ELSEVIER

Journal of Public Economics 71 (1999) 313–334

JOURNAL OF PUBLIC ECONOMICS

Restraining the Leviathan: property tax limitation in Massachusetts

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Received 9 August 1997; received in revised form 9 May 1998; accepted 6 June 1998

Abstract

Proposition $2\frac{1}{2}$, a ballot initiative passed in Massachusetts in 1980, sharply reduced local property taxes. We examine why voters supported Proposition $2\frac{1}{2}$, using data on votes for the Proposition and for overrides of it a decade later. We find two reasons for the Proposition's support: people perceived agency losses from the difficulty of monitoring government, and people judged government to be inefficient because their tax burden was high. By the 1990s, people either regretted the severity of the Proposition's constraints or felt that its mission was accomplished. Voters in communities with larger initial tax cuts supported significantly more overrides.

Keywords: Tax limitations; Proposition $2\frac{1}{2}$; Agency loss; Regret; Overrides

JEL classification: H1; H7; K0

1. Introduction

''To tax and to please, no more than to love and be wise, is not given to men.''– Edmund Burke, ''Speech on American Taxation,'' 1774

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0047-2727/99/$ – see front matter
PII: S0047-2727(98)00079-6

Voter-initiated tax limitations have become a central feature of the United States fiscal landscape. Many governments that once had substantial latitude in setting tax rates – subject only to the discipline of elections – are now statutorily limited in the amount of monies they can raise. Proposition 13 began this trend in California in 1978. It was followed two years later by Proposition $2\frac{1}{2}$ in Massachusetts. Similar measures have passed in other states and localities, and there are calls for legislation at the national level.[1]

Previous research has shown that ''hard'' budget limits do reduce government spending, although ''soft'' limits may not.[2] But there has been relatively little evidence in the previous literature about what makes tax limitations so attractive. Why do voters feel the need to constrain governments in this way? What does support for these limits imply about people's views of their elected representatives? How durable is the sentiment in favor of these limits? These questions are addressed in this paper, drawing on the example of Proposition $2\frac{1}{2}$. This Proposition provides a natural case study of tax limitations for several reasons. First, the initial impact of the Proposition was substantial: an 18% reduction in total property tax revenue in Massachusetts. Further, the Proposition was quite controversial, with many big-city mayors predicting dire consequences were it to pass.[3] Finally, there is a straightforward way to gauge citizens' views about the effects of the Proposition, because communities are allowed to increase revenue above the limit by direct majority votes called ''overrides'' and ''exclusions''.

We use data on these override and exclusion votes and on the initial vote for the Proposition itself to understand why people in various communities supported Proposition $2\frac{1}{2}$ initially and what they thought of it later. Surveys conducted when the Proposition was approved show that voters believed that the Proposition would reduce taxes without cutting services (Ladd and Wilson (1982), (1985)).[4] But the fundamental question we wish to address is why voters held this view.

We distinguish four theories of voter sentiment. Our first theory is the agency loss theory, under which governments spend tax revenue on projects that people do not value. Rational voters may constrain government revenue as a way to limit this wasteful spending. Our second theory is the regret theory – a specialization of the

[1]Many other instruments, including budgets, limit the discretion of government agents in spending monies. When resources are tight, cruder instruments such as budget and hiring freezes are employed.

[2]See Poterba (1997a) for a recent survey. On local tax limits, see Inman (1989); Preston and Ichniowski (1991); Dye and McGuire (1995). On state tax limits, see Rueben (1996). On the effect of alternative budget institutions, see Romer and Rosenthal (1982); Romer et al. (1992); Olmsted et al. (1993); Rothstein (1994).

[3]Cambridge city manager James Sullivan asserted that ''the basic costs of required payments [pensions, debt service, insurance costs, and state-mandated assessments for regional activities] exceed the amount of taxes that would be available by over $1.5 million, without the source of revenue for one municipal employee'' (*Boston Globe*, 10/30/80, p. 20).

[4]There has been little research on Proposition $2\frac{1}{2}$ since the mid-1980s, which is unfortunate because there is much more experience to draw upon now than a decade ago. Notable recent papers include Bradbury (1991), who examines voters' response to the Proposition's constraints, and Lang and Jian (1996); Bradbury et al. (1997), who study the effect of the Proposition on property values.

agency loss theory – which says that voters initially believed there was a lot of waste but came to regret the severity of the constraints they imposed. This explanation may be observationally equivalent to a mission accomplished theory, in which Proposition $2\frac{1}{2}$ reduced waste during the 1980s and thereby left voters more likely to approve additional government spending in the 1990s. Our third theory is the personal finance theory, in which people judge the efficiency of government by the size of their individual tax burden. When that burden is high, people assume that government is inefficient and are more likely to support tax limits. Our fourth theory is the demographic differences theory, under which voters believe that government is wasteful because it spends money on demographic groups (e.g., blacks or ethnic minorities) that are different from themselves (e.g., the majority of voters).

We test these theories using data on voting for Proposition $2\frac{1}{2}$ in 1980 and for overrides and exclusions to the Proposition in the 1990s. The evidence supports the agency loss, regret (or mission-accomplished) and personal finance theories, but not the demographic differences theory. We find that voters have reason to be concerned about agency problems in local government, as each community spends essentially the full amount allowed by the Proposition. At the same time, voters show regret, or a sense of accomplishment, about the severity of the Proposition's constraints: in communities where the initial impact was greater, voters were more likely to support the Proposition and were more likely to approve overrides and exclusions. Finally, higher taxes per capita correlate with greater support for the Proposition and less support for overrides and exclusions.

The Section 2 briefly describes Proposition $2\frac{1}{2}$ and revenue trends in Massachusetts since the Proposition was enacted. The Section 3 elaborates our theories of voter support for the Proposition. The Section 4 explains our empirical methodology, and the Section 5 presents our results. The Section 6 concludes.

