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Getting what we vote for: A regression discontinuity test of ballot initiative outcomes

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ABSTRACT

What do voters really receive when they vote? This paper exploits 25 years of municipal level voting data in Massachusetts to identify the specific effects of voter approved ballots. In particular, this analysis attempts to determine the degree to which the median voter preferences are reflected in public expenditures. The findings suggest that voters see little change in expenditures, regardless of voting outcomes. To my knowledge, this paper is the first of its kind to directly link voting outcomes with non capital expenditure outcomes. This has important implications for discussing frictions that arise between voter preferences and local public expenditures.

1. Introduction

A basic tenet of political economic theory relies on the supposition that resources in a municipality are allocated based on the revealed preferences provided by its member groups. Provided that citizens of a jurisdiction are allowed to vote, municipal budgets should reflect the aggregated preferences of the voting public. This result underpins much of the argument of having decentralized governments as local government are theoretically more beholden to local voter requests. As noted by Romer and Rosenthal (1979), this may be a somewhat simplistic view as it fails to account for possible frictions in the voter-bureaucrat relationship such as asymmetric information, decision-making monopoly power, or even expenditure exploitation (see Drazen and Eslava (2010)). Therefore, the question remains, just how effectively do local governments respond after seeing a vote's outcome?

Perhaps unsurprisingly, empirical evidence on returns to voting[2] are few and far between. Endogeneity remains a key difficulty in performing empirical tests given the healthy degree to which unobservables likely drive the determinants of local budget expenditures. The degree to which a municipality may or may not meet voters' revealed preferences can inform economists as to the size, and degree, of frictions that may occur between voters and municipal decision-makers. In cases of low friction (effectively, high pass through of voter

preferences), it can generally be accepted that local officials will be held accountable to expenditure decision making. In such a case, we would expect that passage of a vote will have a relatively strong budgetary response, regardless of how close the vote was. However, with low voter preference pass through, there may be concerns that local officials hold an inordinate amount of power thus making it difficult for the democratic process to proceed. In such cases, it may be socially beneficial to consider policies that can help reduce the sources of voting frictions. In addition, there also might be the possibility that official responses to vote passage are more heavily contingent upon the strength of vote passage.

To this end, this paper uses 25 years of voting and budget data from Massachusetts municipalities to investigate how local budgets respond to voter-approved fiscal overrides. In order to alleviate concerns over model misspecification and endogeneity derived from unobservables, a regression discontinuity (RD) methodology will be employed. The RD method uses the fact that vote outcomes are binary, but voting shares are not, to create a sample that focuses on the shift from vote passage to failure. This allows for empirical testing with a larger degree of internal validity than more standard regression techniques. Additionally, in order to better identify *a priori* expectations of budget changes, the fiscal overrides are limited to only those that address educational expenditures.[3]

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[2] Here, returns to voting is used to indicate whether the local budget responds to revealed voter preferences, not whether an individual's welfare has changed.
[3] Also note that all analyses utilizes data on municipal budgets in the fiscal year *after* the override is voted upon. Current year expenditures are less likely to reflect a response to vote failure or success, while investigating future years becomes difficult because overrides are only required to be earmarked for one year.

The findings of this paper may be surprising to some. In particular, education spending seems to have no correlation with the passage of an override, despite every vote having explicitly education-oriented usage. If thinking in terms of flypaper effects, this is indicative of effectively no 'stickiness'. In fact, expenditures in general appear to have no response to an override passage. However, this is not just an artifact of municipalities lagging in their revenue generation. Statistically significant results show that the passage of a fiscal override leads to increased tax collections in line with expectations, but the evidence that total revenues increase is less clear. This fascinating outcome seems to provide evidence that fiscal overrides in Massachusetts are largely being utilized for substitutability in revenues rather than as public expenditure boosts.

The findings reported here strongly imply that municipal budgets fail to strongly respond to the median voter's preference. Models for public expenditures may need to ensure the inclusion of frictions in the voting 'market', otherwise there may be a tendency to over predict public expenditures. Additionally, the results may also be suggestive of a lack of information of outcomes for voters. If we are to subscribe to the theory that an informed populace will provide for informed voters, then policies for providing voters with more information on local budget outcomes may be valuable. In other words, the results provide little evidence for local politicians following the Median Voter Theorem.

This paper is organized as follows. Section 2 provides a brief background of Massachusetts' property tax cap law. Section 3 discusses prior research into voting and public expenditure theory. The data and methodology employed here is laid out in Sections 4 and 5 respectively, while Section 6 discusses the results. Section 7 concludes.

