RESEARCH ARTICLES

Fiscal Federalism and Tax Effort in the U.S. States

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ABSTRACT

Scholars have long been interested in the politics of taxation in the U.S. states. Research in this area has not, however, sufficiently explored the impact of fiscal federalism on state-level taxing decisions. Drawing on theoretical models of fiscal choice, this study develops the expectation that, under certain conditions, federal grants-in-aid exert significant downward pressure on state-level tax effort. I test that assertion in an analysis of tax effort in the U.S. states between 1971 and 1996.

IN THE 25 YEARS FOLLOWING World War II, U.S. state governments doubled the amount of inflation adjusted revenue that they collected in taxes, which represented a growth rate more than double that of the federal government (see Maxwell 1972). On average, the increase in state tax effort flattened out markedly by the 1980s, but there has been tremendous variation in the degree to which individual states have raised or lowered the tax burden on citizens over the last three decades.

This interstate variation has drawn a number of scholars to the question of taxation in the U.S. states. Researchers have also gravitated to the subject because the level of wealth claimed as government revenue is one of the most significant decisions made by state-level political actors (see Hansen 1990). The relatively large amount of literature in this area has offered and tested a variety of explanations for both short and long-term tax effort variation including partisanship, ideology, and wealth, among others (Berry and Berry 1992; Alt and Lowry 2000).

Nonetheless, scholars have not paid a great deal of attention to the relationship between fiscal federalism and the politics of taxation in the U.S. states. This neglect is surprising because of the important role that grants-in-aid play in state budgetary decisionmaking and the large body of work suggesting a likely connection between grant receipts and tax levels within

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recipient jurisdictions (Nicholson-Crotty, Theobald, and Wood 2006). Drawing on this literature, my study develops and tests expectations regarding the impact of grants-in-aid on tax effort in the U.S. states between 1971 and 1996, as well the conditions that may moderate that impact.

PREVIOUS LITERATURE ON U.S. STATE TAXATION

There has been considerable interest in the correlates of taxation in the U.S. states among political scientists. Previous work has examined numerous dimensions of state tax effort, including the adoption of new taxes, changes in the rates of existing taxes, the amount of state wealth claimed as government revenue, and overall tax burden. Whatever the dependent variable, studies have produced relatively consistent results regarding the most important political determinants of state-level tax effort.

Not surprisingly, one of the largest categories of studies has investigated the effect of partisanship on state taxation. While the earliest work in this area suggested that party differences explained little of the variation in spending and tax burdens across the states (for example, see Dye 1966), more recent studies have provided evidence that Democrats claim a larger share of income for government revenue than Republicans. Scholars have demonstrated these partisan effects on both long-term patterns of tax effort (Alt and Lowry 1994; Ringquist and Garand 1999) and short term fluctuations in revenue collections (Alt and Lowry 2000). Alt and Lowry (2000) also demonstrate that the impact of Democratic partisanship on tax effort is conditional on levels of institutional control and is significantly greater under conditions of unified government.[1]

Other researchers have suggested that ideological differences play an important role in the variation in tax effort across the American states. In a critique and extension of Alt and Lowry's (2000) work, McAtee, Yackee, and Lowery (2003) determine that ideological distance between the parties within a state has a significant impact on the speed with which electoral transitions affect revenue collections.[2] Berry and Berry (1992) demonstrate that ideological differences across states help to explain the adoption of new taxes, with liberal states adopting the income tax more quickly than their conservative counterparts. Similarly, Camobreco (1998) demonstrates that increased opinion liberalism within a state's citizenry is associated with greater tax effort by the state government.

Finally, scholars have proposed and tested an electoral cycle explanation for state tax effort based on the assumption that politicians manipulate economic policies to gain political advantage (Kiewiet and McCubbins 1985).

The logic here is that political actors will be less likely to raise taxes during an election year. Berry and Berry (1992) find evidence that states are significantly less likely to adopt new taxes or raise rates on existing taxes in the year of a gubernatorial election.

