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Is direct democracy a problem or a promise for fiscal outcomes? The case of the United States(*)

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Abstract

In time of worry for large deficits, the question on whether direct democracy can be a problem or a promise to better rule modern societies may arise. Both theoretical and empirical studies provide mixed answers. This paper investigates both the indirect (i.e. the existence) and the direct effects (i.e. the usage) of direct democracy institutions on major fiscal outcomes across the American States during 1992-2009. Being based on a more recent time span than previous contributions, our study includes more detailed information such as the type of institution, the voting result, and the topics of concern. The main results suggest that States permitting initiatives spend less than those without, confirming some previous findings. However, when initiatives are effectively used, their practice contributes to increase spending among those States allowing them. The intensity of different initiatives also matters for fiscal outcomes as well as the nature of topics involved.

JEL classification: H710, H720, P160, O510

Keywords: Voter initiatives; Fiscal policy; Positive constitutional economics; State government.

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1. Introduction

As confidence in government decreases and trust in politicians' hits low, the idea of shifting decision-making directly to citizens becomes ever more appealing. Theoretical considerations do not provide a conclusive assessment as to whether institutions of direct democracy have a positive or negative impact on fiscal and policy outcomes. According to some views, direct democracy instruments (e.g., referendums[1] and initiatives) are influenced by narrow and special interest groups that neglect the majority view (e.g, Broder 2000); but to others, they uncover outcomes that are generally supported by the many and affirm that more direct form of democracy may improve productive resource allocation (Blomberg *et al.* 2004). The central theme of the strand of literature sustaining the "virtuous" effect of direct democracy is based on evidence (basically in the United States and Switzerland) that such instruments increase the flexibility of resource allocation and lead to lower taxes and spending. However, it is not *a priori* clear whether citizens are generally more in favor of cutting or increasing public spending as this may depend on historical, cultural or other context factors. In time of worry for large deficits and pressure to balance the budget, this raises the question on whether direct democracy can be a problem or a promise to better rule modern societies.

Around half of American States and an increasing number of other countries have adopted some form of direct democracy.[2] The debate about the merits of representative *versus* direct democracy goes back to ancient times. It is mainly based on the difference between the "people's rule" (i.e. pure democracy for the Athenians) and the "public thing" (i.e. the choice of a republic for the Romans). In real-world societies of a size too large to efficiently vote directly on all issues, representative and direct democracy are usually complementary institutions; in these societies, a different degree of direct democracy can be combined with representative institutions.

The effects of direct democracy have been explored by many empirical studies, mostly focusing on the US. Few exceptions refer to more recent cross-country analysis of Blume *et al.* (2009), and case-studies on Switzerland by Feld and Savioz (1997), Feld and Kirchgassner (2000, 2001), Feld and Matsusaka (2003), Funk and Gathmann (2011). US studies range from citizens' voter turnout and civic engagement (Tolbert *et al.* 2001; Smith and Tolbert 2004) to minority/majority rights (Gerber 1996, 1999; Hajnal *et al.* 2002), state economic performance (Matsusaka 2005); state and local fiscal policy (Matsusaka 1995, 2004); and the quality of government (Alt and Lassen 2003; Dalton 2008).

[1] We follow the *Oxford English Dictionary* and most of the modern literature (e.g., Feld and Matsusaka 2003) in adopting the plural term *referendums* instead of *referenda*. See also Butler and Ranney (1994) for further details on this grammatical issue.

[2] Recently, Britain has held its first referendum since years (on whether to change its voting system), and the European Union has just introduced the first supranational initiative process. With technology making it ever easier to hold referendums and Western voters ever angrier with their politicians, direct democracy could be on the march. Switzerland represents, after all, a successful model of direct democracy in the 19th century at the federal level and in the middle ages at the local level.

However, results are mixed and the effect of the direct democracy process on such items usually varies according to the level of government and the time period analyzed.

Although the use of direct democracy mechanisms has spread in different forms to several countries, testing its impact on fiscal outcomes is a difficult task. International comparisons are problematic given the impossibility to keep the many factors affecting public policies constant across countries. As a matter of fact, the US serves as an interesting laboratory for other federal settings, thanks to a sufficient variation in types of direct democracy institutions at the State level. Even without a federal initiative process, more than half of all American States have some form of initiative - either direct or indirect (see Section 3) - according to which citizens have the ability to adopt laws or to amend the State constitution.

In this study, we are interested in performing a positive analysis on whether direct democracy institutions - considering their existence, usage, types and the topics of concern - have effects on the level of debt, public expenditure (and its main components) and revenue items at the State level. The existing literature has provided a great deal of descriptive information about voter information, initiative campaigns, and the existence of the initiative process, while it has little to do with the actual usage of direct democracy measures.[3] Our paper is an attempt to document and disentangle both the effects of initiatives, i.e. one related to their existence and, especially, one related to their practice, with respect to fiscal outcomes and policies across the American States and time.

The issue is widely debated in US as regards recent history as well. For example, *The Economist* (April 20th 2011) affirmed that the main culprit of the huge budget hole in California is direct democracy.[4] The underlying criticism of the initiative process is that it leads to irrational public policies because voters are myopic that they would approve new spending programs while, at the same time, cut their taxes. This is properly summarized by Sears and Citrin (1985), who conclude that "to make a long story short, substantial majorities of the California electorate wanted cutbacks in government spending and taxes…while at the same time (and by equally strong majorities) requesting additional services in most areas of government responsibility" (p. 44).

However, previous results on the US (e.g., Matsusaka 1995, 2004; Matsusaka and McCarty 2001) prove that State government spending is lower when voters participate directly in policy decisions, i.e. initiative-States spend less than non-initiative ones.

A common feature of such studies is that only part of the available data is used. Almost all consider the existence and, more rarely, the ease of usage of the initiative process (e.g., Blomberg *et al.* 2004) - which means State-with *versus* State-without initiatives - so neglecting the more articulate

[3] To our knowledge, the only exception is a recent work of Matsusaka (2012), who investigates the importance of quantifying the direct and indirect effects of the initiative, i.e. passed initiatives versus available but not used initiatives.

[4] "[R]ecalls, in which Californians fire elected officials in mid-term; referendums, in which they can reject acts of their legislature; and especially initiatives, in which the voters write their own rules. Since 1978, when Proposition 13 lowered property-tax rates, hundreds of initiatives have been approved on subjects from education to the regulation of chicken coops. This citizen legislature has caused chaos. Many initiatives have either limited taxes or mandated spending, making it even harder to balance the budget".

differences among various instruments of direct democracy (e.g., direct and indirect initiatives). Likewise, the topic or scope for which initiative is undertaken is often not explored even though it can vary hugely. Indeed, initiatives may concern financing single infrastructure projects, welfare policies, taxation, state spending and bonds, electoral issues, environmental and regulation institutions, civil rights, etc. More generally, as pointed out by Feld and Matsusaka (2003, p. 2706), "many studies combine several institutional features into an *ad hoc* index of direct democracy"; this does not allow to answer questions concerning the institutional details that possibly affect economic and fiscal outcomes and limits the policy relevance of the results.

The novelty of our paper is to take into account detailed information on direct democracy measures such as whether direct or indirect initiatives are used and which area of the policy agenda is explicitly involved (e.g., taxes, bonds, education, health, civil rights, regulation, etc.) in order to empirically investigate the effects of these instruments on the main fiscal variables in American States over the period 1992-2009. We follow the suggestion of Blume *et al.* (2009, p. 454) according to which "[o]ne desirable extension is to divide the category 'initiative' into a number of more fine-grained sub-categories", so we also extend the content of previous works.

To make our study consistent with the standard approach, we start the analysis considering the existence of direct democracy tools (i.e. whether and where initiatives are possible) and we evaluate whether some fiscal effects occur. Then, we focus on the usage of the process (i.e. whether initiatives are actually held in practice) so analyzing only the sub-sample of initiative-States in relation to their fiscal performance. Hence, we search for evidence that among initiative-States, the effect of using direct democracy may be different to that of permitting it only. Overall, the dataset refers to a more recent time span with respect to the existing studies, with transparent coding criteria for the institutional and topic details.[5]

Our main results suggest that State with initiatives spend and tax less than those without, consistently with previous findings (e.g., Matsusaka 1995, 2004). However, among the States allowing initiatives, it seems that the actual practice of them plays a different role in affecting fiscal outcomes as it basically contributes to increase State spending and revenues. Additionally, the type of initiatives matters as well as the nature of specific topics. In brief, a closer look at the practice of direct democracy, beyond its existence, provides a different picture about its fiscal effects and proves that one cannot adopt a single indicator to capture all aspects of the phenomenon.

The rest of the paper is organized as follows. Section 2 surveys the empirical dealing with the relationship between direct democracy issue and fiscal outcomes. Section 3 briefly provides background information on voter initiatives in the US, while Section 4 describes the data and the

[5] This was possible thanks to the comprehensive effort conducted by the *Initiative & Referendum Institute* (IRI) at the University of Southern California for many years, and additional information tracked on *Ballotpedia* (which is a free, collaborative, online encyclopedia about State politics, including elections, congress, legislatures, ballot measures, governors, etc.).

estimation approach here used. Section 5 contains and discusses the empirical results. Finally, Section 6 concludes and suggests some questions for further research.

