This paper explores the benefits and costs of the voter initiative, a direct democracy device that allows voters to make policy decisions without involving their elected representatives. Previous research suggests that by introducing “competition” into the proposal process, the initiative leads to policies that are closer to the voter’s ideal point. In our model, in contrast, the effect of the initiative is conditional on the severity of representative agency problems and the uncertainty about voter preferences. The initiative always makes the voter better off when representatives are faithful agents, but when voter preferences are uncertain, initiatives can cause “shirking” representatives to choose policies farther from the voter’s ideal point. Our evidence shows that initiatives reduce state spending when Democrats control the government, when the tax base is vulnerable to “common pool” problems, and when citizens have diverse preferences.

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POLITICAL RESOURCE ALLOCATION: BENEFITS AND COSTS OF VOTER INITIATIVES

I. Introduction

A central goal of political economy research is to understand how non-market institutions allocate resources. The most common institution, and the focus of most studies, is where decisions are made exclusively by elected representatives. Yet in many jurisdictions, resources also are allocated directly by voters through the use of initiatives. In these jurisdictions, representatives set the initial policies, but voters have the option to override them. Although voter initiatives are highly visible, and an emerging empirical literature suggests that they have significant policy effects, our understanding of the institution’s benefits and costs is in its infancy.

The prevailing view in the literature is that initiatives provide a benefit by inducing policy choices closer to those preferred by the median voter. Initiatives are believed to promote median voter outcomes directly, by replacing bad policies of representatives with those chosen by the voters themselves, and indirectly, by causing representatives to select

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1 An initiative is a referendum that reaches the ballot by citizen petition—usually, after the measure’s sponsor collects a predetermined number of signatures from fellow citizens. There are other kinds of referendum that we do not consider, such as “referred” measures that are placed on the ballot by the legislature.

2 For example, Matsusaka [1995] finds that states with initiatives spend and tax less than other states, and Gerber [1996] reports differences in abortion parental notification policies. In recent years, voter initiatives have been used to cut property taxes, crack down on illegal immigrants, impose term limits on elected officials, and scale back affirmative action programs. Initiatives were also instrumental in providing for women’s suffrage, abolishing poll taxes, establishing presidential primary elections, prohibiting and then repealing the prohibition of alcohol, setting environmental protection standards, and reforming campaign finance laws [Cronin, 1989]. There is also a small literature focusing on shareholder initiatives in corporations, for example, Karpoff, Malatesta, and Walkling [1996].

3 For instance, see Denzau, Mackay, and Weaver [1981] and Gerber [1996].
more favorable policies initially to stave off the threat of an initiative. Intuitively, an initiative allows “entry” into decisionmaking that is otherwise monopolized by representatives, leading to policies that are closer to the “competitive” median voter outcome.

This view of the initiative seems fundamentally incomplete. Initiatives are not the rule—only 23 of 50 states and half of the municipalities in the United States permit them. If direct resource allocation can only result in policies closer to the median voter’s position, it is difficult to explain why initiatives are not more common, especially at the local level where Tiebout competition should put pressure on governments to adopt policies that please the voters. What we are missing is an understanding of the costs of direct decisionmaking.

The goal of this paper is to develop a simple model in which initiatives have costs as well as benefits, and thereby provide a way to begin thinking about the tradeoffs between direct and representative decisionmaking. We study a model with three actors, a representative, an interest group, and a voter, in which agenda control issues and agency problems between the voter and the representative play important roles.\(^4\) The representative makes the initial policy choice. When initiatives are unavailable, this policy stands. When initiatives are possible, the interest group can pay a cost and make a counterproposal; the voter then chooses either the representative’s or the interest group’s proposal.

The key difference between our model and the existing literature is that we assume that the representative and interest group face some uncertainty about the voter’s preferences. Uncertainty affects the tradeoff between direct and representative resource allocation in two important ways. First, it makes initiatives valuable simply because they provide the voter with a choice: the ultimate policy will be closer to the voter’s ideal point if he selects from a menu of possibilities instead of having a policy chosen for him. For this reason, direct decisionmaking can be desirable even if the representative does not “shirk,” and even if

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\(^4\) This follows the archetype of Romer and Rosenthal [1978; 1979].
initiatives propose more extreme policies than the representative.

The second and more surprising effect of uncertainty is on the behavior of the representative. When preferences are known with certainty, the representative ignores interest groups that threaten an initiative farther from the voter’s ideal point than the representative’s choice because such an initiative is sure to be rejected by the voter. However, when voter preferences are uncertain, even an extreme interest group’s initiative could turn out to match the voter’s preferences and end up defeating the representative’s policy in an election. To avoid this risk, the representative may find it optimal to choose a policy closer to the interest group’s ideal point. This can deter the interest group from proposing its initiative if the cost of initiating is high enough. Consequently, the threat of an initiative can cause the representative to adopt a more extreme policy than he would have otherwise. We therefore show how availability of the initiative can lead to policy choices that are farther from the voter’s ideal point than if there were no initiative. This provides a logical foundation for the objection that initiatives increase the power of special interest groups at the expense of the “common good.”  

However, in another sense our results stand the conventional wisdom on its head. The usual argument in favor of direct resource allocation is that it gives the electorate a weapon against representatives who act against the voters’ interests. That is, initiatives are valuable when representatives are bad. While this can happen as a special case in our model, the general pattern is that (1) direct resource allocation always makes the electorate better off

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5 For example, Magleby [1984, page 29] says: “Groups with money will set the agenda of direct legislation by placing measures they desire on the ballot and then financing the campaign for passage. In the event that a proposition runs counter to their political desires, they will dominate the ensuing campaign and defeat the issue. Thus, under direct legislation it is not the people who rule but the special interests.” However, our results suggest that the power of interest groups arises through their ability to distort representative behavior, not through an ability to dominate initiative elections. The most comprehensive reference available on the role of interest groups in the direct legislation process is the valuable study by Gerber [1997].
when there is no agency problem with representatives, and (2) direct resource allocation can make the electorate worse off only when there is an agency problem. The main reason is that the representative has an incentive to adjust policy to deter an initiative only when he has a policy preference (as opposed to a desire to maximize the welfare of the voter). Our results suggest that giving an interest group the power to influence the agenda is a two-edged sword: when a moderate interest group makes the proposals, the voters are better off, but they can be made worse off when an extreme interest group appears.

The central idea of our paper is that direct decisionmaking has both benefits and costs. A major implication is that the overall effect of the initiative (on the voter’s utility and on policy) is conditional, depending on the factors that determine the benefits and costs. The factors we emphasize are the nature of representation and uncertainty about voter preferences. Our model suggests that the initiative has the greatest effect when representatives have extreme preferences and when uncertainty about preferences is great. To see if the effect of the initiative is in fact conditional on these factors, we examine U.S. state and local expenditure data from 1960 to 1990. As documented in Matsusaka [1995], states with initiatives tend to spend less than representative-only states. We find that the initiative has the largest anti-spending effect in states where (1) Democrats control both the executive and the legislature, (2) the number of legislative districts is large (which is theoretically linked to fiscal “common pool” problems [Weingast, Shepsle, and Johnsen, 1981]), and (3) the population is heterogeneous (which we interpret as having less predictable voter preferences).