FISCAL FEDERALISM AND U.S. STATE TAX EFFORT

Despite the relative breadth of the political explanations offered for state taxation decisions, studies of state-level tax effort have not sufficiently explored the potential impact of fiscal federalism.[3] This omission is surprising because grants from the federal government comprise a meaningful share of total state revenue (Nice 1987), and scholars have demonstrated that the strings attached to these monies have a significant impact on state budgetary decisionmaking (Gramlich 1977; Chubb 1985; Nicholson-Crotty 2004). In fact, the literature on fiscal federalism suggests a likely connection between tax effort within a state and the amount of grant money that it receives. It also suggests a set of conditions specific to both the grant and the state that likely moderate that connection.

Economists and political scientists have long been interested in the effectiveness of federal grants in stimulating state-level spending on targeted programs and the so-called flypaper effect—the degree to which state money sticks to federal—has been widely debated in the literature (see Hines and Thaler 1995). Most studies find evidence that grants increase state spending, but the stimulative effect is typically well below a 1–to-1 ratio, suggesting that some federal money is used to supplant, rather than supplement, state money (Gramlich and Galper 1973; Bowman 1974; Olmstead, Denzau, and Roberts 1993). A more limited body of work suggests that observed flypaper effects are due to specification or econometric errors and argues that federal money is typically substituted for own source expenditures (Moffit 1984; Knight 2002).

The flypaper debate is relevant to this project not to determine whether or not some state money sticks to federal, but rather to explore what states do with the portion of own source revenue that they supplant with federal grants. The theoretical premise for this question, and the flypaper debate generally, is a fiscal choice model where recipient jurisdictions operate within a budget constraint and have preferences defined over a mix of public and private goods (Bradford and Oates 1971). In the basic form of these models, jurisdictions treat some portion of grant money as income, which moves the budget constraint out and allows them to purchase more of both types of goods. In other words, fiscal choice models predict that some portion of

grant monies will be spent on the policies targeted by the grantor, while the remainder will be returned to jurisdictional citizens in the form of lower taxes. Numerous studies have provided empirical evidence for this theoretical prediction (Gramlich and Galper 1973; Case, Hines, and Rosen 1993).

Scholars have also demonstrated, however, that a number of factors increase the relative effectiveness of grants in stimulating targeted jurisdictional spending and inversely decrease the amount of federal monies diverted to state or local taxpayers. The oldest and largest body of work in this area suggests that matching grants are more effective than unconditional monies because the matching requirement reduces the marginal cost of public goods for recipient jurisdictions and, thus, encourages them to substitute these for private goods (Bradford and Oates 1971; Borcherding and Deacon 1972; Gramlich 1977). As an example, Gramlich and Galper (1973) demonstrate empirically that between 1954 and 1972, each additional dollar in unconditional grant funding produced a $0.57 reduction in state taxes, while the same dollar of matching grant reduced the tax burden by only $0.10.

More recent work has adopted a principal agent approach and found that factors consistent with that theoretical perspective also influence grant effectiveness. Chubb (1985) argues that Congressional oversight has a significant impact on the degree to which subnational jurisdictions spend federal money in targeted areas. He finds that more than half of each dollar of Disadvantaged Vocational Aid funding, a program with little or no oversight, was returned to state taxpayers, while heavily monitored Title I Compensatory Education grants provided essentially no reduction in property taxes in the school districts that received them. Building upon Chubb's work, Nicholson-Crotty (2004) introduces the idea of heterogeneous agent preferences to the principal agent model of fiscal federalism. He finds that states that are ideologically predisposed to support the goals of the Medicaid program diverted approximately 50 percent less federal money into other spending categories or tax reductions relative to states with an ideological predisposition against the program.

Taken as a whole, then, the work on fiscal federalism suggests several testable hypotheses regarding the relationship between grants-in-aid and state tax effort.

> Hypothesis 1. Grant monies received by states should exert downward pressure on state tax effort, as jurisdictions return some portion of federal money to citizens by lowering, or at least not raising, taxes.

Previous scholarship also indicates, however, that a number of factors should moderate this relationship.

Hypothesis 2. The negative impact of grants on state tax effort should be less when grant programs have a matching requirement.

Hypothesis 3. The negative impact of grants on state tax effort should be less when grant programs are heavily monitored by the federal government.

And finally:

Hypothesis 4. The negative impact of grants on state tax effort should be less when grant programs match the ideological orientation of the recipient state.

