



State Fiscal Policy and Economic Growth: Do Taxes Make a Difference?

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State policymakers have long worried about the impact of tax and expenditure decisions on their states' economic fortunes. In this fiscal year, with Minnesota and 45 other states facing significant budget deficits, the direction and size of that impact is of particular importance.¹ Researchers have studied the impacts, in empirical work dating back at least to the 1970's, and in theoretical work, for much longer.

To summarize what lies below, drawing from theory, we know that taxes create distortions and inefficiencies. Drawing from empirical research, the inefficiencies predicted by economic theory are difficult to detect and quantify, leaving us with little in the way of unambiguous prescriptions for state fiscal policy. Consequently state-level tax and expenditure debates should be about the relative merits of public and private spending and not the impact of these policies on short-run aggregate economic activity.

Beginning theoretically, whenever a government imposes a tax on an individual's economic activity, the tax will create a separation or wedge between the individual's before-tax compensation and the now lower after-tax compensation. Examples of taxes include taxes on the supply of labor or capital, or on the sale of a good the individual produces. Examples of compensation include a worker's wage rate, an owner's return to capital, and the price of the good sold.

Faced with a lower after-tax compensation, the individual might be expected to react by changing behavior – working fewer hours when labor is taxed, supplying less capital when its return is taxed, or producing less of a taxed good. In most instances, these changes in or distortions of behavior are socially costly, rendering the input or output market less efficient. There is almost no disagreement amongst economists on this point: With only a few exceptions, a tax that impacts individual (or firm) behavior creates inefficiency.²

Why then do governments levy taxes?

As you might expect, the answer lies in the exceptions. At the state level, two exceptions matter most. One is the presence of a negative cost, such as pollution. Taxing a polluting firm can lead the firm to reduce output, resulting in less toxic waste and improved social efficiency. A second exception is the desire to fund public goods, such as roads and education. Taxing residents to fund these services can address their unwillingness to voluntarily contribute enough to support public goods, resulting in a higher, more efficient level of, for example, transportation and workforce readiness. Both exceptions provide rationales for state governments to levy taxes in the public interest.

This leads to the next question: How much inefficiency will an economy tolerate as a consequence of these taxes? To answer this, we must be able to measure the level of inefficiency created.

Measuring taxation's effect on a state economy

One way to measure the inefficiency is to ask how much slower our state's economy is growing, relative to what would be true if there were no taxes. That comparison would tell us how much we give up, in terms of job or income

1 Elizabeth McNichol, Phil Oliff and Nicholas Johnson 2010. "Recession Continues to Batter State Budgets; State Responses Could Slow Recovery." Center on Budget and Policy Priorities, available at <http://www.cbpp.org/cms/index.cfm?fa=view&id=711&emailView=1>.

2 There is one exception: a "lump-sum" tax that, by virtue of the way it is raised, has no impact on individual behavior. An example would be a poll tax, a sum levied on every individual, regardless of her circumstances or her behavior. Since there is no way to avoid such a tax, it cannot create any inefficiency. Poll taxes are widely viewed as unfair, a consensus that shortened Margaret Thatcher's tenure as Prime Minister of the United Kingdom in the 1980's.



growth, because of taxes.³ Since it is impossible to find another state exactly like ours with no taxes, the next best approach is to compare our economic growth to that of other states with either higher or lower taxes, controlling for differences in demographic characteristics (for example, proportion of population that is working-age), industrial sector (for example, agriculture vs. manufacturing), and other relevant factors. A significant line of academic research has studied just this sort of comparison, with fairly divergent results, depending on the sources of the data, the year(s) studied, the control variables included, and the statistical methodology.