In the next section of the paper, we present the model. Section III describes the solution of the model. Section IV identifies the basic benefits and costs of voter initiatives. Section V develops testable implications concerning policies and the number of initiatives. Section VI presents evidence on the effect of the initiative on state and local fiscal policy. Section VII summarizes and discusses extensions.
II. A Spatial Model of the Two Decisionmaking Institutions

A policy \( x \in \mathbb{R} \) must be chosen. The policy affects the welfare of a voter, a representative, and an interest group. Under “monopolistic representative” (MR) decisionmaking, the policy is selected by the representative. Under “direct-and-representative” (DR) decisionmaking, the representative selects a policy but the interest group can make a counter-proposal, in which case the voter chooses between the two options.

A. Preferences

The voter has utility
\[
V(x) = -|x - v|,
\]
where \( v \) is his ideal point. To capture uncertainty about preferences, we assume that \( v \) takes on one of three values, \(-\theta\), \(0\), and \(\theta\), with probabilities \(\sigma\), \(1 - 2\sigma\), and \(\sigma\), respectively. Note that \(0 \leq \sigma \leq 1/2\). The amount of uncertainty about preferences is parameterized by \(\sigma\).

The utility of the interest group is
\[
I(x) = -|x - i| - \lambda C,
\]
where \(i\) is the ideal point, \(\lambda\) is an indicator variable equal to 1 if the group makes an initiative proposal, and \(C > 0\) is the (exogenous) cost of doing so. We will study three types of interest groups, corresponding to voter types, with \(i\) equal to \(-\theta\), \(0\), and \(\theta\). The parameter \(C\) represents signature-gathering costs, registration fees, and other opportunity costs associated with an initiative campaign.

Finally, the representative’s utility is
\[
R(x) = (1 - \alpha) E[V] - \alpha |x - r|,
\]
where \(E[V]\) is the expected value of the voter’s utility (over realizations of \(v\)). The parameter \(\alpha\) measures the severity of the agency problem between the voter and his representative.
The literature contains significant disagreement whether representatives are faithful agents or “shirkers.” Our parameterization of $\alpha$ allows us to study the impact of the initiative under different assumptions of how well the representative process works. If $\alpha = 0$, then $R = E[V]$ and there is no agency problem—the representative wants to maximize the voter’s utility. If $\alpha > 0$, then the representative has a policy preference of his own, with an ideal point $r$. We shall consider the cases of a “moderate” representative ($r = 0$) and “extreme” representatives ($r = \theta$ and $r = -\theta$).

B. Information

The voter’s ideal point is known only by the voter and he has no way of conveying this information to the other parties. A natural interpretation is that $v$ is the ideal point of the median voter—it is uncertain from the viewpoint of the interest group and representative due to their limited information or randomness in turnout. The ideal points of the interest group and representative are common knowledge, as are all of the other parameters.

C. Sequence of Actions

Under the MR institution, resource allocation begins and ends with the representative selecting a policy. All parties then take their payoffs.

Under the DR institution, the sequence is more involved (see Figure 1): (i) an interest group arrives with ideal point $i$; (ii) the representative chooses a policy $x_r$; (iii) the interest group decides whether to accept $x_r$ or pay the cost $C$ and propose an initiative policy $x_i$;

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6 See the special June 1993 issue of Public Choice 1993 and Peltzman [1984].

7 A formally equivalent approach is to assume that the voter himself is unsure what policy is in his best interest until after he hears the pro and con arguments during the campaign.

8 In practice, polling can reduce uncertainty, but not entirely because of measurement error and the possibility that voters change their minds after hearing competing arguments. The fact that many propositions enjoy majority support in early polls yet ultimately fail is illustration [Magleby, 1984].
and (iv) if a counterproposal is made, the voter’s preferences are determined, and he decides
between \( x_r \) and \( x_i \). The DR sequence incorporates the regularity that interest groups take
their cases to the representatives before going forward with a costly initiative. Therefore,
when representatives make their policy choices, they know the nature of the threat that
waits in the wings.

### III. Equilibrium Behavior of the Voter and Interest Group

We begin by characterizing equilibrium behavior for the voter and interest group under DR
resource allocation. If an initiative is proposed, the last actor is the voter. Faced with a
choice between \( x_i \) and \( x_r \), he chooses the policy closest to his ideal point. The proposal that
is smaller in absolute value will be supported by the moderate voter type and one of the
extreme types (we ignore the dominated strategies of \( |x_i| > \theta \) and \( |x_r| > \theta \)). Therefore, the
probability that \( x_i \) defeats \( x_r \) is\(^9\)

\[
p(x_i, x_r) = \begin{cases} 
\sigma & \text{if } |x_i| > |x_r|; \\
1 - \sigma & \text{if } |x_i| \leq |x_r|. 
\end{cases}
\]  

(1)

The interest group decides whether to send an initiative to the voter taking into account
the likelihood of success given by (1). The expected payoff from proposing an initiative is
\[
E[I_{\lambda=1}] = -p|x_i - i| - (1 - p)|x_r - i| - C. 
\]

The interest group’s optimal proposal is then

\[
x_i^* = \begin{cases} 
-x_r & \text{if } [i = \theta \text{ and } x_r \geq z] \text{ or } [i = \theta \text{ and } x_r \leq -z]; \\
\ i & \text{otherwise}; 
\end{cases}
\]  

(2)

where \( z \equiv \theta \sigma/(2 - 3\sigma) > 0 \). The interest group is best off proposing either its ideal
point or the policy that makes the moderate voter indifferent between the initiative and
the representative’s policy. The interest group’s payoff from accepting the representative’s
policy is \( I_{\lambda=0} = -|x_r - i| \). Then the group does not initiate when

\[
I_{\lambda=0} - E[I_{\lambda=1}] = C - p|x_r - i| + p|x_i^* - i| \geq 0. 
\]  

(3)

\(^9\) The interest group wins if the voter is indifferent.
Equation (3) defines the set of representative policy choices that are close enough to the interest group’s ideal point to deter an initiative. Specifically, if \( i = \theta \) (\( i = -\theta \)) then deterrence is achieved with \( x_r \geq \theta - C/\sigma \) (\( x_r \leq C/\sigma - \theta \)); and if \( i = 0 \) then deterrence is achieved with \(|x_r| \leq C/(1 - \sigma)\). We shall assume that \( C < \theta \sigma \), which implies that an extreme interest group is not deterred by a moderate policy, \( x_r = 0 \).

IV. Benefits and Costs

This section isolates the basic tradeoffs between MR and DR resource allocation from the voter’s perspective. The main tradeoffs can be seen by studying the polar extremes \( \alpha = 0 \) and \( \alpha = 1 \).

