200

1 2 3 4 5 6

Estimated Effect  95 Percent Confidence Interval
Future Pupil Support Expenditures per Pupil

-200 -150 -100 -50 0 50 100 150 200

Years Elapsed

Estimated Effect

95 Percent Confidence Interval
Administrative Expenditures

Future Administrative Expenditures per Pupil

-200 -150 -100 -50 0 50 100 150 200

-200 -150 -100 -50 0 50 100 150 200

1 2 3 4 5 6

Years Elapsed

Estimated Effect  95 Percent Confidence Interval
Staff Support Expenditures

Future Staff Support Expenditures per Pupil

Years Elapsed

Estimated Effect

95 Percent Confidence Interval
District Value-Added

Future Value-Added Gain Score (ODE)

-6 -4 -2 0 .2

1 2 3 4 5 6

Years Elapsed

Estimated Effect

95 Percent Confidence Interval
Future Levy Passage

Future Levy Passage

Years Elapsed

Estimated Effect

95 Percent Confidence Interval
Lessons

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▶ Best way to change their mind is target cuts to most essential services
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- However, their minds can be changed by observing consequences

- Best way to change their mind is target cuts to most essential services

- But this is politically risky!