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Income Inequality Weighs On State Tax Revenues

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Income Inequality Weighs On State Tax Revenues

In a recent article, Standard & Poor's Ratings Services examined income inequality in the U.S. and concluded that rising income inequality is one factor contributing to slower economic growth, and that this represents a structural, rather than a cyclical change.

Extending our analysis to public finance, we find that increasing income inequality is undermining the rate of state tax revenue growth. In addition, it is contributing to volatility in tax revenue collections.

Overview

- A one-unit increase in the share of income going to the top percentile had a negative impact on tax revenue growth.
- We believe that structural, rather than cyclical, forces are leading to slower state tax revenue growth.
- From 1980 to 2011, average annual state tax revenue growth fell to 5% from 10%; meanwhile, the share of total income for the top 1% of earners doubled.
- State tax revenue trends have also become more volatile as progressive tax states have come to rely more heavily on capital gains from top earners.
- Regardless of a state's tax structure -- be it income-tax or sales-tax reliant – the pace of revenue growth is declining across the spectrum.
- Reasons for rising income inequality aside, the disparity is contributing to weaker tax revenue growth by weakening the rate of overall economic expansion.
- It's unlikely that states can fully correct for both slower and more volatile tax revenue growth by adjusting their tax policies.

Compared with local governments, which rely to a greater extent on property taxes, states generate the bulk of their revenue from taxes levied on current economic activity, namely personal income and consumption. Therefore, when the economy operates below its potential, state tax revenues tend to suffer. Insofar as income inequality contributes to economic output falling short of potential, it undermines the growth of states' tax bases.

Our analysis found a negative relationship between income inequality and state tax revenue tends. When we tested the relationship by tax structure, we found the negative effect was stronger and only statistically significant in the sales tax-reliant states. The findings support our view that rising income inequality contributes to weaker tax revenue growth by undermining the rate of overall economic expansion.

In addition to slower revenue growth, Standard & Poor's believes income inequality has tied the states' revenue performance more closely to that of the financial markets. Reflecting this linkage, state tax revenues have become more volatile, greatly complicating the task of budgeting.

Thus, inequality appears to be a macroeconomic problem with fiscal implications for states. In other words, because it is a structural economic problem, it is unlikely that states can fully correct for it solely by adjusting their tax policies.

Inequality And State Tax Revenue Trends

Our view that greater inequality may be associated with simultaneously slower and more volatile state tax revenue growth rests on three premises. The first is that state tax revenues have, in fact, been growing more slowly. Second, tax revenues are exhibiting greater volatility. Finally, these developments correlate with rising inequality.

Our analysis of long-term state tax revenue trends confirms this. According to U.S. Census Bureau data, since 1950 the annual average rate (geometric mean) of state tax revenue growth has drifted downward. Whereas state tax revenues grew at an annual rate of 9.97% from 1950 through 1979, the annual average growth rate had fallen to below 4% during the 10 years through 2009. In addition, as measured by its standard deviation, tax revenue growth has turned more volatile, especially since 2000 (see table 1). As for whether either the slower or more volatile tax revenues relate to rising inequality, we believe the juxtaposition of revenue trends and rising inequality suggests so (see chart 1).