2. Proposition $2\frac{1}{2}$ and its aftermath

Concern about property taxes in Massachusetts goes back to at least the 1960s. In 1967, per capita property taxes in Massachusetts were nearly 50% above the national average; in 1977, they had risen to nearly twice the national average and were the highest in the nation. As Cutler et al. (1997b) show, this high level of property taxation reflected two factors: higher total state and local taxes, and a larger share of state and local taxes taking the form of property taxes. The high level of property taxation caught public attention, and in 1980 voters followed the lead of California and approved Proposition $2\frac{1}{2}$ by nearly a 3-to-2 margin.

Proposition $2\frac{1}{2}$ restricted property taxes in several ways.[5] The Proposition

[5]Our discussion of the Proposition is necessarily brief. Bradbury and Ladd (1982); Massachusetts Department of Revenue (1990) provide more detail.

established a levy limit for each community equal (in fiscal year 1982) to the lesser of current property taxes and 2.5% of total property values. Communities were prohibited from imposing property taxes in excess of the levy limit, and communities that were initially taxing above the limit were forced to reduce their tax burden by 15% annually until they reached the limit.[6] Because county governments and special districts play little role in local fiscal matters in Massachusetts, and because most school districts are coterminous with the cities and towns, these constraints on municipalities could have affected a wide range of local services.

The Proposition further capped the growth of the levy limit at 2.5% annually in nominal terms. Shortly after the Proposition was passed, in December 1980, the state legislature amended the Proposition to allow tax revenue from new construction to add to the 2.5% increase. Finally, the Proposition established a levy ceiling for each community, which restricts total property tax revenue to less than 2.5% of total property values even if this implies less than 2.5% annual growth in tax revenue. Because property values in Massachusetts grew quite rapidly after 1982, the levy ceilings were not binding, so we do not focus on this constraint.

Voters can raise their community's taxes above its basic levy limit if a majority of them approve an ''override'' or ''exclusion'' resolution in a direct election.[7] These resolutions are generally proposed by a community's selectmen, or the town or city council, with the mayor's approval required in some cases. Exclusions are temporary increases of a constant size that can be used only for debt or capital expenditures. Overrides are permanent increases that grow by 2.5% per year like the basic levy limit.[8] They can be enacted for any purpose, but the purpose must be declared. Some of the purposes are highly specific – for example, to purchase a new fire truck – while others designate spending categories such as education, and still others raise funds for ''general government'' or the equivalent. The declared purpose applies to the extra revenue in the first year only, and it is not constraining even in the first year if the government can shift funds to other areas that otherwise would have been spent for that purpose. Override voting often occurs before the general budget is determined, so it is not possible to know how much a successful override actually raises spending of the designated type.

To understand the implications of Proposition $2\frac{1}{2}$ for local revenue, we construct a measure of the initial impact of the Proposition on each of the 351

[6]Contrary to the prediction of some behavioral models, the Proposition took effect immediately. If people wanted a smaller government but were afraid of losing services in the short run, they might alternatively have voted for a tax limit that took effect many years later.

[7]The original Proposition required a two-thirds favorable vote with the participation of at least 30% of a municipality's eligible voters, and it restricted such votes to once every two years. The state legislature subsequently relaxed these rules.

[8]Overrides cannot raise a community's levy limit above its levy ceiling, but this constraint proved not important because of the rapid increase in property values.

cities and towns in the state.[9] For a community that was taxing at or below 2.5% of property values in fiscal year 1982 – when the Proposition was first binding – the initial impact of the legislation was zero. For a community taxing above 2.5%, we define the initial impact as the tax cut needed to reduce revenues to 2.5% of property values. Of course, the initial impact of the Proposition comprises only part of the Proposition's total effect, but it is the part that differs across communities and is exogenous to communities' actions after 1982.

As Table 1 shows, Proposition $2\frac{1}{2}$ had an initial impact on 42% of communities in Massachusetts. Because these communities were disproportionately the larger cities and towns, roughly three-quarters of the state's population lived in a community facing a mandatory tax reduction. These initial reductions lowered property tax revenue by 16% in the average affected community but – because larger communities tended to face larger cuts – by 25% for the affected communities as a whole. We calculate the total initial impact in Massachusetts to be 18% of 1981 property tax revenue.

To understand the effect of Proposition $2\frac{1}{2}$ over time, Fig. 1 shows contributions to local revenue growth in Massachusetts from 1976 through 1995. For the line labeled total revenue, we plot the annual growth rate of local revenue. For the line labeled property taxes, we plot the change in property taxes as a share of the previous year's total local revenue. And for the line labeled overrides, we plot new overrides as a share of previous total revenue. We present nominal growth rates because the Proposition's constraints were nominal ones. The sharp decline in inflation during the 1980s made these nominal constraints less binding in real terms than was expected when the Proposition was passed.

Prior to 1982, property taxes and local revenue as a whole grew about 6% per year on average, roughly the rate of overall inflation. Proposition $2\frac{1}{2}$ took effect in fiscal year 1982, causing nominal property tax revenue to fall by 9% that year and

Table 1
Initial impact of Proposition $2\frac{1}{2}$

Measure	Communities reducing taxes	Communities not reducing taxes
Number of communities	146	205
Share of communities	42%	58%
Share of Massachusetts population	73%	27%
Average property taxes per capita in 1981	$524	$554
Average reduction as share of 1981 property taxes	16%	0%
Total reduction in property taxes	$624 million	$0
Total reduction as share of 1981 property taxes	25%	0%

Note: Data are from the Municipal Data Bank of the Department of Revenue and authors' calculations.

[9]All of the community data used in the paper are from the Municipal Data Bank of the Massachusetts Department of Revenue's Division of Local Services. Cutler et al. (1997a), (1997b) describe the data in more detail.

