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The rise of the states: U.S. fiscal decentralization in the postwar period

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ABSTRACT

One of the most dramatic changes in the fiscal federalism landscape during the postwar period has been the rapid growth in state budgets, which almost tripled as a share of GDP and doubled as a share of government spending between 1952 and 2006. We argue that the greater role of states cannot be easily explained by changes in Tiebout forces of fiscal competition, such as mobility and voting patterns, and are not accounted for by demographic or income trends. Rather, we demonstrate that much of the growth in state budgets has been driven by changes in intergovernmental interactions. Restricted federal grants to states have increased, and federal policy and legal constraints have also mandated or heavily incentivized state own-source spending, particularly in the areas of education, health and public welfare. These outside pressures moderate the forces of fiscal competition and must be taken into account when assessing the implications of observed revenue and spending patterns.

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1. Introduction

The past 50 years have seen notable changes in fiscal decentralization in the United States. The increasing concentration of responsibility at the state level has been particularly pronounced: between 1952 and 2006, total state spending increased from 4.5% to 11.6% of GDP, with direct state spending (excluding state grants to localities) growing from 3.1% to 8.6% as a share of GDP and from 11% to 24% as a share of government spending. Tax and expenditure programs at the state level also appear to have become more redistributive over time. The fastest growing component of state expenditure is public welfare, and state revenue raising has shifted away from sales taxes and toward income taxes. In this paper, we explore the reasons for the rapid growth in state budgets as well as the change in composition of these budgets.

We first consider explanations motivated by the classic Tiebout model, which remains the benchmark framework for thinking about the optimal provision of public goods in a federal system (Tiebout, 1956). Although Tiebout does not speak directly to state actions, we draw broad lessons from the model through which to interpret state budget patterns. For example, one of the core features of the model, the idea that households can "vote with their feet" leading to jurisdictional competition, has been enormously influential in the subsequent fiscal federalism literature and has been applied to states as well as localities.

We focus on potential explanations associated with two key aspects of the Tiebout model: mobility and the aggregation of voter preferences. Several studies find significant spillover effects of one state's spending on its neighbors, particularly in the context of welfare reform and among states with the greatest interstate migration, consistent with models of mobility-induced competition.[3] Changes in mobility over time could thus change household sorting behavior and the constraints faced by different levels of government. However, despite substantial declines in moving costs (Rhode and Strumpf, 2003), we show that actual mobility has changed little since 1960 and has even declined slightly for many population subgroups. The absence of significant changes in mobility suggests that it can do little to explain observed changes in patterns of federalism.

We also consider the possibility that the rise in state budgets can be explained by changes in the way preferences are expressed through voting. This may be particularly important when there are mobility costs or other limits to voters' ability to sort into homogeneous communities. Voter turnout is often low, particularly in local elections, and is not representative of the overall population. There are few systematic differences, however, in the demographic

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[3] See Wildasin (1988) for a model of competition comparing competition in price (taxes) versus quantity (services). Hoyt (1993) shows that the results of this model are sensitive to the degree of mobility. Brueckner reviews the mixed evidence on interstate competition (1998) and the potentially harmful effects of tax competition (2004). See Case et al. (1993) for an example of empirical evidence of spillovers, which Baicker (2005) uses to show that interstate mobility is the best predictor of state "neighborliness."

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characteristics of the voting population for national and local elections and there are no obvious trends in turnout over time. Voting patterns, like patterns in mobility, seem to have little power to explain observed changes in the landscape of fiscal federalism.

It is thus difficult to reconcile the observed empirical facts with changes in Tiebout-style forces. Nor do they seem primarily explained by developments such as changes in the size of the school-age population or the increases in income inequality and volatility that took place over the last half century. Rather, we argue that much of the growth in state budgets, as well as changes in their composition, can be explained by changes in the nature of intergovernmental interactions over time.

There are several mechanisms through which one unit of government can influence the budget of another. First, a higher level can impose mandates that are not fully-funded (such as the federal government requiring the states to take costly steps to comply with regulatory standards). Similarly, courts can order governments to meet particular standards (as in the case of court-ordered school finance equalizations). Last, higher levels of government can create grants that induce rather than require spending (such as federal matching funds for Medicaid along with minimum participation requirements). These requirements and matching funds may show up as spending by a unit of government that in reality had little control over its allocation. When the federal government requires state governments to maintain a certain level of spending on welfare, for example, the distributional implications may be the same as if the federal government financed the program itself even though the spending and associated revenues appear in state budgets. A more nuanced understanding of state budgets would account for the fact that they may not be solely the product of residents' preferences, but may be constrained or influenced by external policies.

Our exploration of the timing and composition of the changes in state spending suggests that these external forces are quite important. Close to 60% of the overall increase in state direct spending is attributable to two expenditure categories. First, 20% of the increase comes from increases in state educational expenditures, which rose from 0.4% to 1.6% of GDP between 1952 and 2006. Almost all of this increase occurred between the late 1950s and early 1970s, coinciding with demographic shifts but also with the enactment of federal provisions to increase education spending. Second, 38% of the increase can be attributed to increases in state spending on public welfare and income security programs (including Medicaid), which rose from 0.5% to 2.5% of GDP. The largest increases occurred in the late 1960s–early 1970s and the late 1980s–early 1990s, following the passage of the jointly-financed Medicaid program in 1965 and the enactment of federal floors for state Medicaid participation in the late 1980s.[4] Furthermore, there has been substantial proliferation of unfunded mandates over the postwar period. Our analysis suggests that these federal forces accounted for a substantial share of the increase in state spending, although it is difficult to perform a rigorous decomposition, especially given the matching nature of several key programs.

Together, these results suggest that naïve budgetary accounting may not adequately capture the real distribution of responsibility for spending — just as who nominally pays a tax does not necessarily show who bears the incidence. An analysis of the role played by the evolution of intergovernmental interactions sheds new light on the changing patterns of fiscal federalism that are not easily explained by forces of fiscal competition.

2. Empirical trends: fiscal federalism and the rise of the states

We begin by documenting patterns and trends in government spending and revenues. We start with the size of government budgets and then delve into their composition. We distinguish between two types of government spending: direct spending (going to individuals, programs, providers, vendors, or other non-governmental entities, such as state payments to a doctor providing care to a patient covered by a state insurance program) and indirect spending (where one governmental entity gives funds to another, such as federal matching funds for Medicaid that flow to state governments themselves after the states pay medical vendors). Similarly, total revenues can be divided between own-source revenues and indirect revenues from intergovernmental grants. Total government spending and revenues are thus the sum of federal, state, and local direct spending and own source revenues, respectively. These distinctions are important for understanding the net resources available for different uses (avoiding "double counting" funds that flow through several government entities) and for understanding the intergovernmental relationships that may influence total budgets.

2.1. The size of federal, state, and local governments

Total government spending grew from 27.6% of GDP in 1952 to 36% in 2006 (Fig. 1a).[5] The growth of state governments has been particularly pronounced. Federal direct spending (excluding intergovernmental grants) actually declined slightly over this period, from its Korean War build-up level of 18.7% of GDP in 1952 to 17.0% in 2006.[6] Local direct spending increased from 5.8% to 10.6% of GDP during this period, with most of this growth occurring before the 1970s. In contrast, state direct spending increased steadily over this period, rising almost three-fold from 3.1% of GDP in 1952 to 8.6% in 2006. As a share of government spending, state direct spending doubled over this period, from 11% of total government spending to almost 24% (Fig. 1b). Total state spending, including intergovernmental grants to localities, increased from 4.5% to 11.6% of GDP over the period. The size of government can also be gauged on the revenue side. The increases in own-source revenues are quite similar to those seen in direct spending (Fig. 1c). Between 1952 and 2006, federal own-source revenues declined as a share of GDP from 19.0% to 18.4%, local own source revenues increased from 4.0% to 7.1%, and state own-source revenues more than doubled, going from 4.1% to 10.4%.[7] State-raised revenues increased from 15% of total government revenue to 29%.

As these figures demonstrate, the U.S. has seen substantial fiscal decentralization to states during the postwar period. The growth in state and local budgets has outpaced growth in federal budgets. While local budgets did grow from the 1950s to the mid-1970s, in the last 40 years state budget growth exceeded local growth both in absolute terms and, more dramatically, relative to its base at the beginning of the period. Indeed, the growth in state budgets accounts for much of the overall growth in government spending since the 1980s.

2.2. The Composition of federal, state, and local government budgets

We next turn to an examination of the mechanisms through which funds are raised and the programs on which they are spent. The federal government has substantially increased its spending (both as a share of total spending and as a share of GDP) on social insurance programs, particularly after the introduction of Medicare and

[4] A third important category has been the rise of insurance trusts, discussed in more detail below, which account for 16% of the overall increase; the remaining quarter of the increase is spread over the residual spending categories, with no striking patterns.

[5] Data for these analyses come from the *Census of Governments* (conducted by the Census Bureau in years ending in 2 and 7, but not yet available for 2007) and the *Annual Survey of Governments* (conducted annually, but without comprehensive coverage of individual local governments). Note that we focus throughout on the post-war period, and that our data series end before the financial crisis of the late 2000s.

[6] Federal spending was 14.8% of GDP in 1950, prior to the war.

[7] The figure shows a dramatic drop in revenues in 2002, which is largely due to an anomalous drop in insurance trust revenues, described in the notes to Fig. 3.