A. No Agency Problem (\( \alpha = 0 \))

First, we consider \( \alpha = 0 \), in which case \( R = E[V] \) and the representative’s interests are perfectly aligned with the voter’s. Because the representative cannot observe \( v \), he can maximize only the expected value of \( V \).

1. MR and DR Resource Allocation

Under the MR institution, whatever policy the representative proposes becomes law. Given that \( v \) is distributed symmetrically around zero, the optimal policy is \( x_r^* = 0 \). This delivers an expected payoff to the voter of \(-2\theta \sigma\).

Now suppose that initiatives are available. The representative’s optimal strategy is to select the policy that complements the initiative and provides the voter with the most attractive menu of choices when the initiative comes to a vote. If \( i = 0 \), then \( x_i^* = 0 \); the interest group proposes the representative’s optimal monopoly policy. The representative then maximizes the voter’s expected utility with a positive-value policy that solves \( \min_{x_r} \sigma \theta + \)
\( \sigma \theta - x_r \), giving \( x_r^* = \theta \); similarly, \( x_r^* = -\theta \) is the best negative-value policy. The payoff in either case is \( E[V] = -\theta \sigma \).

When \( i = \theta \), the interest group chooses \( x_i^* = \theta \) if \( x_r > -z \), and \( x_i^* = -x_r \) otherwise. Then the representative chooses \( x_r \) to solve

\[
\max_{x_r} \begin{cases} 
-\sigma (\theta + x_r) - (1 - 2\sigma) |x_r| & \text{if } x_r > -z; \\
-2\sigma (\theta + x_r) - (1 - 2\sigma) |x_r| & \text{if } x_r \leq -z.
\end{cases}
\]

The solution is \( x_r^* = 0 \) if \( \sigma \leq 1/3 \), and \( x_r^* = -\theta \) if \( \sigma \geq 1/3 \), which gives a payoff of \( E[V] = -\theta \min\{\sigma, 1 - 2\sigma\} \). In words, the representative chooses the policy most likely to be the voter’s ideal point from among the positions not taken by the interest group. The case of \( i = -\theta \) is symmetric.

2. Comparison of the Institutions

The difference between the voter’s expected utility under DR and MR given \( i \),

\[
E[V|DR] - E[V|MR] = \begin{cases} 
\theta \sigma & \text{if } i = 0 \text{ or } \sigma \leq 1/3; \\
\theta (4\sigma - 1) & \text{if } i \in \{-\theta, \theta\} \text{ and } \sigma \geq 1/3;
\end{cases}
\]  

is non-negative. In the absence of an agency problem, the voter is always better off when the initiative is available. This is because the representative uses the initiative to give the voter a second choice, which makes the adopted policy closer to the voter’s ideal point. We summarize this in the following proposition.

**Proposition 1:** When there is no agency problem, the voter’s expected utility is at least as high with DR allocation than with MR resource allocation.

3. Remarks

Proposition 1 is driven by a benefit of DR allocation that has not been recognized in the literature, namely, that the voter is made better off simply by having a choice. Alternatively, the proposition can be seen as identifying a cost of MR allocation: even a well-intentioned
representative inadvertently may choose a policy that the voter does not like. Because of this benefit, we find some value in having an initiative even when the representative is faithful. This contrasts with the existing literature in which initiatives are beneficial only when there is an agency problem.

The analysis also suggests why a successful initiative may catalyze similar policy changes in other jurisdictions. For example, California’s Proposition 13 is said to have “spurred” [Ladd and Tideman, 1981] and “started” [Magleby, 1984] a national taxpayer revolt. When an initiative passes, it reveals information about voter preferences. The information is likely to be particularly surprising when an extreme initiative passes. We expect a reaction from other jurisdictions for two reasons: a vote-maximizing representative will adjust his policy position toward the revealed preference, and interest groups will be more inclined to promote their favored policy if they discover it has a constituency. A similar argument might explain why initiative campaigns tell voters they can “send a message” by voting in favor.¹⁰

It can be seen from equation (4) that DR becomes increasingly valuable relative to MR as σ rises, other things equal. Intuitively, when the voter’s preferences are more variable, the representative is more likely to choose the wrong policy so it is better for the voter to make the decision. This suggests that the DR institution provides the largest benefits to the voter in jurisdictions where representatives are rather uncertain about the voter’s preferences. Thus, we might expect DR to be more useful in a big heterogeneous city than a small homogeneous town if representatives know less about their constituents in the former than the latter, as seems plausible.¹¹ For the same reason we might expect DR decisionmaking

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¹⁰ These implications distinguish our approach from models in which voters are uncertain about the policy consequences of a proposed initiative (for instance, Gerber and Lupia [1995]). While the two approaches share some implications, in a model with policy uncertainty nothing is learned about the voters from the outcome of an initiative election. Therefore, such models do not predict that successful initiatives are mimicked and they do not capture the notion that initiatives can be used to send a message to representatives.

¹¹ In fact, the DR institution is more common in large cities than small cities [Renner and De Santis, 1993].
to be more beneficial in cities where (i) the population has undergone significant turnover, for example, due to immigration, (ii) the population is more heterogeneous demographically, and (iii) representatives are less informed, for example, where legislators have small staffs or are not professionals. If governments adopt efficient or vote-maximizing institutions (for example, if Tiebout competition is present) then these observations could be recast as empirical predictions about which cities are likely to have DR decisionmaking.

B. *Agency Problem* \((\alpha = 1)\)

This section studies the case \(\alpha = 1\), where the representative’s utility is \(R(x) = -|x - r|\).

1. MR and DR Resource Allocation

Under the MR institution, the representative’s optimal choice is to set the policy at his ideal point, \(x_r^* = r\).

Under the DR institution, the representative may not set the policy at his ideal point. The representative knows that if he selects a policy that deter the initiative, the policy will stand, but if his policy does not deter then the interest group will propose an initiative \(x_i^*\) given by equation (2), and the voter will choose between them. Then the representative’s problem is

\[
\max_{x_r, x_r} E[R] = \begin{cases} 
 p(x_i^*, x_r) R(x_i^*) + (1 - p(x_i^*, x_r)) R(x_r) & \text{if } x_r \text{ does not deter; } \\
 R(x_r) & \text{if } x_r \text{ deter.} 
\end{cases}
\]

Clearly, if the representative can deter by choosing his ideal point, that is what he will do. Otherwise, deterrence is costly to the representative and may not be optimal. We first characterize the representative’s optimal non-detering policy and then turn to the issue of deterrence. Lemma 1 states the optimal policies. The proof, which is fairly mechanical, is given in the appendix.
Lemma 1: If the representative does not deter the initiative, then \( x^*_r = r \) except when (a) \( r = 0, |i| = \theta, \) and \( \sigma \leq 1/3, \) or (b) \( |r - i| = 2\theta. \) When (a) or (b) hold, \( |x^*_r| = z. \)

Now we consider deterrence. The representative would like to push the policy toward his ideal point, but if he sets the policy too far from the interest group’s ideal point, an initiative will be proposed. Because of uncertainty about the voter’s preferences, the initiative may pass, and the representative may end up with a policy he particularly dislikes. The solution is to deter when \( i \) is close to \( r \) and allow the initiative when \( i \) and \( r \) are far apart. Intuitively, when \( i \) and \( r \) are close, the representative only needs to move a little from his ideal policy to deter. When \( i \) and \( r \) are distant, the representative has to choose a policy far from his ideal point to deter, and he would rather take his chances with the initiative. As this suggests, there is a critical distance between the two ideal points, below which deterrence is optimal. The critical values of the region are straightforward to calculate. We state the next lemma and consign the proof to the appendix.