2. A review of the literature

As pointed out by Matsusaka (2005), the theory of direct democracy revolves around three main ideas: i) the principal-agent problem (where the role of the median-voter is crucial and the effect of direct democracy could be either that of pushing policy closer to the position of the median-voter or that of excluding the median-voter's ideal policy as suggested in Romer and Rosenthal's (1979) work);[6] ii) asymmetric information (where the performance of direct democracy relative to legislature depends on the nature of the information required to make policy decisions); iii) issue bundling (where direct democracy tools, such as initiatives and referendums, give citizens a way to unbundle specific issues, so avoiding the 'logrolling' phenomenon in omnibus bills). Moreover, it is also suggested that direct democracy institutions can make politicians more accountable and result in policy choices that more closely match citizen preferences (Voigt 2011). Thus, the use of initiatives (and referendums) should act on government spending making it more in line with citizens' preferences. Most of the literature assumes that there should be some effect in terms of taxes, expenditure and deficits, although the direction of such effect is unclear.

Each of the above theoretical assumptions provides interesting insights on whether (and when) direct democracy mechanisms are likely to be helpful or harmful for a country's financial balance and inspires empirical investigations. Consistently with the scope of the paper, we focus on a group of studies investigating the impact of the direct democracy process on fiscal outcomes in the US first, and then in other countries.[7]

A common finding of more than ten studies (listed in Matsusaka 2004) is that, all other things equal, initiative States tax and spend less (about 4%) than non-initiative ones, at least from the mid-1970s to the end-1990s. The "full" initiative effect is considered (see Gerber 1999), in the sense that no distinction is made between measures inserted on the ballot by the voters, with no direct involvement of their representatives through the legislature (known as "direct initiatives") and measures inserted on the ballot by legislation (known as "indirect initiatives"). Actually, this

[6] For theoretical explanations, see Tullock (1959); Niskanen (1971); Peltzman (1992).

[7] More generally, economists are increasingly drawn to the study of political institutions and their policy consequences (see Krol 2007 for a review). Here we focus on fiscal outcomes, but other studies relate to productivity and economic performance. For example, Feld and Savioz (1997) highlight that economic performance (measured by GDP per employee) in Swiss cantons with extended democracy rights is some 5% higher than in cantons without such rights, based on evidence from the period 1984 to 1993. This study, as well as Blomberg *et al.* (2004) for the US, gives support to the idea that direct democratic systems are more efficient than representative democratic ones as the former should also lead to better private sector productivity and higher output.

distinction is relevant as it pertains to two different types of initiatives that are characterized by a different intensity of how "direct" of democracy actually is.

More generally, for empirical purposes the initiative effect cannot be measured solely by examining the propositions that actually pass (Lupia and Matsusaka 2004), but it should also try to consider information on both how difficult it is to use direct democracy instruments and what kind of issues are at stake. Blomberg *et al.* (2004), for example, consider the signature requirement[8] (for those States that do) in addition to the presence or absence of the initiative process. Similar arguments are supported by Hobolt (2006) suggesting that direct democracy can have both direct and indirect effects on policy outcomes in the EU and on the EU integration process too, as "involuntary defection" of countries during the ratification stage is a possible direct implication when the referendum hurdle is not passed (as the French and Dutch constitutional referendums have illustrated), while certain indirect effects would be also expected during the negotiations stage at the international level. In this line there is also the contribution of Matsusaka (2012) on the US, proving that both direct (i.e. initiatives change policy directly through voters approving laws that override the legislature) and indirect (i.e. the initiative process represents a threat that induces the legislature to change policy) effects are important, but the direct effect is several times more important than the "threat effect".

Attempts to better represent direct democracy issues are those of Blume *et al.* (2009), and Fiorino and Ricciuti (2007) with their "Direct Democracy Index" (DDI). The latter addresses the relevance of institutional details (e.g., the difference between referendums and initiatives); while, the former indentifies four categories, passing from "0 = no actually observed direct democracy (i.e. no actual use between 1996 and 2005)" to "3 = high level of direct democracy (i.e. more than five voted issues with any sort of instrument)." Such measures are used to perform cross-country studies, where data comparability problems arise and also their availability is not always so guaranteed over long time periods.

As for the US, beyond the findings of lower spending in States with initiatives than in those without (Matsusaka 1995, 2004; Matsusaka and McCarty 2001; Blomberg *et al.* 2004), there are some cases showing the opposite trend. Among them, Zax (1989) found that direct democracy institutions increased per capita government spending in 1980 for 50 American States and 1,305 local communities; Marschall and Ruhil (2005) demonstrated that ignoring States' voluntary adoption of direct democracy when analyzing fiscal outputs generate biased and unreliable estimates of initiative effects, and that the initiative actually increased State expenditures, revenues and taxes over the period 1960-2000. Hence, in these studies, rather than reducing the size of the public sector, the initiative appears to have fostered and expanded the fiscal role of State government.

[8] The signature requirement (usually a percentage) is introduced as proxy for ease of use of the initiative. Nevertheless, it may be differently easy to collect the signatures of 5%, for example, of Californian voters and the same share of voters in Montana, due to both different population sizes and geographical location of inhabitants of the two States. For further details on this issue, see also Magleby (1984).

This pattern is actually quite similar to the one observed by Zimmerman (1999) and Matsusaka (2000) over the previous period (between 1900 and 1940), wherein initiative-States were more likely to require increases than decreases in expenditure (especially for education and welfare categories). The positive relationship between initiatives and public spending can be explained by the fact that if the initiative makes policy more responsive to public opinion, it is easy to note that, more often than not, public opinion calls for more government expenditure - as it seems to be happened from 1960 to 2000 in the US (see Marschall and Ruhil 2005). More generally, the conclusion drawn by Lupia and Matsusaka (2004) is that rather than thinking direct democracy as ideologically predisposed in a particular direction - i.e. increasing or decreasing public spending - it is a "median-reverting" institution, which pushes policy back toward the center when legislatures move too far to the right or left.

Another interesting result in Kiewiet and Szakaly (1996) shows that, although initiatives tend to bring about both lower taxes and lower spending, neither initiatives nor referendums have a significant effect on the amount of debt issued. Similar evidence for the US is provided by Matsusaka (1995, 2004) and Bohn and Inman (1996), wherein States with initiatives are no more likely to borrow than those without initiatives.[9] Finally, Camobreco (1998) found that initiatives have no effect on state and local (combined) per capita expenditures and tax effort in 1988 and 1990. Hence, the evidence on the net policy impact of the initiative in the US is rather mixed (for an historical perspective see Smith 2001).

With regard to countries other than the US, Feld and Matsusaka (2003) deal with the effects of mandatory fiscal referendums in 26 Swiss cantons from 1980 to 1998 and find that cantons with such mechanisms spend significantly less (about 19%) in per capita terms than cantons without them, holding constant other determinants of spending such as income. They also document an interaction between the mandatory referendum and voter initiative suggesting that the initiative process is a substitute way to restrain government spending - consistently with the evidence of Matsusaka (1995) for the American states.[10]

The fact that budget referendums and the initiative process are substitutes could be due to a sort of misspecification in some previous studies wherein the additive indices are used and the two institutions are kept together into an *ad hoc* index. Following this reasoning, Bowler and Donovan (2004) discuss different ways in which the initiative process could be represented and outline an argument in favor of measures that take into account the considerable variety in the way the process is implemented, demonstrating that commonly used variable to represent initiatives (i.e. they are present/absent) suffer validity problems, and hypothesis tests using such measures may under-estimate the initiative effects on state policy.

[9] Similar results hold for the case of Switzerland. Feld and Kirchgässner (1999, 2001) report, for example, that debt referendums reduce borrowing and spending in Swiss municipalities.

[10] Likewise, Feld and Kirchgässner (2001) find that in Swiss cantons with the mandatory referendum, both expenditure and revenue are lower by about 7% to 11% compared to cantons without mandatory referendums.

A similar approach is adopted by Blume *et al.* (2009), who propose the first cross-country study analyzing the economic effects of direct democracy in 88 countries over the period 1996-2005 with findings only partially confirming prior intra-country results. Indeed, they show that total spending (as well as that on welfare) is lower in countries with mandatory referendums[11] but, at the same time, that countries with national initiatives appear to spend more and be more corrupt.

Finally, studies on the fiscal effects of direct democracy are also devoted to analyze whether this process affects the vertical structure of government. Some recent examples are provided for Swiss cantons by Funk and Gathmann (2011), and Galletta and Jametti (2012). The former estimate the impact of direct democracy on government spending by using historical data and find that it constraints canton spending with, however, more modest effects than those previously obtained by other cross-sectional studies (e.g., Pettersson-Lidbom and Tyrefors 2007). The latter explore how the vertical structure of direct democracy in a federal context affects expenditure decisions of sub-central governments and highlight that municipalities without fiscal referendums, but belonging to cantons with fiscal referendums, present higher expenditure. To some extent, we also try to capture the vertical fiscal effect of direct democracy by analyzing its implication for expenditure transfers from States towards other governmental authorities (mainly of lower degree).

3. Direct democracy measures in the United States: characteristics and trends.[12]

The foremost example of direct democracy in the US is the use and development of initiatives and referendums,[13] whereby "the initiative is the means by which voters can correct legislative sins of omission and the popular referendum as the means of correcting legislative sins of commission" (Magelby 1984). The use of referendums can be prescribed by the constitution for passing certain types of legislation: in this case, agenda-setting power remains with parliament, even though citizens' consent is required.[14] Actually, to our knowledge, no previous studies pay much attention to the referendum mechanism also because of their use is less frequent than the initiatives practice. In

[11] The basic feature of mandatory referendums is that the law (usually the constitution) directs authorities to holding referendums on specific matters (such is the case in amending most constitutions and ordinary legislation, or impeaching heads of state as well as ratifying international treaties) and such referendums are usually binding. In other words, mandatory referendums "force" governments to ask the citizens for approval in some policy area (mostly their budget proposals). Thus, they differ from initiatives, which can be initiated directly by citizens themselves (having to collect signatures in favor of them) and be binding or not.