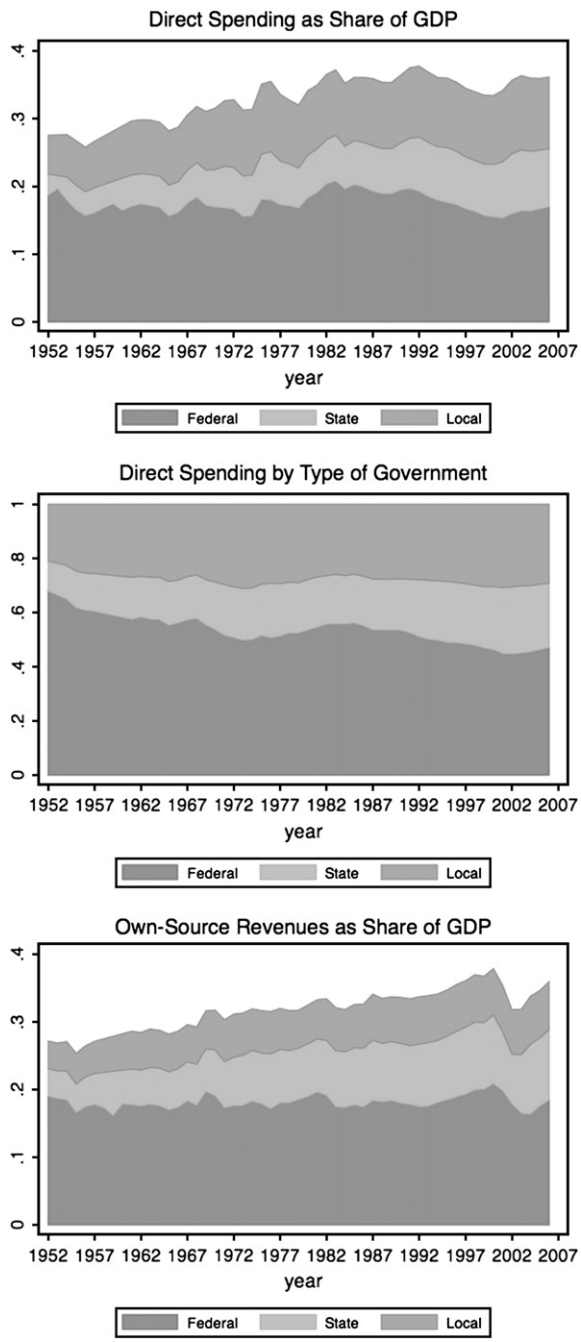

Fig. 1. Aggregate Spending and Revenues. Note: These figures are based on the authors' calculations using data from multiple sources. Data on state and local government revenues and expenditures come from the Census of Governments (COG). Data on federal revenues and expenditures, as well as gross domestic product, come from the Office of Management and Budget (OMB). Expenditures for each level of government reflect direct expenditures only (i.e., expenditures net of intergovernmental expenditures). Similarly, revenues for each level of government reflect own-source revenues only (i.e., revenues net of intergovernmental revenues). The severity of the decline in revenues in the early 2000s is due largely to stock market losses in state insurance trusts.

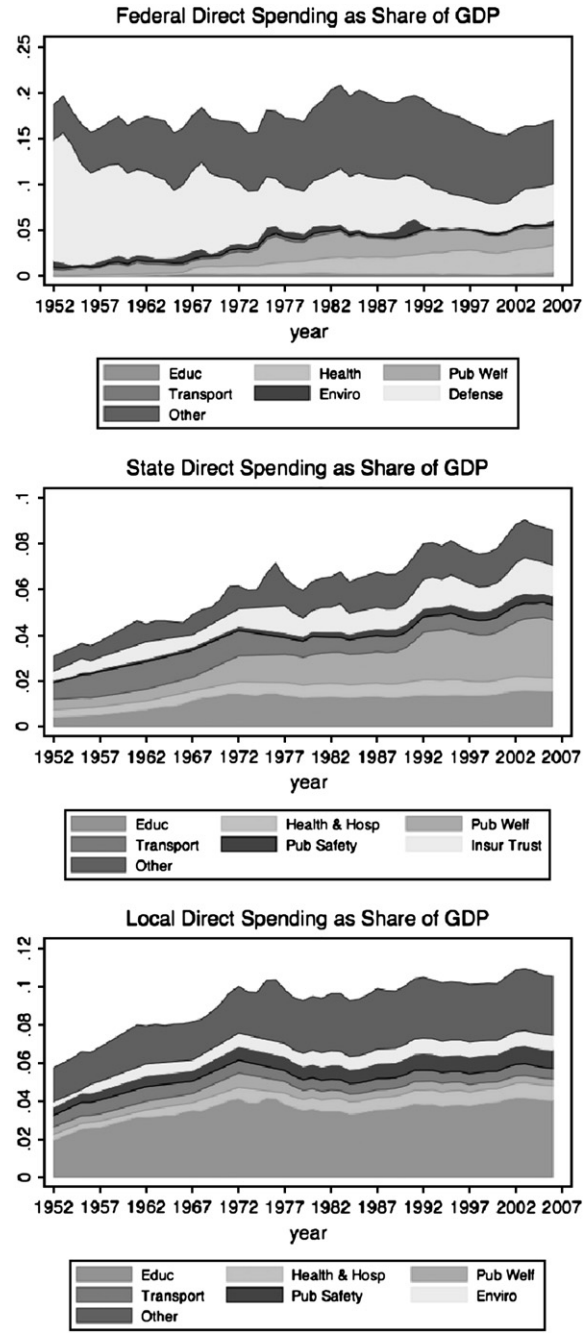

Fig. 2. The Composition of Spending by Level of Government. Note: These figures are based on the authors' calculations using data from multiple sources. Data on state and local government expenditures come from the Census of Governments (COG). Data on federal expenditures, as well as gross domestic product, come from the Office of Management and Budget (OMB). Expenditures for each level of government reflect direct expenditures only (i.e., expenditures net of intergovernmental expenditures). Categories include Education, Health and Hospitals, Public Welfare, Transportation, Environment, Defense, Public Safety, spending through Insurance Trusts, and Other. Note that "Other" is a residual category that differs in its composition across levels of government. The federal "Health" category consists primarily of Medicare. The State and Local "Health and Hospitals" category does not include the Medicaid program, which is classified as "Public Welfare" spending.

Medicaid in 1965 (Fig. 2).[8] However, this increase has been almost entirely offset by declines in defense spending, leaving the total levels of direct federal expenditure remarkably stable, as discussed above. The composition of local spending has remained largely stable as well, with education being the single largest component of local budgets throughout the period.[9]

[8] Note that Medicare is categorized as "Health" spending while Social Security is categorized as "Other" in the figure.

[9] With the exception of the federally administered Social Security program, the large "other" categories in federal and local spending are comprised of numerous very small program categories, none of which exhibits substantial growth or distinguishing trends.

For states, the largest source of expenditure growth has been "public welfare and income maintenance" programs, which importantly includes both their share of the jointly financed Medicaid and cash welfare programs (AFDC/TANF) and the federal share, since federal grants for these programs flow through state budgets in the form of intergovernmental transfers (showing up as federal indirect spending, state intergovernmental revenues, and state direct spending). Growth in this category comprises 38% of the total growth in state direct expenditure. The other drivers of state direct expenditure growth are increases in education spending during the early part of the period and a rise in insurance trusts, which include state employee pension plans.

The mechanisms for financing this spending have also changed. On the federal side, the most notable shift in own-source revenues has been a movement away from corporate income taxes and towards payroll taxes. Local governments saw a decline in the use of property taxation prior to the 1980s and some increased reliance on income taxes, which rose from 0.02% of GDP in 1952 to 0.17% in 2006 (Fig. 3). State governments are relying less on sales taxes (generally thought to be regressive) and more on individual income taxes (more likely to be proportional or progressive) — although this increase is from a very small base: in 1952, state-levied income taxes comprised 0.3% of GDP (6.4% of state own-source revenues), while in 2006 they comprised 1.9% (18.2% of state own-source revenues).[10] States are also increasing their use of miscellaneous and general charges, which have risen from 0.3% of GDP (or 7.6% of state own-source revenues) in 1952 to 2.0% of GDP (or 18.8% of own-source revenues) in 2006.

Perhaps more dramatic has been the increased role of intergovernmental revenues: in 1952 states got 13.8% of their revenues from federal intergovernmental grants, while in 2006 that share had risen to 22.5%. During this period, federal grants to states and localities rose from 0.8% of GDP to 3.3% of GDP (Fig. 4). The bulk of these grants are to states, rather than localities, with grants to states rising from 0.8% of GDP to 3.1% of GDP. This growth contrasts starkly with the slight decline in direct federal spending over the time period. The largest component of this increase in intergovernmental transfers has been income security, including Medicaid. We explore the implications of the increasing importance of these transfers below.

Interestingly, the large increase in size and change in composition of state budgets do not appear to have been accompanied by change in the variation in spending on particular public goods across states (Table 1). Although the variation across states is somewhat variable from year to year, there are few systematic changes within categories between the late 1950s and early 2000s.[11] We next explore various explanations for the observed empirical patterns.

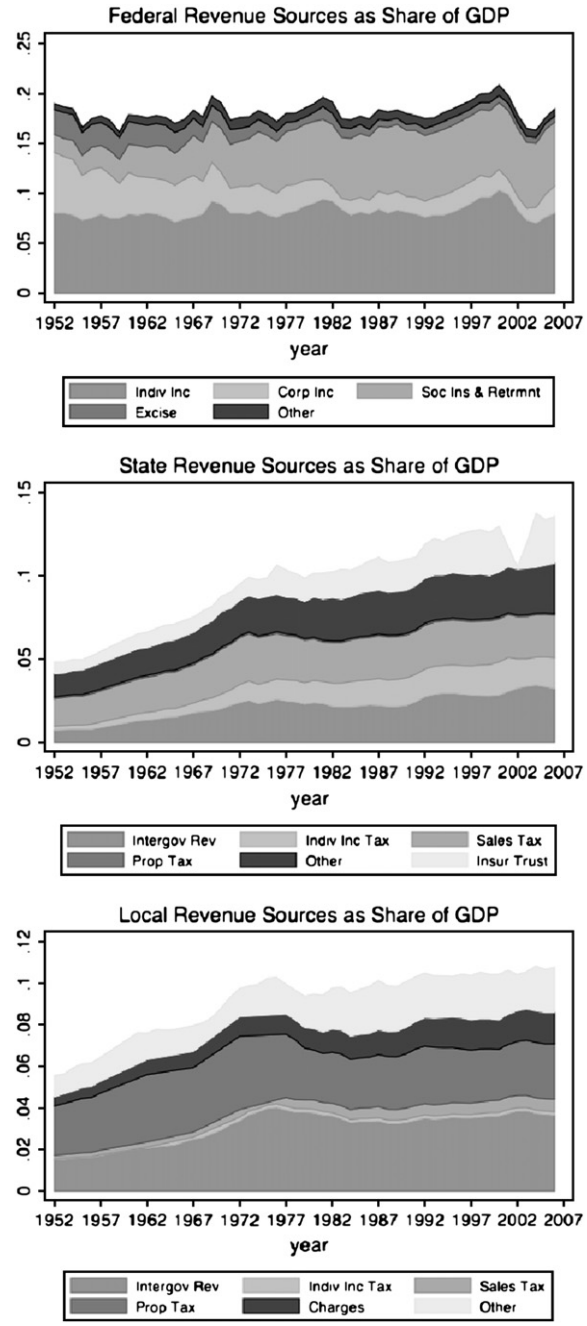

Fig. 3. The Composition of Revenue by Level of Government. Note: These figures are based on the authors' calculations using data from multiple sources. Data on state and local government expenditures come from the Census of Governments (COG). Data on federal revenues and expenditures, as well as gross domestic product, come from the Office of Management and Budget (OMB). Direct spending refers to expenditures net of intergovernmental expenditures. Federal categories include Individual Income Taxes, Corporate Income Taxes, Social Insurance and Retirement Program Taxes, Excise Taxes, and Other (which consists primarily of miscellaneous charges and fees). State and Local categories include Property Taxes, Individual Income Taxes, Sales Taxes, General Charges, Intergovernmental Revenues, and Other (which consists primarily of miscellaneous fees). The dramatic decline in state insurance trust revenues in the early 2000s is due to substantial stock market losses experienced during that period.

