Strategic Timing of Ballot Initiatives: Evidence from Wisconsin School Referenda

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ABSTRACT:

One important consideration when studying direct democracy is the rules on agenda establishment. In their seminal series of articles, Romer and Rosenthal (1978, 1979) identified the ability of a budget maximizing monopolist referendum agenda-setter to extract a greater amount of expenditure than desired by the median voter. While in Romer and Rosenthal's models, the agenda setter exercised control only over the amount of the referendum, this paper focuses on the ability of an agenda-setter to gain favorable outcomes through the strategic timing of elections. Since different subsets of the electorate may turnout to vote for an initiative or a referendum given the remaining composition of the ballot, elections scheduled for different times may produce different median voters. As a result, an agenda setter with the power to schedule the election may attempt to schedule the election at a time that produces a median voter closest to their ideal point. This paper presents a formal model of strategically timing of school referenda. The remainder of the paper then empirically tests the formal model using a dataset of school district referendum in Wisconsin from 1990-2003. The results show some evidence of strategic timing, though they are not particularly robust.

I. Introduction:

In the United States many policy decisions are made by a vote of an electorate at large. Approximately half of the states in the United States have provisions for some form of citizen-initiated direct legislation (Matsusaka, 1995). In addition, many states and municipalities make tax and expenditure decisions through referendum. There is a great deal of heterogeneity in the rules specifying how and when these initiatives and referenda reach voters. For example, states generally require the number of signatures in support of a citizen initiative to exceed some percentage of the voters participating in the most recent gubernatorial election. This requirement varies from two percent in North Dakota to fifteen percent in Wyoming (Matsusaka, 1995). California's proposition 13 and Massachusetts' proposition 1 ½ demonstrate the enormous potential policy influence of direct democracy. As a result, it is important to understand how the presence of direct democracy, and the rules surrounding its administration, affects economic and political outcomes.

The rules on agenda establishment have been of historical interest in the study of direct democracy. In their seminal series of articles, Romer and Rosenthal (1978, 1979) identified the ability of a budget maximizing monopolist referendum agenda-setter to extract a greater amount of expenditure than desired by the median voter. In the Romer and Rosenthal models, the budget maximizing monopolist agenda-setter exercised power by controlling the amount of the referendum. In some circumstances, however, there may be additional sources of agenda control. This paper focuses on the ability of an agenda-setter to gain favorable outcomes through the strategic timing of elections. Since

different subsets of the electorate turnout to vote for an initiative or a referendum given the remaining composition of the ballot (Rubinfeld, 1980; Smith 2001; Tolbert, Grummel, and Smith, 2001), elections scheduled for different times may produce different median voters. As a result, an agenda setter with the power to schedule the election may attempt to schedule the election at a time that produces a median voter closest to their ideal point.

The remainder of the paper proceeds as follows. Section II provides a brief review of the previous literature on direct democracy. A formal model of strategically scheduling elections is developed in section III. Section IV presents empirical tests of the predictions made in section III. The remainder of the paper then applies data to the empirical predictions. The dataset, which covers school district referenda in Wisconsin from 1990 to 2003, is described in section V. Results from the empirical tests are presented in section VI. Section VII concludes.

II. Previous Literature:

A number of recent papers have looked at the relationship between the presence of citizen-initiated direct legislation and government expenditures. Zax (1989) finds that states and municipalities in the United States that permitted direct initiatives for statutory purposes had higher government expenditures than non-initiative states and municipalities. In contrast, Matsusaka (1995) finds that state expenditures and tax revenues are approximately four and eight percent lower respectively in those states that

permit direct legislation. Similarly, Feld and Matsusaka (2003) estimate that Swiss cantons that require mandatory referendum for new spending had 19% less spending than comparable cantons without mandatory referendum. Besley and Case (2003) also find a negative correlation between the presence of initiative and measures of government spending and taxation, though they generally find that this relationship is not statistically significant.

Less literature has been produced on the effects of referendum on governmental expenditure. Much of the existing literature has focused on how the demographics of an electorate affect expenditure outcomes in municipalities that face a common state referendum process. For example, Romer, Rosenthal, and Munley (1992) and Stevens and Mason (1996) test how the composition of the electorate affects school referendum proposals and outcomes in New York and Oregon respectively. A number of other papers, like Bergstrom, Rubinfeld, and Shapiro (1982), Rubinfeld (1977), and Tedin, Matland, and Weiher (2001), have studied how individual's characteristics affect their voting behavior on an expenditure referendum.

In only a few papers in the recent literature on direct democracy is there any discussion of agenda setting. Feld and Matsusaka (2003), Gerber (1996), and Matsusaka (1995) all empirically test how the size of the signature requirement for direct initiatives affects governmental expenditures. All three papers find a positive relationship between the number of signatures required to introduce a direct initiative and government expenditure. Balsdon, Brunner, and Rueben (2003) and Romer, Rosenthal, and Munley (1992) test whether school budget referenda proposed by school boards are consistent with the budget-maximization model of Romer and Rosenthal (1978, 1979). Baldson,

Brunner, and Rueben find that school boards act like risk-averse budget maximizing agenda-setters. Romer, Rosenthal, and Munley conclude that large school districts tend to act like budget maximizers, while small school districts seem to propose referendum more in line with the preferences of the median voter.