[12] The information contained in this section was derived primarily from independent research conducted by the IRI and from *Texas Interim Report on the Initiative Process.*

[13] A third variant are *plebiscites*, often used by the governing class to have its policies confirmed. They usually do not have a binding effect, which is why they do not play an important role in the literature on the economic and fiscal effects of direct democracy.

[14] Referendums can be popular or legislative according to the actor who "starts" the mechanism. In the first case, citizens have the power to refer to enacted specific legislation for the people to either accept or reject; in the second case, an elected official, a constitutional commission, the state legislature or other government/department agency submits propositions to the people for their rejection or approval.

this respect, we also focus on initiatives only as the best instrument to capture the degree of direct democracy in the US.

Initiatives, indeed, allow citizens to become agenda setters as they can directly adopt laws or to amend the State constitution. More precisely, the standard form of an initiative permits citizens to propose a new law that can be placed on a statewide ballot (under the condition that a predetermined number of signatures from fellow citizens is collected) and approved or not by voters through a majority rule; if there is the approval, the proposal becomes law.

There are two types of initiatives: direct and indirect. A *direct* initiative is one for which citizens' proposals are directly placed on the election ballot and then submitted to the people for their approval/rejection, without any role of State legislature in this process; an *indirect* initiative is, instead, a proposal promoted by citizens but subject to the preliminary approval of the State legislature during a regular legislative session. Hence, the main difference concerns the degree of direct democracy entailed by the two measures. We also take into account this difference in the empirical analysis.

In the US, there is no a federal initiative process but in 2011 around half of the American States had initiatives (either direct or indirect) as shown in Figure 1.[15]

Insert Figure 1 about here

The use of initiatives at the State level expanded tremendously in the past century. In particular, the *IRI* calculates that there were 118 statewide initiatives in the US during the 1950s; this figure increased to 378 initiatives in the 1990s, and remained quite stable for the decade 2000-2009 (367 initiatives).[16] More precisely, from 1904[17] to 2009 a total of 2,314 State-level initiatives have been on the ballot and 41% of them have been approved.

In our sample, we count 1,002 direct democracy events (650 direct and 352 indirect initiatives), of which about 53% passed, from 1992 to 2009. Figure 2 shows the total number of direct democracy tools, including those passed and failed for each State over our time span. The most frequent usage is observed in California (143), followed by Oregon (119). Additionally, Figure 3 summarizes State's direct democracy activity year-by-year, also reporting the number of implemented measures actually passed.

Insert Figure 2 and Figure 3 about here

[15] States having the initiative process are: Alaska, Arizona, Arkansans, California, Colorado, Florida, Idaho, Illinois, Maine, Massachusetts, Michigan, Missouri, Mississippi, Montana, Nebraska, Nevada, North Dakota, Ohio, Oklahoma, Oregon, South Dakota, Utah, Washington, Wyoming.

[16] A similar trend apparently occurred at the local level, as citizens and interest groups increasingly turned to direct democracy to advocate their positions. In addition, about half of all cities also provided for the initiative.

[17] Actually, the first year wherein statewide initiatives were adopted is 1898 (in South Dakota).

The actual use of initiatives visibly increases in recent years of our sample, reaching a peak of 150 events in 2002, 83 of which passed. An extensive usage of initiatives also occurs in 2004 (116), 2006 (136) and 2008 (121). In many years, the percentage of measures passed is higher - or at least equal - than the share of those failed.

Details on how the initiative is administered vary across States as concerns the following features: the number of signatures needed and their deadline and their geographic distribution; the presence of single or more subjects on the ballot; the circulation period; the final approval and other minor points. Finally, initiatives can aim at different levels of legislation (constitutional *versus* ordinary legislation), and their scope can vary hugely (e.g., some constitutions prohibit initiatives on budget-relevant issues). In 2009 (the latest data available in our sample), for example, headline issues were gay rights, tax and expenditure limits; likewise, in 2008 issues concerning civil and social rights represented the *leitmotiv* of ballot propositions combined with tax and expenditure measures, while in 2007 it is more difficult to identify national trends given relatively few measures on the ballot (even though taxes and bonds are often favourite topics). In general, fiscal policy items are of great importance at a State level as American Sates have a higher degree of fiscal autonomy and responsibility within the few boundaries of the federal Constitution. In this framework, normative instruments to limit the size and growth of revenues and expenditures (i.e. *tax and expenditure limitations*, TELs) are not imposed by the federal government or by the Congress but they come from the States themselves.[18] Voter initiatives are a way - among others - to promote and approve TELs.

4. The empirical analysis

The fiscal effects of direct democracy existence (i.e. the indirect effect of the process), and those of direct democracy usage (i.e. the direct effect of the process) are analyzed separately. The former is more conventional in the literature (see section 2); the latter represents a novelty and requires more information on the effective implementation of voter initiatives within each State year-by-year during our time period.

It is worth considering that a State may allow initiative institutions, but it may not use them in practice for many years. In our sample, some notable examples are Illinois and Mississippi that allow initiatives, but they do not seem recurring to them a lot (see Figure 2). In this perspective, the existence of direct democracy institutions (broadly defined) is not a sufficient condition to denote the effective usage of them and different fiscal effects may also arise.

[18] For further details see the National Association of State Budget Officers (NASBO).

4.1. Existence

The unit of observation of the this part of the analysis is each American State, excluding Alaska,[19] (i = 1,.., 49) in a given year (t = 1992,..., 2009). Hence, we have a strongly balanced panel based on annual data for a total of 882 observations. The "existence" benchmark specification is the following:

$$Fiscal\_item_{it} = \alpha + \beta_j Existence\_dd_{it} + \sum_{k=1}^{n} \gamma_k Cont_{it} + v_t + \varepsilon_{it} \qquad (1)$$

where $Fiscal\_item_{it}$ denotes the dependent variable representing various fiscal items (e.g., general revenue; taxes; charges; general expenditure; direct general expenditure; capital expenditure; current expenditure; social welfare expenditure; debt; intergovernmental expenditure) expressed in per capita current dollars and used one at a time. The dependent variables are deeply described in Section 4.3. We then estimate ten different specifications passing from wide fiscal aggregates (such as general expenditure) to more disaggregated variables (such as current expenditure).

On the right-hand side of equation (1), $Existence\_dd_{it}$ stands for a dummy variable indicating whether or not a State provides for voter initiatives (i.e. dummy = 1 if State permits initiatives; 0 otherwise). This proxy for direct democracy is the most similar to the previous literature and like in that case it captures only the existence of the process neglecting, instead, its actual usage.[20] As initiative status was established in most States many decades before the sample period, we assume that the decision to adopt them is, in practice, exogenous to policy decisions made in the sample period - as also in most previous studies (e.g., Matsusaka 1995, 2004; Lascher *et al.* 1996; Bowler and Donovan 2002).[21] In other words, given that States' decisions have made on whether to contemplate these institutions are very far in time (several decades before the period of this study), they can be considered exogenous to the fiscal variables under investigation. Hence, the direct democracy dummy is contemporary to the dependent and other control variables.

By investigating the effect of direct democracy existence on the main fiscal variables, we also control for other socio-economic factors that may affect State fiscal policy, making our study consistent with the conventional approach (e.g., Matsusaka 1995). The set of controls ($Cont_{it}$)

[19] Alaska is not included in our estimations as it is a significant spending/revenue outlier (due to oil severance taxes) as well as an initiative-State. Thus, including it alone can create a positive connection between spending and direct democracy, also because of the lack of good controls for oil revenue among our right-hand side variables, and distort the findings. Previous works on the US adopt the same correction (e.g., Matsusaka 1995).

[20] In that literature (see also Blomberg *et al.* 2004), the issue of usage is captured by the signature requirement and represented through the inclusion of another dummy variable for it.

[21] To our knowledge, a notable exception is the work of Marschall and Ruhil (2005), who explicitly address the potential endogeneity of the initiative, even considering combined state and local spending and taxation. Moreover, Funk and Gathmann (2011) also deal with the bias from observed feedback effects between spending trends and the strength of direct democracy in a Swiss canton. In their case, this choice is supported by the fact that they consider a time span of about 100 years during which a number of substantial changes in direct democracy institutions took place and they should be carefully examined.

includes demographics variables at the State level such as: population density (in order to capture, for example, the presence of economies of scale in providing government services); the annual growth rate of population (which is expected to lead to a short-run demand for public spending, which usually requires, in turn, some form of taxation); the percentage of population with total full- and part-time employment by industry (to control for potential differences between more and less developed area in benefits of spending and costs of rising revenue).

In addition to demographic variables, income per capita is included among the covariates as it represents a predictor of government size and public expenditure in the long run and it has a natural relationship with the revenue side. Federal revenue transfers to States[22] belong to the controls of equation (1) as they can play a role in affecting States' fiscal decisions concerning both sides of the budget and, at the same time, they can be assumed exogenous with respect to such decisions as properly argued by Matsusaka (1995).[23] This short list of control variables has a considerable explanatory power, as also proved by the *R-squared* statistic in all regressions (see Section 5 for details).

All other time-invariant factors and permanent differences across States are considered by including State fixed-effects in equation (1). Finally, year dummies (v_t) are used to control for federal shocks that may affect more than one State at the same time, while ε_{it} is the standard error term. To correct for heteroskedastic errors with respect to both time and states, White standard errors are used.