3. Changes in Tiebout forces: mobility and voting

We begin by exploring whether the dramatic growth in state budgets and the changes in their composition can be explained by changes in "Tiebout" forces. The benchmark Tiebout model predicts that individuals will sort themselves into jurisdictions in which all residents have the same preferences over public goods. There is an ongoing debate about whether the Tiebout model should be interpreted primarily as an elegant solution to the Samuelson (1954) mechanism design problem for reaching the optimal level of public goods provision or whether it can also be viewed as a model of local public finance that has implications for optimal fiscal decentralization (Oates, 2006; Musgrave, 2007).[12] While the Tiebout model arguably applies most

[10] Note that redistributive taxes in the budget may not necessarily correspond to redistribution "on the ground." Feldstein and Wrobel (1998), for example, argue that attempts by states to redistribute income through state income taxes are fully reflected in pre-tax wages. There are also many mechanisms through which governments may try to "undo" the actions imposed by higher levels, as discussed in more detail below.

[11] The only clear trends are the increase in variation in health and hospital spending and the decrease in variation in public welfare spending. These patterns may largely result from shifts in the financing of health care for the poor from direct hospital subsidies towards financing through Medicaid. Column (9) aggregates health and hospital spending and public welfare spending and shows that there has been essentially no change in the CV for the sum across states.

[12] Oates (1999) and Boadway and Tremblay (2010) provide excellent reviews of the various lines of literature that have followed from the original Tiebout paper.

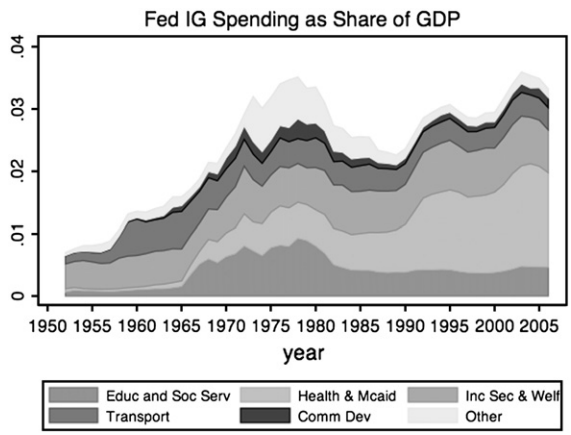

Fig. 4. Federal Intergovernmental Grants to States and Localities. Note: These figures are based on the authors' calculations using data regarding intergovernmental grants from the federal government to states and localities as reported by the Office of Management and Budget (OMB). These figures are expressed as shares of Gross Domestic Product, which is also reported by OMB. Categories include Education and Social Services, Health & Medicaid, Income Security and Welfare, Transportation, Community Development, and Other.

literally at the local level, where mobility is likely to be highest and where property taxes may (in theory) serve as a benefits tax,[13] the framework does nevertheless suggest natural divisions of responsibility across levels of government. In addition, the broader lessons of the model – such as the importance of interjurisdictional competition – carry over to analysis of state budgetary choices.

In this section, we evaluate the role that two key underpinnings of the Tiebout model may play in explaining these patterns: mobility and, in the absence of perfect sorting based on demand for public goods, voting (i.e., the mechanism through which preferences are aggregated).

3.1. Mobility

3.1.1. Mobility and fiscal competition

Mobility – threatened or realized – is a primary driver of fiscal competition and may limit both the growth of government and the ability of state and local governments to engage in redistribution. For example, the 1996 devolution of the welfare program Aid to Families with Dependent Children into block grants generated concerns that states would offer sub-optimal welfare benefits in a "race to the bottom." Concern that the poor would flock to states with generous welfare benefits, as in the "Welfare Magnets" hypothesis advanced by Peterson and Rom (1990), led many states to enact rules to limit benefits to new residents. However, the presence of mobility costs may limit the importance of these forces.[14]

Direct evidence on whether households move in response to fiscal incentives is mixed. Farnham and Sevak (2006), for example, show that empty-nest movers do move to localities in which they face declines in property tax liability relative to non-movers and non-empty nest movers, although they also note that mobility is limited by factors such as job constraints.[15] In contrast, recent work on the imposition of a "millionaire tax" in New Jersey finds essentially no outmigration response (Young and Varner, 2011).

3.1.2. Empirical evidence on mobility trends over time

A natural question is whether the observed patterns of state revenue and spending can be explained by changes in mobility over time. Although transportation and communication costs declined substantially during the last half century (Rhode and Strumpf, 2003), this has not generally been associated with increases in actual mobility. Data from the decennial Census and the annual Current Population Survey (CPS) make it possible to track two complementary mobility concepts: lifetime interstate mobility (the share of household heads not residing in their state-of-birth) and mobility in the last five years. Lifetime interstate mobility has increased modestly in the postwar period (Table 2a). For example, 63.2% of households resided in the household head's state of birth in 1960, while this number had fallen to 60.1% by 2000. These increases are driven by the highly educated (college or more); lifetime mobility for those with lower levels of education actually declined. The fraction of households having moved in the previous five years declined from 47.8% in 1960 to 44.1% in 2000 (Table 2b).[16]

CPS data provide more detail on how far recent movers have moved, which is particularly helpful in thinking about the role of changes in mobility at the state level (Table 2c). First, out-of-state moves are relatively uncommon for all groups over age 35. Second, the declines in mobility are driven by the declines in within-county moves seen across demographic groups. Third, however, the small decline in out-of-state moves masks considerable heterogeneity across the population, with such moves declining significantly among younger and older households, but increasing among those headed by persons aged 45–65.

Given declines in a variety of mobility costs, it is surprising that mobility has not increased. One explanation is that there may have been increases in other constraints on mobility. For example, the Census Bureau reports that the home-ownership rate rose from 63% in 1965 to a high of around 69% in 2005,[17] potentially making moving more costly for many households. Similarly, if job match quality has become more location-specific over time, workers may have become less inclined to change communities. We have also seen a rise in dual-earner households, who may be more constrained in their location decisions.[18]

Significant increases in mobility (or in the threat of mobility) would make expansions in state and local redistribution puzzling from perspectives that emphasize fiscal competition. To the extent that trends in the *threat* of mobility are well-proxied by trends in *observed* mobility, our results suggest that states are not likely to have experienced large increases or decreases in fiscal competition driven by cross-state mobility over the last half-century. It therefore seems unlikely that trends in mobility can explain the rise in state budgets or the apparent increases in redistribution at the state level.

3.2. Voting and preference aggregation

3.2.1. Limits to Tiebout and the importance of voting

In the extreme version of the Tiebout model, voters sort themselves into jurisdictions in which all residents have homogeneous preferences over public goods spending. However, if there are violations of the Tiebout assumptions, such as limits to mobility or a finite number of jurisdictions, individuals will not fully sort into jurisdictions that

[13] Hamilton (1975), for example, showed that property taxes could in theory replicate head taxes if communities created a lower bound on housing value through zoning laws. Please see Mieszkowski and Zodrow (1989) for more detailed discussion.

[14] See Epple and Romer (1991) for a discussion of the potential for local redistribution when residents are mobile but taxes and transfers are done primarily at the local level and Cullen and Gordon (2010) for a discussion of state redistribution under mobility constraints. Epple et al. (2010) argue that reductions in mobility costs could "even out" spending in the schooling context, as wealthy elderly move to poorer school districts.

[15] There is also some evidence of policy-induced mobility in response to other types of programs: Cullen et al. (2010) find that the "10 percent" rule in Texas that guaranteed admission to state universities to students in the top 10% of their class induced strategic migration in the expected direction, with students moving to lower-performing schools to improve their chances of being above that threshold.

[16] This fact is unaffected by the exclusion of immigrant-headed households who, like native-headed households, were less likely to have moved recently in 2000 than in 1960.

[17] See Table 14: http://www.census.gov/hhes/www/housing/hvs/historic/index.html.

[18] The Census Bureau reports that as a fraction of married couples, dual-earning households rose from 49.9% in 1986 (the earliest year reported) to 54.7% in 2009 (see Table MC-1: http://www.census.gov/population/www/socdemo/hh-fam.html).

Table 1
Coefficients of variation by category of spending (Calculated across states for the sum of state and local government spending within the state).

Year	Total expenditure (1)	Direct expenditure (2)	Transport. (3)	Environment and housing (4)	Public safety (5)	Education (6)	Health and hospitals (7)	Public welfare (8)	Health and welfare (9 = 7 + 8)
1957	0.156	0.156	0.339	0.348	0.238	0.204	0.255	0.439	0.268
1962	0.150	0.150	0.359	0.335	0.276	0.196	0.300	0.403	0.271
1967	0.201	0.201	0.526	0.281	0.342	0.224	0.299	0.366	0.258
1972	0.199	0.199	0.452	0.304	0.397	0.178	0.379	0.323	0.281
1977	0.178	0.178	0.414	0.288	0.418	0.147	0.290	0.343	0.234
1982	0.254	0.255	0.424	0.506	0.359	0.206	0.347	0.331	0.247
1987	0.303	0.303	0.487	0.376	0.429	0.240	0.424	0.331	0.270
1992	0.215	0.212	0.437	0.339	0.350	0.181	0.417	0.273	0.236
1997	0.200	0.197	0.406	0.342	0.280	0.178	0.415	0.274	0.245
2002	0.179	0.179	0.414	0.273	0.229	0.151	0.432	0.283	0.255

Note: Authors' calculations using data from the Census of Governments (COG). Coefficients of variation (across states in each year) were calculated for the sum of all state and local government spending within each state. This measure was chosen because it is the most consistent measure of the total quantity of each public good produced within each state over time. Data taken individually for either state governments or for local governments have the problem that direct spending in some state-category cells has shifted over time from local governments to the state government or from the state government to local governments. This could generate changes, for example, in the coefficient of variation for state government spending on education without any actual change in the variation of total education spending by all governments within each of the states.

