Changing State Fiscal Capacity and Tax Effort in an Era of Devolving Government, 1981–2003

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The American system of fiscal federalism requires that state and local governments finance the bulk of their budgets from own-source revenues, not transfers. This article analyzes state total taxable resources from 1981 to 2003 to evaluate how state fiscal capacity has changed in that time and how it has been affected by national recessions, to examine the extent to which fiscal capacity differs among states and whether capacity has converged, and to consider whether states have responded to service demands by changing tax effort and whether tax effort has converged in the face of interstate competition and other harmonizing forces. Because the capacity measure employed here can be compared across years, something impossible with major alternative indices, the analysis provides insights important to the analysis of fiscal federalism and of the implications of revenue devolution not previously possible.

Devolved fiscal responsibility has always been a distinguishing feature of American federalism, but its scope has increased in recent decades. This transformation promises greater responsiveness and efficiency in delivery of public services. Decisions are made closer to the citizens being served, and program variations promise to meet the preferences of a wider range of the population. With service devolution has come a change in which governments levy taxes. In 1965, 64 percent of taxes collected in the United States were federal; by 2005, the percentage had fallen to 54.2 percent (U.S. Bureau of Economic Analysis).[1] This significant revenue system devolution makes state fiscal capacity and how that capacity gets exploited a topic of even greater concern. The American federal system has changed toward even greater subnational fiscal autonomy, but are the fiscal resources of the states appropriate to that change?

There is strong logical reason for devolved responsibility. Revenue autonomy provides discipline for efficiency and responsiveness: It makes governments more

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careful in their fiscal choices and provides a strong incentive for husbanding public resources when lawmakers face both the burden of extracting resources from private entities and the praise from services delivered the public.[2] With the power and responsibility of taxation in state and local hands, these governments may alter both the size of their budgets and the way in which the budgetary costs are distributed (what taxes are chosen will determine which taxpayers will pay). Revenue flexibility and responsibility allows lawmakers to tailor the government response to public demands.

Revenue autonomy does present an important challenge: State—local budgets will be constrained by their indigenous revenue capacity, and state capacities are far from equal. This differential fiscal disparity means that the level of state services and what a citizen must pay for services depends on where the person lives. Oakland (1994, 199) defines fiscal disparity as "differences in fiscal effort required to achieve a particular fiscal outcome." And that result, of course, is driven by access to fiscal capacity. Americans are citizens of a single nation, but important government services and what taxes must be paid to support them will not be the same everywhere and not simply because citizens have difference preferences for state and local government services. Capacity differences mean that the menu of services provided to a person in lower affluence states like Mississippi or Alabama and tax rates necessary to finance them will be distinctly different from those available to a person in higher affluence states like Connecticut or New York. Devolved responsibility means service variations across states, thereby improving the likelihood that citizen preferences can be satisfied somewhere in the system (Tiebout 1956). However, with sizable capacity differences between states, the variation may come from the different tax rate/public service level options facing capacity-rich and capacity-poor states, not fundamentally different preferences. If the service is nationally important, fiscal disparity creates a problem.[3] The distribution of fiscal capacity and the effort that is made to extract fiscal resources from that fiscal base are important concerns for the development of a sound intergovernmental system of finance within the federal state.[4] The advantages of devolution deteriorate when there are significant differences in fiscal capacity of the states.

What is the condition of state fiscal capacity—the "capability of a government entity to finance its public services" (ACIR 1982, 2)—in the face of current and future challenges? This article answers four critical questions about state fiscal capacity over the past two decades: (i) has state fiscal capacity increased over that period and what has been the impact of national recessions?, (ii) to what extent does fiscal capacity differ among states and has capacity converged over time?, (iii) have states responded to demands for services by changing their tax effort?, and (iv) has tax effort converged in the face of competition among the states and other harmonizing forces? These are important questions for understanding impacts of further devolution of fiscal responsibility.

Measuring Capacity

Fiscal analysis distinguishes between the capacity to generate revenue and the revenue effort applied to that capacity. Capacity is an inherent economic characteristic of a government, determined by its economic resources and economic activities, and represents options available to the unit, distinct from choices about how much revenue to raise or how revenue would be raised. Measurement of fiscal capacity is complicated because the tax choices available to governments extend beyond the individual to business enterprises and because tax choices may grasp beyond indigenous resources of a government (tax burdens may be exported). As a result, no single approach to capacity measurement, including those examined here, will meet all analytical expectations.