AN EMPIRICAL TEST

This section offers an empirical assessment of the impact of fiscal federalism on tax effort in the American states between 1971 and 1996. Testing the general assertion that grants-in-aid exert downward pressure on state tax efforts is best explored in an assessment of the impact of all grant funding awarded to a state, and subsequent analyses include such a model. Testing expectations about the factors that may moderate the impact of grants on taxation, however, requires a narrower focus. More specifically, it requires the selection of an individual grant program so that differences in matching requirements, overhead monitoring, and state-level receptivity to program goals can be controlled for or estimated. For the reasons discussed below, this study tests assertions about those moderating conditions in an examination of Medicaid disbursements to the states.[4]

Medicaid is the nation's largest public health insurance program providing health and long-term care coverage to 52 million low-income people in 2004 (Kaiser Commission on Medicaid and the Uninsured 2004). It is also one of the largest domestic federal grant programs (Ku 2006), with expenditures totaling more than $205 billion in 2007. In the average state, the portion of Medicaid funded by the state from own-source revenue comprises 16 percent of total outlays, making it the second largest expenditure category (Kaiser Commission on Medicaid and the Uninsured 2004). Medicaid is a jointly funded program whereby states match federal contributions and the matching rate, or Federal Medical Assistance Percentage (FMAP), ranges between 50 percent and 77 percent, depending on the state.

Because of its scale and redistributive character, Medicaid has been the target of considerable oversight throughout its history. In the period between 1971 and 1996, committees in the U.S. House and Senate held an average of 11 hearings per year on Medicaid and healthcare reform. They also requested multiple investigations and audits by the United States Govern-

ment Accountability Office (USGAO). In one of the most notable of these, released in 1994, the USGAO suggested that some states were supplanting a large percentage of own-source spending on Medicaid with federal dollars, through what it called "illusory accounting practices." The report provided evidence that the state of Michigan made more that $271 million in a single suspect transaction (USGAO 1994).

As a result, Medicaid serves well to examine the impact of a specific grant on state taxation, as well as the conditions that moderate that impact, for a variety of reasons. First, it is large enough in scale that it is plausible to expect decisions about the expenditure of federal Medicaid funds to have an impact on overall state tax effort. Second, it is a conditional grant with a matching requirement, which should reduce the ability for states to return federal funds to taxpayers and, thus, bias the results toward the null. Third, research suggests that, despite matching requirements and oversight, states continue to exercise considerable discretion in the expenditure of federal Medicaid dollars. Fourth, although the overall level of oversight throughout the program's history has been fairly high, congressional attention from year to year varies dramatically. And finally, because of its redistributive character, there is considerable variation in the degree to which state governments embrace the goals of the Medicaid program.

VARIABLES

Dependent

The primary dependent variable in subsequent models is the level of tax effort within a state. The Advisory Commission on Intergovernmental Relations (ACIR), which created and collected the indicator prior to its abolition, measured effort as the ratio of a state's tax collection to its absolute tax capacity.[5] It represents the most accurate measure of the degree to which a state government is willing to claim state wealth as government revenue and has been validated via use as an independent variable in previous studies (Wohlenberg 1992; Ambrosius 1989).

The ACIR typically did not collect the measure every year. Fortunately, Berry and Fording (1997) estimated values for effort in the missing years, creating a continuous series between 1960 and 1991. Using the same methodology as the ACIR, Tannenwald (1999) created the measure of tax effort for 1994 and 1996. Therefore, for the period of interest in this study, 1971 to 1996, there remain three missing years in the tax effort series. I estimate values for these years using linear interpolation, which Berry and Fording (1997) suggest is a reliable method for the estimation of tax effort after 1975.

In order to check the accuracy of the estimated values, I interpolated all years between 1990 and 1996 and then compared my estimates with values for effort in the years when either the ACIR or Tannenwald had created the measure (1990, 1991, 1994, 1996). Correlations between the real and the interpolated measures were all greater than 0.96.

Independent

The key explanatory concept in subsequent models is the level of federal grant funding allocated to a state. But to create measures that will allow for an exploration of the impact of grants on tax effort, one must deal with the possibility that these variables may be endogenous to one another. Indeed, scholars in political science have suggested that the level of federal grant funding distributed to a state is, in part, a function of previous state-level effort in a policy area (Peterson 1995), and economists typically begin their analyses with the assumption that grants and taxes are endogenous.

