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TAXES AND ECONOMIC GROWTH

By Richard Vedder
Ohio University
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Do Taxes Matter?

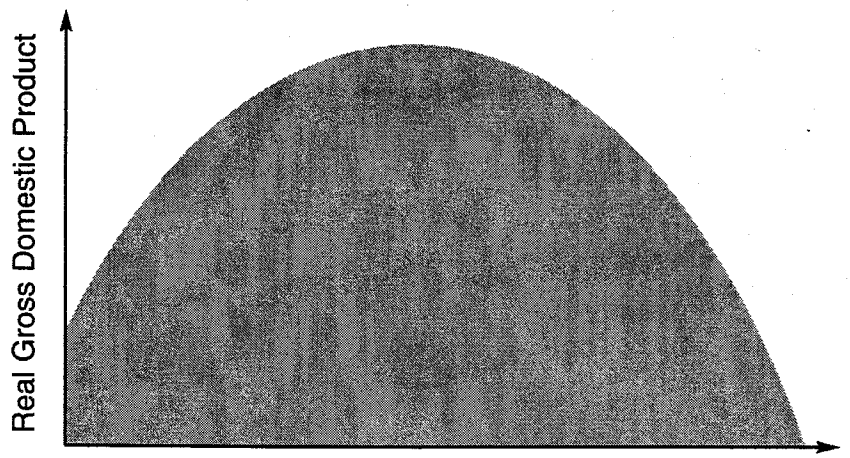
Government is a big part of the lives of Americans, and indeed of anyone living on this planet. Government does some good things; indeed, having a government seems critical to having a prosperous and well-ordered society. Yet governments use resources, and a means must be found in capturing these resources from private uses. While a variety of means are used – debt financing, printing money, expropriating private assets, mandating private performance of governmental objectives, the assessment of user charges– by far the most important way that we pay for government is through taxation.

While this study will concentrate on taxation and its impact on the economy, it is important to keep in mind that taxes are levied to finance governmental spending. When government is non-existent or very small, tax-financed governmental expansion likely is good from the standpoint of creating income for the citizenry: resources are used to establish and enforce laws protecting individual property rights, protecting individuals from destructive behavior on the part of bullies, thieves, and foreign enemies. The government helps finance certain minimal infrastructure needs like roads necessary for trade, and defines and regulates the issuance of money. Virtually everyone but the most radical libertarian would agree that governmental provision of these functions helps develop an exchange economy. Taxes levied when government is extremely small, then, likely increase economic growth by making trade more efficient, providing incentives for people to work, form capital and to innovate. Yet as government grows larger, the law of diminishing returns begins to have an effect. Some spending on roads, national security, police and fire protection, etc., may be of marginal use. More important, governments start to perform welfare functions, redistributing income and wealth from some members of society to others. The taxes needed to finance these expenditures become larger and more burdensome, and may start to have severe disincentive effects. Thus, the original federal income tax, which had rates of one to seven percent and applied only to affluent Americans, had little impact of human economic behavior. Later, however, when marginal tax rates grew as high as 70 or even 90 percent or more, people altered their behavior to avoid an excessive tax burden. The new government spending added less to the national output and may have even reduced it, while the taxes reduced work effort, capital formation, and innovation. Thus tax-financed spending began to have adverse effects on the prosperity of persons.

All of this is illustrated in Figure 1. When government absorbs little or none of the national output, public sector expansion expands that output. When government grows large, however, its expansion crowds out productive private activity and actually retards economic growth. The taxes used to finance most government activity then have a more negative effect than any benefits provided by governmental services.

Figure 1.

Government Spending And The Economy



A number of studies confirm the accuracy of Figure 1 (Vedder and Gallaway 1998, Vedder and Gallaway 1999a, Gwartney and Lawson 1998). The current size of government in the United States is significantly larger than the size which would maximize the income available for each citizen. In western Europe, with even larger welfare states than in America, governments appear to be dramatically oversized from the standpoint of maximizing economic opportunity. Similarly, Lowell Gallaway and I (1998) have found that state and local government spending, mostly tax-financed, is now substantially larger than the income-maximizing level. Reducing government spending, and the corresponding taxes, should increase output.

These findings imply that in our contemporary era of large government, high taxes lead to lower economic growth. When taxes go up, the growth in the income of taxpayers should decline. In fact, several decades of studies by economists confirm the proposition that the higher the level of taxation, the lower the rate of economic growth, holding non-tax factors constant. This reversed earlier conventional wisdom, such of that of distinguished public finance expert John F. Due, who, speaking about industrial location of firms, opined that studies "suggest very strongly that the tax effects cannot be of major importance" (Due 1961). By the later 1970s, however, research was reaching different conclusions, in part because the negative effects of taxes grew as the tax burden itself grew larger.

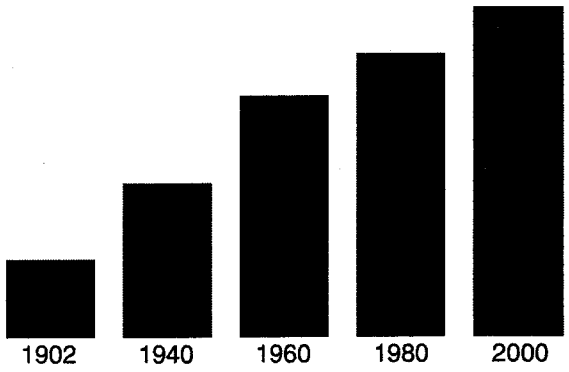
The growth in tax burden is indicated in Figure 2, showing combined federal, state, and local taxes as a percent of personal income for various dates. Note the large growth in the first generation after World War II, leading economists to increasingly conclude that taxes indeed do matter.

Economists realized that state and local governments provided an excellent laboratory to evaluate tax policy, since there were 50 different states and thus 50 different tax systems. In what may have been the first empirical analysis, done by economists at the

Figure 2.