One fiscal capacity measure widely used in the U.S. and Canada is based on a Representative Tax System (RTS). In this usage, ''representative'' means typical or ''average'' and is not intended to imply ideal or model. Tannenwald (1999, 8) explains: ''RTS evaluates states' tax capacity by estimating the per capita yield that a hypothetical, uniform, RTS would produce in each state.'' The approach links major state and local tax collections to their ideal or standardized bases and calculates what revenue each state could generate from these ideal bases if the nationally representative rate were levied. The representative rate for each base equals:

$$r = \frac{\sum_{i=1}^{50} Ti}{\sum_{i=1}^{50} Bi}$$

where r = the representative rate, T = tax collections from the specific tax in the state, and B = the ideal base for that tax in the state. For example, state sales tax capacity for an individual state would equal sales receipts in the retail trade reported in the quinquennial U.S. Bureau of Census economic census reports (with a few adjustments) multiplied by the national average tax rate, which itself has been calculated by dividing national sales tax collections by national retail trade receipts (as in the above formula). The sum of these calculations for each state—local tax creates the estimated total capacity for a state. The ratio of estimated capacity for the state, per capitized, to the national per capita total equals the RTS index.

The RTS approach extends beyond any single tax base, provides a capacity measure that gives greater weight to the more important fiscal options, and captures some tax exporting such as tourism, energy extraction, and financial services. As with all indirect measurement approaches, there are both logical and practical problems with the RTS approach. First, there is no consistent longitudinal series of the RTS.[5] Indeed, none is possible without interpolation because the ideal base used for the retail sales tax —a key component of state and local tax systems

and, hence, a heavy contributor to capacity—is prepared by the Bureau of Census only every five years. (Berry and Fording 1997). Interpolation reduces the independence of the between-year estimates—a completely new measure is available only every five years.

Second, because the measure involves annual ratios, the measure is not suitable for time series or pooled cross-section/time series analysis. The difficulty is this: Suppose an economically large state increases its sales tax rate, thereby generating a significant increase in sales tax revenue for that state. This revenue increase works through the representative rate calculation for the nation as a whole (increased collections relative to the ideal base). This higher national representative rate means that calculated sales tax capacity in other states would increase, not because their ideal base has increased but because of the rate increase in another state.[6] As Berry and Fording summarize, the tax capacity measures "are not comparable across time to assess the *absolute* amount by which a state's tax base has changed, because . . . representative tax rates change each year to conform to national average rates for that year. If a state's index increases from one year to the next, we cannot know how much of the change is due to an increase in the state's tax base and how much is due to an increase in the tax rates that are deemed 'representative.' " (Berry and Fording, 160) Even those new measures every five years are not compatible with time series analysis.

A third problem concerns the extent to which the measure mixes capacity and choices. According to the RTS measure, a state whose residents spend a larger share of their income on taxable retail purchases has greater fiscal capacity than a state with comparable income whose residents spend a smaller share, through impact on the retail sales tax base. This can be misleading—the total resources available within the first state are no larger than the total resources of the second state. As Barro (2002, 8) observes in regard to the Canadian RTS system, "Once the level of resident per capita income is known, knowing the volume of sale to residents adds no information regarding the ability of a province to finance its public sector." Sales to nonresidents could add to capacity by tax burden export, but sales supported by resident income would not add beyond capacity already gauged by resident income.[7]

A fourth concern involves the prescriptive assumptions about what the "ideal" base for each identified tax would be. Defining the ideal base is touchy because the base selected by state lawmakers frequently differs significantly from the ideal identified by scholars (Mikesell 2002). The RTS calculation prescribes a single standard across all states that will measure a capacity that is not in line with what states have legally defined as the tax base. And the selection of this ideal base is prescriptive. For example, the ideal sales tax base for RTS calculations prescribes a normative ideal equal to "the sale of all goods and services at the retail level (other than a few commonly subject to specific selective excises, such as motor fuels)..." (Tannenwald 1999, 8) But to exclude such commodities from the general sales tax

is regarded by most sales tax experts as a "mistake . . . in policy." (Due and Mikesell 1994, 88) As Akin has observed, the RTS approach involves "arbitrary choice of tax bases" (Akin, 280) and that creates a mix of capacity and policy choice that makes for uneasy analysis.

Fifth, the RTS treats the tax bases as completely additive, not allowing for the fact that heavy use of one base may preclude heavy use of another base. Each base draws from the same state economic endowment and, hence, application of one tax would reduce the available capacity to collect from another.[8] In essence, the measure double counts when it regards each tax base as independent contributor to capacity.