Lemma 2: The representative chooses a deterring policy if \( |r - i| \leq C/\Sigma, \) where

\[
\Sigma = \begin{cases} 
\sigma(1 - \sigma) & \text{if } |r| = \theta \text{ and } i = 0; \\
\sigma(1 - \min\{\sigma, \sigma/(2 - 3\sigma)\}) & \text{if } r = 0 \text{ and } |i| = \theta; \\
\sigma(1 - \sigma(1 - 2\sigma)/(2 - 3\sigma))/2 & \text{if } r = -i.
\end{cases}
\]

An important property which we will employ below is that \( \Sigma \) is increasing in \( \sigma. \)

2. Comparison of the Institutions

We can now compare the voter’s expected utility under MR and DR allocation when there is an agency problem. First, when the representative’s ideal point deters, availability of the initiative has no effect. The representative chooses \( x^*_r = r \) regardless of whether the initiative is available, and an initiative is not proposed.
The second case is when \( r \neq i \) but the representative finds it optimal to deter the initiative. Although the voter does not benefit from having a second choice, under DR the threat of a counterproposal causes the representative to choose a policy closer to \( i \) than under MR. When the interest group is moderate, \( i = 0 \), and the representative is extreme, \( r = \theta \), the representative chooses \( x_r^* = \theta \) under MR, and chooses \( x_r^* = C/(1 - \sigma) \) under DR. The initiative is deterred but the voter ends up with a more appealing policy because of the initiative threat. This is the conventional benefit of direct decisionmaking: by breaking the representative’s agenda setting monopoly, he can be forced to adopt more favorable policies.

The most interesting case is when deterrence is optimal, the interest group is extreme, \( i = \theta \), and the representative is moderate, \( r = 0 \). Under MR, the representative chooses \( x_r^* = 0 \), while under DR he chooses \( x_r^* = \theta - C/\sigma \). Here the threat of the initiative causes the representative to choose a policy less desirable to the voter. As a result, the voter is worse off under DR than MR. This captures an important cost of direct decisionmaking: by taking away the representative’s agenda setting monopoly, DR may lead a moderate representative to adopt more extreme policies to accommodate an extreme interest group.

Finally, when the representative chooses not to deter, the initiative gives the voter a valuable choice. This tends to make DR better for the voter than MR. The exception is when \( r = 0 \) and \( \sigma < 1/4 \). Under these conditions, the voter finds the menu of choices under DR (\( z \) and \( -z \)) less attractive than the policy \( x_r^* = 0 \) under MR.

We summarize these results in the next proposition.

**Proposition 2**: When there is an agency problem, the voter is at least as well off with DR than MR decisionmaking, except when the representative is moderate, the interest group is extreme, and either (a) \( C > \theta \Sigma \), or (b) \( C < \theta \Sigma \) and \( \sigma < 1/4 \).
3. Remarks

These results highlight both an important benefit and cost of DR resource allocation. The benefit is that an extreme representative can be forced to adopt a more moderate policy by an initiative threat from a moderate interest group. This is the benefit most commonly attributed to the DR institution. But there is a cost: a moderate representative can end up adopting a more extreme policy when threatened by an extreme interest group. Interestingly, this suggests that if the representative process works well enough to elect a moderate representative, the DR institution can hurt.

The conventional view of the initiative is that it is a useful tool by which voters can address agency problems with their representatives. In a sense, Propositions 1 and 2 taken together stand this view on its head. Proposition 1 shows that DR always helps when there is not an agency problem, while Proposition 2 shows that DR can hurt only when there is an agency problem.

Proposition 2 indicates that the initiative is always beneficial when the representative’s preferences are extreme relative to the voter’s preferences. This suggests that it may not have been coincidental that most states adopted the initiative in the early 20th Century amidst the Progressive Movement. Historians describe this as a period in which it was widely believed that the state capitals were under the control of special interests. More generally, we would expect the DR institution to be more common when representatives have extreme preferences relative to the voters, at least insofar as institutions develop in response to voter demands. This implication could be examined empirically by identifying jurisdictions where representative preferences are likely to diverge from voter preferences, and testing if they use DR or MR allocation. For example, theory suggests that representatives are likely to have “extreme” preferences (i) in states where gerrymandering distorts the representation process,

\[\text{\textsuperscript{12}}\text{ For example, see pages 54–59 in Cronin [1989].}\]
(ii) in states with a large partisan bias (measured as the difference between the percentage of seats controlled by the majority party and the percentage of votes its candidates received), (iii) as the number of seats in a legislature increases,\(^{(13)}\) (iv) in jurisdictions that use district elections instead of at-large elections, and (v) in jurisdictions where elected officials become entrenched (long terms, no term limits, etc.)

It can also be seen from Proposition 2 that DR is costly only when there is not too much uncertainty about the voter’s preferences. One way the voter can be made worse off by DR allocation is if a moderate representative makes his policy more extreme in order to deter an initiative. This happens when condition (a) is satisfied: \(C > \theta \Sigma\). Significant preference uncertainty increases an extreme initiative’s chance of success, and makes it harder for the representative to deter (inefficiently) the interest group. Note that condition (a) holds for sufficiently small \(\sigma\) because \(\Sigma\) is decreasing in \(\sigma\). Condition (b) obviously holds for sufficiently small \(\sigma\) as well. Intuitively, when the voter is likely to be moderate, the interest group is more willing to moderate its proposal. The representative can entice interest group moderation by choosing a more extreme policy. In either case, as we saw when \(\alpha = 0\), DR is valuable when preference uncertainty is high. The conditions under which MR is good for the voter are summarized in the following corollary.

**Corollary:** MR is better for the voter than DR when (a) the representative is moderate, (b) the interest group is extreme, and (c) preference uncertainty is low.

\(^{(13)}\) See Weingast, Shepsle, and Johnsen [1981] and Gilligan and Matsusaka [1995].
V. Other Implications

A. Policy Consequences

As noted above, empirical research shows that DR decisionmaking yields systematically different policy outcomes than MR decisionmaking. Here we note the model’s policy predictions. An important point is that the effect of decisionmaking institution is conditional on the representative and interest group ideal points, and the amount of uncertainty. We first state the main results, and then discuss the underlying logic.