Two previous papers, Dunne, Reed, and Wilbanks (1997) and Pequet, Coats, and Yen (1996) discuss the ability of agenda-setters to control the timing of elections. Dunne, Reed, and Wilbanks collect school bond data from 20 states where school boards have the power to schedule the date of referendum on school bonds. They test whether the scheduling of school bonds for non-general elections is independent of whether the school board was elected in a non-general election. The authors find that school boards that were elected in non-general elections were more likely to schedule bond issues for a non-general election. This is presented as evidence of the strategic scheduling of elections. Pequet, Coats, and Yen study turnout in local school board property tax elections in Louisiana. They find that the proportion of votes against a school-tax proposition is significantly and positively related to turnout, and that turnout is significantly and positively related to the number of other additional issues on the ballot.

While both Dunne, Reed, and Wilbanks (1997) and Pequet, Coats, and Yen (1996) discuss the possibility of the strategic timing of elections, in neither paper do the authors directly test this hypothesis. Dunne, Reed, and Wilbanks' result that school boards that are elected in non-general election are more likely to propose school referendum in a special election could arise simply as a result of unobserved community preference over the number of elections. Pequet, Coats, and Yen's results only show that there may be an advantage for school boards to propose school referendum in special

elections. They provide no evidence that school boards strategically do so. This paper fills this void in the literature by formally modeling and testing the strategic timing of school referendum elections.

III. Theoretical Model:

Let *N* be the finite set of an odd number of voters in a school district. Assume that $\forall i \in N$ that preferences for the amount of public school expenditure ($E \in \Re^1_+$) for the district can be represented by the following utility function: $U^i(E) = -(E - E_i^*)^2$, where E_i^* is *i*'s unique ideal expenditure on schooling. Let $m \in N$ be the individual with the median ideal expenditure, and define E_m^* individual *m*'s ideal expenditure.

The level of *E* is determined through a one-shot referendum process. A referendum is approved if it receives at least as many yes votes and it receives no votes. Let E^r represent the reversion level of expenditure if a referendum is not proposed or a proposed referendum does not pass. It is assumed that $E_m^* > E^r$. A voter favors the referendum if $U(E) \geq U(E^r)$, and otherwise opposes it. The entire electorate, however, does not necessarily turnout for the election. When faced with a referendum for an expenditure of *E*, a voter turns out to vote *iff:* $p_j B_j + C_j \geq 0$ (Riker and Ordenshook, 1968), where B_j is equal to $\left|U^j(E) - U^j(E^r)\right|$, p_j is the exogenous probability that *j* assigns to their vote being pivotal, and C_j is the disutility (or cost) that *j* incurs from

voting. A simplifying assumption is made that p and C are constant across all $i \in N$, and that $p > 0$.

It is assumed that a monopolist that would like to maximize the value of E controls the agenda for the referendum. The agenda-setter has complete knowledge of all preferences, as well as the costs of voting and the exogenous probability that all potential voters assign to being pivotal. The budget maximizing agenda-setter has agenda power not only over amount of the referendum, but also the timing of the referendum. The referendum can be brought up at the same time as regularly scheduled elections for political offices, or in a special election on only school expenditure. In regularly scheduled elections it is assumed that $C = 0$. As a result, the entire electorate will vote on the school referendum. In contrast, it is assumed that $C < 0$ in the special election. As a result, full turnout will not always occur in a special election.

Lemma 1: Suppose partial turnout occurs in a special election. There will exist expenditure cutpoints A and B ($A \leq B$) s.t. only those $i \in N$ with $E_i^* \leq A$ or $E_i^* \geq B$ vote.

Proofs of this lemma and the subsequent propositions are presented in the appendix. This lemma shows that in special elections members of the electorate with extreme preferences are more likely to turnout to vote. Define $A^*(E)$ as the largest expenditure ideal point such that an individual turns out to vote against a referendum with value E. Likewise, $B^*(E)$ as the smallest expenditure ideal point such that an individual

turns out to vote for a referendum with value E. We can then define $N(A^*(E))$ as the number of $i \in N$ s.t. $E_i^* < A^*(E)$, and $Y(B^*(E))$ as the number of $i \in N$ s.t. $E_i^* > B^*(E)$. Using this lemma, three propositions are derived.

Proposition 1: The agenda-setter will propose a referendum of value $\max\{2E_m^* - E^r, E^s\}$, where E^s is the largest value s.t. $Y(B^*(E^s)) = N(A^*(E^s))$. If $E^s \geq 2E_m^* - E^r$, the agenda-setter will propose the referendum in a special election, otherwise the agenda-setter will propose the referendum as part of a regularly scheduled election.

Proposition 2: The percent of the electorate that turnout to vote against referendum is weakly increasing in the amount of the referendum.

Proposition 3: The percent of the electorate that turnout to vote for a referendum is weakly increasing in the amount of the referendum up to some amount E^*. The percent of the electorate that turnout to vote for a referendum is weakly decreasing in the amount of the referendum for all referendum greater than E^*.