Taxes As A Percent Of Total Output*

1902	7%
1940	14%
1960	24%
1980	27%
2000	30%



Source: U.S. Department of Commerce, Author's Calculations

* Excludes non-tax sources of revenues, such as fees and user charges.

Harris Bank in Chicago, Genetski and Chin (1978) used a simple regression model to show that economic growth was negatively correlated with changing rates of state and local taxation, a finding replicated and expanded upon by this author in two studies for the Joint Economic Committee of Congress (Vedder 1981, Vedder 1995). Meanwhile other economists were showing how high taxation had adverse impact on states or territories such as Illinois (Heins 1976), Puerto Rico (Canto and Laffer 1979) and Massachusetts (Kadlec and Laffer 1981). The scholarly studies were reinforced by articles and books written for broader audiences Gilder (1981), Bartlett (1980), Adams (1984), Wanniski (1978), Brookes (1982).

This early research became increasingly accepted as a consequence of new refinements and extensions of the tax-growth literature in the mid and late 1980s. Helms (1985), for example, said that the impact of taxes depended on how they were used, with expenditures on welfare, for example, having a negative impact. Mofidi and Stone (1990) reached similar conclusions. Benson and Johnson (1986) showed that taxes had lagged negative effects, with the adverse impact being realized often after about three years. Canto and Webb(1987) concurred, roughly, with Helms work Other studies confirmed the tax-growth relationship using other data sets or methodologies, albeit with some variation in conclusions as to the strength of the relationship (e.g.,Yu, Wallace and Nardinelli 1991). Other studies showing negative effects of government on growth stressed government spending instead of taxes (Scully 1989, Vedder 1993).

Still more studies showed that a progressive income tax rate structure caused more damaging economic effects than a flatter rate tax schedule (Vedder 1985, Vedder 1986, Hunter and Scott 1986), extending a pioneering observation of Romans and Subrahmanyam (1979). The early work using U.S. state data were confirmed by numerous international studies as well (Marsden 1983, Reynolds 1985). Scully(1988) in particular showed that governmental institutional obstacles (e.g., substantial regulation, restrictions on imports) along with taxes hurt growth. The studies became larger and more sophisticated with

time (e.g., Engen and Skinner 1999; Newell and Symons, 1993,Barro 1989, Koester and Kormedi 1989), Rebello 1991). Van Sinderen (1993) reached a conclusion somewhat representative of these studies:

> "Balanced budget reductions in taxes on wages and profits exert favorable effects on employment and growth. The relative impact depends on the specific government outlays and taxes which are cut back. In the long run, tax revenue decreases less than the amount of the initial tax reduction.

Cashin (1995) found that each one percent increase in taxes as a percent of total output lowers output per worker by about two percent. To be sure, he observes positive effects of spending from taxes, but typically the positive spending effects are only about one-half as large as the negative tax effect, which is about the same thing as saying that private sector spending is twice as productive as public sector outlays. A new study by Holcombe and Lacombe (2001) compares counties on both sides of state borders - and observes that high taxes impede growth.

The research has continued up to the present, generally confirming the basic proposition that taxes have adverse effects on economic change. Much of it has been done at America's premier economic research center, the National Bureau of Economic Research (NBER). Its president, Martin Feldstein of Harvard (1997) concluded that "the deadweight burden caused by incremental taxation....may exceed one dollar per dollar of revenue raised, making the cost of incremental government spending more than two dollars for each dollar of government spending." A recent NBER study (Carroll et al. 2000) concluded "this finding is consistent with the view that raising income tax rates discourages the growth of small businesses." James Hines (1996), in a paper originally written for the NBER but published also in the prestigious *American Economic Review,* found that state and local taxes impacted on the location of foreign investment in America.

Europeans are similarly observing adverse effects of taxation. A Spanish economist writing for a British research center concluded, speaking of government taxation, that "there is evidence of a sizable negative 'externality' effect on the level of productivity" (de la Fuente, 1997). Italian economists Tabellini and Daveri (1997) argued that "the increase in European unemployment and the slowdown in economic growth are related because they stem from a common cause: an excessively high cost of labor. In Europe labor costs have gone up for many reasons, but one is particularly easy to identify: higher taxes on labor." Using a complex general equilibrium model, German economist Bernhard Heitger (1993) concluded that for "the most important OECD countries, taxation turns out to be growth-retarding. " Roubini, Milesi and Gian (1998) concluded that "In general, the taxation of factor incomes...is growth-reducing."

In an interesting recent study (Gittell, Kaufman and Karson 2000), the authors explore regional and state patterns in American economic change, concluding that the role of geography itself is modest in explaining differentials, but that other factors, including

state personal income taxes, play a more important role. Work on Canada similarly shows adverse effects of taxes on growth, both impacting on supply and demand (Fougere 1998). Looking more broadly at OECD nations, Boyle and McCarthy (1996) criticize studies showing a modest role for taxes in explaining inter-country growth rates, showing how labor taxation very strongly negatively impacts on the full utilization of resources. In a study of New Zealand somewhat similar to that done by this author and Gwartney, Lawson and Holcombe discussed above, Gerald Scully (1996) concludes that New Zealand would have to cut its taxes roughly in half to maximize the rate of economic growth, and that "the marginal cost of taxation...is $2.64 for each extra dollar of taxes collected", showing even greater "deadweight losses" and inefficiencies than Feldstein observed for the U.S.

In a study in the highly regarded *Journal of Monetary Economics*, economists from the Federal Reserve and the University of Florida examined changing marginal income tax rates in the U.S. over time, concluding that "lowering taxes significantly raises economic growth and that changing the tax rate schedule also has significant effects on economic growth" (Hakkio, Rush, and Schmidt, 1996). This last conclusion reflects the view that not only do high taxes lower income generation, but that the *type* of tax can make a difference.