4.2. Usage

When analyzing the effects of using direct democracy tools, we focus our attention only on initiative-States (i.e. those that actually allow initiatives) and analyze what happens on fiscal outcomes when initiatives are actually held. Hence, the unit of observation of the second part of the analysis is each initiative-State, always excluding Alaska (i = 1,.., 23), during the same time period (t = 1992,..., 2009). The panel remains strongly balanced with 414 observations (they become 391 as we use a one-year lagged model). The general "usage" specification is the following:

$$Fiscal\_item_{it} = \alpha + \sum_{j=1}^{s} \beta_j Usage\_dd_{it-1} + \sum_{k=1}^{n} \gamma_k Cont_{it} + v_t + \varepsilon_{it} \qquad (2)$$

[22] For States, amounts received directly from the federal government includes federal grants and aid, payments-in-lieu-of-taxes on federal property, reimbursements for State activities, and revenue received but later transmitted through the State to local governments.

[23] Actually, he also affirms that if federal aid is endogenous, its inclusion does not bias estimates as block grants, general revenue sharing and also categorical grants and matching funds are awarded on the basis of formulas set by federal officials (e.g., Congress or administrators), so reflecting political bargaining at the federal level. As a result, a state's ability to increase its fiscal aid by altering its fiscal behavior may be small (see also Hale and Palley 1981).

On the left-hand side of equation (2), we have the same dependent variables used in equation (1). On the right-hand side, instead, we introduce a new variable, $Usage\_dd_{it-1}$, which stands for the usage of different measures of direct democracy (considered in three different forms one at a time) passing from more aggregate to more specific indices. In detail, we start by considering a dummy for the general usage of direct democracy (i.e. dummy = 1 if State has really implemented initiatives in a given year; 0 otherwise), without distinguishing between initiatives type and topic. This proxy is something new with respect to the existing literature and it allows to capture whether an initiative was held or not in a given year and in a given State - and not only the mere existence of the process.

We also introduce two other dummies to represent the initiatives implementation by their two types: direct and indirect (i.e. dummy $D = 1$ if initiative is direct; dummy $I = 1$ if initiatives is indirect) also controlling for the percentage of those passed by type. Finally, six dummies are used to capture the frequency of initiatives being held by topic (grouped into six different categories). Details of all these measures are reported in the next section before discussing the results.

In each of the three specifications of equation (2), the direct democracy usage-variable is lagged by one year as it makes sense that fiscal effects - if any - do not occur in the same year initiatives are held but, reasonably, at the least starting from the next year. This is mostly true when voter initiatives take place at the end of the year (mainly in November, coupled with elections). Hence, our benchmark specification is based on a different time-unit concerning fiscal outcomes and direct democracy events in order to take into account the not-instantaneous effects of initiatives. This also contributes to avoid potential reverse causality problems between these variables allowing for a time lag between them.[24]

The rest of the right-hand side variables are the same as equation (1). Each regression is estimated through a FE panel estimator with robust standard errors. Summary statistics on explanatory and controls variables of equations (1) and (2) are reported in Table 1.

Insert Table 1 about here

Demographic and employment data come from the *Regional Economic Accounts* provided by the US Bureau of Economic Analysis (BEA); detailed data and qualitative information on direct democracy measures (initiatives and referendums), through which we build our indexes, are derived from the *Initiative & Referendum Institute* (IRI).

[24] Even reverse causality should be avoided in such a way, this may be not enough to guarantee causal inference as some initiatives might be the response to emerging problems in fiscal policy. However, most initiatives in our time period do not strictly refer to policy variables - as also shown in the discussion on topics later - but broader society arrangements that more probably have an effect in revenues and expenditures in the long run.

4.3. The dependent variables.

We use fiscal and economic data of State governments for several reasons. The majority of spending functions is allocated at the State level, and their general expenditure also includes revenue transfers (i.e. intergovernmental expenditure) from States to lower tiers of governments, mainly to local units and districts. Likewise, most taxes (basically sales taxes, VAT and tax base sharing for income) are decided and administered by each State.[25] Moreover, States have a higher degree of autonomy on tax/expenditure decisions than local governments, whose finance basically depends on intergovernmental grants. Finally, the organization of the local government sector is at the discretion of the States and the structure of lower tiers is therefore quite different across States. As a consequence, it seems to be difficult to provide a general framework concerning the functions of the various forms of local authorities.

Even though conceptually it makes sense to look for the effect of statewide initiatives on combined State and local spending - mainly because initiatives can be (and are) targeted at the behaviour of both State and local governments -, it may be more interesting to investigate how the cuts or increases in the overall size of State and local governments were achieved, i.e. whether, for example, they come from State governments or local governments or both. This approach is followed only, to the best of our knowledge,[26] by Matsusaka (2004) when he deals with the question of whether initiatives have any effect on the distribution of government spending between the State and the local level, finding that initiative-States spend 13% less per capita at the State level than non-initiative ones, but they also spend 4% more on the local level.[27] More precisely, and importantly for us, the finding that the initiative cuts State spending is highly robust to alternative specifications; while the positive effect on local spending does not. Additionally, the effect of the initiative on State spending is more "dramatic" than one for combined "State plus local" spending (4% less) over the same period, suggesting that such institutional tool may be more important for the spending

[25] It is, indeed, well documented that government centralization of revenue and expenditure increased throughout the twentieth century (see Wallis 1995), whereby spending/revenue is centralized if the state government makes the preponderance of expenditure decisions (and decentralized if local governments make most decisions).

[26] More recently, Marschall and Ruhil (2005), who restricted their attention to total State and local expenditures and revenues per capita, also affirm that revenue and spending shifts between States and their local governments as a consequence of the initiative is an intriguing question in its own right, and one to reserve for future research.

[27] Actually, in the same work he also analyzes how the initiative changes the size of government, as measured by total spending (or revenue), i.e. considering the *combined* spending (or revenue) of State and local government. In that case, he demonstrates that the initiative reduced the size of State and local governments (measured by revenue or expenditure) by about 4% over the period 1970-2000.

composition rather than for its level.[28] For all these reasons, we focus on initiatives and fiscal outcomes at the same - as much as possible - governmental level, i.e. each American State.[29]

In detail, we consider several expenditure items as dependent variables (i.e. $Fiscal\_item_{it}$). We start with general expenditure, which is the sum of direct general expenditure and intergovernmental expenditure, so avoiding the problem of underestimating the role of State government in spending decisions.[30] As for its composition, three main functions belonging to general expenditure are considered together in order to represent the so-called social welfare spending (i.e. education plus health plus public welfare) as dependent variable.

Then, we consider direct general and intergovernmental expenditure. The former comprises all final expenditures paid to current employees, former employees (retirees) and to private sector entities outside of the government itself (e.g., all expenditure other than intergovernmental expenditure). Direct general expenditure also includes current operations, capital outlay, debt interests, subsidies and assistance. We also focus on the first two items[31] in order to verify whether any differences exist between them when the initiative process is at work. In turn, intergovernmental expenditure is defined as amounts paid to other government levels (e.g., the federal government; other States; local governments; independent school districts) for performance of specific functions or for general financial support.[32] Estimations on intergovernmental expenditure allow us to depict, to some extent, the effect of direct democracy existence and practice on the vertical structure of the public sector and on the interaction among different government actors.

Indebtedness by term at end of fiscal year is also considered as dependent variable; it concerns general obligation bonds, term bonds, serial bonds, revenue bonds, industrial revenue bonds, pollution control bonds, special assessment bonds, certificates of participation, zero coupon or compound interest bonds, judgments, mortgages, and construction loan notes.

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[28] Actually, it is worth noting that in Matsusaka (2004) when the dependent variable is local expenditure (per capita), the initiative variable still indicates whether a State-level initiative was available, and not whether a local initiative was available. Hence, it is not possible to hold the same unit of analysis keeping a local viewpoint as it is, instead, in the case of State government.

[29] Ballot measures that refer to local governments only exist (some examples are California's Proposition 98 in 1988 requiring the State to provide specified minimum levels of spending for schools districts, and California's famous Proposition 13 in 1978 cutting local property taxes). However, there are probably few if any measures that legislate directly on the division of spending between State and local governments.

[30] The money raised by the State, and then transferred to a local government showing up as a local expenditure, is included in the first aggregate.

[31] In detail, current expenditures are direct expenditure for compensation of own officers and employees and for supplies, materials, and contractual services except any amounts for capital outlay (i.e., for personal services or other objects used in contract construction or government employee construction of permanent structures and for acquisition of property and equipment); capital expenditures are direct expenditure for purchase or construction, by contract or government employee, construction of buildings and other improvements; for purchase of land, equipment, and existing structures; and for payments on capital leases.

[32] Intergovernmental expenditure includes grants, shared taxes, contingent loans and advances, and any significant and identifiable amounts or reimbursement paid to other governments for performance of general government services or activities. On the other hand, it excludes amounts paid to other governments for purchase of commodities, property, or utility services and for any tax levied as such on facilities of the government.

The revenue side is also explored as dependent variable in equations (1) and (2) to analyze how direct democracy institutions affect the way in which expenditures are financed. In this perspective, we consider three main items: i) general revenues net of intergovernmental revenue; ii) taxes; iii) charges.[33] More precisely, we consider general revenues basically from "own sources", say revenues in the form of taxes or charges but not coming from the federal government; the latter are, instead, used as control variable in both equations. Hence, we are interested in the direct democracy effects on general revenue as a whole, as well as on its two components, which are tax revenue and charges and miscellaneous revenues.

Descriptive statistics of all dependent variables - used one at a time in the empirical analyses - are reported in Table 2.

Insert Table 2 about here

Fiscal, economic and financial data are derived from the *Annual Survey of State Government* provided by the US Census Bureau.

5. Estimation results and discussion

Results are grouped into different cases referring to the effects of both direct democracy existence from equation (1) and direct democracy usage from equation (2) on the main fiscal items. In doing so, we keep clearly in mind that voter initiatives are not the preliminary determinants of fiscal policy and we focus on them only to evaluate whether their availability and usage can make a difference for fiscal outcomes with respect to representative institutions, where citizens to not directly propose or decide on legislation.