Table 1

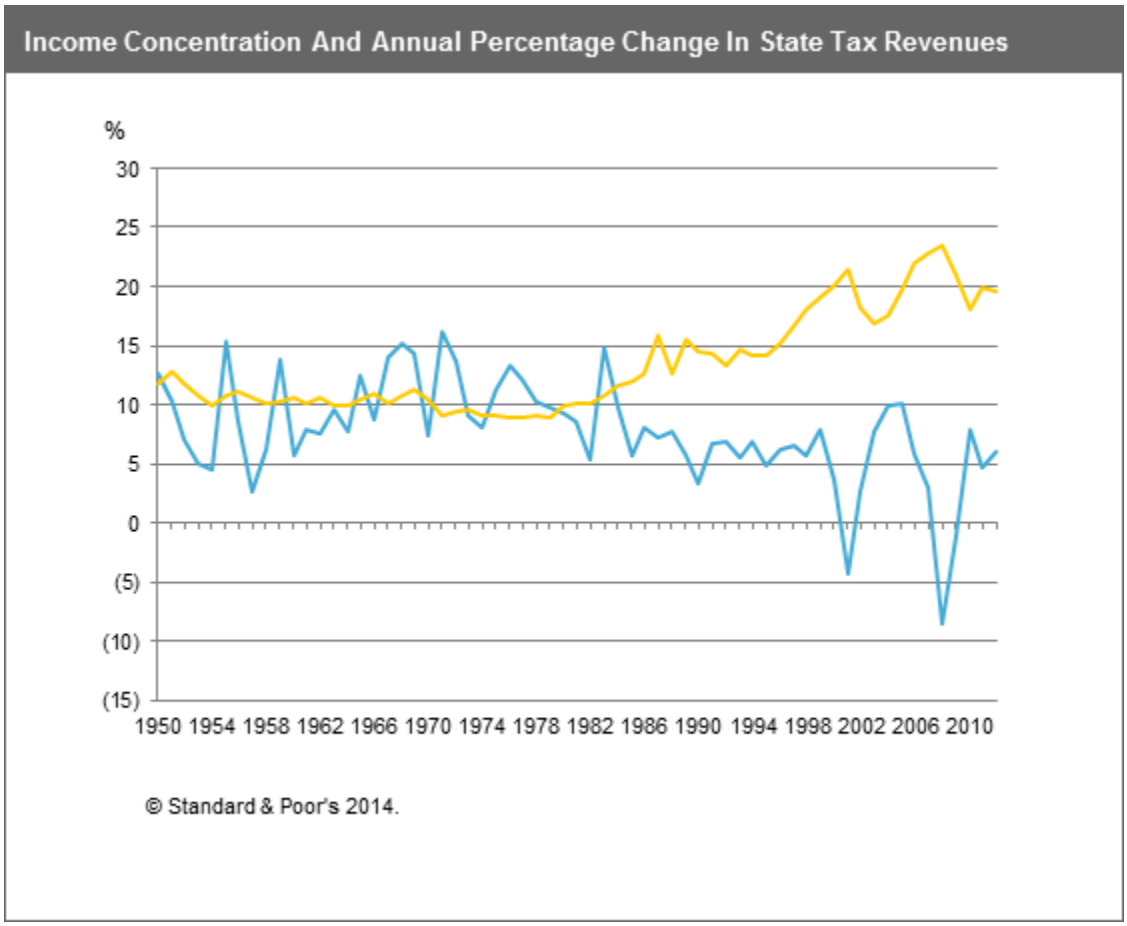
Average Annual State Tax Revenue Growth

	Average annual state tax revenue growth (%)	Standard deviation (%)
1950-1979	9.97	3.55
1980-1989	8.58	2.52
1990-1999	5.80	1.04
2000-2009	3.62	5.78
Since 2009	4.36	3.36

Income Concentration And Tax Revenue Trends Have Diverged

The year 1980 marked an inflection point in the data. Around that time, inequality began rising while the annual average rate of state tax revenue growth slumped. In the 31-year span from 1980 through 2011, the portion of total income going to the top percentile doubled to about 20% from roughly 10%.(1) During the same span, the annual average rate of state tax revenue growth declined by half, to below 5% from nearly 10%.