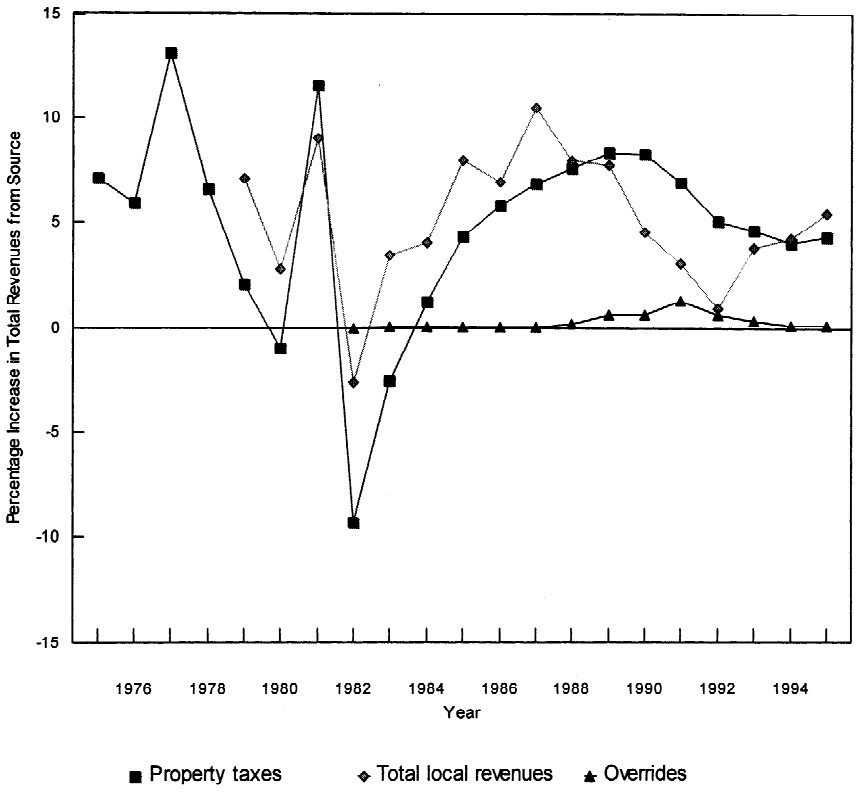

Fig. 1. Sources of local revenue growth in Massachusetts.

3% in 1983, before rising by a mere 1% in 1984. The substantial net decline in property taxes reduced total local revenue growth to 2% annually during this period, well below the rate of inflation.

Local revenue soon rebounded, however, increasing 9% per year on average between 1984 and 1989. This rapid growth was driven by two factors. One was the 7% average annual growth of property tax revenue. The allowance for new construction described above, combined with the economic boom dubbed the ''Massachusetts Miracle'', enabled property tax revenue to grow more swiftly than the Proposition's supposed 2.5% limit. The second factor was a substantial increase in state aid, which was also supported by the state's favorable economic conditions.[10] After 1989, the fiscal situation deteriorated. The recession reduced

[10]In contrast to the surplus in the California state budget before Proposition 13 was passed, the Massachusetts state budget was roughly in balance when Proposition $2\frac{1}{2}$ was passed.

revenue from new growth. Subsequently, the election of a conservative governor led to cuts in state aid. Communities offset these changes to some extent by approving overrides. Fig. 1 shows that new overrides, which never exceeded 0.2% of revenue prior to 1989, raised local revenues by about 1% per year between 1989 and 1992. After 1992, however, voters' willingness to approve new overrides declined, and the growth of local revenue fell as well.

In sum, Proposition $2\frac{1}{2}$ had a significant effect on municipal finances, but a smaller effect than its supporters had hoped for or its detractors had feared. The Proposition bound most tightly during two periods: the first years of its implementation, and the early 1990s, when economic activity slowed. When the economy was booming, the Proposition had much less effect.[11] The fact that Proposition $2\frac{1}{2}$ clearly affected fiscal outcomes is consistent with other evidence that ''hard'' budget constraints affect public sector revenues and spending.

3. Voter attitudes toward local government

Why did voters believe that the Proposition was needed, and did it accomplish what they wanted? Start with a basic observation: Proposition $2\frac{1}{2}$ has endured for a long time. There has been no determined effort to repeal it, and there is no significant evidence of resentment toward the constraints it imposes. Of course, the Proposition was much looser in practice than was originally intended. Still, the lasting popularity of the Proposition suggests that it touches some fundamental chord in people's views about government.

Support for Proposition $2\frac{1}{2}$ was clearly based on the belief that local budgets contained substantial waste that Proposition $2\frac{1}{2}$ would curtail. For example, Ladd and Wilson (1985) reported that 82% of the Proposition's supporters thought the Proposition would cut taxes without reducing service quality; only 10% of supporters listed service cutbacks as the single most important change to be caused by the Proposition.[12]

But why did voters hold such views about local governments? What views do they hold now? We consider four (possibly complementary) theories.

3.1. Agency loss theory

The first theory is that voters believed the government was wasteful for principal-agent reasons. The public elects government officials as its agents, but

[11]Future work should address whether this pattern was intended or occurred by chance.

[12]This explanation contrasts with two other hypotheses regarding the Proposition's appeal – that voters wanted government to provide fewer services, and that voters wanted the same level of services but wanted those services to be financed at the state level instead of the local level. Similar explanations of people's support for tax limitations have been found for Michigan (Courant et al., 1980) and California (Sears and Citrin, 1985).

cannot monitor or penalize their actions easily. Agency losses might result from several factors. A common theme is that officials prefer more – and more expensive – projects than people would choose themselves. Alternatively, agency losses may arise from special-interest lobbying. Officials may be elected on a platform of low public spending, but once in office are pressured by specific groups for particular purposes; giving in to these groups may be a way to ensure continued popularity. Finally, agency losses may owe to bargaining between the government and its employees. Unions of teachers or police officers may be able to extract higher compensation by dealing with elected officials than they could if voters had to approve their contracts directly.[13]