2. Background

California's Proposition 13, passed in 1978, limited *ad valorem* taxes on property to 1 percent of the property's cash value. The passage of this law, for good or ill, has led to a number of consequences in the state.[4] Four decades after Proposition 13, states are still enacting or editing similar laws (as recently as 2010 and 2012 in New Jersey and Oklahoma respectively). These laws are generally meant to force local governments to reduce or streamline service provision and to provide fiscal reprieve to fixed income homeowners for whom increasing property tax rates may result in being priced out of their homes (Ladd and Wilson, 1982).

Massachusett's property tax law (known as Proposition $2\frac{1}{2}$) of 1980 enacted several limitations on local revenue generation from property taxes.[5] In particular, it created two limits; a levy limit and a levy ceiling. The levy ceiling is calculated as 2.5 percent of the total value of all taxable real and personal property in the municipality. This value only changes with property revaluations and new growth. Communities are allowed to temporarily collect property taxes in excess of the levy ceiling only through voter approved measures known as capital or debt exclusions.

On the other hand, the levy limit restricts property tax collections to any value at or below the levy limit. This value increases at an automatic 2.5 percent annual rate, but also includes increases from new growth. Additionally, another type of voter approved measure; the fiscal override can increase the levy limit as well. Any approved fiscal overrides add their value directly to the base levy limit. Cities can choose to collect any amount of property taxes so long as the amount levied lies below both the levy ceiling and the levy limit. The difference between the levied quantity and the levy limit is known as the excess

capacity. Importantly, unused excess capacity *does not* roll over to the next fiscal year.

Debt and capital exclusions allow local governments to raise revenues above and beyond their levy ceiling. Exclusions require two-third majority votes by either a city's council or selectmen as required by local law. Once approved, the exclusion is placed on the next ballot where passage is provided by a simple majority public vote. When placed on the ballot, exclusions are required to list their expected uses and dollar amounts (in the case of capital exclusions). Any increase to a levy limit by exclusions will only last for the life of the debt, and importantly, is not factored into the 2.5 percent annual levy limit increase. As such, exclusions are not only limited in nature (debt or capital projects only), but also in time.[6]

Fiscal overrides are the main focus of this paper. While similar to exclusions in some respects, they are quite different in several key areas. Fiscal overrides need only a majority from local officials to be placed on the ballot and like exclusions, need only a majority of public votes to pass. Similar to exclusions, the initiative must list both the usage and the dollar value of the funds to be collected. An important aspect of overrides is that they are *permanent* in nature. Upon enacting an override, a municipality's levy limit is immediately raised by the aforementioned dollar value, and in subsequent years, the override amount is increased by the same 2.5 percent each year. In essence, an override enables a jurisdiction to increase their revenue generating ability as well as their future revenue generation. Additionally, capital and debt exclusions are restricted to capital expenditures only, fiscal overrides have not limitation. However, overrides have one limiting factor, they cannot increase a levy limit beyond the municipality's levy ceiling.[7]

These fiscal overrides provide a quality demonstration of the voting public's median preference. When an override passes, the public is provided with both the expected total property tax increase as well as the usage of the monies. Importantly, fiscal overrides must be earmarked for their usage during the first year after the initiative's passage. In any future years the money is no longer restricted to its original usage. The analysis presented here will focus solely on budget effects during the first year of passage while the override's usage is still restricted. There exists little *a priori* knowledge to guide investigative efforts once the monies become more easily fungible in future years.

3. Literature review

No discussion of voting and political economy can remove itself from its roots in Black (1948). In laying down the basic ideas behind the Median Voter Theorem, Black heavily influenced research into the provision of public expenditures. In essence, Black argued that the preferences of the median voter should ultimately drive the result of elections. Since then, empirical tests of the Median Voter Theorem have generally failed to show it to be generalizable.

A more recent example by Gerber and Lewis (2004) utilized an extensive database of more than two million individual-level voting returns demonstrates the Median Voter Theorem tends to have more predictive power in homogenous voting districts. Heterogeneous preferences are more likely to allow other factors (such as legislative members' or party preferences) to dominate the median voter's preferences. Importantly, Gerber's paper discusses elections in a multidimensional framework (each voter is essentially deciding party

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[4] See Rosen (1982) and Sexton et al. (1999).
[5] See Cutler et al. (1999) for a discussion on why Massachusetts voters passed Proposition $2\frac{1}{2}$, and why voters might choose to override the law's revenue generation limitations. For other research on Proposition $2\frac{1}{2}$, see Bradbury et al. (2001) and Wallin and Zabel (2011).

[6] Given that debt and capital projects are special cases of expenditures and thus, are not included in city general funds budgets, they are not used in the following analysis. Their removal is also important for timing concerns. Capital project may not line up perfectly with capital exclusion votes, particularly because some capital and debt exclusion votes were to help fund already ongoing projects.
[7] There also exists an option known as an underride in which the municipality's levy limit is reduced by the balloted amount. Only 18 underrides were voted on during the period of analysis. They are not considered here.