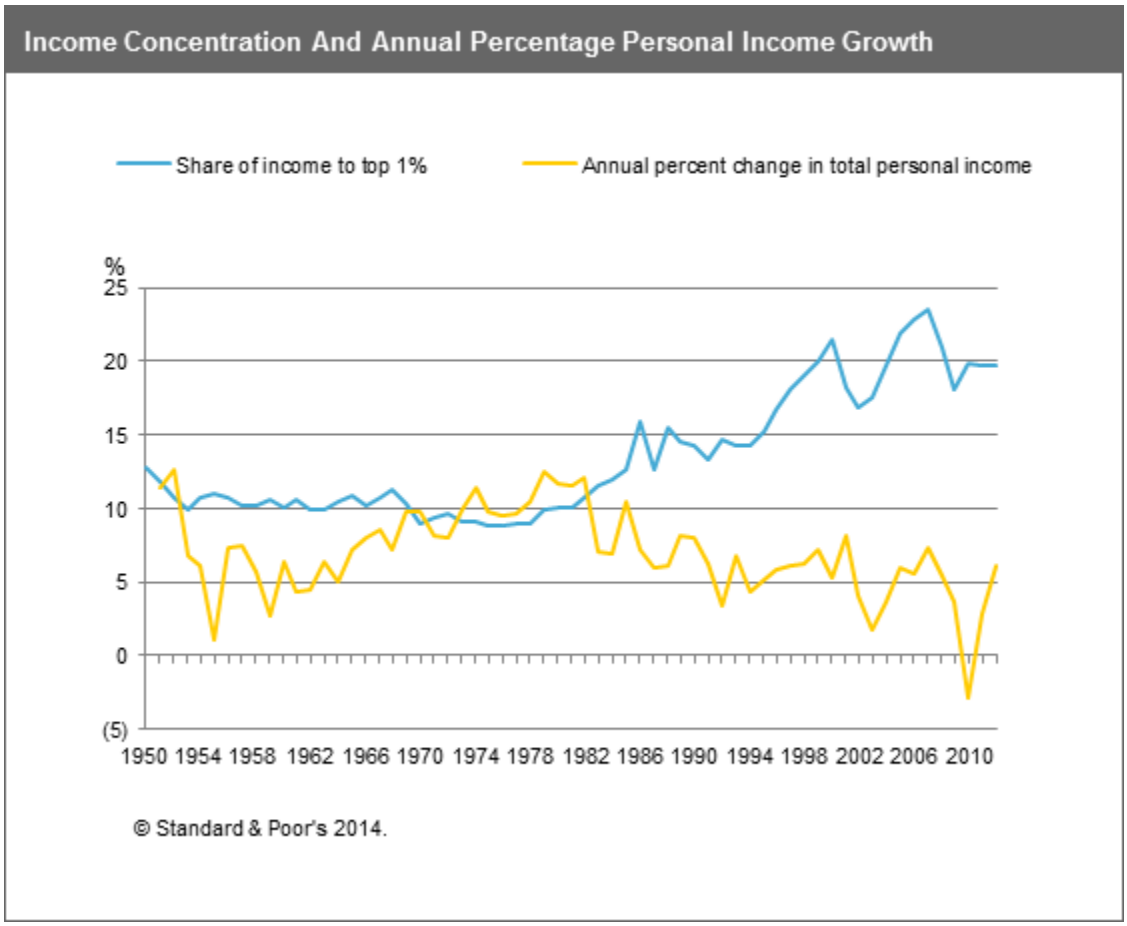
Chart 1



Our interpretation, which incorporates the views of our economists, is that beyond a certain point, rising income inequality is a macroeconomic factor that acts as a drag on growth (see "Increasing Income Inequality Is Dampening U.S. Economic Growth, And Possible Ways To Change The Tide," published Aug. 5, 2014 on RatingsDirect). There is evidence, although not conclusive at this point, that the higher savings rates of those with high incomes causes aggregate consumer spending to suffer. And since one person's spending is another person's income, the result is slower overall personal income growth despite continued strong income gains at the top (see chart 2).

While the trend lines are compelling, we also conducted several regression analyses to test the relationships more formally.

Chart 2



Regression analysis finds a relationship between inequality and tax revenue growth

Our regression model measured the annual percentage changes in state tax revenues since 1980 for the 50 individual states as reported by the U.S. Census Bureau. The independent variables included the following for each state:

- Income concentration in the top percentile (measured by the share of total adjusted gross income going to the top one percentile),(2)
- Annual rate of total personal income growth, and
- Annual percentage change in the state coincident economic indicators index (a summary of four main statistics), compiled by the Federal Reserve Bank of Philadelphia. (3)

As expected, the results from this regression analysis found a positive relationship between changes in both overall personal income and the coincident economic indicators index and state tax revenues. Regarding the income inequality measure, we found a negative relationship, consistent with our hypothesis (see Appendix, table 1). That is, a one-unit increase in the share of income going to the top percentile had a negative impact on tax revenue growth, holding personal income growth and the state coincident economic indicators index constant. All of these findings were statistically significant at the 1% level.

In order to ensure our results were not driven by the inequality indictor we selected, we performed another round of

regressions using a secondary set of inequality indicators: the Gini Index, Theil Index, Atkinson Index, and the relative mean deviation (see Appendix, table 2). Consistent with our other findings, all of these regressions returned results showing the same negative relationship between income inequality and state tax revenue growth. Furthermore, all but one of the results were statistically significant at the 1% level.

How Does Inequality Affect State Tax Revenues?

The statistical relationship we found between trends in income inequality and state tax revenue growth is interesting but perhaps less important than understanding how one may relate to the other. In other words, what is the transmission mechanism through which the changes in income inequality influence state tax revenue growth? The answer could be useful both to those interested in state credit quality and to policymakers alike.

One possibility is that, similar to its effect on revenue stability, rising income inequality somehow directly undermines tax revenue growth. If so, we would anticipate that tax revenues of the most income tax-dependent states would be more sensitive to rising inequality. Social policy considerations aside, a potential fiscal remedy in this scenario might be for states to modify their tax codes in ways that offset the effects of rising inequality.

Alternatively, inequality could be dampening overall economic growth, which in turn leads to slower tax revenue growth no matter a state's tax structure. According to this view, rising inequality is weakening state tax revenue trends through its effect on the economy. In this case, the best fiscal strategy for states might be to pursue policies supportive of economic growth in general, regardless of tax policy.

Either way, to better understand how inequality is influencing tax revenues, we need to explore whether a state's revenue sensitivity to inequality varies depending upon its tax structure. If not, then increasing inequality might be weakening overall economic growth, thereby eroding any state's ability to generate faster tax revenue growth.

Determining whether tax structure matters

To assess the role of state tax structure, we had to modify our original regression analysis. In that model, we did not control for differences in states' tax structures. In order to account for this, we revised our original regression methodology by forming two groups of 10 states (see tables 2 and 3). One group consisted of the 10 most income tax-reliant states (as a share of their total tax revenues).(4) The second group was made up of the 10 states most dependent on sales taxes, including five of the states that levy no personal income tax. We can see that both groups of states experienced declining tax revenue growth rates and rising rates of revenue volatility. The higher volatility is particularly evident in the coefficients of variations (a statistical measure that normalizes dispersion relative to the mean for a series of data).(5) We then performed regressions for these two groups of states against the same set of independent variables as in the first regression model (see Appendix, table 3).