IV. Empirical Predictions

Proposition 1 indicates that a budget-maximizing agenda setter will be more likely to propose a referendum as part of a special election if there are more members of the electorate with preferences for extremely high expenditure than for extremely low expenditure. Thus, we would like to identify characteristics of the electorate that would indicate the presence of extremely high or extremely low preferences. Parents of those children who currently attend public schools are likely to have high expenditure preferences. Conversely, parents of those children who currently attend private schools are likely to have low expenditure preferences. It is expected, therefore, that holding all other factors constant, a school board in a district with a high percentage of voters with children in public schools will be more likely to call a special election. In contrast, a school board in a district with a high percentage of voters with children in private schools would be expected to be less likely to call special election. Rubinfeld (1977) and Bergstrom, Rubinfeld, and Shapiro (1982) analysis of voter behavior in individual school referenda empirically verify that parents of students who attend public and private school are more and less likely respectively to support a school referendum. Additionally, Rubinfeld and Thomas (1980) find that individuals with children both in public and private school were more likely to turnout in a special school election.

Elderly individuals are another potential group of voters that are likely to have low expenditure preferences. Harris, Evans, and Schwab (2001), Romer, Rosenthal, and Munley (1992), and Stevens and Mason (1996) all show a negative relationship between the percentage of elderly individuals in a school district and the amount of spending

passed by referendum. Empirical results, however, have not always indicated that elderly individuals are less likely to support school referendum. Rubinfeld (1977) and Bergstrom, Rubinfeld, and Shapiro (1982) both find elderly individuals are insignificantly more likely to support a school referendum. Tedin, Matland, Weiher (2001) find that white individuals over 50 were significantly less likely to support a bond referendum, but find no significant relationship between African-American and Hispanic individuals over 50 and support for the referendum. Still, it is expected a high percentage of elderly individuals in the voting population would make the school board less likely to call special election.

Propositions 2 and 3 are more straightforward to test empirically. Using yes and no turnout as the dependent variables in regressions, it can be tested how the amount of the referendum affects the percent of the electorate that turns out to vote yes and no. It is expected that the number of no votes will continuously grow as the size of the referendum increases, while the number of yes votes will begin decreasing at some level of expenditure. It can also be tested whether the general assumption that amount of the referendum affects turnout, and affects turnout more in special elections than in regularly scheduled elections, is empirically true. Finally, it can be tested whether districts with a higher percentage of parents with students enrolled in public schools have higher turnout in favor of referenda in special elections. Similarly, it can be tested whether districts with a higher percentage of parents with children in private schools and elderly individuals have higher turnout against referenda in special elections.

V. Data

The remainder of this paper this paper tests the empirical predictions made in section IV. A dataset of school referendum in the state of Wisconsin from 1990 – 2003 is constructed for this purpose. The state of Wisconsin restricts the amount a school district can expend on a per pupil basis. A school district, however, may exceed this revenue limit by passing a referendum. The amount of the referendum and the timing of when it is scheduled to vote are determined by the school board. Referenda are classified as being for one of three different types of expenditures: debt, reoccurring costs, or nonreoccuring costs. Debt referenda are generally for larger project, like building maintenance and construction. Reoccuring cost referenda are often for general operating costs, while nonreoccuring cost referenda are typically for specific projects like a new computer lab or ADA compliance. If a referendum is for reoccurring costs, it can either be for a temporary or permanent increase in the revenue limit.

Data on school referenda were downloaded from the Wisconsin Department of Public Instruction. This data included information on the dates of election, the amount of the referendum, votes in favor of the referendum, votes against the referendum, the type of referendum, school year(s) for which the referendum applies, and a brief verbal description of the specific purpose for the referendum. A total of 1778 separate referenda occurred over this time period. Dates of primary and general statewide elections were obtained from volumes of the Wisconsin Blue Book. An election was assumed to be a special election if it occurred on a day in which a primary or general statewide election

was not occurring. A breakdown of the number of special and regularly scheduled school referenda by year is given in Table I in the appendix.

Reported referendum amounts are converted to their real present value at the time of the election. A continuously compounded social discount rate of 5% is used to discount the amount of the referendum between the election date and the time of expenditure. Expenditures on debt referendum were assumed to occur immediately. Expenditures on non-debt referendum were assumed to occur on September 1st of their listed starting year. Exceptions to this rule were referenda that were voted on after September 1st of the listed starting year, which were assumed to start on the election date. If no start year was provided, expenditures were assumed to occur on the first September 1st following the election. Permanent increases in the revenue limit were priced as an infinite stream.

2000 Census data by school district were obtained from Wisconsin's Department of Administration. The Wisconsin Department of Administration compiled this data from the National Center for Education Statistics. This provided information on population by age group, percent of individuals age 25 and older obtaining certain levels of education, percent of structures occupied by owners, median household income, population by racial group, and percent of population living in a rural area. In addition, the number of students enrolled in both public and private schools in the school district in 2000 were obtained from Wisconsin's Department of Public Instruction. Measures of yes and no turnout are constructed by dividing the number in voters supporting and opposing the referendum in each election by the population of individuals over the age of 18 in the school district in the 2000 census. To create a measure of the number of parents with

kids enrolled in the public and private schools, the respective district wide enrollment totals are divided by the total population of the school district of the school district in the 2000 census. Descriptive statistics for all of the variables are listed in Table II of the appendix.