Table 2a
Census mobility by demographic characteristics: (percent of households who no longer live in their state of birth).

	1960 census					2000 census				
Total mobility	36.8					39.9				
	Age 25–35	Age 35–45	Age 45–55	Age 55–65	Age 65–75	Age 25–35	Age 35–45	Age 45–55	Age 55–65	Age 65–75
Total mobility	35.7	37.4	36.6	37.5	36.9	37.2	38.5	40.6	43.1	42.3
Above median income	36.5	39.7	40.2	42.1	41.9	39.5	40.8	42.7	46.4	47.8
Below median income	34.5	32.8	31.6	33.7	35.8	34.5	34.4	36.5	38.9	39.0
College plus	47.8	51.3	48.9	51.5	53.0	49.5	50.6	51.1	55.8	55.5
Some college	40.1	45.4	45.7	47.7	44.5	35.7	38.9	41.3	46.5	49.1
High school	32.0	35.7	37.9	42.2	43.8	27.7	29.7	31.2	35.5	37.0
Dropout	33.1	33.5	33.2	34.2	34.3	27.7	28.7	28.6	32.7	34.2
Married with spouse present	34.6	36.6	36.2	37.7	37.9	36.9	38.8	40.4	43.0	43.5
No spouse present	43.1	42.2	38.0	37.0	35.7	37.4	38.1	40.9	43.2	41.0

Note: Tabulations were made using the 1% public use census samples (for 1960 and 2000) made available through the Minnesota Population Center's IPUMS-USA project. Households were categorized as no longer residing in their state of birth if the household's current residence was not reported as being in the same state as the household head's state of birth. The tabulations utilize the relevant household weights for producing estimates representative of the US population. Note that median income was determined for the full sample, so that the population within age group will not, in general, be evenly divided between the above- and below-median categories. Those aged 65–75, for example, are primarily below median income on account of retirement. Retrieving the reported age-group totals also requires properly weighting across education groups. The vast majority of those aged 65–75 in the 1960 census, for example, obtained less than a complete high school education. Retirement will also tend to alter observed relationships between income and education.

match their preferences on all dimensions.[19] This will result in within-jurisdiction preference heterogeneity, making outcomes depend on the political process through which preferences are aggregated. Much analysis has thus focused on the preference of the median voter in determining local public good provision.

In a federal system, tension between different levels of governments can emerge if the median voter at different jurisdictional levels is different. Suppose, for example, that voters in one locality prefer little public education. If the median voter at the state level prefers the universal availability of some higher level of public education, then the state may mandate an education spending requirement on localities. This type of mandate may arise independent of interjurisdictional spillovers if there are altruistic preferences that vary by area.

3.2.2. Preference aggregation in practice: evidence from voting

We first examine voter turn-out levels, beginning with self-reports of voting behavior.[20] Two unsurprising patterns emerge (seen in Fig. 5a, also consistent with official vote counts). First, turnout is far from 100 percent, even in closely-contested presidential elections. Second, turnout is systematically lower in even-numbered non-presidential election years. A case study of California reveals the same turnout pattern at the state and local levels: elections held during presidential years have substantially higher turnout (Fig. 5b). Last, we examine turnout in local elections by looking at all elections for mayor in Los Angeles County in 2005 (a non-federal election year).[21] Across localities, turnout is well below state-level turnout in state special elections and in some cases falls below 15%.

These results indicate that differential turnout may be important in explaining observed patterns of federalism: voters are a non-random sample of the population, and turnout is lower for lower levels of government. We next evaluate whether voter characteristics vary across local and federal elections. We would ideally measure voter preferences (to see whether the preferences of the median voter varied at local, state, and federal levels), but these preferences are not readily observed. Here we focus on an admittedly weak: the demographic characteristics of voters in different types of elections.

Table 3 presents data on various demographic groups as a share of actual voters and as a share of potential voters in presidential and non-presidential election years using data from the CPS. Younger residents, men, married couples, and minorities tend to be under-represented, while the elderly, single, and white residents are over-represented. These patterns do not change among couples of child-

[19] The fact that individuals are trying to match their preferences over many dimensions (such as housing and neighborhood demographics) in addition to their preference for public goods and other amenities puts even greater strains on perfect Tiebout sorting; see Bayer et al. (2004), Calabrese et al. (2006), and Epple et al. (2001).

[20] Tables reported by Bureau of the Census based on November supplement to CPS. Details on sources are in the relevant Figure and Table notes.

[21] Authors' calculations based on mayoral-election voting data for cities in Los Angeles: http://www.sos.ca.gov/elections/co_city_sch_elections/city_report_2005.pdf. Population figures taken from the census bureau and the 2005 American Community Survey.

Table 2b
Census mobility by demographic characteristics: (percent of households who have moved in the last five years).

	1960 census					2000 census				
Total mobility	47.8					44.1				
	Age 25–35	Age 35–45	Age 45–55	Age 55–65	Age 65–75	Age 25–35	Age 35–45	Age 45–55	Age 55–65	Age 65–75
Total mobility	78.9	52.9	38.0	30.0	25.8	77.4	50.4	34.3	26.9	20.8
Above median income	78.7	52.1	36.4	28.1	23.4	78.3	49.1	31.7	24.8	19.8
Below Median income	79.1	54.4	40.3	31.7	26.3	76.4	52.6	38.9	29.5	21.4
College plus	88.3	62.9	41.2	31.7	28.1	86.5	54.8	34.2	28.7	22.9
Some college	82.9	56.7	40.1	31.4	27.2	77.3	50.6	35.2	28.8	22.2
High school	77.4	49.7	36.7	31.6	27.0	69.5	45.7	32.1	24.0	19.2
Dropout	75.5	51.6	37.8	29.5	25.4	71.4	51.9	37.6	27.2	20.4
Married with spouse present	79.2	51.9	36.6	28.6	24.7	75.0	46.0	28.4	23.0	18.3
No Spouse present	76.8	58.4	43.1	33.2	27.1	79.8	56.5	42.8	32.6	23.5

Note: Tabulations were made using the 1% public use census samples (for 1960 and 2000) made available through the Minnesota Population Center's IPUMS-USA project. The tabulations utilize the relevant household weights for producing estimates representative of the US population. Note that median income was determined for the full sample, so that the population within age group will not, in general, be evenly divided between the above- and below-median categories. Those aged 65–75, for example, are primarily below median income on account of retirement. Retrieving the reported age-group totals also requires properly weighting across education groups. The vast majority of those aged 65–75 in the 1960 census, for example, obtained less than a complete high school education. Retirement will also tend to alter observed relationships between income and education.

Table 2c
CPS mobility by age and income (percent of households who have moved in the last year).

	1964 CPS						2004 CPS					
	Age 25–35	Age 35–45	Age 45–55	Age 55–65	Age 65–75	Total	Age 25–35	Age 35–45	Age 45–55	Age 55–65	Age 65–75	Total
Total												
Moved within county	22.1	12.8	8.5	6.7	5.3	13.0	15.0	8.0	4.8	3.3	2.5	7.7
New County within State	5.8	2.6	2.0	1.1	1.0	2.9	5.1	2.4	1.6	1.4	0.9	2.7
Moved out of state	5.9	2.7	1.2	1.1	1.0	2.7	4.7	2.4	1.9	1.7	0.8	2.5
Above median Inc.												
Moved within County	19.1	9.1	7.0	5.4	2.5	10.9	13.4	7.3	3.8	2.4	2.1	6.4
New County within State	5.4	2.2	1.8	1.0	0.6	2.8	5.0	2.3	1.6	1.5	0.5	2.6
Moved out of State	4.8	2.7	1.2	0.7	0.9	2.4	4.2	2.0	1.5	1.5	0.4	2.2
Below Median Inc.												
Moved within County	27.2	20.4	10.9	7.9	5.8	15.0	16.7	9.0	6.5	4.3	2.8	9.0
New County within State	6.6	3.5	2.4	1.3	1.1	3.0	5.3	2.7	1.7	1.3	1.2	2.9
Moved out of State	7.8	2.8	1.2	1.4	1.0	2.9	5.3	2.8	2.6	1.8	0.9	2.9

Note: Tabulations were made using the Current Population Survey samples (for 1964 and 2004) made available through the Minnesota Population Center's IPUMS-CPS project. The tabulations utilize the relevant household weights for producing estimates representative of the US population. Note that median income was determined for the full sample, so that the population within age group will not, in general, be evenly divided between the above- and below-median categories. Those aged 65–75, for example, are primarily below median income on account of retirement.

bearing age (a proxy for the presence of children). One of the most striking patterns is that voter turnout rates are highest among the highly-educated, making their preferences – whatever they may be – likely to be over-represented.[22] In general, these gaps are slightly exaggerated in years during which there is no presidential election.[23]

Table 4 examines how voter characteristics vary across local and federal elections. We use data from the 1987 General Social Survey (GSS), which asks respondents about voting in presidential and local elections.[24] 68% of citizens reported voting regularly in Presidential elections, while 40% did in local elections. The composition of voters is strikingly similar across national and local elections. For example, married individuals comprise 68.3% of all voters in national elections and 70.7% of all voters in local elections. The only exception to this pattern is age: younger voters form a smaller share of voters in local elections (relative to national), and the elderly form a larger share. Note, however, that this does not mean that the median voter will necessarily be the same across local jurisdictions if there is sorting based on demographics.

Although these data are imperfect,[25] the results suggest that the relationship between demographic characteristics and turnout propensity is similar across levels of government. This pattern appears to have held over time: King (1981) compares presidential and local voters using data from a nationwide survey conducted in 1967 and finds generally similar results to those described above. Thus, changes in relative turnout over time across levels of government are unlikely to explain observed patterns of federalism.[26]

[22] Following Milligan et al. (2004), we examine the validity of comparing self-reported voting data across groups by using data from the American National Election Survey (ANES), which provides a unique instance of self-reported voting data matched with administrative records for the same sample of individuals. Mis-reporting rates are fairly similar across a variety of demographic groups.