Alternate capacity approaches employ macroeconomic indicators for direct measurement of economic capacity without the need for involving actual state revenue structures in its calculation. These are important for the analysis of fiscal federalism because they (i) avoid some of the logical issues of mixing tax capacity and tax policy that the RTS approach brings and (ii) permit analysis of individual state capacity across time. Unfortunately, some more obvious measures of state economic capacity are not suitable. State personal income includes only household income but not business income (except for dividend payments to households in the state) and is not comprehensive enough. Furthermore, personal income does not capture the unequal capacity of states to export tax burden, thus understating the capacity of energy-producing states, tourism states, and states with a substantial financial services sector. The Ladd–Yinger (1989, Chapter 3) revenue raising capacity concept for cities is based on personal income. This useful measure adjusts city resident per capita income for estimated exporting ratios for each city economy with a standard burden from property, general sales, and earnings taxes. Taxes levied on business—an important concern for state and local lawmakers—are included only indirectly. The exporting adjustment is asymmetrical—the exported burden must go somewhere (mostly to other states), but this imported burden, which certainly must reduce the fiscal capacity of the recipient jurisdiction, does not get subtracted in any measures of capacity, a weakness shared by all to the extent that burden exports and burden imports do not cancel out. Gross state product adds business income, but it still omits income received in the state from outside sources, does not reflect burden exporting, and makes no allowance for economic flows that are not accessible to the state tax system.

A third measure, total taxable resources (TTR), contributes capacity insights by taking a more comprehensive view of the net economic base that the state may choose to tax and provides the basis for the analysis that follows. TTR equals "the unduplicated sum of the income flows produced within a state and income flows received by its residents which a state can potentially tax." (Compson 2003, 59)

The measure equals gross state product less flows that are not available for the state to tax (federal indirect business taxes, social insurance contributions, and federal civilian enterprise surpluses) plus income flows not included in gross state product (dividends and interest earned from out-of-state, certain transfers from the federal government, net realized capital gains, and earnings of residents who live out of state). This measure, developed by the U.S. Department of Treasury (2002) as a redistributive factor in federal substance abuse and mental health grant programs, provides a more comprehensive measure of state economic activity that could be taxed on a sustainable basis than other macroeconomic measures.[9] State fiscal capacity depends on state economic activity because that activity generates tax revenue, and TTR provides a broader and more realistic gauge of taxable economic activity than do alternate purely economic measures.

The measure has other attractive characteristics as well. It is available annually on a consistent basis for a long time span, making it feasible to analyze state patterns over a long period and across economic cycles, and it has more than relative meaning at the individual state level across time. Therefore, it can be compared across time (or in pooled cross-section/time series analysis) and on an annual basis; RTS cannot. In contrast with RTS, TTR is not linked to specific handles, average rates, or arbitrary definitions about tax structures and policies, and therefore more cleanly divides between fiscal capacity and the tax policy choices made by state—local government. It also more comprehensively measures capacity than does other macroeconomic measures.[10] It fails to adjust for exporting of burden through embedded prices, nor does it adjust for tax burden imported from other states (neither do other measures), but it provide a measure that captures flows excluded from gross state product. While TTR is not the ultimate capacity measure in light of the multiple choices that states (and localities) have for structuring their tax systems, it does provide a useful additional tool for analysis of the subnational fiscal systems, particularly in regard to behavior across time. While RTS provides powerful insights about the fiscal environment of states, TTR provides some important perspectives not possible with that measure.

TTR data used here are from the Department of Treasury and a consistent historical series developed by Compson (2003). For capacity analysis across states and time, TTR is adjusted for inflation (using the gross domestic product deflator) so that capacity can be compared over time; per capita figures are used for comparison across states. Census population estimates for July 1 of each year are used throughout for consistency of comparison. Real per capita TTR by state across the years provides a direct comparison of fiscal capacity across time and states and is available in table A in Supplementary Material available at *Publius* online. These data provide the basis for the analysis that follows.

Variation in Capacity

Fiscal capacity based on TTR shows considerable fiscal disparity across states and across years. Not all states have equal revenue capacity, and this means that citizens of states will be treated differently simply because of the fiscal opportunities in their state. Richer options will be available to those in states with greater capacity, regardless of the taxes actually levied. These variations are across time, across states, and across regions, as the following sections will highlight.

Fiscal Capacity Over Time

Table 1 shows the path of real TTR per capita in the states across the two decades. National average TTR per capita has increased at an annual compound rate of 1.8 percent from 1981 to 2003, from $25,681 to $38,127. Over that period, real per capita gross domestic product grew at a rate of 1.98 percent, slightly faster than did the average real TTR per capita. Not all states show the same increase. The rate is,

Table 1 The pattern of real total taxable resources per capita in the states, 1981–2003

Year	State mean	State median	Coefficient of variation
1981	25,681	24,880	31.4
1982	25,414	23,975	33.5
1983	25,540	24,112	28.8
1984	27,153	25,834	26.1
1985	27,897	26,265	26.6
1986	28,070	27,114	19.1
1987	29,057	27,571	21.9
1988	29,981	28,665	20.8
1989	30,840	29,412	20.8
1990	30,789	29,307	21.0
1991	30,868	28,942	21.5
1992	30,566	29,426	17.5
1993	30,960	29,812	16.9
1994	31,835	30,824	15.7
1995	32,736	31,676	16.2
1996	34,020	32,784	17.0
1997	35,388	34,325	16.9
1998	36,935	36,026	16.9
1999	37,961	36,686	17.3
2000	38,892	37,378	17.8
2001	37,260	36,091	18.8
2002	37,294	36,196	18.3
2003	38,127	36,933	18.6

in fact, slightly negative for Alaska (it started from a high base in 1981) but over 3 percent in Delaware. Rates tend to be somewhat higher in the northeast quadrant of the nation, relative to the remainder of the country. Rates are lowest in the Far West, Rocky Mountain, and Southwest. The trend is generally upward through the period for each region.