VI. Empirical Results

The first set of regressions test what factors are correlated with whether a referendum is scheduled as a special election. The hypothesis is that districts with a high percentage of their population enrolled in the public and private schools should be more and less likely respectively to schedule special elections. In addition, districts in which the elderly make up a large percentage of the electorate should be less likely to schedule special elections.

Since the dependent variable is binary, Probit regressions using robust standard errors clustered by school district were used to perform the analysis. Three separate regressions are presented. In all three regressions the percent of the population in public and private schools and the percent of the electorate over 65 are included as explanatory variables. In regression (1), the natural log of the real amount of the referendum per voter, a dummy for the type of the referendum (with the dummy for an unknown type excluded), and a dummy indicating whether the election took place in an odd year are also included as control variables. The odd year dummy is necessary since there are no fall statewide elections in odd years. In regressions (2) and (3), a number of other additional variables that are often included in regressions to predict the level of school

district spending are included as control variables. In regression (2), the percent of owner occupied properties, the percent of population in rural areas, the percent of population that in non-white, and the natural log of the median household income are included in addition to the variables from regression (1). Regression (3) contains all of the control variables from regression (2), plus the percent of the population with high school and college degrees and the log of the size of the electorate. Results from all three regressions are listed in Table III of the appendix.

The results from regressions (1), (2), and (3) provide some evidence to support the hypothesizes that districts with more children attending public schools and fewer children attending private schools are more likely to call a special election. The support, however, is not very robust. Regression (1) indicates that the percentage of the population enrolled in public and private schools are positively and negatively related respectively to whether a referendum occurs in a special election. In both cases this result is significant at the 90% level. While the signs on the coefficients remain the same in regressions (2) and (3), the results are no longer statistically significant. Since none of the additional control variables are statistically significant, it is unclear whether this change in statistical significance is a result of omitted variable bias in regression (1) or attenuation due to the inclusion of irrelevant variables in regressions (2) and (3). In none of the regressions is the percent of the electorate elderly close to being statistically significant.

Two other interesting results are found in the regressions (1), (2), and (3). In all three regressions the real amount of the referendum per adult is significantly positively related to the probability that the referendum is brought up in a special election.

Conversely, in all three regressions nonreoccuring referenda are significantly less likely to be voted on in a special election than a debt or reoccurring referendum. Both of these results are consistent with extensions of ideas developed in the theoretical model. In the theoretical model, a special election will only be called when it will produce greater expenditure than desired by the median member of the electorate. Suppose we assume that a districts median voter ideal point is distributed independently of the tails of the distribution. This would result in the referenda proposed in special elections to on average be more expensive. In addition, suppose we modified the model to differentiate preferences over different types of expenditure. Specifically, imagine that moderate voters are more likely to support tangible expenditures rather than blank check of equal amount for operating costs. As a result, nonreoccuring referendums, which are often for purposes like building maintenance, ADA requirements, and technological improvements may be more likely to get support from moderate members of the electorate than debt referendum and reoccurring referendum, which are often for less specific or tangible purposes. This would lead to nonreoccuring referenda being proposed more often in regular elections than comparable debt and reoccurring referendum.

The second set of regressions test how turnout varies with the amount and timing of the referendum. This analysis is done using linear regressions with White's standard errors clustered by school district. Regressions (4), (5), and (6) use yes, no, and total turnout as dependent variables respectively, with dummy variables indicating the type of election (February General, April General, September Primary, November General, with special elections excluded), the percent of the electorate over 65, the percent of the population attending public and private schools, and the natural log of the real amount of

referendum per potential voter, the percent of owner occupied properties, the percent of rural population, the percent of non-white population, the natural log of the median household income, and the natural log of the size of the electorate included as explanatory variables. In addition, the percent of the electorate over 65, the percent of the population attending public and private schools, and the natural log of the real amount of referendum per potential voter were interacted with the special election dummy variable. These interaction terms test whether these demographic groups do in fact impact turnout more in special elections and whether amount has a bigger influence on turnout in special elections. Regressions (7), (8), and (9) are the same as (4), (5), and (6), except the log amount of referendum per voter is replaced by the amount of the referendum and the amount of the referendum squared. This is done to test the claims of propositions 2 and 3 that no turnout should be increasing with respect to the amount, while yes turnout should be initially increasing, then decreasing with respect to the amount. The appendix contains results from regressions (4), (5), and (6) in Table IV and results from regressions (7), (8), and (9) in Table V.

Results from the second set of regressions indicate that the amount of the referendum is positively correlated with turnout. In regressions (4), (5), and (6), the effect of the log amount of the referendum per voter on turnout is positive and significant. A one standard deviation increase in the log of the real amount of spending per voter is correlated with approximately a 0.75% and 1.5% increase in yes and no turnout respectively. In addition, the interaction term between the amount of the referendum and the special election is significantly positively related to yes turnout in regressions. A one standard deviation increase in the log of the spending per voter increases yes turnout

0.75% more in a special election than in a regular election. In contrast, no turnout is not significantly more affected by the amount of the referendum in special elections.