The logic of the assumption that tax effort may drive grants is fairly intuitive. States with higher tax effort tend to value public goods more highly than those with lower effort. These high effort states are more likely to apply for project grant monies, more able and willing to raise the matching requirements required to receive some federal dollars, or in the case of a program like Medicaid, more willing to offer optional benefits above and beyond federally-mandated program minimums. Thus, high tax effort states get more federal dollars because they are already putting a greater share of own-source monies toward targeted programs. Granger causality tests confirm that both total grant-in-aid and Medicaid disbursements to the states are caused, in part, by the tax effort within a state in the previous year.

In order to discover if the causation also runs in the other direction or the degree to which grants influence taxation, it is necessary to create measures of grant aid free from the influence of previous tax effort. To do so, I regress total grant distributions per capita on current and lagged values of tax effort to purge the measure of the influence of taxation. Total grants in this equation represent all money awarded directly to the states by the federal government in a given year. The figure includes categorical grants, both formulaic and project, and block grants, but it does not include pass-through funds. The residuals from that equation represent the portion of federal grant distributions not related to previous tax effort and serve as the measures of total grant funding in the first analysis. I follow the same procedure to purge Medicaid grants of the influence of tax effort and employ the residuals from that equation as the measure of Medicaid funding in Model 2.[6] I expect the measures of grant funding to be negatively associated with tax effort in both

models, indicating that an increase in grant funding results in a lower tax burden for state citizens.

The model of the relationship between Medicaid funds and tax effort also includes a set of independent variables designed to capture the moderating influences discussed above. Specifically, it includes a measure of the number of hearings on healthcare reform held each year in both the house and the senate, as well as a multiplicative interaction between the purged measure of per capita Medicaid funding and the number of hearings.[7] I expect the interaction to be positively associated with tax effort, indicating that a greater degree of Congressional attention to Medicaid reduces the degree to which states use federal funding to reduce tax effort.

The Medicaid model also includes the indicator of state government ideology created by Berry et al. (1998) and a multiplicative interaction between ideology and the measure of federal Medicaid funds.[8] The ideology measure ranges from 0 to 100 with higher values indicating more liberal states. I expect both the measure of ideology and the interaction to be positive, indicating that liberal states have higher tax effort and, more importantly, that states which are predisposed to share the redistributive goals of the Medicaid program divert less money to tax reduction. The Berry et al. (1998) measure is also included in the model of the impact of total grant receipts on tax effort. Because it is impossible to test for the moderating effect of ideology when grants are aggregated, however, the measure is best conceived of as a control variable in that model.

Control

Both models include a set of variables designed to control for explanations offered in previous studies of state tax effort. First, both models include a variable designed to capture the degree of fiscal centralization within a state. Some states make significantly greater demands on local government for the provision of services than others, which likely influences the effort that the state expends in collecting revenue, as well as the equality of services across jurisdictions and local government resources (Stonecash 1981, 1983). Specifically, models include the percent of total general revenue originating from local sources.[9]

They also include several measures of partisan control of state institutions.[10] Specifically, the models include dichotomous indicators of (1) Democratic control of at least one house of the state legislature, but not the governor's mansion; (2) Democratic control of the governorship but neither house of the legislature; and (3) unified Democratic control.[11] Previous work suggests that all three indicators may be positively related to tax effort, with unified control having the largest impact (Alt and Lowry 1994, 2000).

The models also control for the wealth within a state, measured as the inflation adjusted gross state product (GSP) per capita. Previous research suggests that taxation, and presumably an increase in the share of state resources claimed for government revenue, becomes more attractive to lawmakers as available wealth increases (Barro 1986; Berry and Berry 1992).[12] Thus, the measure should be positively correlated with state tax effort. Because the effort measure has overall tax capacity—of which GSP is a component—in the denominator, the models were also estimated without the wealth measure in order to assure that no bias was arising from similarities between the dependent and independent variables.[13] The substantive findings remain unchanged, and therefore, I include the measure in the final analysis to better account for the findings in previous work.

The models also control for three additional factors that have been shown to influence taxation in the states. They include a measure of the percent of a state's population that lives in urban areas, which should correlate positively with tax effort (Berry and Berry 1992). They also include an indicator of whether a state has taxing and spending limits, passed via statute or initiative. Some evidence suggests that these restrictions on state government may decrease taxation, and the measure should, therefore, be negatively correlated with the dependent variable. Finally, the models include an indicator of a gubernatorial election within the state, which should be negatively correlated with tax effort.