I summarize here a sample of this work, consisting of three single articles and two broader surveys of the literature, concentrating on the short-run. Before diving in, it is worth noting an important caveat attached to this sort of analysis. Since state governments are required to balance their budgets annually, deficits tend to move counter to the business cycle. That is, in good economic times, state revenues rise, bringing deficits down and potentially allowing for tax cuts. In recessions, revenues fall, increasing deficits and pushing states to at least consider raising taxes. This means that a negative relationship between taxes and economic growth could be read — and is often expressed — as “high taxes slow economic growth.” But it could also be read as “slow economic growth leads to higher taxes.” In other words, causality could run in either direction; a significantly negative relationship is evidence only that the two are associated. Furthermore, not accounting for the influence of cyclical budget balancing may bias estimates of the magnitude of the association between taxes and economic growth. Later, we will look at a recent research effort designed to address this problem.⁴

Studies that estimate the impacts of taxes

I begin with a 1985 article by Helms⁵ using historical, annual data between 1965 and 1979 for 48 U.S. states to estimate the impact on state personal income of a set of factors:

- state taxes (as a percent of personal income)
- state spending on health, highways and education (as a percent of personal income)
- state spending on welfare
- state budget deficit
- and several demographic variables.

In order to account for budget-balancing, Helms’ specification excludes spending on transfer payments (welfare); he also does not control for state differences in industrial composition.

Helms reports a negative and statistically significant impact of state taxes on state personal income, but also positive, significant impacts of spending on health, highways and education on state personal income. The spending impacts are larger than the tax impacts.

We can interpret Helms’ results as follows: First, if a state raises taxes and balances its budget by increasing welfare spending, then personal income declines. Second, if, alternatively, a state raises spending on health, education, and highways and offsets the increase by reducing welfare spending, then personal income increases. Finally, Helms claims that the net impact on personal income of a tax increase that finances more government spending (on health, highways and education) “may well be positive.”⁶

3 Throughout this paper, “taxes” is used to capture the combined impacts from both state tax rates and the sizes of states’ tax bases.

4 The economist’s term for this problem is endogeneity: rather than being independently set, taxes are jointly determined along with a state’s economic growth rate.

5 L. Jay Helms 1985. “The Effects of State and Local Taxes on Economic Growth: A Time Series-Cross Section Approach,” *Review of Economics and Statistics* 67(4), 574-582.

6 Helms, p. 579.



Alaeddin and Stone (1990) take a somewhat different approach.⁷ Their data is drawn from all 50 U.S. states, in 5-year intervals over a somewhat longer period, between 1962 and 1982.⁸ They seek to explore the impacts on the growth of manufacturing employment from state taxes (divided by personal income); state expenditures (divided by personal income); state unemployment and unionization rates; the percent of employers engaged in manufacturing durable goods; and several demographic variables.

Using a specification much like Helms, Alaeddin and Stone also report statistically significant, negative estimates for the impact of taxes that fund higher transfers. For states with average taxes, Alaeddin and Stone estimate that a 1 percentage point increase in taxes is associated with a 5 percent decline in employment. They find significantly positive impacts on employment for spending on health, education and highways, funded by reduced welfare spending, holding taxes constant. In contrast to Helms, they find that an increase in taxes, accompanied by increased spending on health, education and highways, has little to no impact on employment. In addition, states with higher unemployment rates are associated with smaller employment, while a larger manufacturing sector is associated with higher employment.

Bartik's 1994 review article distills the results of 48 studies regarding the impact of general state and local business taxes.⁹ He concludes from this literature that a 10-percent decline in business taxes is associated with increased state economic activity (income, employment or investment) of between 1 percent and 6 percent, with an average impact of 3 percent.

Also focusing on research regarding the impact of business taxes, Wasylenko (1997)¹⁰ finds that 24 of 34 business studies showed significant negative impacts. The median values of these significant estimated impacts clustered between 0 and 2.6 percent, clearly smaller than Bartik's findings regarding tax reductions. Wasylenko also observes that the estimated impacts are smaller in data collected after 1982. He speculates that this may be due to increased interstate competition in tax rates, since as state tax rates became more similar, smaller tax differentials between states might be expected to have less influence on firms' location choices.