Regressions (7), (8), and (9) provide some evidence in support of propositions 2 and 3. Regression (7) shows that the derivative of yes turnout with respect to amount initially increases and then decreases in both regular and special election. It should be noted, however, that the coefficient on the amount squared term is essentially zero in special elections. Regression (8) shows that the derivative of no turnout with respect to amount is strictly increasing for all amounts. Again, however, the squared term cannot be shown to be statistically significant different from zero. It should be also be noted there is nothing in proposition 2 or 3 that suggests that the relationship between the amount of referendum and turnout should be quadratic. A semi-parametric estimation strategy in which the effects of amount on turnout were allowed to vary non-parametrically, may be a more effective means of testing propositions 2 and 3.

Regressions (4) – (9) provide little support to the hypothesis that the presence of certain demographics should lead to higher turnout in special elections. In general the regressions do show the expected strong positive statistical relationship between yes turnout and the percentage of the population in public school. The relationship between yes turnout and the interaction term between the percentage of the population in public school and a special election, however, while positive, is not statistically significant. The results are less clear about the how the percentage of the population in private school affects no turnout. There exist no significant relationship between both no turnout and the percentage of the population attending private school and no turnout and the interaction term between the percentage of the population in private school and a special

election. Finally, while the percentage of the population over 65 shows a positive statistical relationship with both yes and no turnout, there exists no statistical relationship between either measure of turnout and the population over 65 interacted with the special election dummy.

VII. Conclusions

This paper has attempted to formally model and empirically test the ability of budget maximizing agenda-setters to strategically schedule elections. The formal model predicts that the budget maximizing agenda-setter will be more likely to schedule elections when those individuals with extreme expenditure preferences are more like to favor high expenditure. The empirical evidence provides some support of this hypothesis, but is this support not particularly robust. The empirical testing relies on the assumption that a high percentage of population attending public schools is a good indicator of high demanders, and that a high percentage of students in private schools and elderly is a good indicator of low demanders. Evidence from subsequent regressions brings the validity of these assumptions into question. In particular, there is not strong evidence that turnout against referenda is highly correlated with the percentage of students attending private schools or the percentage of elderly in the electorate. Thus, stronger empirical results may result from identifying stronger macro indicators of the presence high and low demand individuals within a school district.

In the literature direct democracy is often justified normatively on the grounds that it represents the will of the median voter. This argument is not as convincing if

certain individuals have the ability to pick amongst a number of median voters. Thus, irrespective of the strength of the empirical results, this paper identifies a serious concern that must be addressed in both future research and public policy. In most research on direct democracy, the agenda is exogenously set through some black box. This paper demonstrates the need for subsequent research to explicitly model and account for the agenda-setting process.

Appendix

Proof of Lemma 1:

Let $V \subset N$ be the set of all individuals that turnout to vote for a referendum of expenditure *E*. Since our agenda setter is a budget maximizer, we only need to consider referenda *E* s.t. $E > E^r$. Suppose $i, j \in N \setminus V$, and define $I = [E_i^*, E_j^*]$. Let $\hat{E} \in I$, and suppose that an individual *k* with an ideal expenditure of $\hat{E}$ turned out to vote.

Case 1: Individual *k* votes for the referendum *E*.

Since *k* votes for the referendum, it must be that $(E^r - E_k^*)^2 - (E - E_k^*)^2 \geq (C/p)$.

Rearranging terms, this can be rewritten as $(E^{r\,2} - E^2) + 2E_k^*(E - E^r) \geq (C/p)$. Since $E_j^* > E_k^*$ and $E > E^r$, it is true that

$(E^{r\,2} - E^2) + 2E_j^*(E - E^r) \geq (E^{r\,2} - E^2) + 2E_k^*(E - E^r) \Rightarrow$

$(E^r - E_j^*)^2 - (E - E_j^*)^2 \geq (C/p)$. This contradicts that individual *j* abstains from voting.

Case 2: Individual *k* votes against referendum *E*.

Since *k* votes for the referendum, it must be that $(E - E_k^*)^2 - (E^r - E_k^*)^2 \geq (C/p)$.

Rearranging terms, this can be rewritten as $(E^2 - E^{r2}) - 2E_k^*(E - E^r) \geq (C/p)$. Since $E_k^* > E_i^*$ and $E > E^r$, it is true that

$(E^2 - E^{r2}) - 2E_i^*(E - E^r) \geq (E^2 - E^{r2}) - 2E_k^*(E - E^r) \Rightarrow$

$(E - E_i^*)^2 - (E^r - E_i^*)^2 \geq (C/p)$. This contradicts that individual *i* abstains from voting.

Proof of Proposition 1:

As in Romer and Rosenthal (1978), the budget maximizing agenda-setter makes the median voter indifferent between the referendum and the reversion expenditure. In the regularly scheduled the budget-maximizing agenda setter's maximization problem can be written as: $\max E$ s.t. $U^m(E) \geq U(E^r)$. Since the constraint binds at the maximum, we know $(E - E_m^*)^2 = (E^r - E_m^*)^2$. Taking the square root of both sides, we know $(E - E_m^*) = (E^r - E_m^*)$ or $(E - E_m^*) = -(E^r - E_m^*)$. This implies that $E = E^r$ or $2E_m^* - E^r$. Since it is assumed that $E_m^* > E^r$, $2E_m^* - E^r$ is always preferred by the agenda-setter.