In each of these cases, citizens have some recourse. Voters can elect new officials, recall old ones, or move to another jurisdiction. But these actions are costly, and there is no guarantee that the new system will be better than the old one; after all, no one can commit never to yield to powerful interests. An incumbent can also ''get away with it'' for some time, and may get a personal return from doing so. Indeed, some of that return could be loyal constituents or campaign support, making future election more likely. Further, candidates come as bundles, so that incumbents might be able to spend more and maintain their position if they satisfy people's views along other dimensions. In light of these difficulties, limiting the overall size of government is an alternative, albeit blunt, way to limit wasteful spending.[14]

3.2. Regret or mission-accomplished theory

A special case of the agency loss theory is the regret, or mission-accomplished, theory. This theory recognizes that voters perceived agency loss initially, but that conditions changed. Voter may have perceived substantial waste in 1980 but decided – after seeing the Proposition's impact – that there was less waste than they had believed in 1980. Perhaps voters had not studied local budgets carefully before the Proposition $2\frac{1}{2}$ vote, but reasoned simply that government was big and therefore wasteful. Alternately, voters might still believe that there was substantial

[13]This argument may also help to explain why Proposition $2\frac{1}{2}$ applies to all local governments in Massachusetts, rather than just governments in communities that voted for the Proposition. Most externalities of local spending (for example, from roads or parks) are positive, implying that citizens of one community should want other communities to spend more on public goods, not less. Moreover, because state aid varies inversely with local tax revenue, higher taxes in other communities decreases their demand for state aid. On the other hand, holding down the compensation of public employees in one community is much easier if neighboring communities are trying to do the same thing. See Inman (1989).

[14]Overall budgets might also be justified on a rule-of-thumb basis. People may have an overall perception about government waste but not know where the waste is line by line. Delegating the budget decisions to knowledgeable individuals, but holding them to an overall cap, might encourage managers to eliminate this waste.

waste in 1980, but that the Proposition has now eliminated much of it. In this sense, the desired mission has largely been accomplished.

3.3. Personal finance theory

The third theory is that people judge the value of government by their personal tax burden. If a person's taxes are high, she presumes that government must be inefficient, while if her taxes are low, she presumes that government is fairly well run. This theory is consistent with the observation that Massachusetts had the highest property tax rates in the country in the late 1970s. Similarly, California had the fourth highest property taxes per capita in 1977 before Proposition 13 was passed.[15]

3.4. Demographic differences theory

The fourth theory is that people felt government spending was not desirable because they place a low value on the beneficiaries of government largesse. In particular, people may dislike transfer recipients if they differ in racial or ethnic origin from themselves.[16] Some anecdotal evidence supports this view. The Wall Street Journal (November 25, 1991, p. A1) reported that in Holyoke, Massachusetts, ''the town's mostly white, working-class voters, mainly aged and childless, are alienated from its mainly Puerto Rican public-school children.... Services for older people get funded. Those for children, such as parks and recreation programs, the library and the schools, don't.''

The demographic differences theory is related to the agency loss theory but is somewhat different. The latter theory stresses that programs are wasteful or inefficient in general; the former theory says that programs are less desirable if they benefit certain groups of recipients.

4. Testing the theories

We test these theories in two ways. First, we analyze the factors that predict the share of each community voting in favor of Proposition $2\frac{1}{2}$. The equation we estimate is:

[15]O'Sullivan et al. (1995) posit this explanation as the driving force behind Proposition 13. This behavior may be accentuated by money illusion: in an inflationary environment, nominal tax payments increase more rapidly than real payments and may attract undue attention.

[16]For example, see Cutler et al. (1993) model of ''discriminatory community preference''. Poterba (1997b) finds that states with more elderly residents spend less on education per child, especially if older people and children belong to different racial groups.

$$logit\begin{pmatrix} Percent\ in\ favor\ of \\ Proposition\ 2 \end{pmatrix}_i = \alpha + X_i\ \beta + \epsilon_i,$$

where the independent variables X are generally measured in 1980 before the vote about the Proposition. The average community voted 59% in favor of the Proposition.

In our second test we examine the factors that predict a community's willingness to approve additional spending through override and exclusion resolutions. The equation we estimate is of the form:

$$\left(\frac{OE}{B}\right)_i = \gamma + X_i\ \delta + \eta_i,$$

where OE is the cumulative value of all overrides passed from fiscal years 1990 to 1995 plus the change from 1989 to 1995 in the value of exclusions in force,[17] and B is the levy limit in 1995 if the community had not passed any overrides or exclusions. We study the 1990–95 period because we want to understand voters' attitudes toward Proposition $2\frac{1}{2}$ after its limits had been in effect for a number of years and because overrides and exclusions were very rare prior to that period. The cumulative total of overrides before 1990, for example, was only $37 million, compared to $148 million between 1990 and 1995. Most of the independent variables for this equation are from 1989 before the overrides and exclusions that constitute the dependent variable.

The equation combines two steps of the override and exclusion process: the decision of public officials to propose a resolution (the focus of Romer et al. (1992)), and the decision of voters to approve or disapprove (the focus of Rubinfeld (1977)). Without separate instruments for the two stages of decision-making, however, we could not identify the separate effects of each stage without imposing restrictions on functional forms. Because persuasive restrictions of this sort do not exist, we combine the two stages into one equation. We estimate the equation using ordinary least squares, an approximation given that many observations for OE are zero.