[23] These differences in turnout do not necessarily create a divergence in interests or inefficiencies associated with the majority of voters exploiting the minority. For example, if individuals move only when they are young, then the preferences of the young will determine house prices. In this case, capitalization may give the elderly an incentive to vote for school funding, for example, even if they do not benefit directly from better schooling. We thank Roger Gordon for highlighting this point to us.

[24] To the best of our knowledge, there is no comprehensive or more recent data source on voting in local elections linked to individual demographics.

[25] For example, although the questions about national and local voting were asked in different parts of the survey, we might expect a correlation in reporting bias across individuals' self reports about voting in presidential and local elections. In addition, the GSS does not specify the jurisdiction that corresponds to "local."

[26] It is possible that voters have direct preferences over decentralization, possibly as a result of their perceptions about agency problems. Survey results from the American National Elections Studies show that while 50% of people reported that they had the most confidence in the federal government in 1968, that share had declined to 30% in 1996 (Farnsworth, 1999). This shift came mainly from those placing the greatest confidence in state government (which increased from 20% to 37%), while those with the greatest faith in local governments remained relatively constant at around 30%. Interestingly, these reported changes do seem to correlate (though not perfectly) with changes in allocation of total government expenditure across different levels of government over this period.

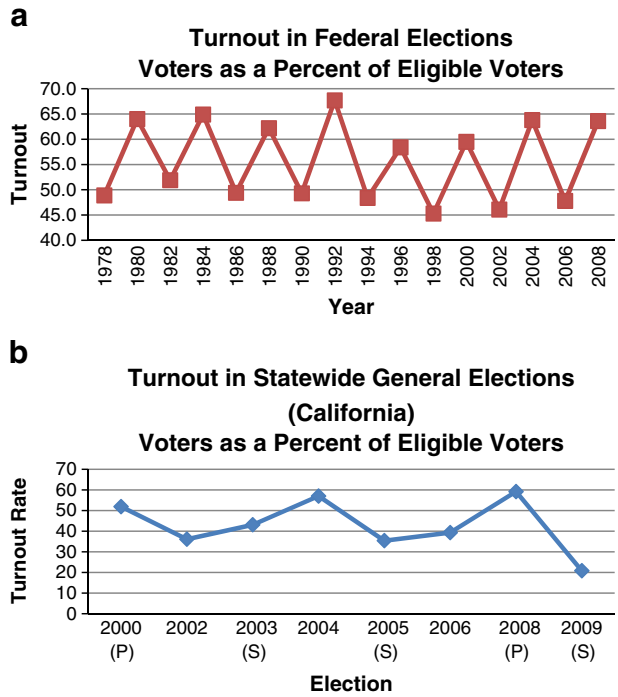

Fig. 5. a. Note: The reported figures are tabulations provided by the Census Bureau that are based on data from the November voting supplements to the Current Population Survey: http://www.census.gov/hhes/www/socdemo/voting/publications/historical/index.html. b. Note: These figures are based on authors' calculations using data provided online by the office of California's Secretary of State: http://www.sos.ca.gov/elections/sov/historical-voter-reg/hist-voter-reg-and-part-general-elections-1910-2009.pdf. Years followed by "(P)" are Presidential election years while the label "(S)" indicates state special elections.

4. Intergovernmental interactions

Tiebout's original work does not directly address the role of multiple levels of local government. In practice, different levels of government not only take on different responsibilities themselves but also enact policies that affect the choices of other jurisdictional levels. Higher levels of government may impose regulatory requirements on those below or incentivize spending through matching grants or grants with other program requirements. While each state has its own unemployment insurance program, for example, the system exists largely because of pressure applied by the federal government in the 1930s. Broad federal grants have given way to restricted categorical grants, often with matching requirements (Table 5).

In this section, we focus on the role of intergovernmental interactions in explaining patterns of state spending. Understanding the constraints and incentives imposed on each level of government is important for interpreting budgetary figures, since spending or revenues may appear at one level of government even though they are in fact controlled by a higher level of government. For example, state spending on redistributive programs that are in fact mandated by federal policy can be thought of as redistribution at the federal level, rather than at the state level. We first examine growth in state spending on education, health, and public welfare, which together account for almost 60% of the overall growth in state direct spending and which are subject to particular externally-imposed constraints and incentives. We then discuss the role of regulation and unfunded mandates more broadly.

4.1. State spending on education

Total spending on education by federal, state, and local governments rose throughout the 1950s and 1960s (Fig. 6a). There was a sharp increase in state education spending in particular during the 1960s. This was also a period that saw a rise in federal intergovernmental grants to states. Fig. 6b shows federal intergovernmental grants to states; total state spending (direct and indirect) minus the intergovernmental revenues received from the federal government (so that the total of these two series equals total state spending); and local spending minus intergovernmental revenues from the state. Federal dollars accounted for 23.6% of the growth in total state spending during the 1960s and 18.9% of the growth over the full time period (1952–2006), although of course it is not clear what state budgets would have looked like had federal grants not increased.

Part of the increase in education spending clearly reflects demographic trends. The post-World War II baby boom was associated with a 61% rise in total school enrollment (representing a roughly 38% increase in the student-to-population ratio) from 1955 to 1970, including a 200% increase in the number of students enrolled in college (due in part to the rise of state universities and the college enrollment of returning veterans).[27] During the 1970s, modest declines in education spending as a share of GDP were associated with a 7% decline in total school enrollment, led by an 18% decline in elementary school enrollment. Spending increases associated with increases in the number of students were clearly important during this period, but less important than increases in spending per student. The rise in the student-to-population ratio from 1955 to1970, for example, can explain only about one third of the more than 100% increase in education spending as a share of GDP during that time.

There are several federal policies during this time period that may explain the rise in federal grants to states as well as some of the additional increase in states' own spending. The sharpest increase in federal grants and additional state spending occurred immediately after 1965, when the Elementary and Secondary Education Act (ESEA) and the Higher Education Act (HEA) were passed. While detailed examinations of these and other federal education-related policies are beyond the scope of this paper, there are a few particularly salient features. A central component of ESEA was Title I, which provides grants to states for compensatory education programs for low-income households. Maintenance of effort provisions made it more difficult for states to use these funds to supplant their own,[28] and Feldstein (1978) finds that each federal Title I dollar increased net school spending by 72 cents. This suggests that much of the increase in federal dollars did flow directly into increases in state education spending.[29] Compliance with Title IV (part of the 1964 Civil Rights Act), which prohibited federal aid to schools that practiced racial discrimination, may also have increased states' own spending.

The increase in state spending comes both through direct expenditures (primarily higher education) and indirect expenditures (intergovernmental grants primarily for elementary and secondary education, with local school districts included in local governments). This can be seen in the difference between total direct local spending in Fig. 6a and local education spending net of state transfers in Fig. 6b, and is further explored in Fig. 6c.[30] 66.9% of the increase in local education spending over the full period can be accounted for by the growth in intergovernmental grants (although again, we do not know what local education spending would have looked like in the absence of state grants).

[27] US Census Bureau tabs of CPS, Historical Tables http://www.census.gov/population/www/socdemo/school.html.

[28] The program also required that districts spend as much on target students as they did on other children from own revenues and that Title I funds were to be spent on programs that benefited targeted students (Murnane, 1985). In other words, districts were required to use Title I funds to supplement rather than supplant own funding. Feldstein (1978) argues that this type of "differential add-on grant" can reduce crowd out, since monitoring is based on the requirement that there be an observable difference in spending on two groups.

[29] Subsequent work by Gordon (2004) exploits discontinuities in Title I funds at the time of decennial censuses to identify the effects of grants on spending and finds strong stickiness in the first year but substantial crowd-out within a three year period. This is not necessarily inconsistent with the findings above: states may be more easily able to crowd out funds on the margin than the initial large grants.

[30] Federal grants could ultimately show up in either direct spending or indirect spending, which is why we do not net federal grants specifically out of state direct or indirect spending and why we display Fig. 6b and c separately. See Figure notes.

Table 3
Characteristics of voters.

Variable	Year	18 to 24 years	25 to 44 years	45 to 64 years	65 to 74 years	75 years and over
Share of actual voters	2008	9.5%	32.3%	38.7%	10.8%	8.7%
	2006	5.7%	29.4%	42.4%	12.2%	10.4%
	2004	9.3%	34.1%	37.6%	10.3%	8.7%
	2002	5.3%	31.5%	40.0%	12.8%	10.5%
Share of potential voters	2008	12.5%	34.3%	35.6%	9.5%	8.1%
	2006	12.4%	35.2%	35.2%	9.1%	8.2%
	2004	12.6%	36.2%	34.1%	9.0%	8.1%
	2002	12.6%	37.4%	32.8%	9.0%	8.1%

		Married spouse present	Married child bearing years	Male	White alone	Black alone	Asian alone
Share of actual voters	2008	59.5%	19.7%	46.3%	83.2%	12.3%	2.6%
	2006	64.4%	19.0%	46.9%	85.7%	10.3%	2.2%
	2004	61.9%	21.9%	46.5%	84.8%	11.1%	2.2%
	2002	66.6%	21.2%	47.0%	86.3%	10.9%	2.1%
Share of potential voters	2008	54.0%	19.3%	48.0%	82.2%	12.1%	3.4%
	2006	54.4%	20.0%	47.8%	82.4%	12.0%	3.3%
	2004	55.6%	21.4%	47.8%	84.4%	11.3%	2.3%
	2002	55.9%	22.2%	47.6%	85.7%	11.2%	2.4%

		Less than 9th grade	9th to 12th grade, no diploma	High school graduate	Some college or associate's degree	Bachelor's degree	Advanced degree
Share of actual voters	2008	2.0%	4.9%	27.3%	31.6%	22.4%	11.8%
	2006	2.2%	4.8%	27.4%	29.6%	23.0%	13.0%
	2004	2.4%	5.7%	28.5%	31.0%	21.1%	11.3%
	2002	2.7%	5.5%	28.8%	29.5%	21.6%	12.0%
Share of potential voters	2008	3.3%	7.8%	31.7%	29.6%	18.5%	9.0%
	2006	3.6%	8.5%	32.3%	28.6%	18.0%	8.9%
	2004	3.9%	9.1%	32.3%	28.7%	17.4%	8.6%
	2002	4.2%	9.5%	33.5%	28.4%	16.4%	8.0%

Note: These figures are authors' calculations using tabulations of the November voting supplements to the Current Population Survey that are provided by the Census Bureau: http:www.census.gov/hhes/www/socdemo/voting/publications/p20/index.html.