Regarding the literature on the impact of personal income tax rates, Wasylenko finds that higher tax rates are associated with lower employment in some studies, but they are not significant in others. He also points out that when taxes have a negative impact overall, the impact on a particular state will be the product of the overall impact (elasticity) and the deviation of that state's tax burden from the average burden of all states: As long as taxes have a significantly negative impact, "high-tax states will lose more economic activity than average or low-tax states."¹¹

A recent article by W. Robert Reed picks up from the work of Helms and of Alaeddin and Stone.¹² Reed uses data from 48 states, in 5-year intervals beginning in 1970 and extending to 1999. His specification includes the impacts of both contemporaneous and lagged taxes¹³ (here defined as state and local revenues divided by personal income) on the percent change in per capita personal income.

Including both contemporaneous and lagged tax measures as the only explanatory variables, Reed finds significant, negative effects on the rate of income growth. A one percentage-point increase in taxes for the current 5-year period is associated with 1.37 percent lower growth in that period's per capita personal income. Since the next period will then begin with taxes at the higher rate, that same increase (and now higher burden relative to other states) will have an additional, lagged impact — reducing per capita personal income growth by 0.90 percent in the subsequent 5-year period. It is worth pointing out that Reed's negative tax effects extend from the 1970's through both the 1980's and

7 Mofidi Alaeddin and Joe A. Stone 1990. "Do State and Local Taxes Affect Economic Growth?" *Review of Economics and Statistics* 72(4), 686-691.

8 Some researchers claim that interval data confers methodological advantages over annual data.

9 Timothy J. Bartik 1994. "Jobs, Productivity, and Local Economic Development: What Implications Does Economic Research Have for the Role of Government?" *National Tax Journal* 47(4) 847-861.

10 Michael Wasylenko 1997. "Taxation and Economic Development: The State of the Economic Literature," *New England Economic Review* March/April, 37-52.

11 Wasylenko, p. 47.—

12 W. Robert Reed 2008. "The Robust Relationship between Taxes and U.S. State Income Growth," *National Tax Journal* 61(1), 57-80.

13 A tax levied today has an impact on this year's personal income ("contemporaneous") and also on next year's personal income ("lagged").



the 1990's. Note also that because states must balance their budgets, Reed's specification assumes that an increase in taxes is accompanied by an equal increase in overall spending. Moreover, these effects are not trivial. Measuring the impact of such a tax increase at the mean of state taxes (10.87 percent of personal income), a one percentage-point increase would reduce the rate of per capita personal income growth from 8.23 to 8.12 percent.

Reed suggests that tax increases affect growth via two channels. First, tax increases may reduce labor efficiency. Second, he shows that tax increases are associated with reductions in the growth of investment, employment and population.

Of course, some researchers would argue that Reed's specification is too sparse, omitting many other potentially important determinants of economic growth. In response, Reed collects a large number of such control variables and proceeds to construct and estimate a series of models that include various combinations of them. He finds that while the estimated impacts of both contemporaneous and lagged tax variables are smaller, they continue to be both negative and significant. Interestingly, he finds positive impacts on per capita personal income growth for educational attainment; the percent of the population that is of working age, is nonwhite or is unionized; and the importance of the agricultural sector. The importance of the mining sector has a negative impact. Also salient, states with higher initial per capita personal income grew more slowly over this time period.

In further estimates, Reed reports that higher taxes accompanied by an increase in non-welfare, "productive" state spending are associated with lower growth while an increase in welfare spending, holding taxes constant, is associated with higher growth. Reed speculates as an explanation for the latter finding – unusual in this literature – that transfers go to state residents, contributing directly to state income while spending in the other categories (for example, highways) can be diverted to suppliers outside a state's borders.

Two reasonable conclusions can be drawn across the studies from this line of work. First, while the magnitude of the impact varies substantially, economic studies generally suggest a negative association between state and local taxes and economic activity, with the magnitude rising with the deviation of a particular state's burden from the 48- or 50-state average. Second, there is conflicting evidence about whether the association depends on how states adjust expenditures when adjusting their taxes. Some studies suggest that tax increases that fund more spending on productive uses such as highways, health care and education can reduce the negative impact on economic activity; at least one study suggests that using higher taxes to fund more transfer payments confers some advantage. However, as discussed earlier, much of this statistical work may be biased by the fact that states cannot set tax revenues independently of economic activity. In the real world, as the economy grows or contracts, tax revenues move up or down, and states must adjust taxes and spending in order to balance their budgets.