The model of Medicaid grants includes two additional control variables. Research suggests that the necessity and willingness to spend on redistributive programs such as Medicaid are, in part, a function of population age and diversity. States with a large elderly population should be more dependent on federal monies to offset the costs of care and high rates of poverty among this group, and studies indicate that states with racially heterogeneous populations award fewer benefits and, thus, may be less covetous of federal funds (Alesina and Glaeser 2004). While these variables may not have a direct impact on tax effort, they are likely to influence the degree to which states are willing or able to use Medicaid funding to reduce the tax burden. As a result, the model includes a measure of the percent of the state's population that is over 65 and an indicator of racial diversity (Gibbs and Martin 1962), as well as multiplicative interactions between these variables and the measure of Medicaid funding.[14]

All but one of the independent and control variables are lagged one year in the analyses discussed below. This accounts for the fact that their influence on state-level taxing decisions will not be instantaneous and is unlikely to be visible until the next legislative year. Different lag structures were explored, including two years for all states and two years for those states in which the

legislature meets biennially, but the substantive findings were robust to these changes. Thus, the most parsimonious specification is employed in the final analyses. The measure of gubernatorial election is not lagged.

FINDINGS AND DISCUSSION

Table 1 presents the findings from analyses of the relationship between fiscal federalism and state tax effort. Because of the panel nature of the data, the presence of significant heteroskedacticity, and the autoregressive nature of state tax effort, each of the models is estimated as a cross-sectional time series with panel corrected standard errors and panel specific corrections for first order autocorrelation. The models were also estimated with a single autocorrelation coefficient and the substantive findings remained unchanged (Beck and Katz 1995). The first column contains coefficients from the model of all grant receipts, while the second presents results from the model of federal Medicaid funds.

As the results in column 1 suggest, the model of all federal grant dollars is highly significant and explains a substantial portion of the variation in the dependent variable ($R^2 = 0.88$). Of course the real measure of interest is the indicator of purged grant receipts per capita. The measure is negative and significant, suggesting that higher levels of grants-in-aid are associated with decreased state tax effort. Substantively, the size of the coefficient indicates that a shift from 1–standard deviation below the mean to 1–standard deviation above the mean in total grant receipts correlates with a .19 standard deviation change in tax effort in the next year. Given the myriad cultural, historical, political, and economic factors that influence taxation within a state this represents a relatively large change.

The control variables also performed largely as expected. The measure of state government ideology, which as noted above serves as a control in this first model, is positive and significant, indicating that more liberal state governments have higher tax effort. Gross State Product per capita was also positively associated with tax effort, as were two of the three measures of Democratic control.[15] Finally, the findings suggest that states with higher population concentrations in urban areas tend to take a larger share of overall state wealth for government revenue.

Turning now to the model of Medicaid's influence on state tax effort, we can note that the model performed well and the control variables were generally in the direction predicted by previous research. In terms of the variable of interest, we can initially note the measure of federal grant monies is again negative and significant, suggesting that Medicaid disbursements may exert

Table 1. The Impact of Federal Grants on U.S. State Tax Effort, 1971–1996

Independent Variables	Aggregated Grant Receipts	Medicaid
Purged grants per capita $_{t-1}$	−14.629****	−45.998****
	(4.145)	(15.365)
Government ideology $_{t-1}$	0.048***	0.055****
	(0.016)	(0.017)
Congressional hearings $_{t-1}$	—	−0.005[A]
		(0.022)
Hearings $_{t-1}$ × Grants $_{t-1}$	—	0.411*
		(0.226)
Ideology $_{t-1}$ × Grants $_{t-1}$	—	0.191[A]
		(0.126)
Percent revenue from local sources $_{t-1}$	−0.120*	−0.039
	(0.062)	(0.027)
Gross state product per capita $_{t-1}$	8.150*	5.257*
	(4.807)	(3.287)
Democratic control legislature $_{t-1}$	1.280*	1.380*
	(0.753)	(0.779)
Democratic control governorship $_{t-1}$	1.213*	1.260*
	(0.717)	(0.684)
Unified democratic control $_{t-1}$	0.380	0.364
	(0.663)	(0.682)
Taxing and spending limitations $_{t-1}$	−0.606	−0.909
	(0.935)	(0.919)
Percent urban population $_{t-1}$	0.104****	0.126****
	(0.022)	(0.023)
Gubernatorial election	0.367	0.232
	(0.222)	(0.210)
Percent population over 65 $_{t-1}$	—	−0.006[A]
		(0.033)
Population diversity $_{t-1}$	—	0.004[A]
		(0.016)
Over 65 $_{t-1}$ × Grants $_{t-1}$	—	1.192[A]
		(0.731)
Diversity $_{t-1}$ × Grants $_{t-1}$	—	−0.237[A]
		(0.255)
Constant	91.418	87.826
	(2.416)	(2.319)
N	1225	1225
R^2	0.88	0.90
χ^2	49.45	59.83