Taxes Impact The Location Of Businesses And Residences

The discussion to this point has examined research on the negative impact of taxes on economic growth, citing around 40 studies. Yet there are a large number of studies looking at related issues, such as the impact of taxes on business location. As early as 1977, Grieson, Hamovitch and Morgenstern used econometric techniques to argue that high taxes discouraged business entrepreneurs from locating in a given area. Bernard Weinstein, alone (1977) and with Robert Firestine (1978), noted that high taxes forced up labor costs, as employers had to compensate employees for the burden of high taxes, a conclusion verified empirically in a later NBER study (Gyourko and Tracy 1986). The followup studies in the 1980s, using ever more sophisticated models, confirmed the earlier conclusion that high taxes deter businesses from investing capital (Carlton 1983; Papke and Papke, 1986; Papke 1986; Bartik 1989). Research in the 1990s agreed that taxes matter in business location, albeit with some qualifications, such as Fox and Murray's (1990) conclusion that the sensitivity to taxes varies considerably with industry and firm size (see also Friedman, Gerlowski and Silberman, 1992). The aforementioned Hines study showing foreign investors are deterred by high taxes actually confirmed what an earlier study had shown as well (Couglin, Terza, and Aromdee, 1990). One of the more interesting studies used a distinctly low tech approach (questionnaires to business leaders), concluding that high tech firms were swayed considerably by tax considerations in making location decisions (Premus 1983).

Other research has demonstrated that high taxes reduce in-migration and spawn outmigration. Early work noting the debilitating effects of taxes on local population growth

by Cebula (1974), Browne (1979) and Ecker and Syron (1979), have been replicated by others in the past decade, including Niskanen (1992), Kotlikoff and Raffelhueschen (1991), and Cadwallader (1991). More recent research reinforces the general conclusion by providing added detail. A new study in the *National Tax Journal*, for example, suggests that the elderly are influenced by low personal income and death taxes, and prefer states that exempt food from sales taxation (Conway, Smith, and Houtenville, 2001). This is consistent with the finding of Assadian (1995) that the elderly in Florida were less likely to migrate into counties with high taxes, even more so than the general population.

Finally, there is mounting evidence that high taxes reduce job opportunities and sometimes lead to higher unemployment. Wasylenko and McGuire(1985) noted a negative correlation between taxes and metropolitan area employment growth between 1973 and 1980. Even stronger findings were observed by Plaut and Pluta (1983). Goss, Preston and Phillips (1994) think previous studies understate the adverse employment effects of taxes by failing to control for other factors fully. Lowell Gallaway and I have observed that high taxes are often positively associated with unemployment, both in the U.S. and internationally (Vedder and Gallaway, 1996 and 1999b). Other research using state and local data reach similar conclusions (Dalenberg and Partridge 1995; Mark, McGuire and Papke, 2000).

This review of the literature, although listing over 65 studies, is not comprehensive. Nor does it discuss every economic dimension of taxation. To cite one excluded example, in a well regarded study in the *National Tax Journal*, Ladd and Bradbury (1988) observed that high property taxes lower property values, causing significant loss of real wealth, a finding that Stephen Moore and I have found exists for other taxes in work as yet unpublished. To cite another economic impact of state and local taxes, interstate variations in tax rates lead to enormous amount of cross-border activity, and thereby to administrative problems arising from smuggling, etc. Early work suggesting high sensitivity of citizens to tax differentials in border areas (Mikesell 1970, 1971), has been replicated in later work (e.g., Vedder, 1993, 1996; Walsh and Jones, 1988).

Some Empirical Evidence for U.S. States

To provide a little more specific detail to demonstrate the negative effect that taxes have on economic growth, I gathered together extensive tax and expenditure data on U.S. states over the long time span. Specifically, I recorded by state several dozen measures of taxes and spending in the years 1957, 1977, and 1997, drawing on three of the Census of Governments conducted every five years by the U.S. Bureau of the Census. Most of the evidence presented below is simple comparisons of average performance of high and low tax states. While economists would argue that such comparisons are simplistic, in reality they usually present very similar results as to those obtained using complicated statistical procedures that are incomprehensible to the average citizen.

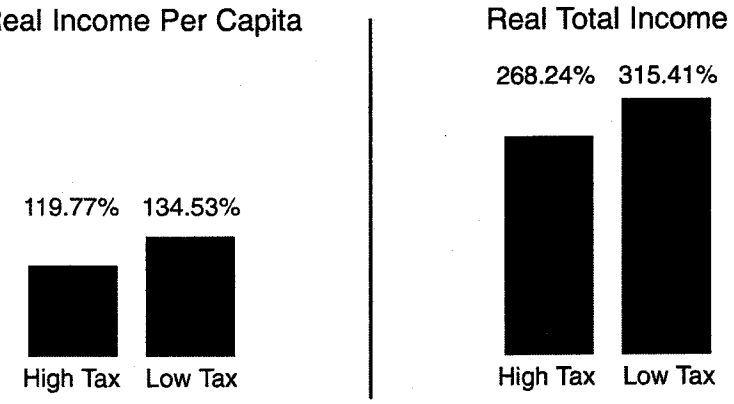
For the very first comparison, I calculated the average tax burden for the 50 states for the years 1957,1977, and 1997. The average tax burden is defined as state and local taxes as

a percent of personal income. Taking the average burden for the three dates, I obtained an average tax burden over these four decades. I arbitrarily defined the 25 states with the highest average burden as "high tax" states, and the 25 with the lowest burden as "low tax states". I used two different measures of income growth: growth in total personal income, adjusted for inflation; and, second, growth in real per capita personal income, adjusting for population change. The first measure is the better indicator of overall economic change, while the second is the better measure of income available for individuals for consumption and other uses.

The results (Figure 3) show that the low tax states outperformed the high tax states by either measure. Income per person rose by 135 percent from 1957 to 1997 in the low tax states, compared with 120 percent in the high tax ones. Using the broader measure of growth, real personal income rose dramatically more in the low tax states, going up by an average of 315 percent, compared with 268 percent in the high tax jurisdictions. This implies that not only were individuals benefitting from faster income growth in the low tax states, but also that population growth was larger in the jurisdictions with lower tax burdens. **In general, *the lower the tax burden, the higher the rate of economic growth.***

Figure 3.