The upward trend was interrupted in the recession periods—July 1981 to November 1982, July 1990 to March 1991, and March 2001 to November 2001. The impact from the 2001 recession is greatest: from 2000 to 2001, the median fell by 3.4 percent, compared with a fall of 1.04 percent from 1981 to 1982, and a fall of 0.98 percent from 1991 to 1992 (this latter occurring in the year after the official end of the recession). Such falls represent an important change from the overall trend of capacity and would not be taken lightly in state finances. The 2001 recession did, in fact, have a greater impact on capacity than the earlier ones. If this indicates greater dynamic sensitivity to recessions, it creates a problem for further devolution of fiscal responsibility in the American federal system.

Table 2 shows that there usually is no dramatic annual change in the relative status of fiscal capacity of individual states: the correlation between state total taxable resources in one year and in the next is high. Across the 1981–2003 period, the only periods in which the year-to-year correlation is below 0.95 occurs between 1990 and 1991 (0.8599) and between 1991 and 1992 (0.8766)—likely because states were not equally impacted by the 1990–1991 national recession. Stability of relative capacity is less over longer periods. Table 2 also presents correlations across the full 1981–2003 period and for the two periods of uninterrupted expansions within that time spans (1982 and 1990 and 1991 and 2001). The correlations, although positive, are much lower. The correlation between 1981 and 2003 is only 0.4653, so state fiscal capacities do not move in lock-step over the long term. Nevertheless,

Table 2 Correlations between annual state fiscal capacity, selected years

Short-term correlations						Long-term correlations	
		1990–1991	0.8599	2000–2001	0.9559	1982–1990	0.8094
1981–1982	0.9954	1991–1992	0.8766	2001–2002	0.9950	1991–2001	0.7736
1982–1983	0.9923	1992–1993	0.9962	2002–2003	0.9980	1981–2003	0.4653
1983–1984	0.9967	1993–1994	0.9940				
1984–1985	0.9969	1994–1995	0.9944				
1985–1986	0.9105	1995–1996	0.9902				
1986–1987	0.9910	1996–1997	0.9899				
1987–1988	0.9888	1997–1998	0.9850				
1988–1989	0.9810	1998–1999	0.9959				
1989–1990	0.9714	1999–2000	0.9775				

many states remain in roughly their same capacity ranking over the years, consistently toward the top, the bottom, or somewhere in between. For example, some states in the Southeast (Alabama, Arkansas, Mississippi, and West Virginia) are in the bottom ten states every year and some states in the Mideast (Delaware, New Jersey, and New York) are in the top ten every year. But sixteen states have moved more than ten positions (one quintile) in the rankings over the period. Improving their position were Massachusetts, New Hampshire, Rhode Island, Pennsylvania, Wisconsin, Minnesota, South Dakota, North Carolina, and Virginia. Those with deteriorating positions were North Dakota, Louisiana, New Mexico, Oklahoma, Texas, Montana, and Hawaii. Long-term rankings are far less stable than short-term rankings and the relative position of some states has changed fairly dramatically over the long term. There is some hope for a "Horatio Alger effect" at the state level, as some low capacity states have improved their relative circumstances over the longer term.

Disparity Across the States

As noted earlier, differences in fiscal capacity are referred to as fiscal disparity (and reflect horizontal imbalance), and there are substantial differences across the states. In 1981, real total taxable resources per capita ranged from $18,260 (Mississippi) to $72,778 (Alaska); in 2003, the range was from $26,545 (Mississippi) to $63,677 (Alaska). But capacities differ dramatically even if one does not look only at the extremes. Comparing states at the borders of the top and bottom deciles (the fifth highest and fifth lowest states), in 1981, the range was from $19,265 (Maine) to $29,684 (Texas) and in 2003, the range was from $30,019 (Alabama) to $47,598 (Wyoming)—the highest decile state having a capacity of more than 1.5 times that of the lowest decline state in both years. In 1981, five states (Mississippi, South Carolina, Arkansas, Alabama, and Maine) had real TTR per capita of $20,000 or less, while three (Alaska, Wyoming, and Louisiana) had real TTR per capita of $30,000 or more. In 2003, four states (Mississippi, Arkansas, West Virginia, and Montana) had capacity below $30,000, while six had capacity above $45,000 (Delaware, Connecticut, New Jersey, Massachusetts, Wyoming, and Alaska). These disparities make devolution of service financing hazardous if there is a strong national interest in maintaining a consistent standard for provision of services and a generally consistent relationship between residents and their state governments.