Table 2

Average Annual State Tax Revenue Growth For The 10 Most Income Tax-Dependent States

	1950-1979	1980-1989	1990-1999	2000-2009	Since 2009
California					
Annual average state tax revenue growth (%)	10.91	9.69	5.79	3.39	7.16

Table 2

Average Annual State Tax Revenue Growth For The 10 Most Income Tax-Dependent States (cont.)					
Standard deviation (%)	6.73	5.95	2.64	10.14	7.05
Colorado					
Annual average state tax revenue growth (%)	10.06	7.26	8.50	2.83	6.68
Standard deviation (%)	5.38	6.78	2.25	7.25	4.69
Connecticut					
Annual average state tax revenue growth (%)	10.09	10.84	7.18	2.37	7.33
Standard deviation (%)	9.01	4.88	6.77	7.74	4.73
Georgia					
Annual average state tax revenue growth (%)	10.81	10.00	6.98	2.58	2.57
Standard deviation (%)	9.57	2.22	3.42	6.62	6.40
Massachusetts					
Annual average state tax revenue growth (%)	9.89	9.69	4.91	2.94	4.97
Standard deviation (%)	6.85	3.80	2.27	7.92	3.05
Missouri					
Annual average state tax revenue growth (%)	9.07	8.82	6.22	1.84	2.04
Standard deviation (%)	5.06	3.97	3.41	3.74	4.63
New York					
Annual average state tax revenue growth (%)	9.26	8.61	3.83	5.28	3.28
Standard deviation (%)	5.81	3.75	2.90	5.55	3.04
North Carolina					
Annual average state tax revenue growth (%)	9.45	9.72	6.96	3.58	3.74
Standard deviation (%)	4.64	2.72	3.75	6.03	1.38
Oregon					
Annual average state tax revenue growth (%)	9.49	6.45	7.52	2.91	6.52
Standard deviation (%)	8.65	8.75	3.73	8.30	1.63
Virginia					
Annual average state tax revenue growth (%)	10.36	9.95	5.73	3.69	3.68
Standard deviation (%)	9.28	2.52	3.50	6.48	2.92
Weighted average					
Annual average state tax revenue growth (%)	10.04	9.32	5.66	3.60	5.25
Standard deviation (%)	6.64	4.58	3.10	7.79	4.77
Coefficient of variation	0.66	0.49	0.55	2.17	0.91

Table 3

Average Annual State Tax Revenue Growth For 10 Most Sales Tax-Dependent States

		1950-1979	1980-1989	1990-1999	2000-2009	Since 2009
Arizona						
	Annual average state tax revenue growth (%)	12.66	10.36	6.39	3.97	4.88
	Standard deviation (%)	8.63	5.16	2.66	10.10	6.47
Florida						
	Annual average state tax revenue growth (%)	11.77	11.25	6.69	3.02	1.92
	Standard deviation (%)	6.85	3.83	2.53	8.74	4.00
Hawaii						
	Annual average state tax revenue growth (%)	11.38	9.73	3.63	4.06	6.63
	Standard deviation (%)	5.82	5.37	4.72	6.29	5.41
Indiana						
	Annual average state tax revenue growth (%)	9.29	8.26	5.13	4.35	3.24
	Standard deviation (%)	8.43	6.82	3.97	3.43	6.63
Mississippi						
	Annual average state tax revenue growth (%)	9.44	6.65	7.22	3.56	3.34
	Standard deviation (%)	5.60	3.52	4.94	3.95	4.02
Nevada						
	Annual average state tax revenue growth (%)	13.78	11.36	9.72	5.05	5.78
	Standard deviation (%)	8.04	11.23	5.07	7.73	2.02
South Dakota						
	Annual average state tax revenue growth (%)	6.65	6.76	6.30	4.42	3.40
	Standard deviation (%)	7.81	6.12	2.20	2.15	4.46
Tennessee						
	Annual average state tax revenue growth (%)	9.04	8.23	5.88	3.78	4.34
	Standard deviation (%)	5.21	4.69	4.79	6.06	2.85
Texas						
	Annual average state tax revenue growth (%)	10.52	9.31	6.27	4.99	5.48
	Standard deviation (%)	6.22	8.63	1.33	6.25	6.79
Washington						
	Annual average state tax revenue growth (%)	9.39	9.13	6.60	2.89	3.28
	Standard deviation (%)	4.37	4.63	2.90	5.19	3.89
Weighted average						
	Annual average state tax revenue growth (%)	10.42	9.50	6.33	3.94	4.07
	Standard deviation (%)	6.45	6.01	2.86	6.69	5.15
	Coefficient of variation	0.62	0.63	0.45	1.70	1.27

Results showed that inequality reduces overall economic growth

The results of this analysis found that income inequality for both groups -- the income tax and the sales tax-dependent states -- relates negatively with tax revenue growth. However, the negative effect was stronger in the sales tax-reliant

states than it was for the income tax-dependent states. In addition, the relationship was only statistically significant at the one percent level for the sales tax-reliant states. This suggests that through a progressive tax structure, it's possible to counteract much of the depressing effect inequality has on tax revenue growth rates. In contrast, the strong negative relationship we found in the sales tax-dependent states reflects how rising income inequality contributes to slower economic growth. And absent the progressivity found in most of the income-tax states' tax structures, the slower economic growth related to inequality gets transmitted to the sales tax-reliant states' budgets as slower tax-revenue growth.