Economic Performance: Low vs. High Tax States, 1957-1997



Source: U.S. Department of Commerce, Author's Calculations

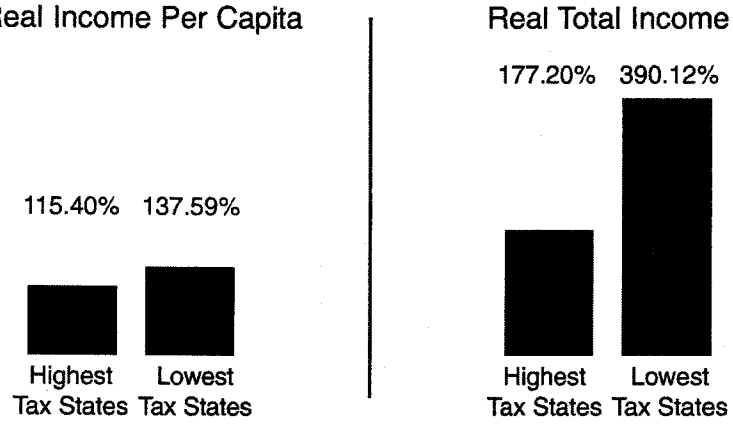
Some individuals believe that a better measure of fiscal policy actions is the change in tax burden over time. Usually most changes in tax burden reflect new legislative initiatives, and it is the change in burden that more likely will alter behavior. Others might argue that the 40 year time horizon used above is too long, that it poses issues in measuring tax burdens and the like. Accordingly, we did some other comparisons, using the change in average tax burden as our measure of tax policy, and using 20 year as well as 40 year time periods. We actually looked at economic growth over three time periods: the entire 40 years from 1957 to 1997 as before, as well as 1957 to 1977, and 1977 to 1997. Finally, it might be a stretch to call the 25 states with the highest taxes "high tax" states. Accordingly, in the next comparisons we looked at the highest 10 states and lowest 10

states with respect to tax burdens, confining our analysis to states that clearly were at the extremes of the tax burden distribution.[1]

Looking first (figure 4) at the entire period 1957 to 1997, per capita real income growth was substantially higher (138 vs. 115 percent) in the 10 states with the lowest increases in tax burden compared with the 10 states with the greatest increase. Using total real personal income growth, the already sizable differential explodes: while real personal income rose 390 percent in the states with the smallest tax increases, it rose less than half as much (177 percent) in the 10 states with the great increase in tax burden.

Figure 4.

Economic Performance: 10 Highest, 10 Lowest Tax States, 1957-1997



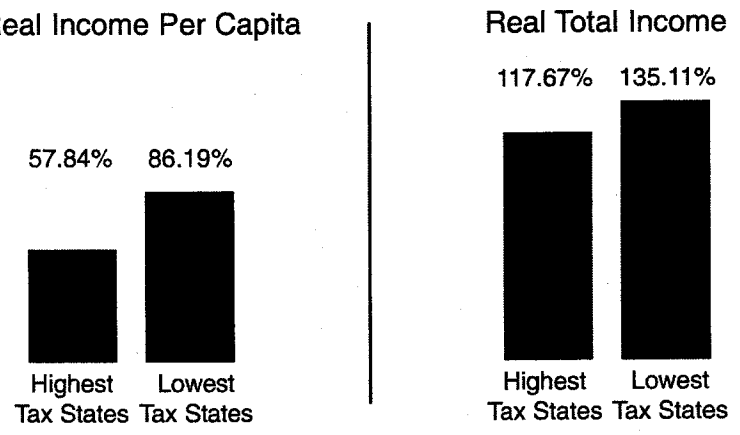
Source: U.S. Department of Commerce, Author's Calculations

In figures 5 and 6, we looked at two 20 years time periods, 1957-77, and 1977-97. Turning to the earlier time period first (figure 5), again those 10 states with the smallest increase in tax burden had dramatically high real per capita growth (86 vs. 58 percent) compared with the 10 states with the largest increase in tax period. With respect to total real personal income growth, the same pattern holds, with the states increasing taxation the least growing faster (135 vs. 118 percent). Though the specific states in each categories changes, the conclusion does not as we move forward to 1977 to 1997 (Figure 6). Real per capita income growth is over 35 percent in the states increasing taxes the least (or, in this case, actually decreasing the tax burden), while such growth is under 32 percent in the states raising the tax burden the most. With regard to total personal income, the 10 states reducing their tax burden the most grew 72 percent, vs. 52 percent for those raising that burden the most.

[1] In these comparisons, we confined our analysis to the 48 contiguous states. Alaska and Hawaii were not states at the beginning of the period examined. Alaska has always been an outlier because of its enormous oil revenues, and it receives abnormally large federal payments as well.

Figure 5.

Economic Performance: 10 Highest, 10 Lowest Tax States, 1957-1977



Source: U.S. Department of Commerce, Author's Calculations

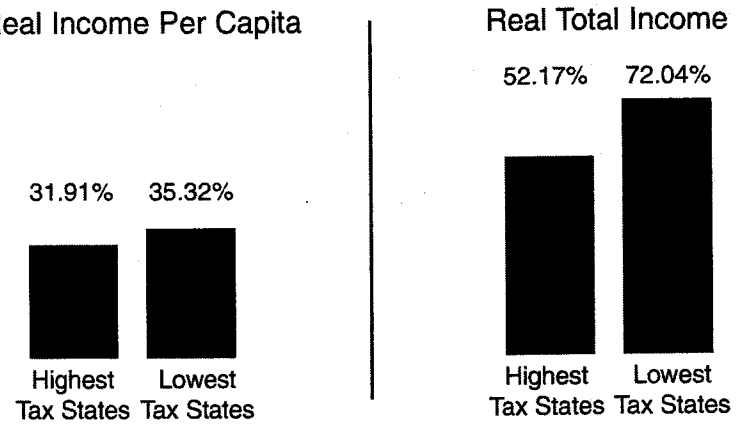
Summarizing, in Figures 3 through 6 we make a total of eight comparisons of high (or increasing) tax states compared with states with a relatively low (or declining) tax burden. In every single case, without exception, the results are consistent: **high or rising taxes are associated with lower amounts of economic growth.** The use of more sophisticated statistical models produces the same sort of result: higher taxes, lower growth.