Fiscal disparity, however, has not remained constant. A general measure of disparity—the degree to which individual state capacities differ from uniformity—is the coefficient of variation, calculated as the standard deviation divided by the mean of the distribution times 100. State real TTR per capita varies widely. Table 1 shows the coefficient at its lowest in 1994; the coefficient is 15.7, meaning that the standard deviation is 15.7 percent of the mean, a rather high dispersion. However,

state fiscal capacity has converged over the years, with the coefficient declining from 31.4 in 1981 to 18.6 in 2003. Convergence was continuous until 1994 (15.7), but disparity has increased slightly since then. Even with this recent increase in disparity, the horizontal imbalance problem is less severe now than two decades earlier and that makes fiscal devolution more feasible.

Variation in Tax Effort

A second concern for devolved revenue systems is tax effort, the extent to which states exploit their fiscal capacity. The result of different tax policies—selection of bases for taxation, definition of tax structures to be applied to those bases, and level of statutory tax rates applied to those bases—is substantial differences in tax effort (actual tax collections relative to total taxable resources) across the states and across the years.[11]

Both state tax effort and state-local tax effort are calculated here. Because states differ in the extent to which they have devolved service and revenue-raising responsibilities to their local governments and because states do have considerable control over local revenue options, it is important to consider both of these effort indices.[12] Regardless of the measure, however, both state and local governments will be extracting revenues from exactly the same fiscal base. Devolving revenue responsibility from state to local government does not create new fiscal capacity, although it may influence effort. Detailed measures of state and state plus local tax effort over the two decades are available in the *Publius* website as tables B and C.[13] The measures reported in these tables provide several important insights into behavior of devolved revenue authority in the U.S.

State Tax Effort: Levels and Diversity

Table 3 shows that mean state tax effort in 2003 was 0.0478, slightly below 5 percent of total taxable resources. This effort is only slightly higher than its level in 1981 (0.0454). While there have been fluctuations between years and changes among states, measured effort is roughly the same in the early years of the twenty-first century as it was at the start of the 1980s, despite the economic, social, demographic, and technological change across those years.

State tax effort was high (above 0.05) for most of the 1991–1997 period. Furthermore, the national recessions did have some impact: state effort increased by 3.5 percent from 1981 to 1982 and by 4.4 percent from 2000 to 2001. State effort fell from 1991 to 1992, so the recession pattern is not uniform. Effort did not consistently return to its pre-recession level after recessions, however, and did increase in other years, so a clear recession pattern is difficult to discern. State effort after the 2002 recession has quickly fallen below its pre-recession levels.

Table 4 shows little annual change in state tax effort. The year to year correlations of state tax effort is usually considerably above 0.90. There are two

Table 3 The pattern of state and state—local tax effort, 1981–2003

Year	Mean state effort	Coefficient of variation	Median state effort	Mean state-local effort	Coefficient of variation	Median state-local effort
1981	0.0454	32.6	0.0444	0.0702	20.2	0.0668
1982	0.0470	27.9	0.0473	0.0726	17.2	0.0696
1983	0.0463	23.5	0.0462	0.0725	15.6	0.0706
1984	0.0472	21.8	0.0477	0.0727	150.0	0.0717
1985	0.0479	19.6	0.0490	0.0739	13.5	0.0723
1986	0.0483	23.4	0.0482	0.0749	16.4	0.0726
1987	0.0475	17.9	0.0478	0.0748	12.4	0.0736
1988	0.0479	18.6	0.0489	0.0750	12.2	0.0742
1989	0.0477	18.2	0.0478	0.0747	11.1	0.0741
1990	0.0483	18.4	0.0493	0.0763	11.6	0.0758
1991	0.0505	19.8	0.0505	0.0770	14.9	0.0763
1992	0.0497	17.9	0.0500	0.0791	12.3	0.0771
1993	0.0515	20.4	0.0513	0.0809	140.0	0.0791
1994	0.0505	17.6	0.0519	0.0800	11.8	0.0801
1995	0.0512	19.1	0.0513	0.0804	12.2	0.0804
1996	0.0500	19.8	0.0502	0.0783	11.8	0.0792
1997	0.0500	19.6	0.0496	0.0781	120.0	0.0787
1998	0.0496	19.5	0.0491	0.0775	11.9	0.0781
1999	0.0497	20.7	0.0490	0.0771	11.8	0.0767
2000	0.0495	18.8	0.0482	0.0758	10.6	0.0763
2001	0.0517	19.1	0.0503	n.a.	n.a.	n.a.
2002	0.0487	19.3	0.0469	0.0777	11.6	0.0777
2003	0.0478	190.0	0.0471	n.a.	n.a.	n.a

notable exceptions: the correlation between 1986 and 1987 is 0.729 and between 1993 and 1994, 0.8079. In both cases, the low correlation is caused by Alaska; omitting that state from the analysis causes the correlation to rise to its normal high level. State tax structures are extremely incremental. The structure in place in one year continues to the next unless there is explicit legislative change and these changes are infrequent. However, structures are not immutable. The long-term correlations (one and two decade tests) are much lower and the correlation between state effort in 1981 and 2003 is only 0.236. Tax effort does change but not abruptly.