A reliance on more progressive tax structures isn't necessarily a fiscal panacea, however, because it may introduce a second problem: greater revenue volatility. Indeed, the income tax-reliant states exhibited greater volatility than the sales tax-dependent states in three of the five time periods we examined.

Inequality interacts with the tax code to create greater revenue volatility

Although they are less graduated than the federal tax code, the income tax schedules of 33 states include progressive features.(6) This makes these states' revenue performance more dependent on the income patterns of those at the top of the distribution. Furthermore, as income inequality has risen over time, the overall mix of personal income has shifted in favor of capital gains and away from labor sources. Those at the top obtain more of their income from capital gains, which on the whole, fluctuate much more than income from wages. Tax revenues reflect this -- both as a consequence of higher top-end tax rates and because the top end is where the income growth has occurred –- and are, therefore, more volatile.

To summarize, our findings indicate that inequality is fundamentally an economic problem -- with fiscal implications for states. That makes it unlikely that states can fully correct for its effects -- be they slower growth or increased volatility -- even from solely a budgetary perspective, by adjusting their tax policies.

Chart 3

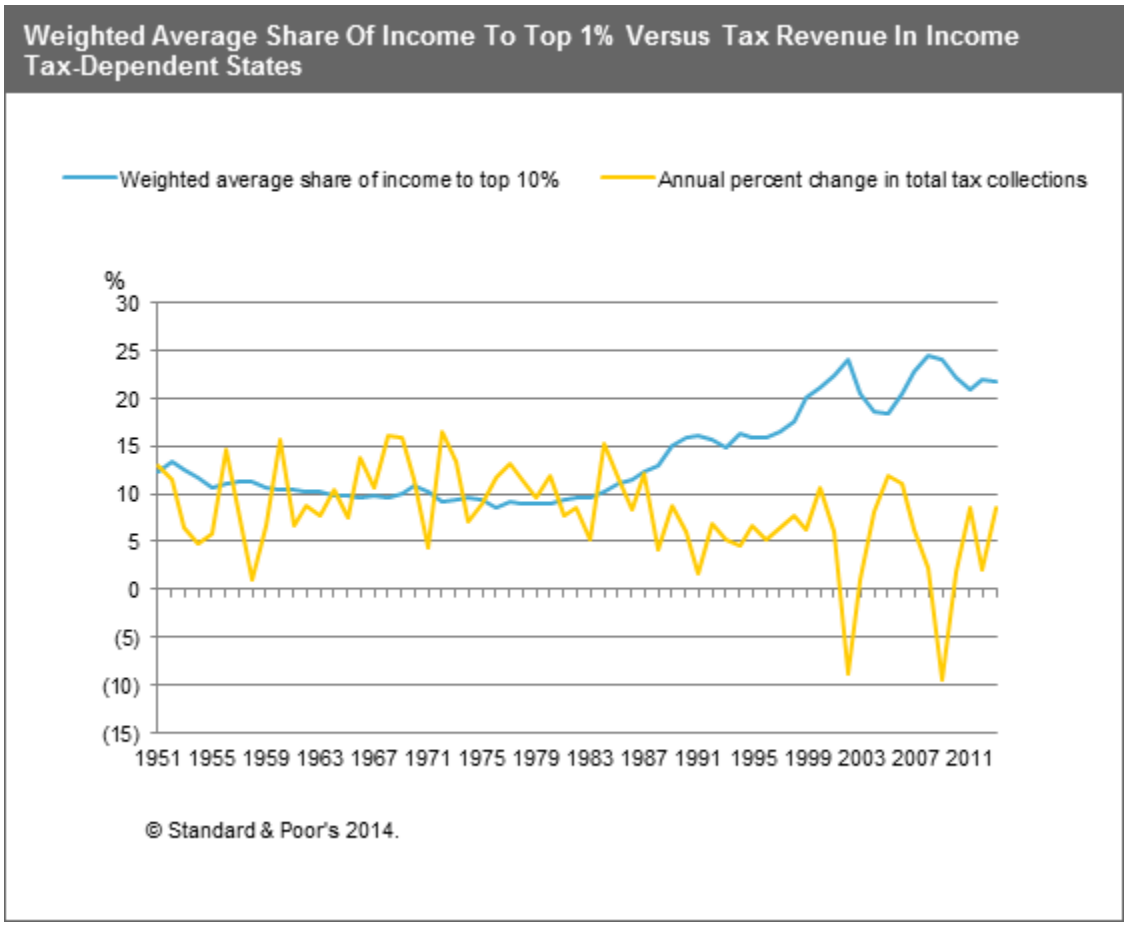


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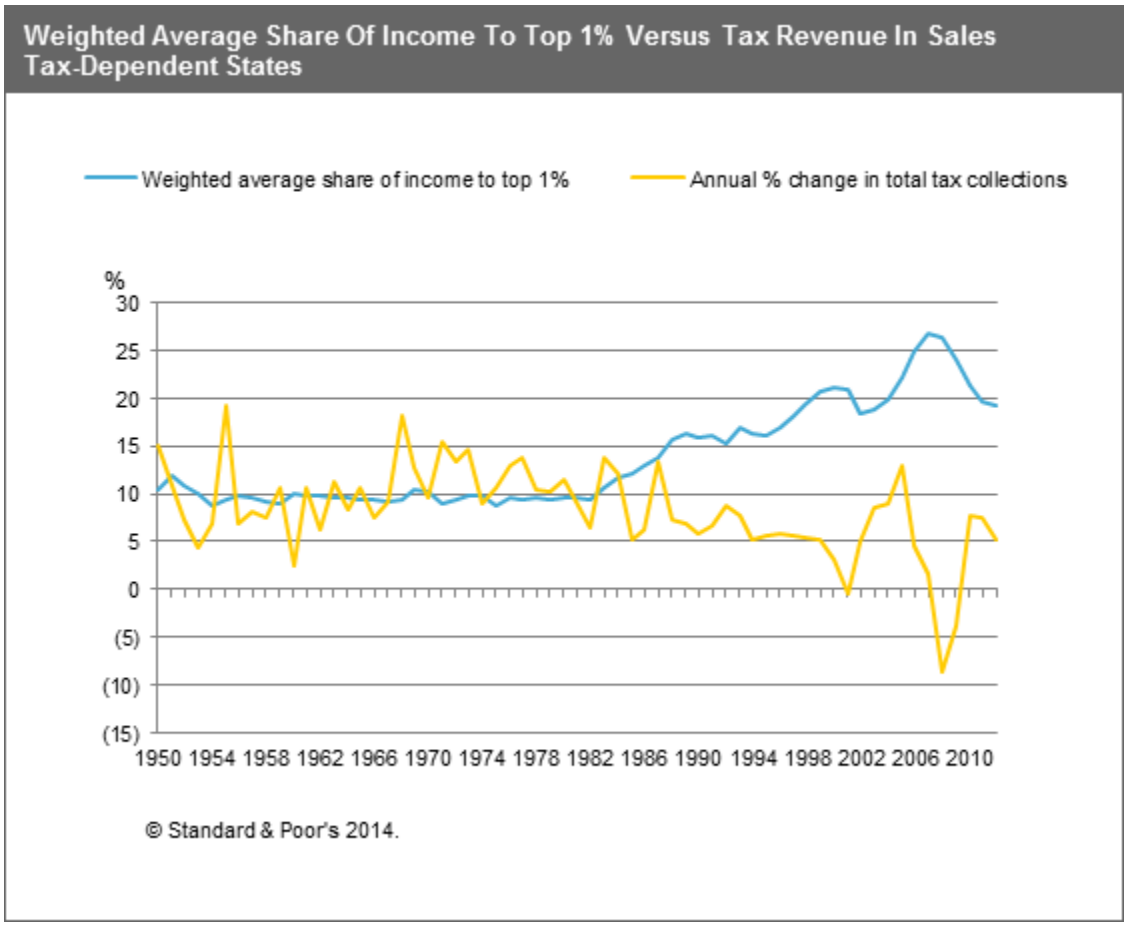
Chart 4



Some caveats are warranted

The regression models we constructed measure the effects of changes in inequality on state tax revenue growth. But it's possible our results reflect, at least in part, the effect of a state's level of inequality, as well as changes in inequality. Finally, it is also possible that the results could be a function of the interaction between the two variables -- "changes in" and "the level of" inequality.