Now suppose that the agenda setter proposes a referendum in a special election. The budget maximizing agenda-setter still wants to make the median voter indifferent between the referendum and the reversion expenditure. The identity of the median voter, however, depends on which members of the electorate turnout. From lemma 1, we know that for each referendum *E*, there exist cutpoints $A^*(E)$ and $B^*(E)$. We can represent the budget-maximizing agenda-setter's problem in the special election as:

$\max E$ s.t. $Y(B^*(E)) \geq N(A^*(E))$. Since the constraint binds at the maximum, we know $Y(B^*(E)) = N(A^*(E))$. E^s is defined as the largest value of *E* such that this equality holds.

Knowing the values of the referendum that could be passed in each type of election, the budget maximizing agenda-setter will schedule the referendum for the type of election in which the larger referendum will pass. If $E^s \geq 2E_m^* - E^r$ a larger referendum can be passed in the special election, and thus the agenda-setter will schedule the referendum as part of a special election. Conversely, if $2E_m^* - E^r > E^s$, then the agenda-setter will bring the referendum to a vote in a regularly scheduled election.

Proof of Proposition 2:

Suppose $i \in N$ votes against a referendum *E*, and let $\hat{E} > E$. This implies that $U^i(E) > U^i(\hat{E})$, and hence that $U^i(E^r) - U^i(\hat{E}) \geq U^i(E^r) - U^i(E)$. Since *i* voted for *E*, it must be that $U^i(E^r) - U^i(E) \geq (C/p)$, which implies $U^i(E^r) - U^i(\hat{E}) \geq (C/p)$.

Proof of Proposition 3:

From lemma 1, we know that for all referendum *E*, there exists a cutpoint $B^*(E)$, where only voter's with ideal points for expenditure greater than $B^*(E)$ turnout to vote. Define $E^* = \min_E B*(E)$ and let $\hat{E}$ be another referendum. We must show that for any

$E = \alpha\hat{E} + (1-\alpha)E^*$, $\alpha \in (0,1)$, that any voters that turnout to vote yes for referendum $\hat{E}$ also turnout to vote yes for referendum *E*, and that any voters that turnout to vote yes for referendum *E* also turnout to vote yes for referendum E^*.

By the definition of E^*, the second half of the statement is true. Therefore we know $\forall i \in N$ who voter for $\hat{E}$ that $U^i(\hat{E}) - U^i(E^r) \geq (C/p)$ and that $U^i(E^*) - U^i(E^r) \geq (C/p)$. Thus, we know for some $\alpha \in (0,1)$ that $\alpha U^i(\hat{E}) + (1-\alpha)U^i(E^*) - U^i(E^r) \geq (C/p)$. By the concavity of the utility function this implies that $U^i(\alpha\hat{E} + (1-\alpha)E^*) - U^i(E^r) \geq (C/p)$, and hence that all *i* vote for referendum *E*.

Table I
Counts of Elections By Year

	Reg. Election	Sp. Election	Total
1990	4	1	5
1991	2	32	34
1992	20	31	51
1993	17	34	51
1994	85	49	134
1995	51	91	142
1996	115	88	203
1997	73	124	197
1998	173	67	240
1999	69	91	160
2000	142	49	191
2001	92	73	165
2002	91	13	104
2003	65	36	101
Total	999	779	1,778

Table II
Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Special Election Dummy	1778	0.44	0.50	0	1
Yes Turnout	1717	16.44	8.18	1.72	62.05
No Turnout	1717	16.51	8.26	0.78	54.18
Total Turnout	1717	32.95	13.67	4.85	89.18
Log (Real Referendum Amount / Pop. 18+)	1772	6.10	1.48	0.11	9.36
Percent Electorate 65+	1778	18.10	4.98	5.19	34.20
Percent of Pop. Attending Public Schools	1778	16.84	4.83	5.10	91.20
Percent of Pop. Attending Private Schools	1778	1.80	1.93	0	19.24
Debt Referendum Dummy	1778	0.69	0.46	0	1
Nonoccuring Referendum Dummy	1778	0.10	0.29	0	1
Reoccuring Referendum Dummy	1778	0.18	0.38	0	1
Permenent Referendum Dummy	1778	0.08	0.28	0	1
Percent of Property Owner Occupied	1778	77.21	7.78	45.31	97.06
Percent of Population Rural	1778	60.38	36.82	0	100
Percent of Population Non-White	1778	4.51	5.82	0	87.84
Log (Median Household Income)	1778	10.73	0.22	10.17	11.51
Percent of Pop. 25+ w/ High School Diploma	1778	85.87	5.01	70.10	97.98
Percent of Pop. 25+ w/ College Degree	1778	19.52	9.40	6.23	70.92
Log (Electorate)	1778	8.79	1.01	5.75	12.96
November Statewide Election Dummy	1778	0.11	0.31	0	1
September Statewide Election Dummy	1778	0.08	0.27	0	1
February Statewide Election Dummy	1778	0.10	0.30	0	1
April Statewide Election Dummy	1778	0.27	0.45	0	1
Odd Year Election Dummy	1778	0.48	0.50	0	1