The states place widely divergent demands on their fiscal capacity. In 1981, state tax effort ranged from 0.0195 (New Hampshire) to 0.1287 (Alaska); in 2003, the range was from 0.0324 (Colorado) to 0.0711 (Hawaii). There are similar differences when the comparison is with states at the highest and lowest deciles. In 1981, the comparison was between South Dakota (0.0331) and Wisconsin (0.0549); in 2003,

Table 4 Correlations between annual tax effort: 1981–2003

State effort							
Short-term correlations						Long-term correlations	
		1990–1991	0.9658	2000-2001	0.9370	1981-1990	0.6656
1981–1982	0.9588	1991–1992	0.9353	2001–2002	0.9546	1991–2000	0.8012
1982–1983	0.963	1992–1993	0.9298	2002–2003	0.9838	2001–2003	0.9403
1983–1984	0.9681	1993–1994	0.8079			1981–2003	0.236
1984–1985	0.9684	1994–1995	0.9199				
1985–1986	0.9372	1995–1996	0.9549				
1986–1987	0.729	1996–1997	0.9889				
1987–1988	0.9164	1997–1998	0.9641				
1988–1989	0.9634	1998–1999	0.9375				
1989–1990	0.9583	1999–2000	0.9487				
State-local effort							
Short-term correlations						Long-term correlations	
		1990–1991	0.7805			1981–1990	0.6701
1981–1982	0.9328	1991–1992	0.8372	2000–2002	0.8001	1991–2000	0.6372
1982–1983	0.9356	1992–1993	0.9238			1981–2002	0.2466
1983–1984	0.9703	1993–1994	0.8205				
1984–1985	0.9716	1994–1995	0.9166				
1985–1986	0.8986	1995–1996	0.9355				
1986–1987	0.7346	1996–1997	0.9700				
1987–1988	0.8857	1997–1998	0.9569				
1988–1989	0.9147	1998–1999	0.9577				
1989–90	0.9058	1999–2000	0.9023				

between Alaska (0.0341) and Mississippi (0.0615). In 1981, New Hampshire, Colorado, Missouri, Texas, South Dakota, Nevada, Ohio, and Nebraska had effort below 0.035 while Alaska, Hawaii, New Mexico, Minnesota, Wisconsin, Delaware, West Virginia, South Carolina, Maine, Mississippi, California, Massachusetts, and Kentucky had effort above 0.05. In 2003, states below 0.035 were Colorado, South Dakota, New Hampshire, Texas, and Alaska and states above 0.06 were Hawaii, Vermont, West Virginia, Arkansas, Mississippi, and Minnesota. Four states are in the lower effort group in both years and nine are in the higher effort group in both years, showing some consistency in effort.

Analysis of the coefficients of variation over time in table 3 shows convergence in state tax effort. The coefficient declined from 32.6 in 1981 to 19.0 in 2003, a

clear reduction in effort disparity. The decline was persistent until 1987, at which point the coefficient increased to about 19, its level in 2003. The convergence was therefore primarily in the 1980s, without much change since then. Response to tax competition among the states (and with international competitors) has not been reflected recently in states becoming effort outliers and, as noted earlier, it has not produced reduced state tax effort.

State-Local Effort and Diversity

For state-local government, measured mean tax effort was 0.0702 in 1981 and 0.0777 in 2002, reflecting only a modest increase, just as was the case for state effort alone. State-local effort exceeded 0.08 from 1993 to 1995, an upward blip within a period of higher effort for state taxes alone. The recession impact also is evident: state-local effort increased by 3.4 percent from 1981 to 1982, by 2.7 percent from 1991 to 1992, and by 2.5 percent from 2000 to 2002.

Table 4 shows that, just as was the case for state effort, there is considerable stability in state-local tax effort in the short term. However, in almost all years, the state-local effort correlation is lower than for the comparable state effort correlation. Because rates for the property tax, the major local tax source, normally must be set each year, tax effort measures that include this source may have less year to year stability. The correlation is below 0.80 for 1986–1987 (0.7346) and for 1990–1991 (0.7805). Alaska is again the disrupting influence in the former instance, but there are considerable changes in a number of states (particularly Alaska and Michigan) involved in the later years. The longer term correlations are much lower than the short term ones. The two decade correlation, although low, is roughly the same as for state effort.