In an effort to account for this, we added two variables to our model; a Gini coefficient (to capture a state's level of inequality) and an interaction term (see Appendix, table 4).(7) (Interaction terms are used in regression analysis when the measured effect of one independent variable may differ depending on the value of another independent variable. In this case, the two independent variables are "changes in" and "level of" inequality. The interaction term in our regression is the product of the two.) Results of this regression model showed that, although the variable for changes in inequality remained negatively correlated with state tax revenues, so did the added variables (all results were statistically significant). Our interpretation is that, although rising inequality has a negative effect on state tax revenue trends, the beginning inequality level of a state's income distribution also matters.

Indeed, we found that in states with the highest levels of inequality, the negative effects of rising inequality on the state's revenues begin to dissipate. We don't take this to mean that at more extreme levels inequality is actually

favorable for state tax revenue growth, however. More likely, it reflects the effects of periodic changes individual states have made to their tax policies. Because of data limitations, we did not control for each individual tax policy adjustment. But these changes likely explain why the top 10 most income tax-dependent states showed less revenue sensitivity to rising income inequality. Among the 10 states with the highest levels of income inequality are Connecticut, California, New Jersey, and New York. All of these states, which are also among the most income-tax reliant, have implemented higher top marginal tax rates at several points in the past decade. The policy changes toward greater income tax progressivity have probably helped offset a portion, although not all, of the effects of inequality on their tax revenue growth rates.

Another caveat is that it's possible the tax revenue slowdown reflects the rise of the service sector more than inequality per se. Many states' sales tax bases have not evolved to fully capture the growth of services as a share of the economy. But it's not clear that, even if they had, this would erase the relationship we found. We tested the effect on year-over-year tax revenue growth rates against changes in inequality. It's certainly possible that overall spending on services would exhibit a similar sensitivity to changes in inequality as spending on goods that are currently taxed. Nevertheless, this is an area that warrants further research.