Proposition 3: (a) The expected policy is more extreme under DR than MR when the representative is moderate, and the expected policy is more moderate when the representative is extreme. (b) The DR institution has a more extreme (less moderating) effect on policy when preference uncertainty rises.

The logic behind part (a) is this: First, if the representative is moderate, he will set the policy at $x = 0$ under the MR institution. Under the DR institution, the expected policy will be pulled in the direction of the interest group, and therefore become more extreme, either because the representative adjusts his choice to deter an initiative, or because the interest group’s (extreme) initiative has some chance of winning. If the representative is extreme, on the other hand, the DR institution will result in more moderate policies by causing the representative to choose a more moderate deterring policy, or by opening up the possibility that a moderate initiative is approved.

Part (b) of Proposition 3 underlines the importance of preference uncertainty. If the representative is moderate, the DR institution leads to increasingly extreme policies as $\sigma$ rises. If the representative is extreme, DR leads to more moderate policies, but they become less moderate as $\sigma$ rises. The logic is the same in both cases. A high value of $\sigma$ strengthens
the position of the extreme interest groups, and weakens the moderate group. Thus, the representative must be more accommodating (more extreme) to deter the extreme groups, and less accommodating (less moderate) to deter the moderate group. If, on the other hand, the representative chooses not to deter, a high value of $\sigma$ makes it more likely that the extreme proposal will be approved.\footnote{This is a sketch of the complete proof of Proposition 3 which we omit.}

Proposition 3 is testable in principle if the positions of the agents and the amount of preference uncertainty can be measured. We illustrate several approaches in Section VI.

B. Number of Initiatives

In some states, like California and Oregon, voters face dozens of initiatives each decade while in other states, like Wyoming, initiatives are extremely rare. How can we account for the cross-sectional variation in the number of initiatives among those jurisdictions where direct decisionmaking is available?

The model points in several directions. An initiative occurs when the representative chooses not to deter, which means that the number of initiatives depends on whether or not $|r - i| \leq C/\Sigma$ (see Lemma 1) holding constant the representative’s and interest group’s ideal points. The representative deters when the inequality is satisfied. It follows that more initiatives will be allowed when $C$ is low and $\sigma$ is high (recall that $\Sigma$ is increasing in $\sigma$.) The result for $C$ is not surprising. The result for $\sigma$ implies that initiatives are more common when the representative faces greater uncertainty about constituent preferences. Uncertain preferences increase an extreme proposal’s electoral prospects. This makes it easier to deter a moderate group and harder to deter an extreme group. If the representative is moderate, an increase in preference uncertainty reduces his expected utility from deterrence and from non-deterrence (because he is more likely to lose the initiative election.) If the representative...
is extreme, it increases his expected utility from both deterrence and non-deterrence. In both cases, the former effect dominates the latter.

One way to think about preference uncertainty, as discussed above, is as an attribute of a jurisdiction. The model predicts that there will be more initiatives in jurisdictions with greater uncertainty about preferences. This may be part of the reason why initiatives are used so often in diverse California and so rarely in homogeneous Wyoming. Another way to think of preference uncertainty is as an attribute of an issue. Some issues might present the representative with very little uncertainty about the voter’s preferences, for example, whether or not to locate a nuclear waste dump nearby. Other issues might be fraught with uncertainty, for example, distributional issues concerning government spending and taxes. The model predicts that the latter type of issue is more likely to appear on initiatives than the former type of issue.\textsuperscript{15}

The relation between the number of initiatives and the position of the representative depends on $C$ and $\sigma$. There are three regions of interest. The first is a sufficiently large $C$ and/or a sufficiently small $\sigma$ so that $C > \theta \sigma (1 - \min\{\sigma, \sigma/(2 - 3\sigma)\})$. In this case, a moderate representative deters all interest groups; an extreme representative deters a moderate interest group and a like-minded extreme group, but finds it too costly to deter opposite extreme interest groups. Therefore, initiatives are more common when the representative is extreme. This situation captures the view that a large number of initiatives is symptomatic of dissatisfaction with elected representatives. For example, Matsusaka [1992] shows that the number of initiatives in California was particularly high in the 1920s and 1980s, two periods that featured significant discontent with the state legislature.\textsuperscript{16}

\textsuperscript{15} Matsusaka [1992] documents such a pattern for California and North Dakota.

\textsuperscript{16} In the 1920s, dissatisfaction was centered on the influence of the Southern Pacific Railroad. In the 1980s, a Democratic gerrymander of the state resulted in Democrats controlling roughly two-thirds of the seats in the legislature while polling only about half of the votes.
However, the model also indicates that initiatives can be common even when the representative is moderate. This happens in an “intermediate” region where $C$ and $\sigma$ satisfy $\sigma(1 - \sigma) < C < \theta\sigma(1 - \min(\sigma, \sigma/(2 - 3\sigma)))$. Then the moderate representative deters only the moderate interest group while the extreme representative deters all but an opposite extreme interest group. Therefore, a moderate representative is more likely to attract an initiative than an extreme representative.

In the third region, $C < \sigma(1 - \sigma)$, only interest groups with the same ideal point as the representative are deterred. The number of initiatives depends on the frequency that different types of interest groups appear.

The theoretical results are summarized in the following proposition.

**Proposition 4:** (a) More initiatives appear when the cost of initiating is low and uncertainty about voter preferences is high. (b) When $C$ is sufficiently large/$\sigma$ is sufficiently small, more initiatives appear when the representative is moderate; when $C$ and $\sigma$ take on “intermediate” values, more initiatives occur when the representative is extreme; and when $C$ is sufficiently low/$\sigma$ is sufficiently high, the number of initiatives depends on the distribution of interest group types.

**VI. Some Evidence: Fiscal Policy and the Initiative**

A major implication of our paper is that the effect of the initiative on the voter’s utility and the policy is conditional on the nature of representation and the uncertainty about voter preferences. This stands in contrast to most of the empirical literature which looks for unconditional effects of the initiative (for example, Matsusaka [1995] and Gerber [1996]). In this section we provide some evidence to suggest that the effect of the initiative is in fact conditional on the factors we have emphasized.
Because it is difficult to measure the voter’s utility, we do not pursue the implications of Propositions 1 and 2. Instead, we focus on Proposition 3, which describes how the initiative affects the expected policy. As the proposition suggests, we expect the policy consequences of the initiative to depend on the relation between the preferences of actors and on the amount of uncertainty about voter preferences. The variables of interest are not observed directly, so our empirical strategy is to identify variables that theory or intuition suggest are correlated with the variables we want, and see if they influence policy decisions in a way that is consistent with our model.

We focus on fiscal policy, specifically, the total spending of U.S. state and local governments from 1960 to 1990. This is a natural policy to study because the data are good, and there is a pre-existing empirical literature from which to draw control variables (for example, Peltzman [1992], Matsusaka [1995], Gilligan and Matsusaka [1995]).