To discriminate among our four theories, we choose independent variables for these equations that reflect people's possible motivations. We capture the agency loss theory in several ways. We first identify variables that indicate the share of the community that is conservative: the share of voters who are Republican (since Republicans presumably feel that government is more wasteful than do Democrats) and the share of voters who approved Proposition 9, a much-debated 1995 ballot initiative that eliminated rent control in Massachusetts. Like Proposition $2\frac{1}{2}$, Proposition 9 raised important issues regarding the appropriate role of local governments (although it did not affect municipal finances). We also include two measures of municipal finances: per capita state aid and per capita local revenue aside from property taxes and state aid. Greater revenue from these sources might persuade voters that their municipal governments are less efficient. Finally, in

[17]Two-thirds of this total is overrides and one-third is exclusions.

some specifications of the override and exclusion equation, we include the share of voters who approved Proposition $2\frac{1}{2}$. This variable should reflect tastes for additional government spending, but it may also provide a proxy for unmeasured economic or demographic characteristics, so we present some results excluding this measure. The first columns of Table 2 and Table 3 show the means of these

Table 2
Determinants of votes for Proposition $2\frac{1}{2}$

Independent variable	Mean	1
Agency Loss Theory		
Share Republican, 1982	0.17	0.048 (0.434)
Share in favor of ending rent control	0.51	0.731** (0.301)
State aid per capita, 1980	$0.15	−0.099 (0.530)
Regret or Mission Accomplished Theory		
Initial impact of Prop $2\frac{1}{2}$ as share of 1980 taxes	0.08	0.678* (0.245)
Personal Finance Theory, 1980		
Property taxes per capita	$0.47	0.407** (0.193)
Demographic Differences Theory, 1980		
Share young	0.28	2.99** (0.918)
Share old	0.12	1.48 (1.02)
Share non-white	0.02	1.69 (1.83)
Share young non-white less share old non-white	1.96	−0.014 (0.015)
Controls		
Population, 1980		
5000–10 000	0.24	−0.091 (0.131)
10 000–20 000	0.23	−0.072 (0.126)
20 000–50 000	0.18	−0.086 (0.127)
50 000 and above	0.07	−0.218 (0.142)
Share of households by income, 1979		
$0 to $7500	0.16	−1.52 (1.31)
$7500 to $15 000	0.21	−3.13* (1.78)
$22 500 to $30 000	0.17	0.365 (1.68)
$30 000 and above	0.24	−0.764 (1.07)
Change in median household income, 1969 to 1979	$9.05	−0.015 (0.027)
Log (house value), 1980	10.80	−0.380 (0.240)
Change in log (house value), 1970–80	0.02	4.69 (3.10)
Share owner-occupied, 1980	0.72	−0.209 (0.373)
Number of observations		251
R^2		0.35

Notes: Dependent variable Log(share in favor/(1−share in favor) for a Community.
The sample includes 316 communities with 1980 populations greater than 1000. Fiscal variables are measured in thousands of dollars. Standard errors are in parentheses.
*, Significant at 10% level.
**, Significant at 5% level.

Table 3
Determinants of dollar value of approved overrides and exclusions

Independent variable	Mean	1	2	3	4
Agency Loss Theory					
Share Republican, 1990	0.16	−0.075 (0.116)	−0.053 (0.128)	−0.031 (0.123)	−0.069 (0.114)
Share in favor of ending rent control	0.51	−0.126 (0.079)	−0.108 (0.086)	−0.109 (0.083)	−0.115 (0.078)
Share in favor of Proposition $2\frac{1}{2}$	0.59	–	–	–	−0.184** (0.060)
State aid per capita, 1989	$.30	−0.137** (0.054)	−0.108* (0.059)	−0.091 (0.057)	−0.121** (0.053)
Other local revenue per capita, 1989	$.30	0.025 (0.032)	−0.018 (0.032)	−0.012 (0.031)	0.034 (0.032)
Regret or Mission Accomplished Theory					
Initial impact of Prop $2\frac{1}{2}$ as share of 1980 taxes	0.08	0.109* (0.065)	0.108 (0.071)	0.131* (0.069)	0.129** (0.065)
Personal Finance Theory, 1989					
Property taxes per capita	$.71	−0.081** (0.028)	–	–	−0.096** (0.028)
Tax rate	1.09	–	−0.029 (0.021)	–	–
Average tax bill as share of income per capita	0.08	–	–	−1.73** (0.372)	–
Demographic Differences Theory, 1990					
Share young	0.24	0.653** (0.219)	0.738** (0.246)	0.711** (0.237)	0.712** (0.217)
Share old	0.13	0.206 (0.203)	0.085 (0.222)	−0.176 (0.222)	0.275 (0.202)
Share non-white	0.04	0.107 (0.270)	−0.282 (0.303)	−0.104 (0.294)	0.106 (0.267)
Share young non-white less share share old non-white	3.92	0.001 (0.002)	0.003 (0.003)	0.001 (0.002)	0.001 (0.002)

Controls					
Population, 1990					
5000–10 000	0.22	−0.043** (0.015)	−0.033** (0.016)	−0.026* (0.015)	−0.038** (0.015)
10 000–20 000	0.25	−0.076** (0.016)	−0.071** (0.017)	−0.056** (0.017)	−0.073** (0.016)
20 000–50 000	0.19	−0.111** (0.019)	−0.104** (0.020)	−0.087** (0.020)	−0.106** (0.018)
50 000 and above	0.07	−0.126** (0.031)	−0.111** (0.035)	−0.097** (0.034)	−0.127** (0.031)
Share of households by income, 1989					
$0 to $15 000	0.17	0.223 (0.214)	0.324 (0.235)	0.459** (0.228)	0.215 (0.211)
$15 000 to $30 000	0.20	0.499** (0.242)	0.636** (0.261)	0.628** (0.250)	0.440* (0.239)
$45 000 to $60 000	0.18	−0.030 (0.260)	0.159 (0.285)	0.260 (0.274)	−0.021 (0.256)
$60 000 and above	0.24	−0.142 (0.183)	0.004 (0.194)	0.082 (0.187)	−0.075 (0.182)
Change in median household income, 1979 to 1989	$22.30	−0.000 (0.002)	−0.001 (0.002)	−0.004* (0.002)	−0.001 (0.002)
Log(house value), 1990	12	0.272** (0.048)	0.221** (0.049)	0.302** (0.047)	0.261** (0.047)
Change in log(house value), 1980–90	0.07	−2.03** (0.794)	−2.20** (0.862)	−2.28** (0.830)	−1.60** (0.795)
Share owner-occupied, 1990	0.73	0.157** (0.076)	0.102 (0.081)	0.123 (0.078)	0.162** (0.075)
Excess capacity in 1989 as share of 1989 levy limit	0.02	−0.562** (0.118)	−0.500** (0.134)	−0.525** (0.128)	−0.544** (0.117)
Number of observations		316	270	270	316
R^2		0.43	0.43	0.47	0.45

Notes: Dependent variable: overrides and exclusions in a community, 1990–95/levy limit in absence of overrides and exclusions, 1989.
The sample includes 316 communities with 1980 population greater than 1000. Fiscal variables are in thousands of dollars. Standard errors are in parentheses.
*, Significant at 10% level.
**, Significant at 5% level.

and other variables. Massachusetts is not very Republican, but it did vote in favor of Proposition 9.