State intergovernmental spending on (elementary and secondary) education continued to rise, even after state direct spending on (higher) education leveled off. This was also the period of the first court-ordered school finance equalization (SFE) programs, where state-level courts ordered a change in education finance intended to increase the resources available to low-income children. Some of these equalizations required a change in spending at the local level. Others required increases in state spending to equalize resources available to localities. Hoxby (2001) finds that they met with varying degrees of success. Past work suggests that while state-imposed equalization measures do affect the level and distribution of local school resources, they tend to be partially undone by off-setting local responses.[31]

The timing of the introduction of SFEs suggests that some portion of state spending on education may be explained by these externally-imposed requirements. It is difficult to isolate the share of total state spending that can be attributed to court-ordered SFEs. We observe, however, that states that experienced court-ordered SFEs at any point during the 1952–2006 period saw their total education spending rise from 1.3% of (national) GDP to 1.9% of GDP. States without SFEs spent a roughly stable 1.6% of GDP on education throughout this period.[32] Increased spending in states with SFEs occurred primarily through intergovernmental grants to localities during the 1970s and afterwards (the SFE era).

This does not, of course, mean that the SFEs themselves were the primary cause of the increase in spending. A simple regression of total state education spending on an SFE indicator and state and year fixed effects yields a coefficient that, if taken at face value, suggests that the

Table 4
Voters in national vs. local elections.

	National	Local
Married	68.33	70.67
Age		
25 to 44	45.38	38.11
45 to 64	30.55	32.61
65+	24.06	29.29
Have children	40.57	40.94
Race		
White	84.45	85.5
Black	14.13	13.08
Other	1.42	1.42
Education		
HS dropout	20.37	22.18
HS	31.48	32.61
Some college	21.92	20.22
College +	26.23	25
Male	43.58	45.28

Note: The reported figures come from authors' tabulations using the 1987 General Social Survey (GSS). The sample only includes individuals who a) gave a valid response to the question about voting in local voting (variable "locvote"), and b) responded either "yes" or "no" to both the question about voting in the 1980 Presidential election and the 1984 Presidential election. This excludes those who either refused to answer the questions or who reported being ineligible to vote in the Presidential elections. The numbers in the table are the answers to questions of the following form: what percent of the population regularly voting in national and local elections belongs to various demographic groups (e.g., is married)? An individual is coded as regularly voting in national elections if they reported that they voted in *both* the 1980 and 1984 Presidential elections. An individual is coded as regularly voting in local elections if they responded that they "vote in all" local elections. Since the sample only includes individuals who were eligible to vote in 1980, those less than 25 years of age in 1987 were effectively excluded. The sample was weighted using the product of a) the weights provided to account for the oversampling of blacks in the 1987 GSS and b) the number of adults in each household (as recommended by GSS to achieve individual-level population weights).

[31] Murray et al. (1998) and Card and Payne (2002) find that SFEs increase the level and progressivity of state spending. Hoxby (2001) shows the diversity of incentives created by SFE measures across states, while Cullen and Loeb (2000) and Baicker and Gordon (2006) show different mechanisms used by localities to "undo" the changes forced by those equalizations.

[32] We use information on SFEs from Card and Payne (2002) and Corcoran et al. (2004). The earliest court ruling that a state's education finance was unconstitutional was in 1971 in California. See Baicker and Gordon (2006) for details.

Table 5
Changes in size and type of federal grants.

	1975	1978	1981	1984	1987	1989	1991
Outlays ($billions)							
Gen purp	7.0	9.6	6.8	6.8	2.1	2.3	2.4
Broad-based	4.6	11.5	10.0	13.0	13.1	12.7	14.5
Categorical	38.2	56.8	77.9	77.8	93.2	106.9	141.7
Total	49.8	77.9	94.7	97.6	108.4	122.0	158.6

Note: This table reproduces a table from Report A-126 by the Advisory Commission on Intergovernmental Relations (1993, 52).

SFEs themselves were responsible for approximately 20 to 25% of the growth of state education spending in the SFE era (although the effect is statistically insignificant when standard errors are clustered at the state level).[33] Given that the states in which these SFEs were imposed began with lower spending, it perhaps not surprising that the SFEs do not account for the majority of the increase in aggregate spending.

4.2. State spending on health and welfare

Growth in state spending on public welfare and health programs, including Medicaid, is the largest component of overall state spending growth.[34] Some of the increase in social insurance could be driven by changes in income volatility or inequality. Rising inequality during the 1980s, for example, may have motivated the expansions of Medicaid during the late 1980s and 1990s. Evidence suggests that changes in volatility (such as during the early 1980s and post-1998; Shin and Solon (2011)) do not, however, correspond with periods of expanding social insurance (which was relatively flat during these periods).

As with education, federal policy may have been a key driving force in this growth. While states were not required to participate in Medicaid or welfare, federal matching grants made it extremely attractive to do so. By 1972, all states except for Arizona had enacted a Medicaid program.[35] Federal program rules incentivized state spending in two ways. First, to be eligible for any federal matching funds, states were required to provide coverage to certain populations. These federal floors moved up in 1989 and 1990, requiring states to cover pregnant women and children higher up the income distribution (see Currie and Gruber, 1996a,b). Second, both Medicaid and AFDC were jointly financed, with the federal government providing between 50 and 80 cents of every dollar spent by the state.

A closer look at state spending on health and welfare in light of these program rules is revealing. First, it is important to note that state spending on welfare and Medicaid includes federal matching funds. As shown in Fig. 7, if we assume that federal dollars translate directly to increases in state spending, increases in federal grants account for 55.5% of the increase in total state welfare spending in the 1960s and 51.2% of the increase over the full period. Second, the fact that many of the dollars are given in the form of matching grants suggests that they are bundled with a substantial share of the remaining state spending.[36] The timing of the increases suggests the importance of federal policies. The first sharp increase in state spending was between 1965 and 1975, the decade after the enactment of Medicaid, and the second increase was in the early 1990s, immediately after increases in the federal income-eligibility

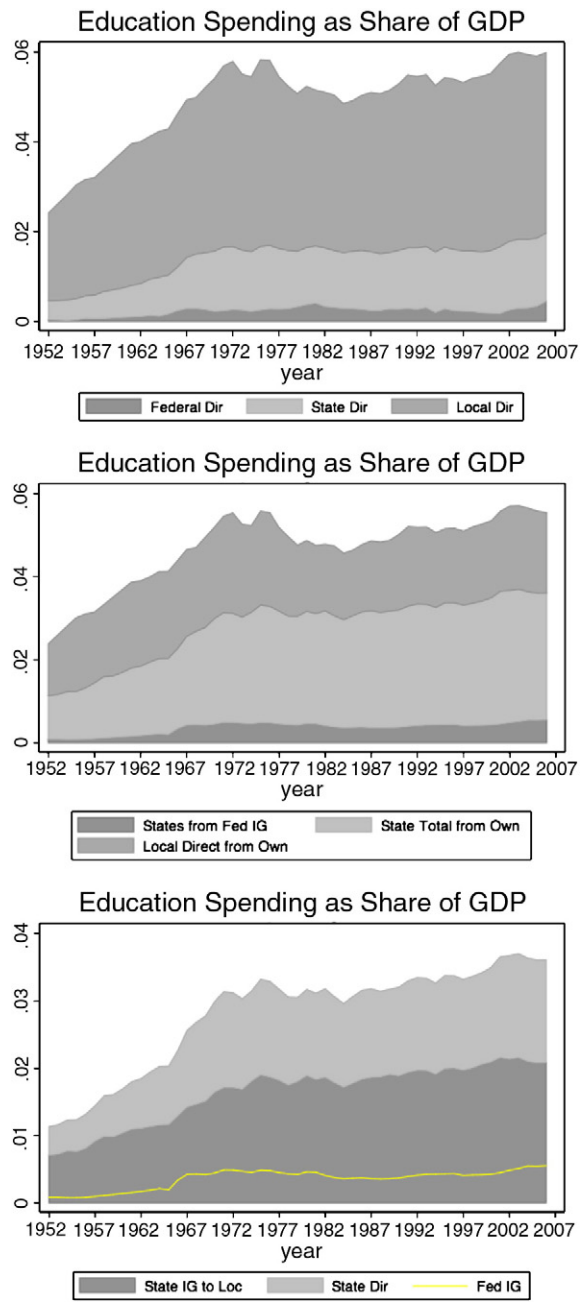

Fig. 6. Education Spending. Note: These figures are based on the authors' calculations using data from multiple sources. Data on state and local government expenditures and their intergovernmental revenues from the federal government come from the Census of Governments (COG). Data on gross domestic product come from the Office of Management and Budget (OMB). Direct expenditures are as reported in the relevant sources. For 6b: "state total expenditures on education from own sources" were calculated as total state education expenditures minus federal transfers to state governments for education. The bottom two series thus sum to total state spending. "Local direct expenditures on education from own sources" were calculated as direct local education expenditures minus state transfers to local governments for education. All three series thus sum to the total of state and local education spending (without double-counting intergovernmental transfers). Because federal grants could ultimately be used by states for direct or indirect spending, we cannot decomposed state spending into these components while still graphing federal grants. Fig. 6c decomposes state spending into these two components, juxtaposing federal intergovernmental education grants as a line, so that the two solid series still sum to total state spending on education.

[33] We regress total (or indirect) state spending on an indicator variable for a court-ordered SFE (lagged by 2 years) and state and year fixed effects for 1971–2006. The effect on education spending comes primarily through intergovernmental education spending to local districts. While the coefficient is statistically significant with $p<.01$ without clustering, the fact that SFEs are enacted at the state level suggests clustering standard errors at the state level, which results in a coefficient estimate that is significant at only the 15% level. Other research has found that SFEs increase state spending, and the magnitude of our coefficient estimate is not inconsistent with that previous research.

[34] We examine welfare and Medicaid together here because they are intertwined through policy in several ways: before TANF in 2001, individuals who were eligible for AFDC were largely also eligible for Medicaid, and while the federal match rate varied across states based on state income, it was the same for these programs within any state.

[35] Arizona enacted a program in 1982.