Our analysis is built around a series of regressions of the form

\[ \text{Expenditure}_{jt} = A \times \text{Initiative variables}_{jt} + B \times \text{Controls}_{jt} + \text{Error}_{jt}, \]

where \( j \) indexes a state and \( t \) indexes a year. We include all 50 states except Alaska and sample at 5 year intervals starting in 1960. This gives a total of 343 observations in the basic sample. The dependent variable to be precise is combined state and local direct general expenditure per capita. Panel A of Table 1 reports the summary statistics for the dependent variable. The control variables are listed and defined in Panel B of Table 1, and summary statistics are given. These controls are intended to capture benefits and costs of public spending. We also include a dummy for the 11 states of the Old South, and 7 year dummies, but do not report their coefficients. Panel C of Table 1 lists our initiative variables. All financial variables are expressed in 1990 dollars and per capita.

The regressions make use of the cross-sectional variation in availability of the initiative. At the start of our sample period, 20 of 50 states allowed citizens to propose and approve
laws directly. By the end of the period, 23 states allowed initiatives. The basic research strategy is to see if initiative states select different fiscal policies than non-initiative states and if so, to determine whether the effects of the initiative are conditional on the factors emphasized in our model. Column (1) of Table 2 provides a baseline regression of spending on a dummy variable equal to 1 if the state provides for the initiative and the controls. This measures the unconditional effect of the initiative. Essentially as in Matsusaka [1995], states with initiatives spent $44.39 per capita less on average than those with monopoly representatives.\(^1\)

The remaining regressions in Table 2 test whether the effect of the initiative is conditional on the nature of representation. Theory predicts that the initiative’s effect depends on whether or not the preferences of the representatives are extreme relative to those of the voters. We first try to capture a divergence between the preferences of the representatives and voters with two dummy variables, one for the Democrats and one for the Republicans, equal to 1 if all branches of the state’s government (lower house, upper house, and governor) were controlled by the same party.\(^2\) The idea is that when one party controls all of the government, the legislature’s preferences might be more extreme than the median voter’s. The summary statistics show that Democrats monopolized the government in 40 percent of the observations compared to 15 percent for the Republicans. The regression in column (2) of Table 2 adds the two dummy variables to the regression in column (1). It can be seen that one-party control did not have a significant effect on spending after accounting for income, population growth, etc. This is consistent with a large literature on party effects, for example, Blais, Blake, and Dion [1993] and Gilligan and Matsusaka [1995]. In the column (3) regression, we add interaction terms that measure the effect of the initiative conditional on

\(^1\) We adjust for heteroskedasticity by using White standard errors.

\(^2\) The omitted category is divided government.
one-party control of the government. The interaction term for Democratic control is negative and significant at better than the 5 percent level. The coefficient on the initiative dummy itself falls and becomes negligible. This says that the effect of the initiative was conditional on control of the government by the Democratic party. Indeed, the results suggest that the initiative was used almost exclusively to cut back the spending of Democratic-controlled governments. This story is consistent with Peltzman’s [1992] finding that voters penalized increased spending by Democratic governors but not Republican governors.

The second set of variables we use to capture preference divergences between the representatives and the voters is the number of seats in the state legislature’s upper and lower house. These variables are motivated by the common pool/logrolling theory of spending [Buchanan and Tullock, 1962]. As formalized by Weingast, Shepsle, and Johnsen [1981], each dollar of spending in a legislator’s district, say to build a road, generates 1 dollar of benefits for his constituents but imposes only a cost of \( \frac{1}{N} \)th of a dollar, where \( N \) is the number of districts, because revenue is raised from broad-based taxes that are spread over all districts. The familiar common pool logic implies that as \( N \) becomes larger, the perceived cost of spending declines, and overall spending increases. Some evidence for this view of pork barrel spending can be found in Inman and Fitts [1990], Del Rossi [1995], Gilligan and Matsusaka [1995], and Del Rossi and Inman [1997].

The regression in column (4) adds the two seats variables to regression (1). Consistent with the common pool theory, spending is positively related to the number of seats in the upper house. However, it is negatively related to the number of seats in the lower house. The regression in column (5) introduces interactions between the initiative dummy and the number of seats. Again, we find evidence that the effect of the initiative is conditional. As the number of seats in the upper chamber increases (which we interpret to mean that the common pool problem becomes more severe), the initiative pushes down spending more.
The final column of the table includes all of the representation variables at once. One might expect that our two sets are capturing the same underlying factor, but this does not appear to be the case. The effect of the initiative remains conditional on both factors at approximately the same levels of statistical significance.

Table 3 investigates whether the initiative is conditional on the amount of uncertainty about voter preferences. We are particularly interested in these results because identification of this factor is one of the novel contributions of our paper. It is not obvious how to measure uncertainty about preferences, but we might expect uncertainty to be correlated with the heterogeneity of the population. The idea is that in a small homogeneous town, the representatives probably have a good idea about voter preferences, while in a large city with a diverse population, representatives may find it difficult to know what the median voter wants. Our first variable, admittedly crude, is the population of the state. We expect that in a large state such as California it is harder to know what the voters want than in a small state like Wyoming. The regression in column (1) of Table 3 adds an interaction term between the initiative dummy and the state’s population to the basic regression in column (1) of Table 2. As can be seen, the coefficient on the interaction term is negative and significant at better than the 5 percent level. While this provides additional evidence of the conditionality of the effect of initiatives, it falls short of a formal test of the model because the effect of uncertainty can be positive or negative in theory. In terms of Proposition 3, our results to this point are most consistent with the situation where interest groups tend to be conservative \((i = -\theta)\) and representatives are moderate \((r = 0)\) or liberal \((r = \theta)\). With these configurations, (i) the initiative unconditionally reduces spending, and (ii) an increase in uncertainty causes an even larger decline of spending. Intuitively, preference uncertainty increases the chance that a conservative initiative will pass, which tilts the representative to the right or forces him to allow the initiative to appear.
We next consider a more direct measure of population heterogeneity, the percentage of
the population that lives in a metropolitan area times the percentage that does not. This
variable attains its theoretical maximum when the population is evenly divided between
urban and rural areas. In column (2) we add this measure directly to the regression in
column (1), and in column (3) we add an interaction between the initiative variable and the
urban-rural variable. There is weak evidence of conditionality here. Heterogeneity again
appears to have made the initiative more effective in cutting spending, but the coefficient is
only on the edge of statistical significance. The conclusion is less ambiguous in the regression
of column (4) where we include both heterogeneity variables and their interactions. As can be
seen, both interactions are negative and statistically significant at better than the 1 percent
level. This makes a stronger case for the importance of preference uncertainty because the
coefficients are significant, and also because they both are negative, which tells a consistent
story. The story is that on average, throughout the sample period, states tended to have
moderate-to-liberal representatives, and the typical interest group using the initiative process
was conservative.

The final regression, in column (5) of Table 3, includes all of the variables we have
considered so far. The results are essentially unchanged. We continue to see statistically
significant evidence of conditionality in the effect of the initiative.