In detail, we start by presenting results related to the variable $Existence\_dd_{it}$ for each dependent variable on a whole sample of the American States. Then, we show results related to the variable $Usage\_dd_{it-1}$, considering its three main dimensions: the general usage of initiatives; the usage of initiatives by type; the usage of initiatives by topic. Hence, $Usage\_dd_{it-1}$ is firstly very widely defined and encompasses all institutions (i.e. both direct and indirect initiatives) dealing with

[33] General revenue is all government revenue except utility, liquor store, and insurance trust revenue; we voluntary exclude intergovernmental revenues (mainly from the federal government) from this definition. Taxes are compulsory contributions exacted by a State government for public purposes, other than for employee and employer assessments and contributions to finance retirement and social insurance trust systems and for special assessments to pay capital improvements. It consists of all taxes imposed by State (e.g., property tax, sales tax, and income tax revenues). It excludes charges for services and revenues from utilities and liquor stores. Charges are revenue received from the public for performance of specific services and from sales of commodities and services, expect liquor store sales. This includes fees, assessments, and other reimbursements for services, rents, etc.

legislation made by citizens; secondly, it becomes more detailed and includes specific features of the initiatives process such as their type and results; thirdly, $Usage\_dd_{it-1}$ is used to capture different topics put on the ballot. The $Usage\_dd_{it-1}$ specifications are referred to the sub-sample of initiative-States only. Each case is treated and discussed separately (from section 5.2 to section 5.4).

5.1. Case 1: The existence of direct democracy.

Table 3 shows estimation results from equation (1), where each row is a regression referred to a specific fiscal item and the variable $Existence\_dd_{it}$ is a dummy equal to 1 if State permits initiatives in year *t*. In all regressions, we observe that the coefficient on the initiative dummy variable is statistically significant (with the exception of general direct expenditure) and it indicates, on average, that initiative-States spend and tax less than pure representative States over the whole period. Moreover, the magnitude of the coefficients is always higher for revenue items than for those related to expenditure. Overall, these results confirm the common finding of many studies on the US (see Matsusaka 2004 for a review).[34]

Insert Table 3 about here

Looking at Table 3 the only exceptions to the negative association are charges and intergovernmental expenditure where the coefficient on $Existence\_dd_{it}$ shows a positive sign in both cases. As for the former, initiatives seem to have a pronounced effect on the tax mix: overall all initiative-States have less revenue, all other things equal, but while they rise less revenue from taxes, their citizens pay more in charges than citizens in non-initiative-States. Hence, it seems that the initiative alters the way in which funds are raised: broad-based taxes are cut and replaced with user fees and charges for services. The reason why voters may prefer to increase charges than taxes through the initiative mechanism is that they may be interested in reinforcing the link between expenditure and revenue decisions, say between those who benefit from government spending and those who pay for it. This may also reveal a different attitude for redistribution purposes between States with initiatives and those without as actually proved by the shift of financing away from taxes and towards charges.

As for intergovernmental expenditure, the positive sign of $Existence\_dd_{it}$ (even at 10% significance level) suggests that States permitting initiatives increase more grants and resources paid to other government levels (mainly local governments) than those without initiatives. This sounds quite familiar to the above mentioned studies according to which the initiative shifts disbursement of

[34] If we restrict the sample to the nineties (i.e. 1992-1999), say when it overlaps with the period taken into consideration in previous studies, basically the same results hold (estimations are not reported in the paper but available upon request).

funds from State to local governments, i.e. it contributes to decentralize government spending. Likewise, in our case the existence of direct democracy institutions seems to partly affect the interaction among different governmental actors, addressing spending away from State and toward lower tiers of government. Additionally, this result appears more pronounced for the second period of our sample (i.e. 2000-2009) once we split the whole time span (estimations are not reported in the paper but available upon request).

To sum up, the results on the existence model show that allowing the initiative process drives down both taxes and spending. Hence, the view according to which voters are short sighted so voter initiatives would favor tax cuts and, at the same time, increase spending, so forcing the government to borrow until it runs out of credit, is not supported by our findings. Indeed, as also pointed out by Matsusaka (2004), "[h]ow much of this is due to voter foresight and how much to institutional safeguards such as balanced budget requirements is not clear from these results, but the notion that voter control of budgeting decisions will lead to a fiscal breakdown is clearly incorrect."

5.2. Case 2: The usage of direct democracy.

Table 4 reports estimates of equation (2), where each row is a regression wherein the variable $Usage\_dd_{it-1}$ is a dummy one-year lagged, which is equal to 1 when an initiative-State has actually used and implemented direct or indirect initiatives year-by-year during the period 1992-2009.

Insert Table 4 about here

Looking at Table 4, we note that direct democracy practice is statistically significant and positively associated with the most important fiscal items: general expenditure, general revenues and taxes. Actually, in almost all other cases, the coefficient of $Usage\_dd_{it-1}$ remains positive even though it is not statistically significant at the conventional level (i.e. 10%). Hence, the effective usage of direct democracy tends to be correlated, on average, with more spending and taxation among States permitting initiatives. Compared to findings on the existence effects, the latter result suggests that having direct democracy measures available is not a sufficient condition to be more fiscally "virtuous" as a whole, i.e. to tax and spend less, as when initiatives are really implemented they seem to contribute to increasing both State revenues and expenditures.

Similar trends occur for the revenue side. Indeed, the coefficient on $Usage\_dd_{it-1}$ is positive for all the revenue variables, i.e. general revenues (net of intergovernmental revenue), taxes, and charges, even though in the last case it is not statistically significant. To some extent, we may conclude that the implementation of direct democracy measures appears to have increased the size of the public sector and both sides of the budget during the years 1992-2009 for initiative-States.

Additionally, inconclusive results emerge for the level of debt as well as in almost other studies on the US (e.g., Matsusaka 1995, 2004; Bohn and Inman 1996), suggesting that States using direct democracy institutions are no more likely to borrow than those do not.

As for the controls (estimated coefficients are not reported in the table 4 for the sake of brevity), income per capita is highly statistically significant in all specifications: income is, as expected, the most important driver of general expenditure and it also has a strong relationship with general revenues and taxes, recalling that direct democracy is not the key element in shaping fiscal policy. The same high significance with positive coefficient can be found for the percentage of population working full- and part-time by industry and for federal aid across different specification (mainly for spending items). Population growth is not significant, while the time dummies better explain the variation in each fiscal item over the sample period.

5.3. Case 3: The usage of direct democracy by type and result.

Table 5 shows estimation results when $Usage\_dd_{it-1}$ is represented by two one-year lagged dummies denoting the type of instrument used: a dummy *D* equal to 1 if initiative is of direct type; a dummy *I* equal to 1 if initiative is of indirect type. We also add the share of initiatives passed by type one-year lagged, i.e. the proportion of indirect initiatives passed over their total; the proportion of direct initiatives passed over their total. This specification is adopted to disentangle the impact of measures characterized by a different intensity of direct democracy involved (i.e. direct > indirect) and to take into account the *ex-post* effect by including the voting results. The other right-hand side variables are those used before.

Insert Table 5 about here

Looking at Table 5, it is worth noting that the type of initiative used seems to matter as different results can be obtained across specifications. In detail, the usage of indirect initiatives (*I*) mostly contributes to reduce fiscal outcomes (with the exception of capital expenditure). Per capita general expenditures are $100 lower when initiative-States effectively implement initiatives of *I* type. On the other hand, direct initiatives (*D*) show positive and statistically significant coefficients on general revenues and taxes, suggesting that when the stronger the institutions of direct democracy used, the higher State government revenues (also expenditures items are higher but the coefficients on *D* dummy are not statistically significant). In monetary terms, *D* initiatives are likely to increase general revenues and taxes respectively of about $57 and $53 per capita.

Hence, when we start to look into the different types of direct democracy tools, we obtain manifold results for many fiscal variables. In this respect, the common result achieved by the previous literature (see Matsusaka 2004 for a survey) according to which, all other things equal, initiative-States tax and spend less than non-initiative ones can be better qualified by our findings

adding that, across initiative-States, this holds when initiatives implemented belong to the indirect type, i.e. a preliminary approval of the State legislature during a regular legislative session is needed in order to make effective the initiative process. On the other hand, when measures are inserted on the ballot by the voters without any role of State legislature, the initiatives are of direct type and their use seems basically to favor an increase in tax policies, on average, in States permitting them.

Overall, it appears that the general usage of initiatives is not a sufficient condition to conclude that initiative-States always spend and tax more when the initiative process is effectively implemented as it depends on which type of initiative is at work. Only the usage of direct initiatives (*D*) is likely to have an expansionary fiscal effect (even significant for the revenue side only); the usage of indirect initiatives (*I*) tends, instead, to have a constraining fiscal effect (basically significant for expenditure items).

Controlling for the share of indirect and direct initiatives passed over their total prove that the negative effect of using *I* type on certain spending items (e.g., current and social expenditures) should be mitigated by indirect initiatives that really passed reporting a positive and statistically significant coefficient. Finally, comments on the control variables are similar to those drawn in the previous section (and their estimated coefficients are not reported in the table for the sake of brevity).

5.4. *Case 4: The usage of direct democracy by topic.*

The third part of the analysis tries to add to the existing literature the importance of considering direct democracy practice by topic in order to capture more details on what has been happening. The topic of each initiative identifies its scope and purpose. As already discussed, topics can vary widely (e.g., taxes, spending, bonds, education, health, regulation, business, constitutional issues, environment, civil rights, government administration, etc.).