[A] jointly significant at $p < 0.05$, **** $p < 0.0001$, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$; one-tailed test

Note: Numbers in parentheses are panels corrected standard errors. Models also include panel specific corrections for autocorrelation. Individual rho coefficients are not displayed due to space constraints.

downward pressure on state taxes. The indicator of government ideology is positive and significant, suggesting that more liberal states have higher tax effort. The interactions between ideology and Medicaid funding and Congressional hearings and federal dollars are also both positive and significant.

Interpreting the substantive impact of Medicaid, as well as the moderating impact of ideology and oversight, is best accomplished via a graphical presentation of the results. Figure 1 graphs the impact of government ideology across a change in the measure of purged federal Medicaid funding per capita from 1–standard deviation below to 1–standard deviation above the mean. As the figure indicates, for both liberal and conservative states, the impact of Medicaid funding on tax effort is negative. However, in states that are 1–sd more conservative than the mean state—and thus are assumed to oppose the redistributive goals of the program—the effect is considerably larger than in states that are 1–sd more liberal than the average. In the former, a 2–standard deviation shift in Medicaid funding has a .32–sd impact on tax effort; while in the latter, the impact of a similar change is only .21–sd.

Figure 2 graphs the effect of Congressional hearings across the same change in purged per capita Medicaid funding. Again the findings suggest that, regardless of the level of oversight, states that receive more Medicaid grant monies have lower tax effort. The figure also suggests, however, that the number of Congressional hearings does not meaningfully moderate that relationship. Although the interaction is statistically significant, there appears

Figure 1. The Impact of Medicaid Funding on Tax Effort in Conservative and Liberal States

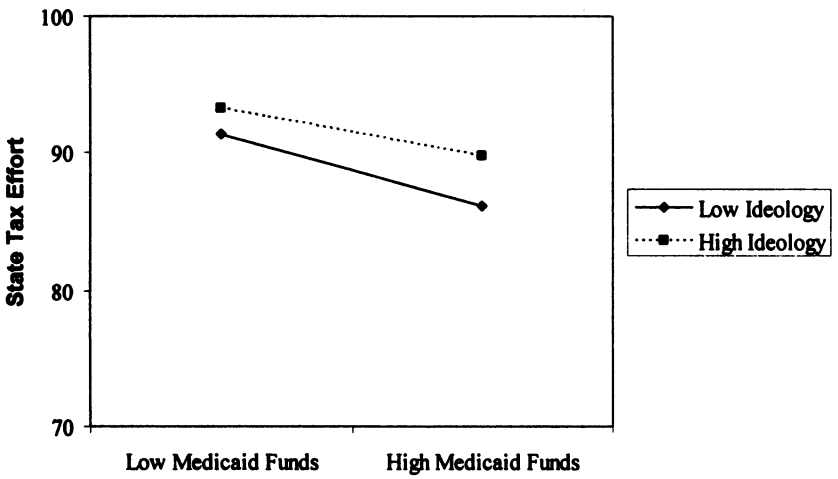
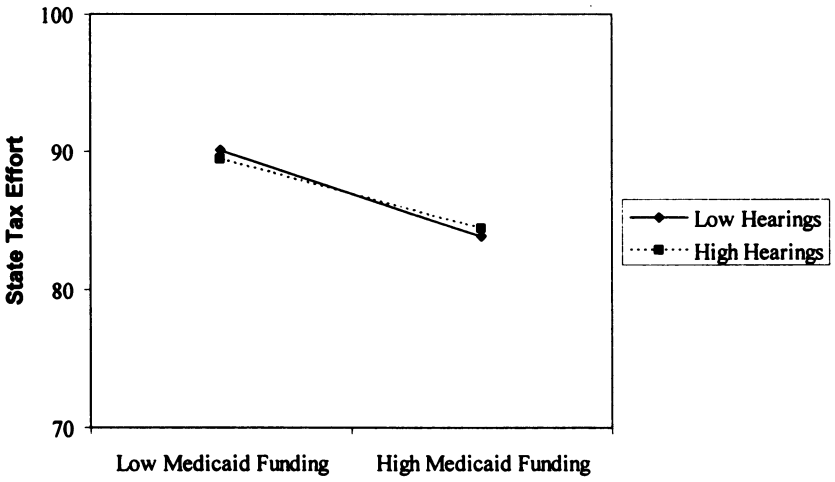