Regression Model Specifications

To test the relationship between inequality and state tax revenues, we employed a fixed-effects panel regression, thus controlling for time-consistent variations across states. Without this adjustment, the correlation coefficients resulting from our model would likely have reflected cross-state effects of omitted variables. Also, because the validity of least squares regression analysis depends on the truth of certain assumptions, we tested for those. One necessary assumption is that the data's error terms not be correlated with one another across time periods (when such correlation is found, it is referred to as auto- or serial correlation). Our test found that the data did not contain autocorrelation.

Another requirement of least squares analysis is that the variations in the error term be constant across observations -- which in this case means across the states. The data failed this test, indicating that, not surprisingly, each state is subject to a unique combination of economic, demographic, and policy-based characteristics that can influence its tax revenue performance. We were able to correct for this using a generalized least squares regression with heteroskedasticity-consistent standard errors that included state fixed effects.

Finally, although our panel regression approach removes the effects of differences across states, we also recognize that variation is likely within each state due to periodic tax policy changes. However, primarily because of data limitations, we did not control for individual tax rate and policy changes. Nevertheless, although we temper our findings as a result of this caveat, we believe our evaluation was sufficiently robust to offer insight about how rising income inequality has a depressing effect on state revenue growth rates.

One reason for this is that wholesale changes in state tax regimes during the time period of our review have been few. Other than Connecticut, which enacted a personal income tax in 1991, states' basic tax structures have remained constant since at least 1980. In our view, therefore, our findings do not simply reflect the effects of tax rate or policy changes. We believe the thrust of our findings would almost certainly have pointed in the same general direction even if each incremental tax rate and policy change had been accounted for.

Implications Of Results For State Tax Policies

As inequality has become more pronounced in recent years, the subject has garnered more attention in the media and has risen in the public's awareness; it's no longer an abstract national macroeconomic issue. And lawmakers have begun responding to its fiscal consequences, perhaps based as much on intuition as any statistical assessment.

Following the onset of the Great Recession, we have observed a more populist impulse among lawmakers, culminating in more progressive income tax structures in some states. For example, since 2009, nine states have increased their top marginal personal income tax rates. (At least three--New Jersey, New York, and Wisconsin--subsequently reversed course, at least partly, and moved away from higher top marginal income tax rates). The enactment of higher top marginal tax rates has marked something of a reversal from the prior trend, which spanned roughly a generation. From 1985 through 2009, the average overall top marginal tax rate across the states declined by slightly more than 1%.(8)

In a setting of rising income inequality, the move toward more progressive tax rates may help states generate faster tax revenue growth than would flatter tax regimes. In California, the Legislative Analyst's Office (LAO) has indicated as much. Since 1993, the top percentile's inflation-adjusted incomes have increased by 75%. Incomes of the bottom four quintiles, on the other hand, all declined, between 2.9% to 9.3% during this span. California's revenue dependence has mirrored these income trends, with an increasing share of its income tax collections coming from the high-income taxpayers. In 2012, for example, taxpayers with incomes in the top percentile paid almost 51% of the state's personal income tax revenue, up from 33% in 1993.(9) Thanks to the combination of a progressive income tax schedule and divergent income trends, the state's finances have come to rely more heavily on high-income taxpayers.

The LAO has pointed out, however, that while California's progressive tax structure likely delivers faster revenue growth than would a less progressive alternative, it also brings with it greater volatility.(10) Although we don't have the same level of tax incidence data for all the states, we would expect that similar, if less pronounced trends exist in many states, especially those with progressive income tax codes.

The findings from our research indicate that tax revenue growth slows as income inequality rises, especially for the sales tax-dependent states. This suggests to us that inequality is having a detrimental effect on economic growth. But rather than being the direct cause of new rating downgrades, the negative consequences of income inequality on fiscal performance are best thought of as already implicitly reflected in our ratings. For example, despite its recent budgetary stabilization, California's propensity for revenue volatility continues to hold back its credit rating. As we see it, income inequality is part of a broader economic landscape, one that includes not only slower growth but also periodic tax revenue downdrafts in some states. But given that rising income inequality is fundamentally an economic problem, changes to state tax policies alone won't likely fully reverse any fiscal trends that have emerged as a result. While such an approach might help to partly counteract the slowdown in revenue collections, it does so at the expense of revenue stability, making it a second-best option.