Incentives Impact Behavior

It might be useful to reflect a little more as to *why* this is so. This author does not believe that the people working in the public sector are inherently less efficient, less creative, less productive than their private sector counterparts. What is different about the two sectors, however, is that the private sector responds to the discipline of markets. When firms are inefficient, having high costs or selling a product that people do not want, prof-

Figure 6.

Economic Performance: 10 Highest, 10 Lowest Tax States, 1977-1997



Source: U.S. Department of Commerce, Author's Calculations

its suffer. When firms are efficient, cutting costs and selling more appealing products, profits rise. Higher profits usually means increased wealth and income for stockholders, bigger bonuses for managers and often even rank-and-file employees. Thus there are considerable incentives in the private sector to be efficient, lowering costs by minimizing the use of resources, and expanding revenues by offering an appealing product or service.

By contrast, those market incentives are absent in the public sector. Indeed, often public sector bureaucrats want to *increase* costs (have a larger budget). More resources means more power to the public sector managers, and often makes it easier to do their job. Thus while companies try to cut their labor usage, public sector enterprises like schools are constantly trying to increase staffs, for example by reducing teacher-student ratios.

Some Case Studies

Kentucky and Tennessee

Perhaps a better way of illustrating the impact of taxes on economic growth is to look at examples of specific areas. Kentucky and Tennessee are very much alike in many respects, both are border states with diverse economies. Historically, Kentucky was slightly more prosperous than Tennessee. In 1957, for example, per capita income was slightly higher in Kentucky. Both states had relatively low tax burdens (even by standards of that era), although Kentucky's was about five percent lower (as measured by total state and local taxes as a percent of personal income) than Tennessee's.

In the 40 years after 1957, the two states followed sharply different fiscal paths. Kentucky raised its tax burden dramatically, including massive hikes in its income tax. By 1997, the state and local governments were taking $35.71 more out of each $1000 of income than 40 years earlier. By contrast, Tennessee had only a modest increase in taxes, and did not adopt an income tax (except for a limited tax on property income). As a consequence, by 1997, the aggregate tax burden was over 25 percent higher in Kentucky than in Tennessee.

What happened to the two economies? By 1997, Tennessee had per capita income that was about 10 percent higher than in Kentucky - $2,109 per person higher, or $8,436 for a family of four. On average, a family of four in Tennessee earned $703 more per month than its counterpart to the north in Kentucky. Yet that is not the whole story. Population growth was dramatically greater in Tennessee, as individuals and companies flocked to the Volunteer State to take advantage of the favorable tax climate. Looking at total real personal income growth (which takes account of population growth as well as growth in per capita income), it grew 333 percent in Tennessee, compared with 232 percent in Kentucky.

California and Florida

Florida is the premier Sun Belt state on the East Coast, a haven for retirees and vacationers. California has long had the same reputation on the West Coast, being historically a haven for migrants from the East as well. Both states have nice climates and spectacular scenery. It is no accident that the Walt Disney company has its two large theme parks in these two states.

In 1957, the total state and local tax burden was about five percent higher in California than in Florida. Over time, both states raised their tax levels significantly, but California's burden rose over 15 percent, compared with 9 percent in already lower taxed Florida. By 1997, the aggregate tax burden in California was about 11 percent higher than in Florida. Moreover, Florida had no corporate or individual income tax throughout the period, whereas California had one of the highest and most progressive personal income taxes.

One huge difference existed between the states, however: California historically has been far more affluent. In 1957, per capita income was over 40 percent higher in California than in Florida. By 1997, the differential had largely disappeared (to four percent). While non-tax factors were no doubt also at work, the higher tax burden in California clearly played an important role, for example in the location decisions of affluent retirees. Looking at real personal income, it rose eight-fold in Florida (one of the highest growth rates in the Union), double that of California.

Illinois and Ohio

The two largest states in the industrial Midwest are Illinois and Ohio. They are in many ways very similar, both having a large industrial base but also a substantial population living in smaller towns and rural areas. Illinois, historically having more rich soil, has always been the somewhat richer state, with per capita income in 1957 exceeding that in the Buckeye State by 12 percent. Economic theory would predict that difference would narrow over time: businesses paying high wages in Illinois would locate plants in lower wage states like Ohio. Also, migrants would move more into high income cities like Chicago relative to less high income ones like Cleveland.

Yet the opposite happened. The differential between the two states has actually grown somewhat over time. Why? A big part of the answer has to be government, and specifically tax policy. In 1957, both were relatively low tax states, but Illinois's tax burden was about 6 percent higher than Ohio's. Both states raised taxes considerably after 1957, both adopting income taxes. Illinois's tax burden rose a staggering 43 percent, for example. Ohio, however, had one of the biggest tax burden increases of any state, a truly extraordinary 57 percent, so by 1997, the tax burden on average was higher in Ohio than Illinois. The top marginal tax rate on the income tax, for example, was more than twice as high in Ohio than in Illinois. Neither state had exemplary fiscal experiences, but Illinois's greater moderation in increasing taxes paid off.

New York and New Jersey

New York and New Jersey are both relatively wealthy, industrialized Eastern states with huge urban populations. In 1957, income per capita was a little more than one percent higher in New Jersey than New York, a trivial difference. Over time, both states have had economic growth, but it has been more robust in New Jersey than in the Empire State, so today, per capita income is six percent higher in New Jersey. Looking at total income growth in real terms, it is over 50 percent higher in New Jersey, which has had much higher population growth.

One might argue that affluent persons working in New York City are moving to New Jersey suburbs. True, but they could just as easily have moved to suburbs in New York state itself. Taxes are a major factor in the emerging population patterns. New York's tax burden was dramatically higher than New Jersey's in 1957. Both states raised their taxes a lot, but New York more so than New Jersey (which, however, lamentably added an income tax). By 1997, a typical New Yorker pays over $31 more dollars in taxes for each $1000 earned compared with his counterpart in New Jersey, up from less than $24 in 1957. Hence New Jersey outshines New York in income growth, population growth, and increases in income per capita.