Our initiative variables are rather crude proxies for the factors in the model. None
of our regressions constitutes a formal test of the model, but taken together, the results
tend to support the idea that the effect of the initiative is conditional on the nature of the
representative process and the amount of uncertainty about voter preferences.\footnote{We also estimated the regressions without Wyoming, without states that adopted the initiative during the sample period, and with a dummy for states west of the Mississippi. The results were the same as those we report in all important respects.}
VII. Summary and Extensions

This paper develops a model of political resource allocation that focuses on the procedures used to make decisions. We use the model to study the tradeoffs between two common decisionmaking institutions, monopoly decisionmaking by representatives and joint decisionmaking by representatives and voter initiatives. We view this as a step toward understanding the growing empirical literature documenting that the method of decisionmaking matters for outcomes.

The building blocks of our model are (1) an agency problem between the voter and representative, (2) assignment of agenda control, and (3) uncertainty about the voter’s policy preferences. The first two are mainstays of the existing literature. They give rise to the conventional view that initiatives help the voter by breaking the representative’s monopoly over the agenda. Our contribution is to emphasize the third building block, preference uncertainty. We show that when voter preferences are uncertain, the initiative has both benefits and costs. As a result, policies are not necessarily closer to median voter outcomes in DR jurisdictions than MR jurisdictions—the threat of an initiative can cause the representative to adopt a more extreme policy than he would have otherwise.

As for the broad question—does availability of the initiative make the voter better or worse off?—we find that the answer depends on the amount of preference uncertainty and the severity of the voter-representative agency problem. The voter benefits from (or at least is not hurt by) the initiative when preferences are very uncertain, or when there is no agency problem, or when there is an agency problem but the representative is extreme. The voter is hurt by the initiative only when preferences are fairly certain, there is an agency problem, and the representative is moderate. Thus, although an important point of the paper is identifying a potential cost of initiatives, perhaps the main message is that these costs are
decisive only in a particular set of circumstances.

Much work obviously remains to be done. Our model does not incorporate any notion of expertise on the part of the representative, and therefore abstracts away from the specialization benefit that is surely an important reason for delegated decisionmaking. We also assume that the voter is capable of determining which of the policy options is in his best interest. A natural starting point to address the issues of expertise and voter ignorance would be to include policy uncertainty along the lines of Gilligan and Krehbiel [1987]. This would presumably make resource allocation by representatives more valuable. It would then be possible to study the effect of different institutions on the incentives to acquire information, an important issue addressed recently by Aghion and Tirole [1997]. A signaling role for interest groups and endorsements would also arise, as in Gerber and Lupia [1995].

Another issue we ignore is competition between interest groups—our model contains a single group. We suspect that our basic benefits and costs would be present in a multi-group environment as well. Initiatives would still have value by providing a choice. Representatives no longer would be able to forestall all initiatives, but they would find it optimal to deter at least one of them in some circumstances. Thus, uncertainty would continue to pull the policy away from the representative’s ideal point. Some new strategic considerations would arise, however, concerning how decisions with multiple initiatives are resolved.

Although we have focused on public sector decisionmaking, the analysis could be recast to consider resource allocation in corporations. The question becomes, what are the benefits and costs of shareholder initiatives? Here is a sketch of how such an analysis might proceed: In a corporate context, the shareholders are the voters and the directors/managers are the representatives. For most corporate decisions, shareholders are likely to have similar preferences—they want the policy that will maximize value. Because managers face little uncertainty about shareholder preferences, initiatives are unlikely to be valuable for most
decisions, which is consistent with the evidence in Karpoff, Malatesta, and Walkling [1996]. However, our analysis suggests that shareholder initiatives will be beneficial for particular issues, those where manager and shareholder interests diverge (such as executive compensation and takeover defenses), and those where shareholder interests are heterogeneous (such as investment in apartheid South Africa in the 1980s).
Appendix

Proof of Lemma 1

Suppose that \( i = 0 \). By equation (2), \( x_i^* = 0 \) and by equation (1), \( p(x_i^*, x_r) = 1 - \sigma \), independent of the choice of \( x_r \). Then \( E[R] \) is maximized with \( x_i^* = r \).

Suppose that \( i = \theta \) (the case of \( i = -\theta \) is symmetric.) Then

\[
E[R] = \begin{cases} 
\sigma R(\theta) + (1 - \sigma) R(x_r) & \text{if } x_r > -z; \\
(1 - \sigma) R(-x_r) + \sigma R(x_r) & \text{if } x_r \leq -z.
\end{cases}
\]

Consider \( r = 0 \). Then \( x_i^* = 0 \) if \( x_r > -z \), and \( x_r^* = -z \) if \( x_r \leq -z \). The expected payoff is \( \sigma R(\theta) \) in the first case and \( R(-z) \) in the second. The first exceeds the second when \( \sigma > 1/3 \).

Consider \( r = -\theta \). Then \( x_i^* \to -z \) if \( x_r > -z \), and \( x_r^* = -z \) if \( x_r \leq -z \). The expected payoff in the first case approaches \( \sigma R(\theta) \) which is less than the expected payoff in the second case, \( R(z) \). Q.E.D

Proof of Lemma 2

Suppose \( r = \theta \) and \( i = 0 \). Then the representative either deters with \( x_r = C/(1 - \sigma) \) (see equation (3)) or allows the initiative, leading to \( x_i = 0 \) and \( x_r = \theta \) (from equation (2) and Lemma 1). Deterrence is optimal for the representative if

\[
R \left( \frac{C}{1 - \sigma} \right) > \sigma R(\theta) + (1 - \sigma) R(0). \tag{A-1}
\]

Equation (A-1) reduces to \( C > \theta \sigma (1 - \sigma) \). The case of \( r = -\theta \) and \( i = 0 \) is symmetric.

Suppose \( r = -\theta \) and \( i = \theta \). Then the representative can deter with \( x_r = \theta - C/\sigma \), or allow the initiative, giving \( x_i = z \) and \( x_r = -z \) (Lemma 1). Deterrence is optimal if

\[
R(\theta - \frac{C}{\sigma}) > \sigma R(-z) + (1 - \sigma) R(z). \tag{A-2}
\]

Equation (A-2) reduces to \( C > \theta \sigma (1 - \sigma (1 - 2\sigma)/(2 - 3\sigma)) \). The case of \( r = \theta \) and \( i = -\theta \) is symmetric.