Keeping this in mind, we re-estimate equation (2) for the same initiative-States sub-sample after grouping all topics observed on the ballots into six categories selected as the most frequently at stake from 1992 to 2009. Six dummies variables are built and included in one-year lagged values to represent $Usage\_dd_{it-1}$ in equation (2). More precisely, we consider: a) *Bond and State Spending* (i.e. the dummy is equal to 1 when the initiative implemented contains propositions concerning bond or State spending; the same logic is adopted to define the other five topic-dummies); b*) Education and Health*; c) *Taxes and Revenues*; d) *Regulation and Environment*; e) *Election and Administration of government*; f) *Other* as a residual category including all other possible topics put on the ballot. Figure 4 shows the percentage composition of the six topics in each initiative-States over the period 1992-2009.

Insert Figure 4 about here

In general, we pass from a type-distinction (case 3) to a topic-distinction (case 4) to capture whether any differences exist in the fiscal effects of various topics. Table 6 provides a stylized picture of the dimension and distribution, on average, of the six selected topics based on the total number of direct and indirect initiatives. The first five categories represent more than 80% of the total. It is easy to note that in each group direct initiatives (*D)* are more than indirect initiatives (*I*), with the exception of *Bond and State Spending*. In this part of the analysis, we deliberately neglect the type of initiative (i.e. *D* and *I*) in order to isolate the fiscal effects of the different propositions content put on the ballots.

Insert Table 6 about here

Estimation results on the usage of direct democracy by topics are reported in Table 7.

Insert Table 7 about here

Topics on *Taxes and Revenues* seem to imply "virtuous" effects on social expenditure. Indeed, the related coefficients are negative and statistically significant (even at 10%) suggesting that tax ballots are inversely related to these spending items.[35] The initiatives under this topic concern both issues related to increasing specific taxes and dedicating them to specific expenditures, and reducing taxes (albeit form our analysis this latter category is more frequent).

The *Education and Health* topic seems to be relevant for charges. Indeed, its coefficient is positive and statistically significant suggesting that questions usually referred to organizational, administrative and managerial aspects of those services may favor increases in revenues coming from the public for performance of such services. As a matter of fact, the two largest revenue sources classified as charges were tolls from roads and tuition payments for education. On the other hand, the same topic shows a negative coefficient on capital outlays; this can occur, for example, when propositions require less buildings investments and other related improvements on education after the recent budget crisis.

A positive coefficient on capital expenditure can be found in the case of *Regulation and Environment* issue according to which initiative-States are likely to spend $17 per capita more on such item when using this topic. This is consistent with the possibility that voters are willing to put on the ballot questions on the realization of specific projects to preserve, for example, State forest or water resources, and also to promote investments on energy-saving structures and equipment. Consistently with this result, an opposite pattern emerges for current expenditure where the

[35] This effect is persistent even when we add to this topic questions on alcohol, tobacco and gambling that usually provide more resource to State governments.

coefficient on *Regulation and Environment* topic is negative. Likewise, a negative relationship occurs in the case of the two main revenues, i.e. general revenues and taxes.

A persistent positive effect on fiscal variables comes from topics on *Election and Administration of Government* whose questions seem to favor an increase in general revenues, taxes, general expenditures, social expenditures and intergovernmental expenditure. In the latter case, this is likely to occur when propositions on the ballot concern, for example, legislator salaries, extension of legislative term limits and other similar subjects also referred to the authority of counties, cities, towns and villages, and more generally involving constitutional and institutional relations among different entities of the public sector.

Finally, *Bond and State Spending* topics do not have statistically significant impact (at least at 10%) on fiscal outcomes. Nevertheless, they basically hold positive coefficients for spending items and negative ones for revenue items. In general, questions on State spending are usually put on the ballot to limit the growth of expenditures (i.e. TELs) with a direct effect on the tax side of the budget as fewer resources can be probably needed to finance a lower level of spending. In turn, bond propositions usually contribute to increase spending. At the same time, voters might be willing to propose bond measures as an alternative financing mechanism with respect to taxation (although this view could end up being a bit myopic as it does not consider interests' payment that must be paid on bonds). This component may contribute to justify the positive coefficient - even not significant - on general and direct expenditure.

These results uncover correlations in the data, although they may not be considered proof of causality. Indeed, as commented for the category *Bond and State Spending* and *Taxes and Revenue*, the passage of an initiative within one of the topic categories does not need to have a particular directional outcome on fiscal variables. Analyzing the single initiative content might help in separating those expected to increase revenue/expenditure from those expected to have a contrary effect. By looking into a sub-sample of initiatives, this is a lengthily and not obvious task, especially for the many initiatives related to *Civil rights* and *Regulation and Environment* for which in the short term there might not be a clear relation with fiscal variables. These results should therefore be considered exploratory.

6. Concluding remarks

This paper is a first attempt to analyze the effect of direct democracy on fiscal outcomes in the US focusing not only on the availability of the process - as almost all previous studies did - but also on the actual practice of the initiatives measures. In this perspective, many features of direct democracy (e.g., the type of instrument used; the result of the voting process; the topics of concern) are taken into account in our empirical analysis.

Several fiscal policy components (e.g., general expenditure and other sub-categories; general revenue, taxes and charges) are also considered as dependent variables and a more recent time span (1992-2009) with respect to previous studies is examined. Even though most of the literature recognizes that direct democracy institutions have some effects in terms of spending, taxation and public deficit, a widespread consensus on the direction of such effects does not emerge and mixed results can be found even performing analyses on specific case-study such as the US.

Our findings are based on four steps of analysis. When the existence of the initiative process is considered, we observe that initiative-States are likely to spend and tax less than non-initiative-ones. Put differently, the initiative leads to less government sector overall when measured by expenditure but also by revenue variables. In fact, we also note that initiative-States raise more of their revenue by directly charging the people who consume government services as well as that initiative-States are more likely to shift resources to local government through intergovernmental expenditure than pure representative States.

A different picture emerges when the actual usage of the initiative process is analyzed focusing on only those States that permit it. When a general definition for direct democracy usage is adopted (without any distinction neither between the types of initiatives nor among different topics), we observe that the implementation of initiatives tends to be associated with higher State government general expenditure and revenue. Moving from more aggregate measures to specific types of initiatives, manifold results can be obtained across specifications. Indeed, while the use of indirect initiatives seems to be more effective in reducing fiscal variables mainly on the expenditure side, the adoption of direct initiatives tends to be associated with increases in the tax components. The different intensity degree of direct democracy involved by the two instruments - where the direct type is the strongest - is reflected in their differential impacts on fiscal policy.

Finally, the representation of direct democracy practice based on the topics put on the ballots helps to provide some hints for further research. Questions concerning *Taxes and Revenues* propositions could be working as "incentive" mechanisms to reduce all expenditure variables, even they are statistically significant for social expenditure only. On the other hand, putting on the initiative ballot questions related to *Election and Administration of Government* is associated with an increase in many spending categories, including intergovernmental expenditure so confirming that the usage of this topic can affect the vertical structure of the public sector.

All in all, empirical studies - especially on a single country - using an index-variable capturing only one dimension of direct democracy phenomenon may produce not comprehensive results. Our work try to describe the importance, other things equal, of the model specification and estimations based on multiple vision of direct democracy practice and existence keeping, however, in mind that voter initiatives make a difference at the margins, but the prime movers of fiscal outcomes are other factors. Beyond this, much remains to be learned about the impact of direct democracy institutions.

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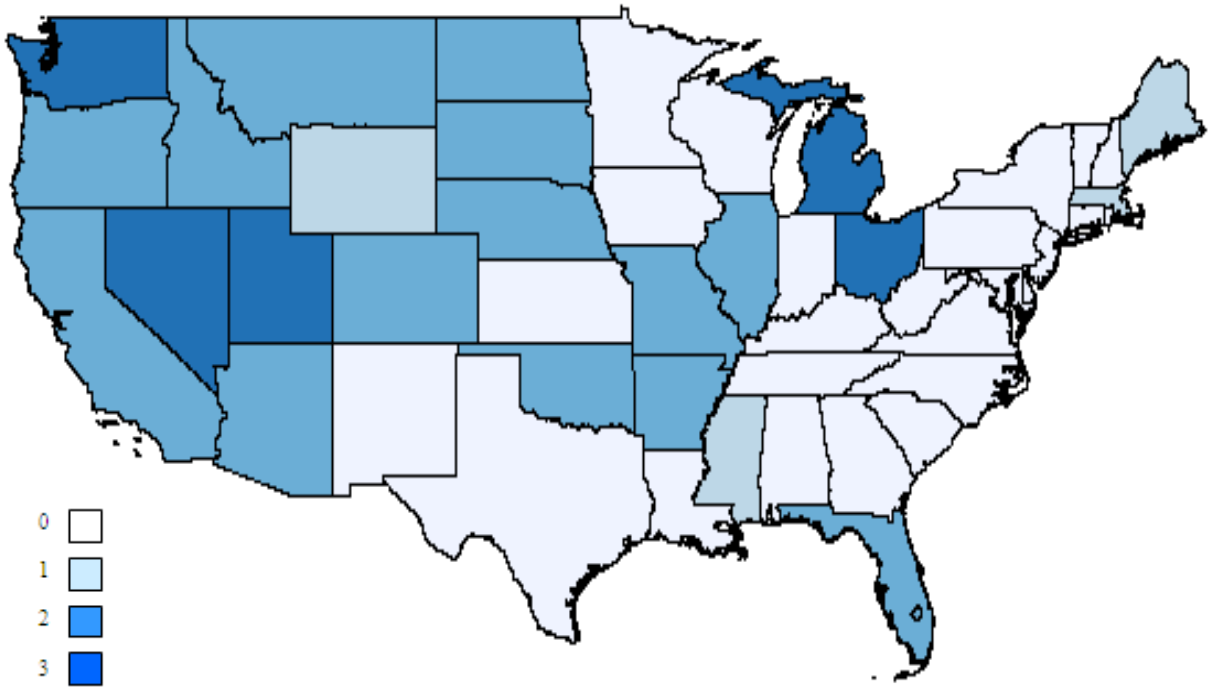
Figures and tables