Another study: Examining a "real world" example

In order to get around this problem, a researcher might seek a "natural" experiment in which two similar local economies are studied, one with a large, independently set change in taxes (i.e., a tax change that is not forced by a budget-balancing requirement), while there is no such tax change in the other.

Reed and Rogers (2004) study such a naturally occurring experiment in New Jersey.¹⁴ While campaigning for governor in 1993, Christine Todd Whitman promised to reduce personal income taxes, even as the New Jersey economy had not yet recovered from the 1990 recession. After her inauguration, she in fact did spearhead a cumulative 30 percent reduction between 1994 and 1996. Reed and Rogers gather a panel of county data for New Jersey and the surrounding region, both before (1989-1993) and after (1994-1997) the Whitman tax cuts. They say that the tax cuts in New Jersey were instituted independently of the state's economic growth circumstances and that these cuts were a departure from state fiscal policies in the region, being larger and more frequent (with the possible exception of New York).

14 W. Robert Reed and Cynthia L. Rogers 2004. "Tax Cuts and Employment Growth in New Jersey: Lessons from a Regional Analysis," *Public Finance Review* 32(3) 269-291.



Using a difference-in-difference approach, Reed and Rogers compare the short-run change in employment growth between the two time periods for New Jersey counties with the change in employment growth between the same two periods for bordering counties in other states. When Reed and Rogers define the bordering counties on the basis of Bureau of Economic Analysis (BEA) economic areas,¹⁵ their results are striking. They find that about 75 percent of the economic growth experienced in New Jersey counties between 1994 and 1997 was shared by counties lying outside the state but within the same BEA economic area. Furthermore, they were unable to confirm a statistically significant impact on employment growth specifically attributable to New Jersey counties alone.

Conclusion

As taxpayers and policymakers, what unambiguous prescriptions for state fiscal policy can we glean from this evidence? Unfortunately, very few. The inefficiencies predicted by economic theory are difficult to detect and quantify empirically. Given researchers' methodological differences and the inherently joint determination of tax levels and aggregate state economic activity in the real world, it is not surprising that the empirical results summarized here do not speak with a single voice.

The evidence from cross-state studies over time suggests that, all other things equal, states with above-average taxes do not do as well in terms of personal income or employment or growth, relative to states with average or below-average taxes. However, three very important caveats temper this conclusion.

First, all other things are not always equal: It likely matters how a state's higher taxes are accommodated in its budget balancing. There is some evidence that the negative impact will be washed away (Alaeddin and Stone) or possibly turned around (Helms) if expenditures on "productive" things like education, highways and health care rise. Another study suggests that the negative impact is smaller when it is accompanied by more spending on welfare transfer payments. Net impacts from the higher taxes can therefore be small.

Second, the estimated magnitude of any negative impact — as measured by statistical techniques that assume taxes are exogenously or independently set — is almost certainly biased, with the direction of the bias uncertain.¹⁶ In other words, take the estimates of any such study with a grain of salt.

Finally, the evidence available from New Jersey's natural experiment — where taxes were arguably independent of personal income — suggests that attempts to exploit the tax-growth tradeoff by enacting large, sustained tax cuts do not produce the hoped-for results. In fact, Reed and Rogers' analysis implies that a tax cut has virtually no effect on growth.

Taking the caveats into account brings us close to the standard, long-held consensus position of economists on how states should set taxes: Make the tax base as broad as possible so as to keep the marginal rates as low as possible. Most important, as Reed and Rogers conclude, state-level tax and expenditure debates should be about the relative merits of public and private spending and not the impact of these policies on short-run aggregate economic activity.

¹⁵ BEA economic areas are constructed to identify areas that are linked by functional ties, the most important being commuting patterns.

¹⁶ Some researchers employ additional statistical techniques to address endogeneity. For example, Helms, doing so, finds larger tax impacts.

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