Table III
Probit Regression on the Effects of the Scheduling of Special Elections
Robust Errors Clustered By School District
N = 1772

Independent Variable	(1)	(2)	(3)
Constant	-0.397 (0.319)	2.348 (3.974)	6.838 (4.916)
Log (Real Referendum Amount / Pop. 18+)	0.050 (0.027)	0.052 (0.027)	0.055 (0.027)
Percent of Electorate 65+	0.003 (0.010)	-0.007 (0.015)	-0.013 (0.016)
Percent of Pop. Attending Public Schools	0.012 (0.006)	0.010 (0.006)	0.009 (0.007)
Percent of Pop. Attending Private Schools	-0.035 (0.021)	-0.025 (0.022)	-0.013 (0.023)
Debt Referendum	-0.560 (0.156)	-0.569 (0.156)	-0.554 (0.155)
Reoccuring Cost Referendum	-0.532 (0.174)	-0.538 (0.174)	-0.522 (0.173)
Nonreoccuring Cost Referendum	-0.923 (0.199)	-0.921 (0.201)	-0.936 (0.199)
Odd Year	0.651 (0.080)	0.652 (0.080)	0.651 (0.080)
Percent of Property Owner Occupied		-0.009 (0.009)	-0.003 (0.009)
Percent of Population Rural		0.002 (0.002)	0.003 (0.002)
Percent of Population Non-White		0.004 (0.007)	0.004 (0.007)
Log (Median Household Income)		-0.188 (0.360)	-0.815 (0.460)
Percent of Pop. 25+ w/ High School Diploma			0.017 (0.019)
Percent of Pop. 25+ w/ College Degree			0.010 (0.009)
Log (Electorate)			0.014 (0.063)

Table IV
Linear Regression on the Effects of Referendum Amount on Turnout
Robust Errors Clustered By School District
N = 1716

	(7)	(8)	(9)
Independent Variable	Yes Turnout	No Turnout	Total Turnout
Constant	-25.882	-18.587	-44.469
	(20.626)	(24.856)	(37.853)
Log (Real Referendum Amount / Pop. 18+)	0.575	0.914	1.489
	(0.153)	(0.194)	(0.258)
Log (Real Referendum Amount / Pop. 18+) x Special Election Dummy Variable	0.443	-0.016	0.427
	(0.220)	(0.318)	(0.440)
November General Election	18.371	10.517	28.888
	(2.919)	(3.468)	(5.209)
September Primary Election	6.319	0.812	7.131
	(2.780)	(3.485)	(5.097)
April General Election	7.467	3.660	11.127
	(2.774)	(3.404)	(5.036)
February Primary Election	4.548	1.063	5.611
	(2.795)	(3.600)	(5.235)
Percent of Electorate 65+	0.375	0.310	0.685
	(0.089)	(0.082)	(0.139)
Percent of Electorate 65+ x Special Election	0.036	-0.004	0.032
	(0.083)	(0.095)	(0.138)
Percent of Pop. Attending Public Schools	0.277	0.106	0.384
	(0.088)	(0.084)	(0.138)
Percent of Pop. Attending Public Schools x Special Election	0.126	0.026	0.152
	(0.118)	(0.127)	(0.195)
Percent of Pop. Attending Private Schools	0.263	0.048	0.311
	(0.182)	(0.173)	(0.292)
Percent of Pop. Attending Private Schools x Special Election	-0.287	0.216	-0.071
	(0.231)	(0.268)	(0.369)
Percent of Property Owner Occupied	0.011	0.087	0.099
	(0.044)	(0.050)	(0.079)
Percent of Population Rural	-0.005	0.007	0.001
	(0.013)	(0.013)	(0.023)
Percent of Population Non-White	0.008	-0.040	-0.032
	(0.058)	(0.073)	(0.125)
Log (Median Household Income)	3.225	1.582	4.806
	(1.861)	(2.227)	(3.438)
Log (Electorate)	-1.755	-0.504	-2.259
	(0.466)	(0.451)	(0.803)

Table V
Linear Regression on the Effects of Referendum Amount on Turnout
Robust Errors Clustered By School District
N = 1716