[36] Note, however, that states may in some cases use federal funds to supplant their required matching contributions to Medicaid (Baicker and Gordon, 2006; Baicker and Staiger, 2005).

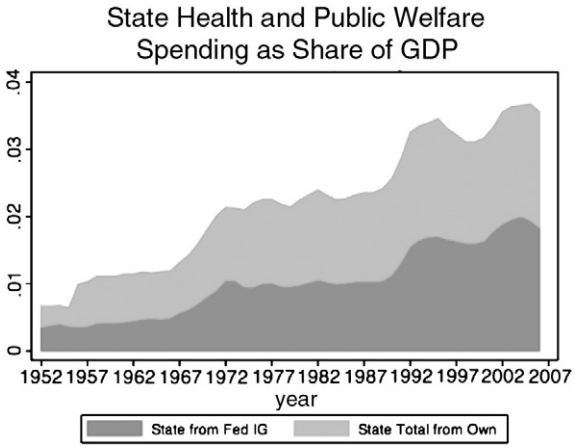

Fig. 7. Health and Public Welfare Spending. Note: This figure is based on the authors' calculations using data from multiple sources. Data on state government expenditures and their intergovernmental revenues from the federal government come from the Census of Governments (COG). Data on gross domestic product come from the Office of Management and Budget (OMB). State Total expenditures on health and public welfare from Own sources were calculated as total state expenditures on health, hospitals, and public welfare programs minus federal transfers to state governments *for those purposes*.

standards. If all states had the per capita health and welfare spending of the least generous state (a very crude proxy for the minimum spending that meets federal requirements), aggregate health and welfare spending would be only half the size that it is today, although it is of course not obvious what state spending would have looked like in the absence of federal matching funds or program requirements.

The structure of federal incentives thus changes the interpretation of observed state spending. Matching grants clearly promote higher spending, and the progressivity of the federal match may reduce heterogeneity if it increases spending disproportionately in low-spending states. Federal floors increase state spending to the extent that the minimum eligibility floor is a binding constraint, although the effect on heterogeneity is ambiguous. With some states voluntarily extending Medicaid eligibility above the federal floor, increasing the federal floor would, all else equal, reduce heterogeneity. However, it is also possible that increases in the floor allow states already above the floor to further increase their spending. Floor increases could do this by relaxing constraints associated with fiscal competition across states (as driven by the mobility of taxpayers and program participants). In this case, federal floors could raise spending throughout the distribution.

We therefore turn briefly to an empirical examination of the variability in state program generosity. As Table 1 showed, there is little change in state-level variation in health and welfare spending over time. Spending is the product, however, of local economic (and demographic) conditions and a complicated array of state choices about program eligibility rules. We use an extremely crude proxy for the generosity of state eligibility rules for 1982–2001: the "need standard" that is one of many parameters used to assess families' eligibility for assistance.[37] If anything, the variability in this state-level measure of generosity increased after the imposition of federal eligibility floors, with a coefficient of variation of 0.26 before 1989 but 0.43 after 1991. The growth in real health and welfare spending by states that were below median in 1985 (measured in real per capita spending) was 132% between 1985 and 1995, but the growth for above-median states was also a substantial 74%. The lower base spending of below-median states means that increases in these states accounted for 40% of overall growth in health and welfare spending over the period. These results indicate that federal floors may have affected not only states for which the floors were binding, but also states throughout the distribution. Taken together, the findings suggest that the features of federal conditional matching grants were important factors in explaining the large observed rise in state health and welfare spending.

4.3. Non-budgetary allocation of authority/responsibility: regulations and mandates

Another way in which federal policy can influence state spending is through the imposition of regulations and mandates. The now-defunct Advisory Commission on Intergovernmental Relations (ACIR) outlines the many ways in which federal actions dictate state spending (ACIR, 1994): statutory "direct order" mandates that require specific spending (such as requiring states to make all voting places accessible to the disabled); requirements that states must meet in order to receive federal aid — including both requirements for matching spending (as in Medicaid) or other conditions (such as having a drinking age of 21 to qualify for federal highway funds); statutory preemption of state rights to regulation or action (which may impose indirect costs or preclude revenue sources); other provisions such as restrictions on bonds or taxes, imperfect enforcement of law, or creation of liability exposure.

Unfortunately there is limited systematic evidence on the magnitude of this indirect spending generated by federal choices. A series of reports issued by the ACIR examined costs imposed by federal mandates and regulation (Fig. 8). It identified 12 mandates enacted in the 1960s, 22 in the 1970s and 27 in the 1980s (ACIR, 1992). Many of these mandates imposed substantial financial burdens on lower levels of government: EPA estimated that about 25% of the $125 billion cost of environmental mandates imposed in 1995 would be borne by states and localities (reported by the Senate's Committee on Governmental Affairs, 1995). The rate of enactment of federal preemption statutes increased at a similar pace. Mandated costs grew rapidly in the 1980s (Fig. 9).[38] While it is difficult to quantify the effect of these policies on state budgets, it is reasonable to believe that they played at least some role in explaining the rise in remaining state budget categories.

4.4. Rationales for intergovernmental interventions

These results demonstrate the important and growing role the federal government has played in explaining the rise of state budgets over the last half-century. This naturally raises the question of why the federal government might intervene to change state behavior. A classic rationale for intergovernmental intervention is the presence of externalities: if there are positive interjurisdictional spillovers, public goods will be underprovided in a decentralized system. To correct this under provision, higher levels of government can engage in direct provision of the relevant goods or set corrective Pigouvian subsidies for lower levels of government (Oates, 1999; Besley and Coate, 2003). Some of the observed patterns in intergovernmental interactions do seem consistent with this rationale. A large share of

[37] The need standard is one of the benchmarks against which income is evaluated, but there are numerous adjustment factors and disregards that go into the eligibility calculation. We use the state-year need standard from the Urban Institute's TRM model for 1982–2001. Expressed as a percentage of the federal poverty level, this figure ranges from 26% to 360%, but should be interpreted with caution. See Currie and Gruber (1996a) for a method of capturing state program rules.

[38] Amid mounting discontent over this burden, Congress enacted the Unfunded Mandate Reform Act (UMRA) in 1995 as part of the Contract With America (Anderson and Constantine, 2005). UMRA requires, in part, that CBO evaluate the cost imposed on lower levels of government by proposed legislation and creates procedural hurdles to passing such bills if the costs exceed $50 million (1996 dollars) in any of the first 5 years (CBO, 2009). From 1996–2005, CBO examined 700 intergovernmental mandates and determined that 64 imposed costs in excess of the threshold (CBO, 2006).

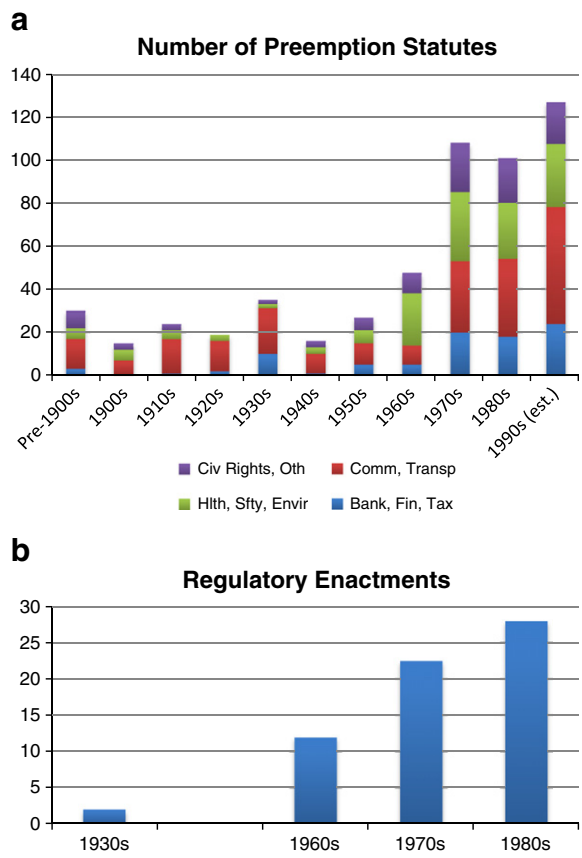

Fig. 8. Growth of regulation and pre-emption (reproduced from ACIR). Panel a: Federal Statutory Preemption of State and Local Authority. Panel b: Federally-Induced Costs Affecting State and Local Governments. Note: These figures reproduce data from reports by the Advisory Council on Intergovernmental Relations (ACIR). Panel a comes from ACIR Report A-121 (1992, 7) and Panel b comes from ACIR Report M-193 (1994, 1).

intergovernmental grants from federal to state governments is comprised of goods for which we might expect there to be substantial interjurisdictional spillovers (health, education, transportation). Some types of unfunded mandates, such as those in the area of environmental policy, may also be motivated by the desire to correct externalities. It is not clear, however, how such spillovers have changed over time.

A second potential explanation for observed intergovernmental interventions is redistribution. Redistribution across localities is the primary stated rationale for state courts to intervene in local

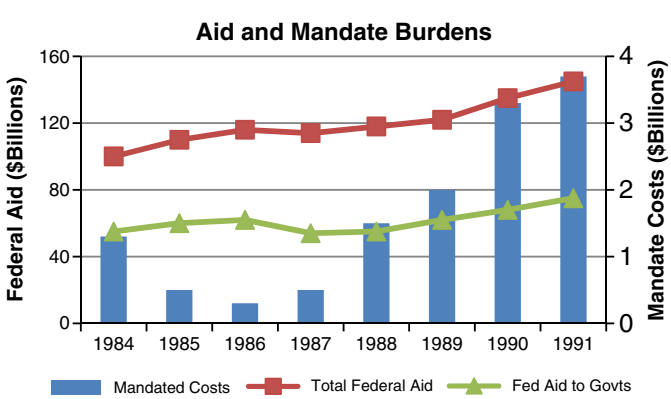

Fig. 9. Increase in grants and mandates (reproduced from ACIR). Note: This figure reproduces data from Report A-126 by the Advisory Council on Intergovernmental Relations (ACIR) (1993, 68).

education finance through school finance equalization policies. Similarly, many federal Title I provisions explicitly incentivized increased state and local spending directed toward low income areas and households. Federal Medicaid and welfare policy has almost certainly been driven by a desire to generate a different distribution of transfer benefits than would be seen in the absence of federal intervention. Of course, an alternative would be for the federal government to implement its desired policies through direct federal spending. Decentralization may provide benefits over federal provision through fiscal competition: conditional on federal requirements, residents should prefer to locate in a jurisdiction that meets these requirements most efficiently or in a way that most lines up with their preferences. There may also be productive advantages from local information: a commonly-stated rationale for decentralization of AFDC and the eventual move to block grants under TANF was that each state knew best how to design a welfare program for its own residents.