Appendix

Table 1

Panel Error-Correction Estimates Of Tax Revenue Growth And Inequality

(All States)

Variables	**A**		**B**		**B**	
Income share of top 1%	-0.057	(-0.042)	-0.077*	(0.029)	-0.127§	(0.029)
Personal income	0.504§	(0.067)	0.495§	(0.071)	0.488§	(0.038)
Coincident economic index	0.643§	(0.051)	0.739§	(0.068)	0.765§	(0.029)
Constant	0.025§	(0.008)	0.026§	(0.005)	0.099	(0.065)
Observations	1,650		1,650		1,650	
Fixed effects (state)	N		Y		Y	

Notes: Dependent variable is tax revenue growth rate. Standard error in parentheses. Personal Income and coincident economic index prepresent annual percent change. A-- Pooled OLS regression. B--Pooled fixed effects panel regression. C--Pooled generalized least squares panel regression correcting for heteroskedasticity. *Significance at the 5% level. §Significance at the 1% level. Data source: Frank, M. U.S. State-Level Income Inequality Data, 1980-2012. www.shsu.edu/eco_mwf/inequality.html

Table 2

Panel Error-Correction Estimates Of Tax Revenue Growth And Inequality, Alternative Measures Of Inequality

(All States)

	Top 10		**Gini**		**Theil**		**Atkins05**		**RMeanDev**	
Coefficient and standard error	-0.121*	(0.028)	-0.001	(0.02)	-0.022*	(0.008)	-0.282*	(0.05)	-0.088*	(0.023)
Observations	1,650		1,650		1,650		1,650		1,650	

Notes: Dependent variable is tax revenue growth rate. Standard error in parentheses. *Significance at the 1% level. Variables also used in each regression were annual percent change in personal income and coincident economic index. All regressions used the pooled generalized least-squares panel regression correcting for heteroskedasticity. Data source: Frank, M. U.S. State-Level Income Inequality Data, 1980-2012. www.shsu.edu/eco_mwf/inequality.html

Table 3

Panel Error-Correction Estimates Of Tax Revenue Growth And Inequality, By Tax Structure

	Top 10 income tax states		**Top 10 sales tax states**	
Income share of top 1%	-0.077	(0.0497)	-0.217*	(0.0597)
Personal income	0.462*	(0.0775)	0.361*	(0.0755)
Coincident economic index	1.028*	(0.0669)	0.805*	(0.0680)
Constant	0.019	(0.0143)	0.039*	(0.0136)
Observations	330		330	
Fixed effects (state)	Y		Y	

Notes: Dependent variable is tax revenue growth rate. Standard errors are in parentheses. Personal income and coincident economic index represent annual percent change. *Significance at the 1% level. Data source: Frank, M. U.S. State-Level Income Inquality Data, 1980-2012. www.shsu.edu/eco_mwf/inequality.html

Table 4

Panel Error-Correction Estimates Of Tax Revenue Growth And Inequality Growth Rate

(All states)

Income share of top 1% growth rate	-0.822*	(0.125)

Table 4

Panel Error-Correction Estimates Of Tax Revenue Growth And Inequality Growth Rate (cont.)		
Gini level	-1.39*	(0.023)
Income share of top 1% growth rate x Gini	1.59*	(0.216)
Personal income	0.416*	(0.039)
Coincident economic index	0.648*	(0.032)
Constant	0.173*	(0.066)
Observations	1,650	
Fixed effects (state)	Y	

Notes: Dependent variable is tax revenue growth rate. Standard errors in parentheses. Personal income and coincident economic index represent annual percent change. Regressions used pooled generalized least-squares panel regression for heteroskedasticity. *Indicates significance at the 1% level. Data source: Frank, M. U.S. State-Level Income Inequality Data, 2010-2012. www.shsu.edu/eco_mwf/inequality.html

Contributor: Robert Tu

Related Research

How Increasing Income Inequality Is Dampening U.S. Economic Growth, And Possible Ways To Change The Tide, Aug. 5, 2014

Notes

(1) Piketty, Thomas. 2003. "Income Inequality in the United States, 1913-1998." Quarterly Journal of Economics 118(1), 1-39. Longer version published in A.B. Atkinson and Piketty, T., eds., 2007, Oxford University Press. (Tables and figures updated to 2012 in Excel format, September 2013.)

(2) Income data reflect adjusted gross income from data published by the U.S. Internal Revenue Service as compiled and published by: Frank, M. (2014). "U.S. State-Level Income Inequality, 1916-2011." http://www.shsu.edu/eco_mwf/inequality.html

(3) Index for each state includes nonfarm payroll employment, average hours worked in manufacturing, unemployment rate, and wage and salary disbursements deflated by the consumer price index. Variables are then calibrated so that long-term growth in the index aligns with long-term growth in state GDP. (http://www.philadelphiafed.org/research-and-data/regional-economy/indexes/coincident/)

(4) Top 10 income-tax states based on 2012 U.S. Census Bureau Data. Individual income tax as share of total taxes: Oregon, Virginia, New York, Massachusetts, Georgia, Connecticut, California, Colorado, Missouri, and North Carolina.

(5) Top 10 sales-tax states: Florida, Washington, South Dakota, Texas, Nevada, Tennessee, Hawaii, Mississippi, Arizona, and Indiana.

(6) Federation of Tax Administrators. 2014 (February). http://www.taxadmin.org/fta/rate/ind_inc.pdf

(7) For consistency, we used estimates of Gini coefficients created from the same data set as the income data.

(8) Bruce, D.; Fox, W.; and Yang, Z. 2010. "Base Mobility And State Personal Income Taxes." In National Tax Journal 63(4), Part 2, 945-966. December.

(9) California Franchise Tax Board,

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