	(7)	(8)	(9)
Independent Variable	Yes Turnout	No Turnout	Total Turnout
Constant	-20.590	-16.640	-37.230
	(20.012)	(23.455)	(35.514)
Real Referendum Amount (thousands) / Pop 18+	1.443	1.293	2.736
	(0.417)	(0.597)	(0.760)
Real Referendum Amount (thousands) / Pop 18+ x Special Election Dummy Variable	0.305	-0.136	0.169
	(0.710)	(0.775)	(1.163)
(Real Referendum Amount (thousands) / Pop 18+)^2	-0.219	0.206	-0.013
	(0.090)	(0.164)	(0.190)
(Real Referendum Amount (thousands) / Pop 18+)^2 x Special Election Dummy Variable	0.203	0.074	0.277
	(0.203)	(0.199)	(0.319)
November General Election	15.965	10.569	26.534
	(2.605)	(2.679)	(4.242)
September Primary Election	3.895	0.961	4.857
	(2.493)	(2.682)	(4.165)
April General Election	5.052	3.940	8.992
	(2.444)	(2.565)	(3.998)
February Primary Election	2.137	1.037	3.174
	(2.460)	(2.766)	(4.241)
Percent of Electorate 65+	0.376	0.308	0.685
	(0.088)	(0.079)	(0.135)
Percent of Electorate 65+ x Special Election	0.032	0.001	0.032
	(0.084)	(0.091)	(0.136)
Percent of Pop. Attending Public Schools	0.278	0.078	0.356
	(0.086)	(0.079)	(0.133)
Percent of Pop. Attending Public Schools x Special Election	0.101	0.020	0.121
	(0.116)	(0.123)	(0.188)
Percent of Pop. Attending Private Schools	0.261	0.070	0.331
	(0.180)	(0.168)	(0.285)
Percent of Pop. Attending Private Schools x Special Election	-0.254	0.228	-0.026
	(0.228)	(0.256)	(0.351)
Percent of Property Owner Occupied	0.010	0.096	0.106
	(0.043)	(0.047)	(0.074)
Percent of Population Rural	-0.005	0.009	0.004
	(0.012)	(0.012)	(0.021)
Percent of Population Non-White	0.006	-0.050	-0.044
	(0.059)	(0.076)	(0.127)
Log (Median Household Income)	3.188	1.365	4.552
	(1.804)	(2.122)	(3.243)
Log (Electorate)	-1.739	-0.068	-1.807
	(0.460)	(0.444)	(0.781)

References

Balsdon, Ed, Eric J. Brunner, and Kim Rueben, "Private Demands for Public Capital: Evidence From School Bond Referenda." *Journal of Urban Economics* 54, 2003. 610-638.

Bergstrom, Theodore C., Daniel L. Rubinfeld, and Perry Shapiro, "Micro-Based Estimates of Demand Functions For Local School Expenditures." *Econometrica* 50, 1982. 1183-1205.

Besley, Timothy and Anne Case, "Political Institutions and Policy Choices: Evidence from the United States." *Journal of Economic Literature* 41, 2003. 7-73.

Dunne, Stephanie, W. Robert Reed, and James Wilbanks, "Endogenizing the Median Voter: Public Choice Goes to School." *Public Choice* 93, 1997. 99-118.

Feld, Lars P. and John G. Matsusaka, "Budget Referendums and Government Spending: Evidence from Swiss Cantons." *Journal of Public Economics* 87, 2003. 2703-2724.

Gerber, Elizabeth R. "Legislative Response to the Threat of Popular Initiatives." *American Journal of Political Science* 40, 1996. 99-128.

Harris, Amy R., William N. Evans, and Robert M. Schwab, "Education Spending in an Aging America." *Journal of Public Economics* 81, 2001. 449-472.

Matsusaka, John G. "Fiscal Effects of the Voter Initiative: Evidence from the Last 30 Years." *The Journal of Political Economy* 103, 1995. 587-623.

Pequet, Gary M., R. Morris Coats, and Steven T. Yen, "Special Versus General Elections

and Composition of the Voters: Evidence from Louisiana School Tax Elections." *Public Finance Quarterly* 24, 1996. 131-147.

Riker, William and Peter Ordenshook, "A Theory of the Calculus of Voting." *American Political Science Review* 62, 1968. 25-42.

Romer, Thomas and Howard Rosenthal, "Political Resource Allocation, Controlled Agendas, and The Status Quo." *Public Choice* 33, 1978. 27-43.

Romer, Thomas and Howard Rosenthal, "Bureaucrats Versus Voters: On the Political Economy of Resource Allocation by Direct Democracy." *Quarterly Journal of Economics* 93, 1979. 563-587

Romer, Thomas, Howard Rosenthal, and Vincent G. Munley, "Economic Incentives and Political Institutions: Spending and Voting in School Budget Referenda." *Journal of Public Economics* 49, 1992. 1-33.

Rubinfeld, Daniel L., "Voting in a Local School Election: A Micro Analysis." *The Review of Economics and Statistics* 59, 1977. 30-42.

Rubinfeld, Daniel L. and Randall Thomas, "On The Economics of Voter Turnout in Local School Elections." *Public Choice* 35, 1980. 315-331.

Smith, Mark A, "The Contingent Effects of Ballot Initiatives and Candidate Races on Turnout." *American Journal of Political Science* 45, 2001. 700-706.

Stevens, Joe B. and Robert Mason, "Political Markets, Property Tax Referenda, and Local School Spending." *Public Choice* 86, 1996. 257-277.

Tedin, Kent L., Richard E. Matland, and Gregory R. Weiher, "Age, Race, Self-Interest, and Financing Public Schools Through Referenda." *The Journal of Politics* 63, 2001. 270-294.

Tolbert, Caroline L., John A. Grummel, and Daniel A. Smith, “The Effect of Ballot Initiatives on Voter Turnout in the American States.” *American Politics Research* 29, 2001. 625-648.

Zax, Jeffery S, “Initiatives and Government Expenditures.” *Public Choice* 63, 1989. 267-277