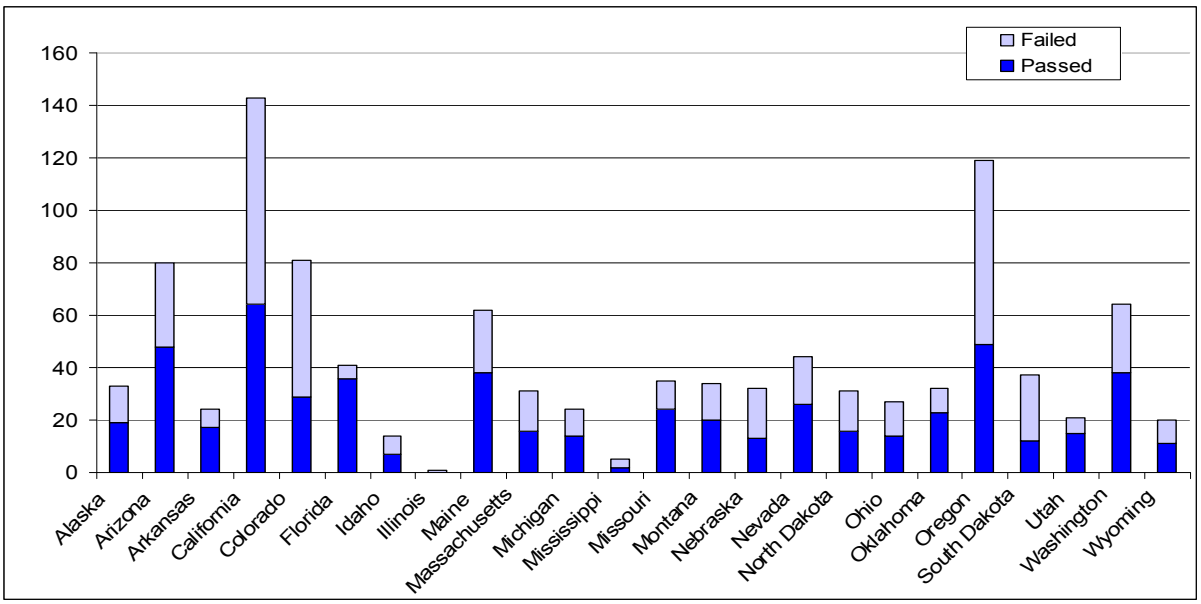
Figure 1 - *State-by-State map of initiatives (2011).*



Legend: 0 = No initiatives; 1 = Indirect initiatives; 2 = Direct initiatives; 3 = Both indirect and direct initiatives

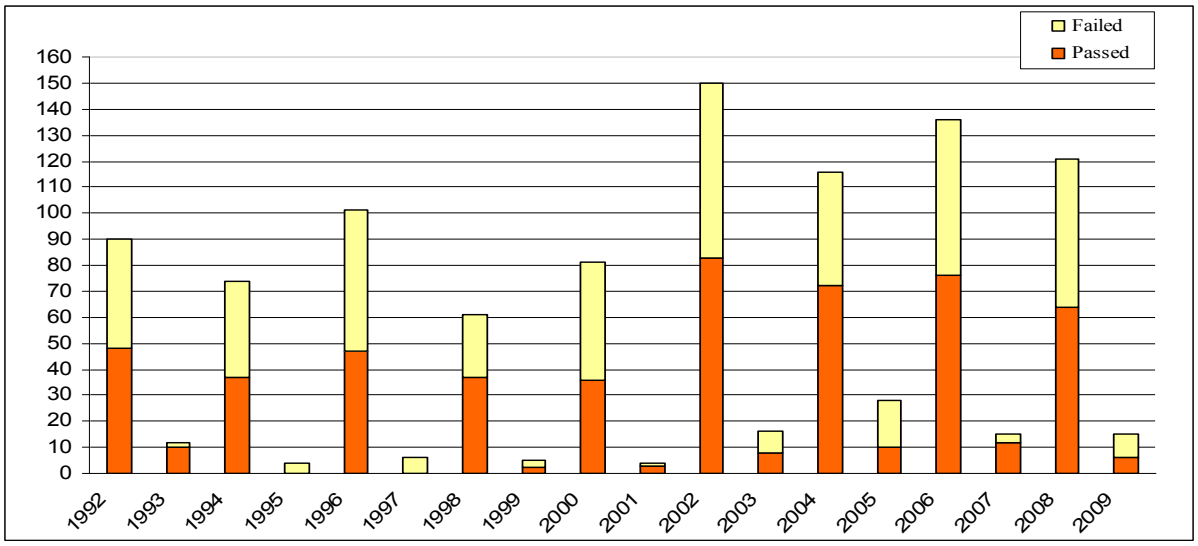
Source: *Authors' elaborations on IRI database*

Figure 2 - *Number of all initiatives by State (1992-2009).*



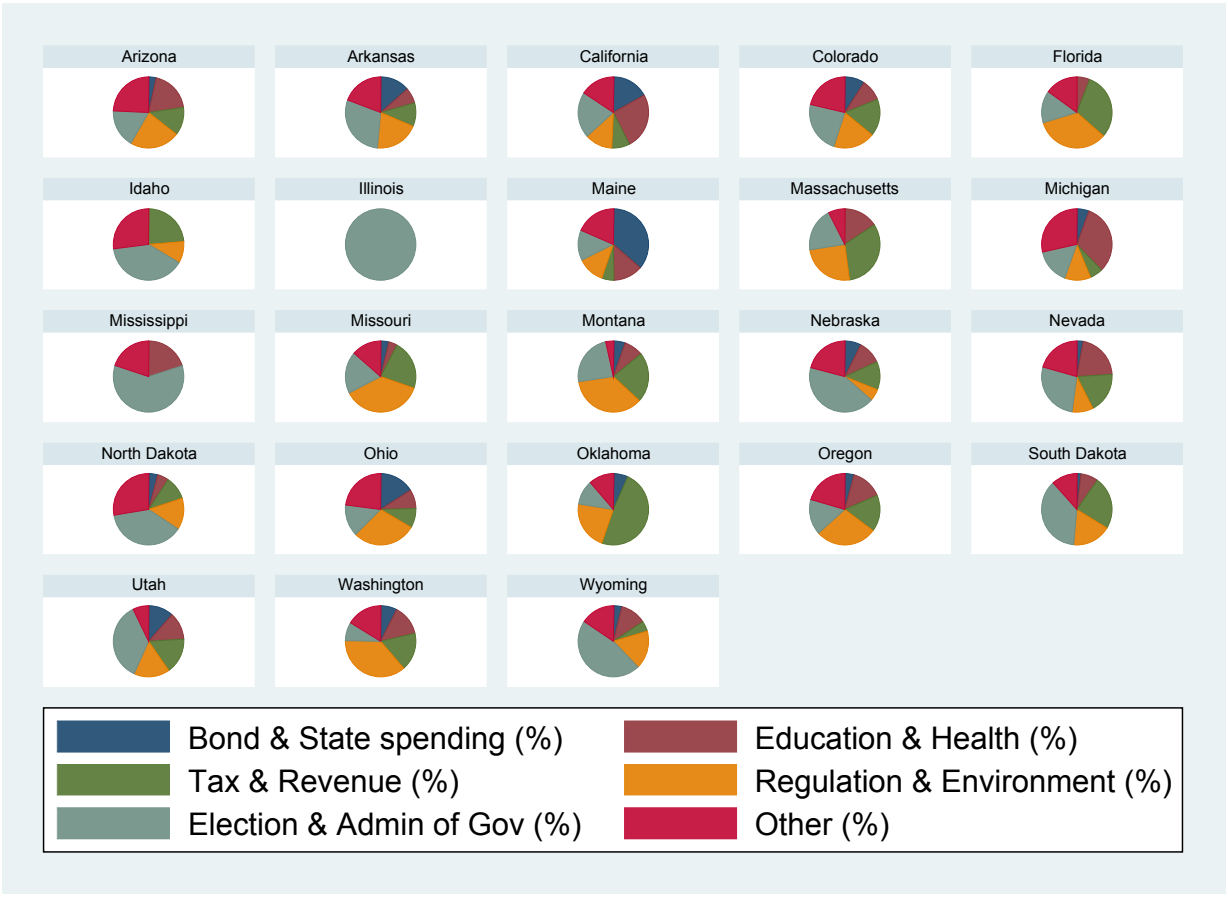
Source: *Authors' elaborations*

Figure 3 - *Number of all initiatives by year (all States).*



Source: *Authors' elaborations*

Figure 4 - *State-by-State percentage composition of the selected topics (1992-2009).*



Note: We do not report the topic composition for Alaska as it is excluded from our empirical analysis.