The state-local fiscal systems show a wide range of tax effort. In 1981, state-local effort ranged from 0.0528 in Texas to 0.1327 in Alaska. Only Texas, New Hampshire, and Louisiana showed effort below 0.055 and only Wisconsin, Maine, Hawaii, Michigan, Massachusetts, New York, and Alaska showed effort above 8 percent. In 2002, effort ranged from Delaware (0.0521) to Maine (0.1030). Delaware was the only state with effort above 0.055 while sixteen states had effort above 8 percent (Kentucky, Arkansas, Rhode Island, Michigan, Oklahoma, California, New Mexico, Mississippi, Oklahoma, Minnesota, Louisiana, West Virginia, Wisconsin, Vermont, Hawaii, New York, and Maine).

The evidence shows considerable convergence in state-local tax effort. Table 3 showed the coefficient of variation to decline throughout the 1981 to 2002 period, from 20.2 to 11.6. There were brief interruptions to this downward path (notably in 1986, 1991, and 1993) but otherwise the trend was persistent. Effort levels have grown more uniform over these years, whether from greater uniformity of citizen demand for state-local services, from global tax competition, or other forces.[14]

Fiscal devolution in a federal country will require greater tax effort by state and local governments. This has been the pattern in the United States for the past two decades as both state and state-local tax effort levels have increased, with a substantially greater increase for state-local effort, implying significantly greater effort increase by local governments. This is the work of devolving fiscal autonomy. The evidence shows considerable convergence of effort among the states, although much divergence across the states remains. These responses are consistent with a federal system that is not locked in a single fiscal template, but that has jurisdictions with flexible response to operating environments.

Effort and Capacity

States with higher fiscal capacity have greater budgetary possibilities than do those with lower capacity. In particular, they have the option of providing a given standard of government services with lower tax effort. Table 5 examines the extent to which states do, in fact, use their endowment of fiscal capacity to reduce their tax effort. While the analysis can be considered only suggestive, there is certainly no evidence of a statistically significant relationship between fiscal capacity and tax effort, either for the state alone or for state-local combined effort. For each year, the correlation between fiscal capacity and state effort is negative (lower capacity and higher effort) and between fiscal capacity and state—local effort is positive (higher capacity and higher effort), but never statistically significant at normal confidence levels. These inconclusive results do suggest a need for further research into the capacity—effort relationship.

There are certainly many influences on tax effort beyond capacity and a full understanding of the capacity—effort relationship requires that they be taken into account. This will be a promising avenue for future research with the concepts developed here.

Conclusion

Analysis of fiscal capacity and effort using total taxable resources provides new insights about how states have responded to citizen demands for services, about the fiscal resources that are available for their response, and about the dynamics of American fiscal federalism. TTR permits annual longitudinal analysis into changing state and local government finances, without losing the capability to understand variation across states, an advantage over the otherwise useful RTS measure. The total taxable resources measure preserves the distinction between tax policy and tax capacity so that the contribution of each to state-local finances can be examined. Several notable conclusions are provided from this capacity and effort analysis

Table 5 Correlation between fiscal capacity and tax effort: 1981–2003

Year	With state effort	With state-local effort	Between state effort and state-local effort
1981	−0.098	0.053	0.847**
1982	−0.155	0.018	0.790**
1983	−0.176	0.030	0.718**
1984	−0.178	0.036	0.735**
1985	−0.159	0.064	0.678**
1986	−0.170	0.008	0.782**
1987	−0.088	0.134	0.589**
1988	−0.173	0.064	0.637**
1989	−0.165	0.074	0.601**
1990	−0.144	0.132	0.593**
1991	−0.185	0.074	0.526**
1992	−0.154	0.164	0.595**
1993	−0.185	0.111	0.701**
1994	−0.154	0.170	0.594**
1995	−0.153	0.110	0.670**
1996	−0.136	0.125	0.687**
1997	−0.170	0.047	0.704**
1998	−0.170	0.026	0.726**
1999	−0.165	0.045	0.774**
2000	−0.171	0.098	0.752**
2001	−0.138		
2002	−0.166	0.176	0.706**
2003	−0.177		

**Significant at 0.01 level of confidence.

driven by total taxable resources:

- Average real state fiscal capacity per capita has grown from 1981 to 2003, at a rate that is slightly below that of real gross domestic product per capita.
- The 2001 recession had a greater negative impact on state fiscal capacity than earlier recessions in the past two decades. A number of observers have suggested that state fiscal systems are unsuited for the economy of the twenty-first century (Tannenwald 2001; Mikesell 2004). Those vulnerabilities in regard to the changed economy may be even more significant in recessions and could become a great fiscal challenge in the next recession.
- Fiscal capacity varies dramatically across the states. While relative fiscal capacity has changed in some states, many are consistently poorly endowed and many are consistently richly endowed in fiscal capacity.