To test the regret (or mission accomplished) theory, we include the initial impact of Proposition $2\frac{1}{2}$ that we calculated earlier. This theory predicts that a larger impact of the Proposition would make initial passage more likely, but would also increase overrides and exclusions. Ideally one would include a measure of the Proposition's impact that extended beyond the first few years, but any variable one could calculate would reflect the communities' responses to the Proposition. Because the initial impacts were so disparate across communities, the measure we use should capture a lot of the cross-community heterogeneity in the Proposition's total impact.

We use three variables to test the personal finance theory. If people look only at their personal finances in deciding whether to support higher taxes, then the personal tax burden should positively affect votes for the Proposition and negatively affect approvals of overrides and exclusions. The three variables we use in the override equation capture different aspects of the tax burden in 1989: per capita property taxes, the residential tax rate, and average property taxes as a share of income. Because these variables are highly correlated, we do not include them all in the same equation. Only the first of these measures is available for 1980, so our equation for voting on the Proposition includes only per capita property taxes in 1980. We have also estimated the equation for overrides including the change in fiscal variables (property taxes, state aid, and other local revenue) from 1981 to 1989. The estimated coefficients on these variables were insignificant and the coefficients on other variables were little changed; hence we do not present the results. Fiscal data for the early 1970s are not available, so we could not add the corresponding variables to the vote equation.

To test the demographic differences theory, we include the share of the population that is young, the share that is old, and the share that is non-white, all measured in the nearest Census year. Because these variables affect the demand for public spending directly as well as affecting people's views about who receives the benefits of spending, interpreting the estimated coefficients on these variables is difficult. As a more stringent test, we include the difference between the share of the young who are non-white and the share of the old who are non-white (as in Poterba, 1997b). The elderly are generally net contributors to local public goods and the young are generally net recipients of them.[18] Thus, if the demographic differences theory is correct, this variable should increase support for the Proposition and reduce support for overrides.

Finally, we include a number of control variables: the size of the community, the share of households with income at different levels, the change in median income, the average house value and its change, and the share of the population

[18]Sears and Citrin (1985) report that California voters viewed spending on social programs less favorably than spending on public safety and other 'universal' services.

living in owner-occupied housing. In the override equation we also use a community's excess capacity as a share of its 1989 levy limit.

5. Evidence on voter attitudes

Before estimating the two equations explained above, it is instructive to review the basic pattern of overrides and exclusions.

5.1. Evidence from the pattern of overrides and exclusions

Fig. 2 presents the distribution of communities by the ratios of their 1989 and 1995 tax levies to their ''basic levy limits'' – what levies would have been in the absence of any overrides or exclusions.[19] In both years, a group of communities clusters just below the basic limit. Yet, the cluster is much smaller in 1995 than in 1989, and the fraction of the distribution above the basic limit is much greater. Between 1989 and 1995, for example, the proportion of communities taxing below their basic levy limits fell by more than half, from above 50% to below 25%; for most of these cities and towns, tax revenues were virtually at the levy limit. The mean excess of tax revenue over the basic levy limit was 14% in 1995, and in one-quarter of communities, the excess exceeded 20%. In total, new overrides and exclusions between 1989 and 1995 raised the levy of the average community by 9%.

This pattern supports both the agency loss theory and the regret (or mission accomplished) theory. First, local governments use all of their taxing authority and would like to have more: in only a few of the 351 cities and towns have voters approved every override and exclusion that was requested from 1990 to 1995. Voters may well be concerned that government officials are pursuing personal agendas rather than the voters' agendas. Second, many local governments have won voter approval for raising substantially more revenue than Proposition $2\frac{1}{2}$ allows, even though the Proposition turned out to be less constraining than was originally intended. Voters in the 1990s do not want local revenue limited as severely as it was in the original Proposition.

The clustering of communities at their basic levy limits also belies a simple median-voter model. The limits imposed by Proposition $2\frac{1}{2}$ clearly had a substantive – not merely a symbolic – effect, a result consistent with the literature showing that ''institutions matter'' for fiscal outcomes (see footnote 1). Yet, much of this research is unable to separate the effect of the institutions from the effect of voters' tastes that shaped their design. Because Proposition $2\frac{1}{2}$ was approved by voters throughout Massachusetts but had very different impacts on different

[19]The figure is limited to communities with 1980 population greater than 1000. Roughly two-thirds of the amounts raised over the basic levy limits derive from overrides and one-third from exclusions.