Figure 2. The Impact of Medicaid Funding on Tax Effort in Periods of High and Low Congressional Oversight



to be no substantive difference in effect between years when Congress held one hearing and years when it held 20.

The findings discussed above provide considerable evidence for the assertion that grant receipts exert significant downward pressure on state tax effort. While interesting in their own right, the findings are perhaps less important from a policy perspective if the effect observed in these models is being driven primarily by cross-sectional variation. In other words, it is important to determine if the findings are due to different states spending grant funding differently or if, in fact, changes in funding in an individual state over time could cause it to adjust tax policies, all else equal. This section will offer a brief extension of the Medicaid funding model that explores that question.

Table 2 presents the findings from a model of state tax effort that includes dummy variables for the states.[16] By fixing the effects of cross-sectional variation with the dummies, the coefficients can be interpreted as the temporal impact of a change in Medicaid funding on tax effort in a given state. As the findings suggest, grant receipts continue to have a significant and negative effect on the dependent variable. The interactions between government ideology, Congressional hearings, and Medicaid funds also remain significant and in the expected direction.

Substantively, the findings suggest that in a state with the average level of liberalism and in a year with the mean number of Congressional hearings, a change from 1–sd below the mean to 1–sd above the mean reduces tax effort

Table 2. Fixed Effect Model of the Impact of Federal Medicaid Grants on U.S. State Tax Effort, 1971–1996

Independent Variables	Coefficients
Purged grants per capita $_{t-1}$	−35.598****
	(12.696)
Government ideology $_{t-1}$	0.008[A]
	(0.012)
Congressional hearings $_{t-1}$	−0.008[A]
	(0.022)
Hearings $_{t-1}$ × Grants $_{t-1}$	0.383*
	(0.226)
Ideology $_{t-1}$ × Grants $_{t-1}$	0.192[A]
	(0.121)
Percent revenue from local sources $_{t-1}$	0.005
	(0.055)
Gross state product per capita $_{t-1}$	−0.794
	(7.254)
Democratic control legislature $_{t-1}$	0.120
	(0.613)
Democratic control governorship $_{t-1}$	0.424
	(0.684)
Unified Democratic control $_{t-1}$	−0.364
	(0.682)
Taxing and spending limitations $_{t-1}$	−0.606
	(0.851)
Percent urban population $_{t-1}$	0.036
	(0.057)
Gubernatorial election	0.244
	(0.176)
Percent population over 65 $_{t-1}$	0.008
	(0.034)
Population diversity $_{t-1}$	0.004
	(0.030)
Over 65 $_{t-1}$ × Grants $_{t-1}$	0.547
	(0.731)
Diversity $_{t-1}$ × Grants $_{t-1}$	−0.218
	(0.513)
Constant	72.863
	(6.153)
N	1225
R^2	0.98
χ^2	418.78

[A] jointly significant at $p < 0.05$; **** $p < 0.0001$; *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; one-tailed test

Note: Joint fixed effects for state significant at $p < 0.0000$. Numbers in parentheses are panels corrected standard errors.

in the following year by .16–standard deviations. Of course, states do not typically experience such radical annual shifts in grant aid, either positive or negative. Nonetheless, they do often receive smaller adjustments in the same direction year after year. For example, in Arkansas between the years 1987 and 1996, the measure of purged Medicaid funds per capita increased every year, ultimately resulting in a 1.7–standard deviation increase. Thus, grants-in-aid could plausibly have a substantial effect on tax effort in those instances where the effect cumulates year after year, and all 50 states experienced at least one multi-year period of consistent increases or decreases in Medicaid funding per capita between 1971 and 1996.