Colorado and Utah

The same pattern holds in the western United States. Both Colorado and neighboring Utah have gorgeous mountains and ski resorts and bountiful natural resources. Both have grown a lot in the past several decades. But Colorado has distinctly outperformed Utah. Already in 1957, per capita income was 14 percent higher in Colorado. Yet that differential has grown substantially since, so that in Colorado incomes are now a huge 32 percent higher than in their neighbor to the west. Colorado has become one of the richest states in the Union, far surpassing historically rich Midwestern states like Michigan, Ohio and Wisconsin, for example, not to mention all of its neighbors.

What is Colorado's secret? Colorado had almost no increases in taxes from 1957 to 1997, making it nearly unique among the states. Whereas in 1957, its tax burden was actually higher than Utah's, 40 years later it averaged 13 percent lower. Part of the secret of Colorado's success was adopting one of the toughest tax and expenditure limitation constitutional amendments in the nation. By constitutionally constraining governmental growth, the people of Colorado have prospered mightily.

Delaware and Pennsylvania

Delaware used to be about the richest place in the United States. Home of the wealthy duPont family and many corporations (owing to its lenient corporation laws), Delaware in 1957 was second only to Connecticut in per capita income. By 1997, Delaware had fallen to 12th among the states in per capita income. Its biggest neighbor, Pennsylvania, had

per capita income levels in 1957 some 18 percent below that of its smaller neighbor to the south. More than two-thirds of that differential was eradicated by 1997, however (Pennsylvania's per capita income was only 5 percent below Delaware's).

Why did Delaware show such a sharp relative economic decline? In 1957, it had the lowest tax burden of any of the then 48 states. Indeed, the low tax burden no doubt was one reason that Delaware was such a rich state. Over the next 40 years, however, Delaware's tax burden *more than doubled* as a percent of personal income - the biggest absolute and percentage increase of any of the 48 contiguous states. Pennsylvania's tax burden was 50 percent higher than that of Delaware in 1957 - but actually four percent lower in 1997. As a consequence, per capita income grew more than one-third faster in the Keystone State.

Great Britain and Sweden (and Continental Europe)

What happened in Delaware happened even more spectacularly in Sweden. As late as 1970, Sweden ranked in everyone's list of the three richest nations in the world. Today, it is not in the top 15, and per capita income is actually below the average of major European nations. By contrast, in 1970, Britain was considered the sick economy of Western Europe, with growth rates at the bottom of the major industrialized countries. The home of the Industrial Revolution had fallen below many of its continental neighbors in per capita income and growth. Yet, in the 1980s and 1990s Britain's growth rate was well above the continental average, greater than such major rivals as France, Italy, and, above all, Germany. Today, London is one of the most energetic economic centers of Europe. What happened?

While Sweden (and indeed virtually all continental Western European countries) were increasing their welfare states massively and increasing taxes from an already high 40.7 percent of total output in 1970 to 52.1 percent in 1999, the British were revolting against the continued expansion of government, and the aggregate tax burden actually fell (modestly, to be sure) from 1970 to 1999. By the latter year, the British tax burden was 30 percent lower than that in Sweden, and about 20 percent below major European nations such as France. As a consequence, economic growth fell sharply in most Western European nations – but not in England. The fiscal revolution that began with Margaret Thatcher in 1979 was not reversed after she left office in 1990. Britain went from being the tired old lady of Europe to being an engine of growth.

Taxes and Growth: Specific Taxes

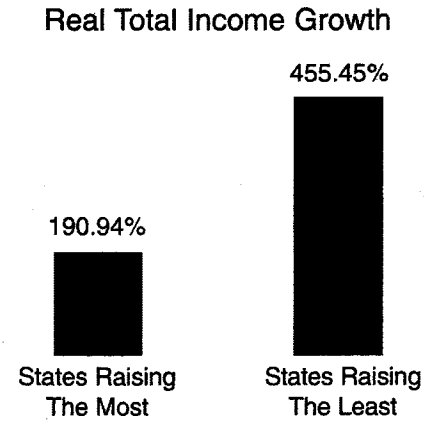
Income Taxation

While government expansion financed by taxes typically leads to lower growth, the type of taxes used to finance government also makes some difference. The major state and local tax that has had the greatest expansion in revenue in modern times is the individ-

ual income tax. I compared the 10 states with the greatest increase in income tax burden from 1957 to 1997, and compared them with the 10 states with the smallest increase in burden (in several cases, zero, as they had no income tax throughout the period).

Figure 7.

Economic Performance: 10 States Raising Income Taxes The Most vs. 10 States Raising Them The Least 1957-1997



Source: U.S. Department of Commerce, Author's Calculations

Figure 7 shows that real personal income growth was more than twice as high in the states raising their income taxes the least (or not at all), compared with the states with the biggest increase in tax burden. . Most of that reflected larger population growth in the low or no income tax states. However, real income *per person* also grew faster on average in the low tax states.