5. Conclusion

One of the most salient changes in the landscape of fiscal federalism in the last half-century is the rising prominence of state governments. We find little evidence that changes in "Tiebout-style" forces (voting with one's feet or voting via the ballot box) can explain the rise of state programs. A closer look at the particular areas in which state budgets have grown – particularly education and health and welfare programs – suggests the importance of intergovernmental forces in determining state spending. Interpretation of state spending thus depends on understanding the extent to which that spending is compelled or incentivized by federal policies.

While states still have some choices within those rules, the timing of the increases in state spending and the size of federal intergovernmental grants suggest that the patterns we observe are strongly influenced by these outside forces. The fastest ramp-up in state education spending is only partly explained by the baby boom, and coincided with the implementation of federal education policies that both increased federal education grants and required additional education spending by the states. The subsequent increase in state education grants to localities is partially attributable to the advent of court-ordered school finance equalization measures. Similar forces appear to have been at work in the growth of public health and welfare programs at the state level. In addition to these specific program areas, there has been a rise over time in the use of unfunded mandates and federal regulations that further increase state spending.

A natural direction for further research would be to better quantify the relative importance of federal incentives and other changes in population characteristics and preferences in explaining the rise of state spending. In addition, these findings raise the important question of *why* federal interventions have increased so dramatically over the last half-century, and why federal involvement has tended to run through the states rather than through direct federal action alone. The current health reform debate highlights ongoing contention over the roles of federal and state governments in determining the shape and extent of social insurance spending.

What is clear is that these federal interventions – regardless of their underlying cause – have important implications for understanding fiscal federalism in the United States. To the extent that the growth in state budgets is driven by federal requirements, it is not merely the product of state-level decision-making and cannot be undone by interjurisdictional competition. A number of programs that appear on state budgets should actually be thought of as federal programs, at least in part. The last decades have seen increasingly complex maneuvering between governments as the federal government attempts to influence the distribution of resources across states and localities through subsidies, taxation, and regulation. While the welfare consequences of these activities are ambiguous, it is clear

that analyses of either fiscal competition or of the landscape of fiscal federalism must account for these intergovernmental forces.

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References

Anderson, Stacy, Constantine, Russell, 2005. Unfunded mandates. Harvard law school: federal budget policy seminar. Briefing Paper 7, May.
Baicker, Katherine, 2005. The spillover effects of state spending. Journal of Public Economics 89 (2–3), 529–544.
Baicker, Katherine, Gordon, Nora, 2006. The effect of state education finance reform on total local resources. Journal of Public Economics 90 (8–9), 1519–1535.
Baicker, Katherine, Staiger, Douglas, 2005. Fiscal shenanigans, targeted federal health care funds, and patient mortality. Quarterly Journal of Economics 120 (1), 345–386.
Bayer, Patrick, McMillan, Robert, Rueben, Kim, 2004. An equilibrium model of sorting in an urban market. NBER Working Paper 10865. November.
Besley, Timothy, Coate, Stephen, 2003. Centralized versus decentralized provision of local public goods: a political economy approach. Journal of Public Economics 87 (12), 2611–2637.
Boadway, Robin, Tremblay, Jean-François, 2010. Reassessment of the Tiebout Model. manuscript.
Brueckner, Jan K., 1998. Welfare Reform and Interstate Welfare Competition: Theory and Evidence. Urban Institute, Washington DC. December.
Brueckner, Jan K., 2004. Fiscal decentralization with distortionary taxation: Tiebout vs. tax competition. International Tax and Public Finance 11 (2), 133–153.
Calabrese, Stephen, Epple, Dennis, Romer, Thomas, Sieg, Holger, 2006. Local Public good provision: voting, peer effects, and mobility. Journal of Public Economics 90 (6–7), 959–981.
Card, D., Payne, A.A., 2002. School finance reform, the distribution of school spending, and the distribution of student test scores. Journal of Public Economics 83 (1), 49–82.
Case, Anne C., Hines Jr., James R., Rosen, Harvey S., 1993. Budget spillovers and fiscal policy interdependence: evidence from the states. Journal of Public Economics 52 (3), 285–307.
Committee on Government Affairs, United States Senate, 1995. Unfunded Mandates Reform Act of 1995. Report 104–1. Government Printing Office, Washington DC. January.
Congressional Budget Office (CBO), 2006. A Review of CBO's Activities from 1996–2005 under the Unfunded Mandates Reform Act. Government Printing Office, March, Washington DC.
Congressional Budget Office (CBO), 2009. A Review of CBO's Activities in 2008 under the Unfunded Mandates Reform Act. Publication 3194. Government Printing Office, Washington DC. March.
Corcoran, S., Evans, W.N., Godwin, J., Murray, S.E., Schwab, R., 2004. The Changing distribution of education finance: 1972–1997. Social Inequality 433–466.
Cullen, Julie Berry, Gordon, Roger, 2010. Income Redistribution in a Federal System of Governments. manuscript.
Cullen, Julie Berry, Loeb, Susanna, 2000. Fiscal Substitution in the Context of School Finance Reform. manuscript.
Cullen, Julie, Long, Mark, Reback, Randall, 2010. Jockeying For Position: Strategic High School Choice under Texas' Top Ten Percent Plan. manuscript.
Currie, Janet, Gruber, Jonathan, 1996a. Saving babies: the efficacy and cost of recent changes in the medicaid eligibility of pregnant Women. Journal of Political Economy 104 (6), 1263–1296.
Currie, Janet, Gruber, Jonathan, 1996b. Health insurance eligibility, utilization of medical care, and child health. The Quarterly Journal of Economics 111 (2), 431–466.
Epple, D., Romer, T., 1991. Mobility and redistribution. Journal of Political Economy 99 (4), 828–858.
Epple, D., Romer, T., Sieg, H., 2001. Interjurisdictional sorting and majority rule: an empirical analysis. Econometrica 69 (6), 1437–1465.
Epple, Dennis, Romano, Richard, Sieg, Holger, 2010. The Intergenerational Conflict over the Provision of Public Education. Manuscript.
Farnham, Martin, Sevak, Purvi, 2006. State fiscal institutions and empty-nest migration: are Tiebout voters hobbled? Journal of Public Economics 90 (3), 407–427.
Farnsworth, Stephen, 1999. Federal frustration, state satisfaction? Voters and decentralized governmental power. Publius 29 (3), 75–88.
Feldstein, Martin, 1978. The effect of a differential add-on grant: title I and local education spending. The Journal of Human Resources 13 (4), 443–458.
Feldstein, Martin, Wrobel, Marian Vaillant, 1998. Can State taxes redistribute income? Journal of Public Economics 68 (3), 369–396.
Gordon, Nora, 2004. Do federal grants boost school spending? Evidence from title I. Journal of Public Economics 88 (9–10), 1771–1792.
Hamilton, Bruce W., 1975. Zoning and property taxation in a system of local governments. Urban Studies 12 (2), 205–211.
Hoxby, Caroline M., 2001. All school finance equalizations are not created equal. Quarterly Journal of Economics 16 (4), 1189–1231.
Hoyt, William, 1993. Tax competition, nash equilibria, and residential mobility. Journal of Urban Economics 34 (3), 358–379.
King, James D., 1981. Comparing local and presidential elections. American Politics Quarterly 9 (3), 277–290.
Mieszkowski, Peter, Zodrow, George R., 1989. Taxation and the Tiebout model: the differential effects of head taxes, taxes on land rents, and property taxes. Journal of Economic Literature 27 (3), 1098–1146.
Milligan, Kevin, Moretti, Enrico, Oreopoulos, Philip, 2004. Does education improve citizenship? Evidence from the United States and the United Kingdom. Journal of Public Economics 88 (9–10), 1667–1695.
Murnane, Richard, 1985. An economist's look at federal and state education policies. In: Quigley, John M., Rubenfeld, Daniel L. (Eds.), American Domestic Priorities: an Economic Appraisal. University of California Press, Berkeley.
Murray, Sheila, Evans, William, Schwab, Robert, 1998. Education finance reform and the distribution of education resources. American Economic Review 88, 789–812.
Musgrave, Richard A., 2007. Devolution, grants, and fiscal competition. Journal of Economic Perspectives 11 (4), 65–72.
Oates, Wallace E., 1999. An essay on fiscal federalism. Journal of Economic Literature 37, 1120–1149.
Oates, Wallace E., 2006. The many faces of the Tiebout model. In: Fischel, William E. (Ed.), The Tiebout Model at Fifty. Lincoln Institute of Land Policy, Cambridge, MA.
Peterson, Paul, Rom, Mark, 1990. Welfare Magnets: a New Case for a National Standard. Brookings Institution Press, Washington, DC.
Rhode, Paul W., Strumpf, Koleman S., 2003. Assessing the importance of Tiebout sorting: local heterogeneity from 1850 to 1990. American Economic Review 93 (5), 1648–1677.
Samuelson, Paul A., 1954. The pure theory of public expenditure. Review of Economics and Statistics 36 (4), 387–389.
Shin, Donggyun, Solon, Gary, 2011. Trends in men's earnings volatility: what does the panel study of income dynamics show? Journal of Public Economics 95 (7–8), 973–982.
Tiebout, Charles M., 1956. A pure theory of local expenditures. Journal of Political Economy 64, 416–424.
U.S. Advisory Commission on Intergovernmental Relations, 1993. Federal regulation of state and local governments: the mixed record of the 1980s. Report A-126. July.
U.S. Advisory Commission on Intergovernmental Relations (ACIR), 1992. Federal statutory preemption of state and local authority: history, inventory, and issues. Report A-121. September.
U.S. Advisory Commission on Intergovernmental Relations (ACIR), 1994. Federally induced costs affect state and local governments. Report M-193. September.
Wildasin, David, 1988. Nash equilibria in models of fiscal competition. Journal of Public Economics 35 (2), 229–240.
Young, Cristobal, Varner, Charles, 2011. Millionaire Migration and the State Taxation of Top Incomes: Evidence from a Natural Experiment. National Tax Journal, June 2011, 64 (2, Part1), 255–284.