- Fiscal disparity has declined over the two decades, particularly before 1994. Fiscal devolution is most feasible when disparity in resources between states is smaller. The convergence in fiscal capacity over the 1981–2003 period makes devolution more feasible—state provision of services important to the nation as a whole is less likely to lead to service disparities based on capacity alone when capacity is more equally distributed.
- Both state tax effort and state-local tax effort have increased over the two decades. Year to year changes are modest (tax policy is incremental), but changes are much greater across the full two decades. High effort states at the beginning of the 1980s are not necessarily high effort states at the beginning of the twenty-first century.
- Both state tax effort and state-local tax effort varies dramatically across the states. However, there is less overall variation now than at the start of the 1980s. Tax effort has converged over the decades. States quickly reduced their tax effort after the 2001 recession, more abruptly than had been the case in earlier recessions.
- There is no statistically significant correlation between capacity and effort, although this relationship requires further research that will be feasible with the indicators developed here.

The American federal system relies on devolved fiscal choices by state and local governments in the provision of public services and relies on revenue-raising by these governments. These governments are not equal in terms of fiscal capacity nor in terms of effort applied to that capacity, but there has been a degree of convergence in the past two decades.

Supplementary Material

Supplementary Material are available at *Publius* online.

Notes

1. Taxes for the social insurance systems are excluded.
2. In addition to the advantage of greater responsibility, this assignment of revenue responsibility also gives these governments the ability to determine the way in which the costs of government are distributed, i.e., to determine what taxes and what taxpayers will bear the cost of government.
3. Canada is formally committed to fiscal equalization. The *Constitution Act of 1982* (*Section 36*(*2*)) makes this clear: ''Parliament and the government of Canada are committed to the principle of making equalization payments to ensure that provincial governments have sufficient revenues to provide reasonably comparable levels of public services at reasonably comparable levels of taxation.''

4. States and localities also differ in the extent to which their operating environments—demographic, economic, social, climatic, etc.—create a need for government services. Some questions of fiscal federalism, in order to be complete, should consider these expenditure-side impacts on fiscal condition. See Yilmaz (2006).
5. The now-defunct Advisory Commission on Intergovernmental Relations (1982) developed the index and calculated it for many years. Robert Tannenwald and associates (2004) have continued the work. But it is only irregularly available.
6. Sales tax collections in the nation are quite concentrated—the top three states in yield constitute 31 percent of total state sales tax revenue—so a rate change in a large state will have a considerable impact on the national total. (Mikesell 2005, 760). Here is the general idea: In 2002, total retail trade in the nation (the RTS ideal tax base before subtracting sales of commodities subject to selective excises) was $3,056 billion according to the economic census of that year. In that year, each percentage point of the California state sales tax generated something more than $3.9 billion or 0.13 percent of that ideal base. As a first approximation, had California chosen to increase its state sales tax by one percentage point, the national representative rate would have increased by that amount—with a resulting increase in sales tax capacity in the other states. Other tax collections are also concentrated, although not so heavily as the sales tax.
7. This mixture of capacity and choice, while violating the purity of the capacity concept, does present a pragmatic advantage of RTS: the measure may capture what is politically and administratively feasible for a state, while other measures implicity presume easy flexibility across taxing options. Issues of feasibility are obviously significant in state fiscal decisions. Others would prefer that these influences be confined to examinations of tax effort—where policy choice, politics, and administration are determinant—and left out of the capacity discussions as much as possible.
8. Akin (1973, 289) notes that the RTS approach creates upward bias in fiscal capacity because its average rate calculation does not account for the fact that ideal bases "tend to be substitute methods of taxing the same basic tax bases." The calculation from individual base averages thus overstates the true capacity because it does not recognize this substitution.
9. Public Law 102 – 321 requires the Department of Treasury to produce annual estimates of total taxable resources for use in distributing these grants.
10. TTR is, in fact, strongly correlated with RTS: 1987, 0.94; 1991: 0.84; 1994: 0.90; 1996, 0.87; 1997: 0.85; 1999: 0.88; and 2002: 0.86. The two measures are consistent in terms of what they are gauging about states. The TTR has an advantage in terms of wide availability, availability for all years, and comparability across time.
11. This measurement is logically comparable to that employed in the RTS system: "Tax effort is measured by the ratio of each state's actual tax collections to the taxes it would have collected under the representative tax system." (Tannenwald 1999, 20) The difference is that the RTS approach uses capacity estimated from the representative

system and this approach uses TTR and this approach is directly comparable across years.

12. Interpretation of state effort can be tricky. In some states, including New Hampshire and Michigan, what were local school property taxes have been moved to the state level, thereby increasing measured state tax effort. This change is simply the movement of this property tax. This shows the importance of the state-local effort measure in analyzing fiscal patterns.
13. State plus local measures are not available for 2001 or 2003 because the Bureau of Census did not report local data for those years.
14. Annala (2003) finds similar convergence in a wide range of state and local fiscal policies over the 1977 to 1996 period.

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