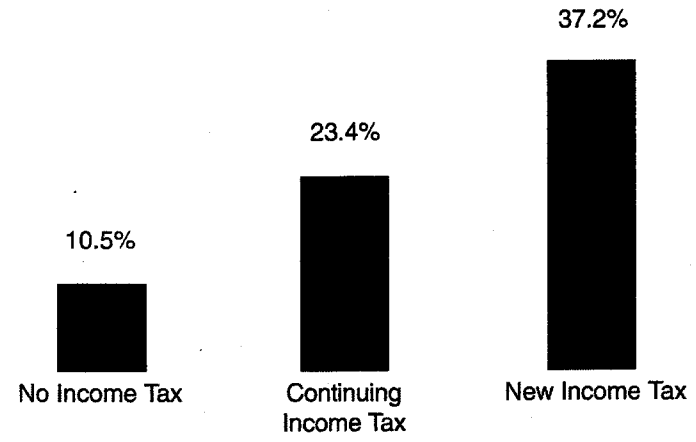
The higher population growth in the low income tax states reflected massive migration into those states from the high income tax states. People "voted with their feet", preferring states where the government allowed them to keep more of their own income. I calculated the net movement of native born Americans within the U.S from the years 1990 to 1999, comparing the nine states that have essentially no personal income tax (Alaska, Florida, Nevada, New Hampshire, South Dakota, Tennessee, Texas, Washington and Wyoming) with the other 41 states and the District of Columbia. Some 2,849,310 persons moved into the no income tax states from the states that levied taxes on the productive activity of their citizens. **Excepting Sundays, some one thousand persons moved every day for nine years to the no income tax states!** More persons fled to the no income tax havens than moved from East to West Germany during the Cold War. One of the great migrations in human history occurred –and most Americans do not even know about it!

The income tax's negative impact on economic activity may come in part because the tax itself may be a factor in the growth of government. I divided the 48 contiguous states into three categories: those which had no income tax in 1957 and did not enact one in the following 40 years ("no income tax states"); the 12 states that had no income tax in 1957 but enacted one over the next 40 years ("new income tax" states); and the 28 states that

had an income tax already in 1957 and maintained it continuously ("continuing income tax" states).

Figure 8.

Percent Increase In Overall Tax Burden: States With No Income Tax, New Income Taxes, Continuing Income Taxes, 1957-1997



Source: U.S. Department of Commerce, Author's Calculations

Figure 8 shows that the average *overall* tax burden rose by an astonishing 37.2 percent in the new income tax states, compared with a much more reasonable 10.5 percent in the no income tax states (the continuing income tax states had a tax burden rising 23.4 percent). Income taxes are such potent revenue sources, with revenues typically rising faster than personal income owing to the progressive nature of the tax, that they provide government treasuries with great revenue growth – which politicians seem to spend. Thus income tax states tend to be big government states, whereas non-income tax states like New Hampshire, Florida and Texas tend to have more moderate levels of government spending and taxation relative to income levels.

General Sales Taxation

While income taxes are the fastest growing large tax revenue source of state and local governments, general sales taxes still provide more revenue in many states. As with income taxes, there is an enormous variety of policies regarding sales taxation, with several states (e.g., Oregon, Delaware, New Hampshire) having no general sales taxes at all, while other states tax items up to eight percent. Also, the sales tax base varies dramatically, with some states excluding food and drugs, while others include them.

While there is a strong negative relationship between income taxes and economic growth, however measured, the sales tax/growth relationship is more ambiguous. Looking at the 10 states with the highest average general sales tax burden from 1957 to 1997 and comparing them with the 10 states with the lowest such burden, we observed moderately higher rates of growth in per capita income in the low sales tax states, sug-

gesting these taxes too are harmful. Yet with respect to total personal income growth, the reverse is true: the high sales tax states actually had, on average, greater growth. One reason is that states with no income taxes often have relatively high sales taxes - Nevada, Tennessee and Washington, for example, are no income tax states with relatively high sales taxes. People may well move to the aforementioned and other low income tax states to avoid income taxes, looking at sales taxes as the lesser of two evils, particularly since the overall tax burden in general is higher in income tax states.

Why are sales taxes less harmful economically than income taxes? They tax consumption of output, not the production of it. Income taxes are levies on the fruits of labor and capital investments that lead to the production of goods. In a sense, income taxes are levies on production. Sales taxes are levies on the benefits of production, not the costs of production. Also sales taxes can be avoided by saving. Income taxes impose a burden on saving (since income that is saved is taxed), whereas consumption taxes do not. Savings and capital formation, along with technological progress, are the primary engines of economic growth.

While sales taxes are clearly less harmful than income taxes, there are problems with levying high rates. First, in our federal system of government, high sales tax rates lead to considerable cross border activity as persons try to escape the tax. The tax competition between states is actually a good thing, as in constrains governments in terms of tax rates. The cross border phenomenon put limits on what governments can levy.

Second, high sales tax rates are relatively more successful in states with large tourist and convention business, e.g., Louisiana, Florida, Hawaii. These states in a sense export part of their tax burden to "foreigners", those living out of state. Thus, even though the tax may have some harmful effects, much of the damage falls on persons outside the political jurisdiction. The economic damage of sales taxes is likely to be higher in states like Iowa or Alabama, with relatively less tourist/convention business, then in states like Nevada and Louisiana who export much of the burden to conventioneers and tourists going to Las Vegas and New Orleans. The same principle applies to some extent with severance and production taxes on minerals.

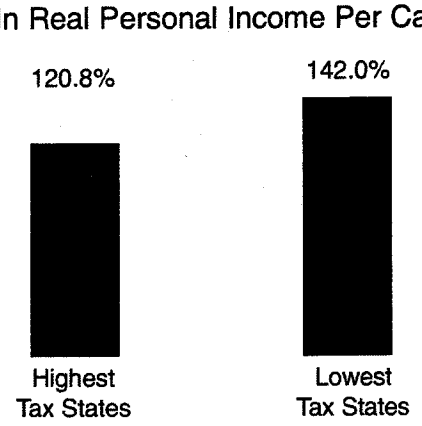
Property Taxes

The most important source of revenue to local governments historically has been the property tax. It typically finances a large part of public schools in the United States, although court attacks on property tax financing have led to some decline in its relative importance in some states. Are property taxes clearly economically harmful like the individual income tax, or are they less harmful like the sales tax?

Again, we took the 10 states with the highest average property tax burden as a percent of personal income in the period 1957 to 1997, and compared them with the 10 states with the lowest average burden. As Figure 9 shows, property taxes have sizable adverse

Figure 9.