Suppose \( r = 0 \) and \( i = \theta \) Then the representative can deter with \( x_r = \theta - C/\sigma \). Without deterrence, the representative’s policy depends on \( \sigma \). If \( \sigma > 1/3 \), then \( x_r = 0 \) and \( x_i = \theta \). Deterrence is optimal if

\[
R(\theta - \frac{C}{\sigma}) > (1 - \sigma) R(0) + \sigma R(\theta),
\]

28
which reduces to

\[ C > \theta \sigma (1 - \sigma). \]  \hspace{1cm} (A-3)

If \( \sigma \leq 1/3 \), then \( x_r = -z \) and \( x_i = z \). Deterrence is optimal if

\[ R(\theta - \frac{\sigma}{2}) > \sigma R(-z) + (1 - \sigma) R(z), \]

which reduces to

\[ C > \theta \sigma (1 - (\sigma/(2 - 3\sigma))). \]  \hspace{1cm} (A-4)

Because \( \sigma < \sigma/(2 - 3\sigma) \) if and only if \( \sigma > 1/3 \), equations (A-3) and (A-4) can be condensed as

\[ C > \theta \sigma \left(1 - \min\{\sigma, \sigma/(2 - 3\sigma)\}\right). \]

The case of \( r = 0 \) and \( i = -\theta \) is symmetric. Q.E.D.
References


Figure 1. Sequence of actions under direct-and-representative allocation

Interest group arrives with $i \in \{-\theta, 0, \theta\}$. 

Representative chooses policy $x_r$. 

Interest group accepts $x_r$ or proposes $x_i$ and pays $C$. 

Voter preferences are revealed $v \in \{-\theta, 0, \theta\}$ and chooses $x_r$ or $x_i$. 

- $x_r$ becomes law. 
- $x_i$ becomes law.
### TABLE 1
Summary Statistics and Variable Definitions

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.E.</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A. Dependent variable</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State and local direct general expenditure per capita</td>
<td>2295.56</td>
<td>761.79</td>
<td>808.53</td>
<td>5060.81</td>
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<tr>
<td><strong>Panel B. Control variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income: Income per capita</td>
<td>12420.64</td>
<td>3105.75</td>
<td>5179.13</td>
<td>24318.83</td>
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<td>Population in 100,000s</td>
<td>43.64</td>
<td>45.93</td>
<td>2.88</td>
<td>297.60</td>
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<tr>
<td>Population growth: Percent growth rate of population over previous four years</td>
<td>5.21</td>
<td>6.03</td>
<td>−10.45</td>
<td>47.16</td>
</tr>
<tr>
<td>%Metro: Percent of population living in a metropolitan area</td>
<td>63.12</td>
<td>22.71</td>
<td>12.76</td>
<td>100.00</td>
</tr>
<tr>
<td>Mineral production: Value of mineral production per capita</td>
<td>932.73</td>
<td>1983.03</td>
<td>5.33</td>
<td>17469.16</td>
</tr>
<tr>
<td>Federal aid: Revenue received by state and local governments from federal government per capita</td>
<td>454.86</td>
<td>190.36</td>
<td>83.76</td>
<td>1174.13</td>
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<td><strong>Panel C. Initiative variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Initiative dummy: Dummy=1 if state allows initiatives</td>
<td>0.42</td>
<td>0.49</td>
<td>0</td>
<td>1</td>
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<td>Democratic control: Dummy=1 if the governor and a majority of both houses are Democrats</td>
<td>0.40</td>
<td>0.49</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Republican control: Dummy=1 if the governor and a majority of both houses are Republicans</td>
<td>0.15</td>
<td>0.35</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Dummy=1 if initiative state and Democrats control government</td>
<td>0.11</td>
<td>0.31</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Dummy=1 if initiative state and Republicans control government</td>
<td>0.07</td>
<td>0.25</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Upper seats: # of seats, upper house</td>
<td>39.66</td>
<td>10.58</td>
<td>17</td>
<td>67</td>
</tr>
<tr>
<td>Lower seats: # of seats, lower house</td>
<td>116.44</td>
<td>59.78</td>
<td>35</td>
<td>400</td>
</tr>
<tr>
<td>Upper seats × Initiative dummy</td>
<td>16.03</td>
<td>19.66</td>
<td>0</td>
<td>59</td>
</tr>
<tr>
<td>Lower seats × Initiative dummy</td>
<td>40.69</td>
<td>55.51</td>
<td>0</td>
<td>240</td>
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<tr>
<td>Population × Initiative dummy</td>
<td>17.77</td>
<td>40.11</td>
<td>0</td>
<td>297.60</td>
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<tr>
<td>%Metro × %Rural: %Rural = 100 − %Metro</td>
<td>1813.72</td>
<td>653.12</td>
<td>0</td>
<td>2500</td>
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<td>%Metro × % Rural × Initiative dummy</td>
<td>740.58</td>
<td>950.15</td>
<td>0</td>
<td>2497.87</td>
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*Note.* All financial variables are expressed in 1990 dollars using the CPI. Data sources are given in Matsusaka [1995] and Gilligan and Matsusaka [1995]. Mineral production data were updated using *Statistical Abstract of the United States, 1996, 1997.*
### TABLE 2
Regressions of State and Local Spending on Initiative and Representation Variables

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<th></th>
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<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
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</thead>
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<tr>
<td>Dummy=1 if state</td>
<td>−44.39*</td>
<td>−50.58*</td>
<td>2.41</td>
<td>−64.97**</td>
<td>178.52</td>
<td>205.61*</td>
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<td>allows initiatives</td>
<td>(26.20)</td>
<td>(26.90)</td>
<td>(36.34)</td>
<td>(27.09)</td>
<td>(108.99)</td>
<td>(116.53)</td>
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<td>Dummy=1 if Democratic control</td>
<td>---</td>
<td>−27.28</td>
<td>20.33</td>
<td>---</td>
<td>8.52</td>
<td>(25.75)</td>
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<tr>
<td></td>
<td></td>
<td>(32.94)</td>
<td>(30.73)</td>
<td></td>
<td>(31.81)</td>
<td></td>
</tr>
<tr>
<td>Dummy=1 if Republican control</td>
<td>---</td>
<td>3.05</td>
<td>35.23</td>
<td>---</td>
<td>72.67</td>
<td>(40.51)</td>
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<tr>
<td></td>
<td></td>
<td>(67.52)</td>
<td>(66.34)</td>
<td></td>
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<tr>
<td>Dummy=1 if initiative state and Democratic control</td>
<td>---</td>
<td>---</td>
<td>−119.62*</td>
<td>---</td>
<td>−87.27*</td>
<td>(47.61)</td>
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<tr>
<td>Dummy=1 if initiative state and Republican control</td>
<td>---</td>
<td>---</td>
<td>−61.40</td>
<td>---</td>
<td>−119.53</td>
<td>(81.45)</td>
</tr>
<tr>
<td>Upper seats</td>
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<td>---</td>
<td>3.86***</td>
<td>5.11***</td>
<td>4.59***</td>
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<td>(1.17)</td>
<td>(1.43)</td>
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**Note.** Each column is a regression. The dependent variable is state and local direct general expenditure per capita. White standard errors are in parentheses beneath the coefficient estimates. Significance levels are indicated by (*) 10%, (**) 5%, and (***) 1%. Variables are defined in Table 1. The basic data cover 49 states (Alaska is excluded) and 7 years (1960, 1965,…, 1985, 1990). (a) Coefficients and standard errors are multiplied by 10 for readability.
TABLE 3
Regressions of State and Local Spending on Initiative and Heterogeneity Variables

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