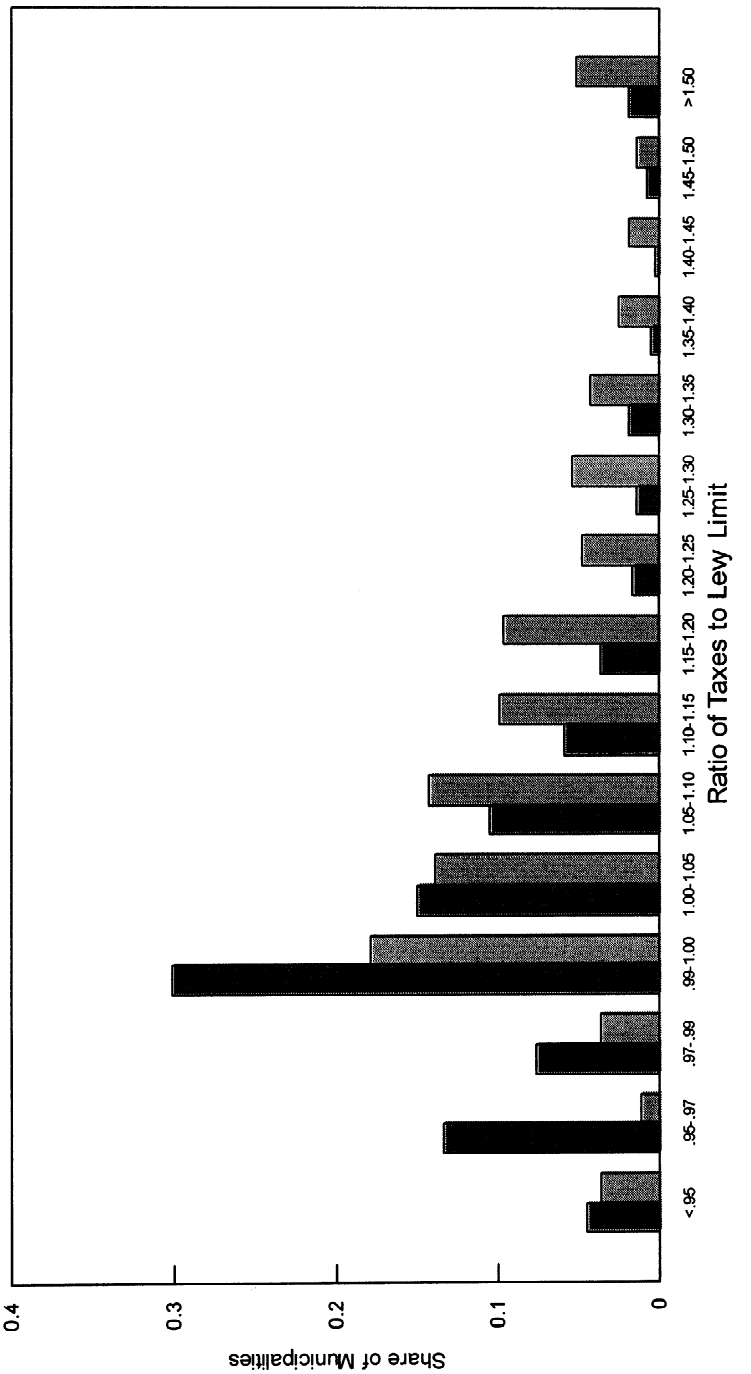

Fig. 2. Distribution of tax revenues relative to the levy limit.

communities, the Proposition's effects across communities are largely exogenous to differences in voters' tastes across communities. Our evidence is among the first that controls for the correlation between institutions and voter's tastes.

5.2. Evidence from regression results

Tables 2 and 3 present estimates of the equations described in the previous section. The dependent variable in Table 2 is the log odds of the share of voters in favor of Proposition $2\frac{1}{2}$; the dependent variable in Table 3 is the dollar amount of overrides and exclusions as a share of the pre-override and exclusion levy limit. Because finances in the very smallest towns display substantial heterogeneity, we limit our analysis to the 316 communities with more than 1000 residents in 1980. For some of the specifications, missing data reduce the sample to 270 or 251 communities; re-estimating all of the specifications with these smaller samples had no effect on the qualitative results.

The first rows show the estimated coefficients on variables related to the agency loss theory. The theory receives mild support. Voting for Proposition 9 is significantly positively correlated with voting for Proposition $2\frac{1}{2}$. Voting for Proposition 9 has a negative effect on voting for overrides and exclusions, although the effect is not statistically significant. State aid generally has a significant negative effect on voting for overrides and exclusions, but it has no effect on voting for the Proposition. The share Republican and other local revenue have insignificant effects, although the coefficients do have the expected sign.[20]

The last column of Table 3 shows that communities that voted more strongly for Proposition $2\frac{1}{2}$ are much less likely to approve override and exclusion resolutions than are communities that supported the Proposition less strongly. The estimated coefficient is extremely large: each additional percentage point of support for the Proposition reduces the value of successful resolutions by 18% of the basic levy limit. The important role of this variable is consistent with the agency loss theory, but it is also consistent with any other theory that predicts antipathy toward government based on variables not included in our model. Our data give us no way to tell why the vote for Proposition $2\frac{1}{2}$ matters so much. It is interesting, though, that the coefficients on the other variables – both for the agency loss theory and the other theories – do not change materially when the vote for Proposition $2\frac{1}{2}$ is included as an additional explanatory variable. The factors that influence support for tax limitations consistently for over a decade are not among the standard variables that researchers have used to proxy for community tastes.

The next row of the tables tests the regret or mission accomplished theory. The data support it strongly. The initial impact of Proposition $2\frac{1}{2}$ is significantly positively related to voting for the Proposition and to support for overrides and

[20]Data on other local revenue are not available for 1980, so that variable is not shown in Table 2.

exclusions.[21] The coefficients imply that a community that was initially forced to reduce its property taxes by 16% (the average among communities with a non-zero impact, shown in Table 1) voted about 3% more in favor of Proposition $2\frac{1}{2}$ and later raised its taxes roughly 2% more than a community with no initial constraint.[22]

The following rows show the estimated coefficients on the personal finance variables. The personal finance theory receives considerable support in the data as well. The coefficient on property taxes is significantly positively related to voting for Proposition $2\frac{1}{2}$ and significantly negatively related to voting for overrides and exclusions. Both alternative measures of the tax burden also have negative effects on overrides and exclusions, although the estimated coefficient on the tax rate is not significantly different from zero. A one standard deviation increase in property taxes per capita raises the share of the vote in favor of Proposition $2\frac{1}{2}$ by 2% and reduces the amount of overrides and exclusions by roughly 4%.