Source: *Authors' elaborations*

Table 1 - *Summary statistics for explanatory and controls variables.*

Variables	*Mean*	*Std. Dev.*	*Min*	*Max*
Income per capita (*current $*)	3,139	788	1,745	6,736
Population density (*per square mile*)	151	188	5	968
Annual growth rate of population (*%*)	1.09	0.91	-5.99	6.24
Population with total full- and part-time employment by industry (*% of total population*)	58.6	5.01	43.70	74.73
Intergovernmental revenue per capita (*current $*)	1,141	490	405	4,165
Existence_dd	0.50	0.50	0	1
Usage_dd:*				
Dummy for usage initiatives	0.50	0.50	0	1
Dummy for usage direct initiatives (D)	0.44	0.50	0	1
Dummy for usage indirect initiatives (I)	0.25	0.43	0	1
Share of direct initiatives passed over the total (DP/D)	0.22	0.35	0	1
Share of indirect initiatives passed over the total (IP/I)	0.17	0.34	0	1
Dummy for usage topic: *Bond & State spending*	0.12	0.33	0	1
Dummy for usage topic: *Taxes & Revenues*	0.25	0.43	0	1
Dummy for usage topic: *Education & Health*	0.20	0.40	0	1
Dummy for usage topic: *Regulation & Environment*	0.28	0.45	0	1
Dummy for usage topic: *Election & Admin of Gov*	0.30	0.46	0	1
Dummy for usage topic: *Other*	0.25	0.43	0	1

Note: each row reports summary statistics calculated for 49 States (i.e. Alaska is excluded from the empirical analysis) over the period 1992-2009. * For all variables belonging to *Usage_dd*, summary statistics are referred to 23 initiative-States only (i.e. Alaska is still excluded from the empirical analysis) over the same time period. Moreover, those variables are included in one-year lagged values in equation (2).
Source: *Authors' elaborations*

Table 2 - *Summary statistics for the dependent variables* (per capita current dollars).

Variables	*Mean*	*Std. Dev.*	*Min*	*Max*
General revenue (net of intergovernmental revenue)	2,632	850	1,224	6,618
Taxes	1,893	601	713	4,931
Charges	738	330	196	2,601
Debt	2,414	1,646	192	11,446
General Expenditure	4,202	1,348	1,908	9,963
Direct Expenditure	3,157	1,115	1,380	8,198
Capital Expenditure	320	138	110	1,058
Current Expenditure	2,176	814	920	6,314
Social Expenditure	2,389	784	1,075	6,071
Intergovernmental Expenditure	1,044	441	100	3,428

Note: each row reports summary statistics calculated for 49 States (i.e. Alaska is excluded from the empirical analysis) over the period 1992-2009.
Source: *Authors' elaborations*

Table 3 - *The existence of direct democracy.*

Dependent variables	*Existence_dd* $_t$	*R-squared*	*Observations*	*Number of States*
General Revenue (net of intergovernmental revenue)	-980***	0.93	882	49
	(0.18)			
Taxes	-1,020***	0.89	882	49
	(0.14)			
Charges	230***	0.85	882	49
	(0.084)			
General Expenditure	-807***	0.96	882	49
	(0.18)			
Direct Expenditure	-130	0.96	882	49
	(0.15)			
Debt	-500*	0.68	882	49
	(0.29)			
Capital Expenditure	-70*	0.60	882	49
	(0.041)			
Current Expenditure	-460***	0.93	882	49
	(0.14)			
Social Expenditure	-630***	0.94	882	49
	(0.16)			
Intergovernmental Expenditure	640*	0.81	882	49
	(0.34)			

Note - Each row is a regression. The dependent variables (first column) are expressed in per capita current dollars. The data are pooled from 1992 to 2009 (Alaska is excluded from all regressions). Coefficients on year- and state-specific fixed effects are not reported in the table as well as those of the controls and the constant. Robust standard errors are in parentheses. Significance level: *** p<0.01, ** p<0.05, * p<0.1.

Source: *Authors' elaborations*

Table 4 - *The usage of direct democracy.*

Dependent variables	*Dummy for usage initiatives* $_{t-1}$	*R-squared*	*Observations*	*Number of States*
General Revenue (net of intergovernmental revenue)	54**	0.93	391	23
	(0.024)			
Taxes	41**	0.90	391	23
	(0.017)			
Charges	13	0.87	391	23
	(0.013)			
General Expenditure	44*	0.97	391	23
	(0.024)			
Direct Expenditure	25	0.97	391	23
	(0.026)			
Debt	-130	0.64	391	23
	(0.083)			
Capital Expenditure	-1.2	0.70	391	23
	(0.0068)			
Current Expenditure	22	0.96	391	23
	(0.020)			
Social Expenditure	27	0.96	391	23
	(0.022)			
Intergovernmental Expenditure	19	0.84	391	23
	(0.015)			

Note - Each row is a regression. The dependent variables (first column) are expressed in per capita current dollars. The data are pooled from 1992 to 2009 (Alaska is excluded from all regressions). Coefficients on year- and state-specific fixed effects are not reported in the table as well as those of the controls and the constant. Robust standard errors are in parentheses. Significance level: *** p<0.01, ** p<0.05, * p<0.1.

Source: *Authors' elaborations*

Table 5 - *The usage of direct democracy by type and result.*

Dependent variables	*Dummy for usage I_{t-1}*	*Dummy for usage D_{t-1}*	*Share of I passed $_{t-1}$*	*Share of D passed $_{t-1}$*	*R-squared*	*Observations*	*Number of States*
General Revenue (net of intergovernmental revenue)	-130	57**	-22	-33	0.93	391	23
	(0.054)	(0.025)	(0.074)	(0.037)			
Taxes	20	53***	-54	-39	0.90	391	23
	(0.048)	(0.018)	(0.066)	(0.028)			
Charges	-33**	4.3	32	6.4	0.87	391	23
	(0.016)	(0.013)	(0.019)	(0.014)			
General Expenditure	-100**	43	100	-19	0.97	391	23
	(0.048)	(0.032)	(0.069)	(0.043)			
Direct Expenditure	-54	17	62	-11	0.97	391	23
	(0.036)	(0.030)	(0.048)	(0.042)			
Debt	-220	31	-51	-110	0.65	391	23
	(0.14)	(0.056)	(0.14)	(0.13)			
Capital Expenditure	29**	-14	-22	12	0.71	391	23
	(0.014)	(0.012)	(0.013)	(0.012)			
Current Expenditure	-61*	20	79*	-20	0.96	391	23
	(0.034)	(0.020)	(0.042)	(0.035)			
Social Expenditure	-88**	18.00	110***	-23	0.96	391	23
	(0.041)	(0.019)	(0.037)	(0.029)			
Intergovernmental Expenditure	-48	26	38	-7.7	0.84	391	23
	(0.044)	(0.018)	(0.051)	(0.016)			

Note - Each row is a regression. The dependent variables (first column) are expressed in per capita current dollars. The data are pooled from 1992 to 2009 (Alaska is excluded from all regressions). Coefficients on year- and state-specific fixed effects are not reported in the table as well as those of the controls and the constant. Robust standard errors are in parentheses. Significance level: *** p<0.01, ** p<0.05, * p<0.1.

Source: *Authors' elaborations*

Table 6 - *The distribution of the selected topics by initiatives type (1992-2009).*

Type / *Topic*	*Bond & Spending*	*Education & Health*	*Taxes & Revenues*	*Regulation & Environment*	*Election & Admin of Gov*	*Other*	*Total*
I	85	26	59	23	88	71	352
D	19	110	98	178	118	127	650
Total	*104*	*136*	*157*	*201*	*206*	*198*	*1,002*

Source: *Authors' elaborations*

Table 7 - *The usage of direct democracy by topic.*

Dependent variables	*Bond & Spending*	*Education & Health*	*Taxes & Revenues*	*Regulation & Environment*	*Election & Admin of Gov*	*Other*	*R-squared*	*Observations*	*Number of States*
General Revenue (net of intergovernmental revenue)	-24	-3	24	-49***	54**	4	0.93	391	23
	(0.042)	(0.023)	(0.028)	(0.016)	(0.020)	(0.034)			
Taxes	-35	-19	14	-38**	46***	26.0	0.90	391	23
	(0.035)	(0.021)	(0.024)	(0.017)	(0.016)	(0.031)			
Charges	11	17*	10	-11	8	-22*	0.87	391	23
	(0.013)	(0.0091)	(0.0099)	(0.0077)	(0.0095)	(0.011)			
General Expenditure	14.0	10.0	-39	-11	63***	-37	0.97	391	23
	(0.040)	(0.034)	(0.026)	(0.022)	(0.022)	(0.030)			
Direct Expenditure	38.0	24.0	-10	0.1	21	-46*	0.97	391	23
	(0.027)	(0.026)	(0.022)	(0.017)	(0.019)	(0.024)			
Debt	44.0	150	-93	-22	-30	-220*	0.65	391	23
	(0.079)	(0.12)	(0.055)	(0.062)	(0.048)	(0.11)			
Capital Expenditure	2	-15*	-7	17**	0.3	2	0.71	391	23
	(0.0063)	(0.0073)	(0.0066)	(0.0064)	(0.0076)	(0.0087)			
Current Expenditure	21	26.0	2.6	-25*	18.0	-6	0.96	391	23
	(0.024)	(0.016)	(0.018)	(0.014)	(0.012)	(0.015)			
Social Expenditure	9	-8.1	-34*	-10	29**	22.0	0.96	391	23
	(0.026)	(0.018)	(0.017)	(0.015)	(0.013)	(0.016)			
Intergovernmental Expenditure	-24	-14	-29	-11	42***	8.8	0.85	391	23
	(0.025)	(0.018)	(0.020)	(0.021)	(0.011)	(0.018)			

Note - Each row is a regression. The dependent variables (first column) are expressed in per capita current dollars. The data are pooled from 1992 to 2009 (Alaska is excluded from all regressions). Coefficients on year- and state-specific fixed effects are not reported in the table as well as those of the controls and the constant. Each topic is expressed through a dummy variable in one-year lagged values. Robust standard errors are in parentheses. Significance level: *** p<0.01, ** p<0.05, * p<0.1.

Source: *Authors' elaborations*