CONCLUSION

This study has asserted that a focus on fiscal federalism could contribute to our understanding of taxation in the American states, and the findings provide considerable evidence that grants-in-aid exert downward pressure on state tax effort. The observed negative relationship holds even when examining conditional and heavily monitored programs, such as Medicaid, and even after the inclusion of fixed effects for cross-sectional variation. The degree to which states agree ideologically with the goals of the Medicaid program moderates the negative impact somewhat, but even in the most liberal state, it appears that some portion of federal monies is being returned to state taxpayers in the form of lower taxes.

The findings have potentially significant implications in the current era of devolution. The proponents of increased discretionary authority for state governments often claim that the federal government's attempt to produce more public goods through grants-in-aid have increased that production, and consequently, taxes to a level that exceeds the preferences of many citizens. Conversely, the results herein suggest that rather than pushing tax effort higher in the states, grants-in-aid may actually be a mechanism whereby state governments can lower the tax burden on citizens while still providing needed services. At the very least the results suggest that the relationships between federal and state-level government growth and activity may not be as simple or straightforward as many have assumed.

ENDNOTES

1. Hansen (1983) finds that unified or divided government is the most important determinant of tax innovation in the states, eclipsing limited differences between the parties.

2. Alt and Lowry (2000) also acknowledge the potential importance of interstate ideological differences among the parties, and they control for these via the inclusion of fixed effects.

3. Alt and Lowry (2000) include a measure of federal grants in their model. But because their dependent variable is total, rather than state-generated, revenue, the measure cannot reveal anything about the influence of grant monies on lawmakers' decisions regarding how much of a state's wealth to extract for government revenue.

4. Unfortunately, determining the impact of conditional versus unconditional grants is difficult because all federal programs that are both large enough to have a discernible impact on state-level tax effort and continuously in existence during the period under study have stringent matching requirements. Testing the relationship between fiscal federalism and state tax effort exclusively in conditional programs does not pose problems for the validity of the findings. In fact, the presence of matching requirements should bias the findings toward the null because recipients are less likely to return federal monies to tax payers in these types of grants.

5. Capacity is measured as the amount of revenue that a state would collect if it taxed at a standard rate across 21 different types of taxes and abolished all breaks, exemptions, and loopholes. Those interested in a more complete description of capacity and Representative Tax System (RTS) approach used to measure it should see ACIR (1982) or Tannenwald (1999).

6. The regressions that produce the residual measures reported an R^2 of .11 for the model of total grant funding and .14 for the model of Medicaid.

7. The data on hearings was collected by the Policy Agendas Project and is available at www.policyagendas.org/datasets/index.html.

8. The ideology measure is available at www.icpsr.umich.edu.

9. Models were also run with a measure of intergovernmental revenue awarded to local governments by states, and findings remained substantively unchanged.

10. Hansen (1983) argued that unified government of any party drives up taxation, but the findings from her bivariate analyses have not been replicated in more recent work. Nonetheless, the models were estimated with a measure of unified government regardless of party. The measure was insignificant and its inclusion did not change the substantive findings of interest. Thus, it is not included in the final analysis.

11. The models were also run with alternative measures of partisanship, including percentage of Democrats in the state legislature, and the substantive findings remained unchanged.

12. The inclusion of a measure of state wealth also controls for the differences in matching rates across states, which are determined in large part by state resources.

13. Although it should be noted that GSP per capita and the tax capacity measure created by the ACIR and others only correlate at .21. Models were also run with income per capita as a measure of state wealth and the substantive findings remained unchanged.

14. The diversity index is calculated as $D = 1 - \sum_{p=i}^{N} p_i^2$, where p is the percentage of individuals in a category and N is the number of categories. In this case, the categories include white, black, and other, which are the only racial classifications available across the entire period under study.

5. The measures of Democratic control are significant at the 0.05 level on a one-tailed test.

6. The model also corrects for first order autocorrelation.

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