The next set of rows tests the demographic differences theory. Our estimates do not provide much support for this theory. The share of the population that is young has a significant positive coefficient both on voting for Proposition $2\frac{1}{2}$ and voting for overrides and exclusions. This combination could be related to the regret or mission accomplished theory: voters were initially concerned that a heavy concentration of young people would encourage elected officials to spend money too freely, but the voters were willing to allocate money themselves when it later proved necessary. The shares of the population that are old and non-white have coefficients in both equations that are statistically indistinguishable from zero.[23] Finally, the difference between the shares of the young and old who are non-white plays little role in voting for the Proposition and in the override and exclusion process. Despite many anecdotes about the importance of demographic differences for public attitudes, such differences appear unrelated to the desire to raise property taxes in our sample.

The remaining rows of the tables present estimated coefficients for the control variables. Communities with larger populations were less enthusiastic about the Proposition in 1980, although this effect is most pronounced for the biggest cities and none of the estimated coefficients is significantly different from zero. At the same time, larger communities were less willing to raise taxes above the

[21]Ladd and Wilson (1982) also find that voters facing larger tax cuts were more likely to support the Proposition.

[22]The simple correlation between the dependent variable and initial impact is negative, because larger communities experienced larger impacts and later passed fewer overrides and exclusions. The regressions control for population size.

[23]Cutler et al. (1993) report that previous researchers generally have found that states with more old people have less public spending, but localities with more old people do not. See Bogart (1991); Romer et al. (1992) for analyses of local governments, and Case et al. (1993); Poterba (1997b) for analyses of states. Ladd and Wilson (1982) find that older voters were more likely to support the Proposition, a result that is not confirmed by our data.

Proposition's limits through overrides and exclusions. Thus, if one believed that agency problems were worse in larger communities, these results would offer conflicting evidence on that hypothesis. We should note that even in towns with populations under 1000 most voters favored the Proposition; whatever factors caused people to feel that government did not represent their interests were felt even in the smallest of government units.[24] In a final effort to explore the role of community size, we tried adding the change in population between 1980 and 1989 to the override equation. This variable does not prove significant, which may be unsurprising since taxes on new construction are added to the basic levy limits automatically.

Communities with more low-income households were less likely to vote in favor of Proposition $2\frac{1}{2}$ and more likely to approve overrides and exclusions.[25] The former effect is rarely statistically significant, but the latter effect is generally quite significant. Without individual data, we cannot distinguish between the hypothesis that people in a certain group are more likely to favor overrides and exclusions, and the hypothesis that the presence of people in this group makes other community members more likely to favor these resolutions. The change in income over the preceding decade has no detectable effect in these equations.

Neither average house value nor the change in house value has any predictive power for voting on Proposition $2\frac{1}{2}$. But average house value has a significant positive effect on overrides and exclusions, and the change in house value has a significant negative effect. The positive effect might arise because communities with more expensive houses (controlling for income) have residents who value residential amenities highly; therefore, they want good schools and nice parks. If this hypothesis were true, higher spending would be capitalized in the price of houses, reinforcing the correlation. But this logic might also imply that these communities should have opposed the Proposition initially, which does not seem to be the case.

The share of owner-occupiers is significantly positively related to both overrides and exclusions. Because property taxes are paid more directly by owner-occupiers, one might expect that the demand for overrides would fall as their share increased. However, owner-occupiers may also have greater commitment to their communities, which could increase their desire for public services. Finally, communities with greater excess capacity in 1989 have significantly fewer overrides and exclusions over the next 6 years, as we would expect.

[24]Because voters in Massachusetts play a more direct role in the governance of towns than of cities, we also tried including a dummy variable for whether a community is a city or a town. However, this variable is highly correlated with population, and it never entered the regression significantly or had a noticeable effect on other estimated coefficients.

[25]Ladd and Wilson (1982) also find that lower-income voters were less likely to support the Proposition.

6. Conclusion

Citizens have increasingly resorted to referenda when they do not trust their elected officials to serve their interests. Therefore, observing the effects of such direct citizen initiatives and distilling the information they provide about people's preferences is important. We examine the experience with Proposition $2\frac{1}{2}$ in Massachusetts, using data on initial votes for the Proposition and on subsequent votes to override its constraints.

The patterns of these votes support three of the theories of voter sentiment that we proposed: the agency loss theory, the regret (or mission accomplished) theory, and the personal finance theory. The best evidence for the agency loss theory is the observation that communities spend essentially all of their allowable amount. The regret theory is supported by the positive correlations between the initial impact of the Proposition and both the initial support for the Proposition and the amount of subsequent overrides and exclusions. The personal finance theory is demonstrated by the finding that higher personal taxes are associated with more votes for the Proposition and a smaller amount of overrides and exclusions. We do not find evidence to support the demographic differences theory, that voters view public spending less favorably when many of the recipients are of a different race.

The central question raised by our results is whether Proposition $2\frac{1}{2}$ was on net beneficial or harmful. Answering this question requires much more information on the returns to government spending: for example, are firefighters arriving at blazes more slowly, or have educational outcomes deteriorated?[26] Our results indicate how voters thought about public spending over time and provide a natural instrument through which one could examine the changes in public service provision brought about by fiscal limitations.

Acknowledgements

We are grateful to Kim O'Neill for helping to inspire our work on this topic, to Alan Altshuler, Edward Glaeser, Robert Inman, James Poterba, Judy Temple, and two anonymous referees for helpful comments, and to Roger Hatch and Burt Lewis from the Massachusetts Department of Revenue for assistance with obtaining and interpreting data. This research was supported by the Alfred Sloan Foundation, the National Institutes on Aging, and the National Science Foundation. The views expressed are our own and not necessarily those of any institution with which we are affiliated.

[26]Downes (1992) examines the effect of Proposition 13 on the California educational system.

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