Economic Growth: 10 Highest vs. 10 Lowest Property Tax States, 1957-1997



Source: U.S. Department of Commerce, Author's Calculations

effects. The 10 high property tax states (Maine, Massachusetts, Montana, Nebraska, New Hampshire, New Jersey, New York, South Dakota, Vermont and Wyoming) had real per capita income growth of 120.8 percent, compared with 142 percent in the low property tax states (Alabama, Arkansas, Delaware, Kentucky, Louisiana, New Mexico, South Carolina, Oklahoma, Tennessee, and West Virginia). Similarly, total personal income growth (not shown graphically) was much higher (263.2 percent vs. 206.3 percent) in the low property tax states.

Since some states had a tax revolt centering on property taxes after 1977 (e.g., Proposition 19 in California, Proposition 2 1/2 in Massachusetts), I looked at rates of economic growth related to changing property tax burdens from 1977 to 1997. While again the results showed the 10 states with the biggest property tax increases had smaller rates of growth than the 10 states with the biggest decreases, using the per capita measure, the two groups had similar performance. One problem: states with high economic growth have large increases in property values, leading to higher property taxes even though tax rates remain unchanged. Thus economic growth itself generated perhaps from non-tax sources may lead property tax rates to rise, just as the reverse is true (high property tax rates lead to lower growth).

I did do some more sophisticated analysis using econometric procedures looking at economic growth related to the three major taxes as well as other non-tax factors. I ran many different regression equations. In general, the results were stronger with respect to total personal income growth than to personal income growth per capita.[2] In most tests, the income tax had the most severe adverse impact on personal income growth, followed by the property tax (whose adverse impact on income growth, dollar for dollar, was about

[2]This is to be expected. Suppose a state is wealthy and thus attracts many migrants. The new arrivals may be less productive, even retired, than existing residents. The newcomers raise total personal income, but may actually lower personal income per person.

three-quarters as large as with the income tax), and, lastly by the sales tax, whose impact was negative but not very large in magnitude.

Other Taxes and Revenue Sources

There are other taxes and non-tax revenue sources that have economic effects. While this paper cannot analyze all of them, some limited analysis of several of these other revenue sources is interesting. Again, I looked at the 10 states with the highest and lowest average use of the revenue source, as measured by the average of the source's share of personal income as of three years: 1957, 1977, and 1997. More sophisticated analysis is necessary before reaching definitive conclusions, but on the basis of this analysis the following conclusions seem to hold:

First, corporate income taxes have an adverse effect on the growth of total personal income over time, but not necessarily on per capita income growth. This implies that low corporate tax states have higher population growth. It is possible that low corporate taxes induce capital formation and investments, which in turn stimulates in-migration of people. On balance, reducing corporate taxes is a pro-development move, although less unambiguously so than with individual income taxes.

Second, the only instance where high taxes were associated with higher growth (measured either in terms of total or per capita income) was with respect to selective sales taxes, a relatively minor revenue source. This includes taxes on gasoline, cigarettes, alcoholic beverages, etc. The states with the higher tax burden had higher growth. The most important of these taxes was motor fuel taxes, which were largely in effect user charges used to finance highway investments. Thus this is a tax that is used for investment, not consumption, purposes, and thus not surprisingly has a pro-growth effect.

Third, large infusions of federal funds to state and local government did not lead to higher growth: indeed, the opposite is more closely the truth. There was no meaningful difference in per capita income growth between the 10 states receiving the most federal aid as a percent of personal income and those receiving the least such aid. However, total personal income growth was dramatically higher in states receiving the least such aid. Again, this implies population growth was greater in the states with low federal subsidies of state and local government activity.

People actually moved away from the states receiving large federal subsidies to those receiving relatively small aid - including such rapidly growing states as Florida, Texas, and Virginia.

Fourth, states relying relatively heavily on fees and user charges tended to have higher growth than those that used these charges less extensively. Correctly levied, a fee or user charge is a price for a government service, whereby the beneficiary of the government service pays. Good examples include university tuition fees, and charges for use of pub-

lic parks. Fees and charges attempt to use a market solution to finance activity rather than general taxpayer subsidy, and thus tend to be more efficient than taxes; payers of fees are conscious of the costs of the service, whereby when government provides the service via taxes, users have incentives to waste the service.

"Good" State Tax Structures and Maximizing Growth: Grading the States

The research suggests that a state wishing to increase economic opportunities and incomes for their citizens will have a low overall tax burden or at least will lower it gradually over time. Also, it will emphasize consumption-based taxes more than taxes that impact production, such as income and property taxes. Specifically, it will avoid income taxation if possible, and work to reduce existing income taxation.

With this in mind, how are the states doing? Over long time periods, governments have grown larger, and with that the tax burden. The research would suggest that this has had a drag on economic growth. Worse, the relative importance of income taxes has grown, while consumption based taxes have declined a bit in relative importance. Thus, in general the experience of the late twentieth century has not been conducive to growth, particularly if federal taxation is taken into account.

Still, at the state and local level there has been wide variation in fiscal policies. Several states have no individual or corporate income taxes, while others have no general sales taxes. Thus some states and local governments rely on income taxation for one-third or more of its revenues, while others receive nothing from this source. Which states have done a relatively "good" job in following the low tax/tax reduction/no income tax policies advocated above?

I decided to grade the states on these three factors. I ranked the states from low (good tax policies) to high (bad tax policies) on three criteria:
1. state and local taxes as a percent of personal income in fiscal year 1998, the last year that comprehensive data have been made available by the U.S. Bureau of the Census (2001)
2. the *change* in the total state and local tax burden measured as above over the years 1990 to 1998,
3. the proportion of total state and local tax revenues derived from the individual income tax in 1998. Local governments are included in the analysis since the division of responsibilities between states and local jurisdictions varies considerably, so a comprehensive measure of government below the federal level is needed to maintain data comparability.

I summed the rankings for the three categories. In doing so, I weighted the total tax burden 60 percent, and the change in tax burden and the proportion of taxes derived from income taxes at 20 percent each. I obtained an aggregate ranking and distributed grades on the basis of those rankings. I arbitrarily graded on a "curve" with the average grade approximately a "C" (tough standards in this age of grade inflation, but historically a

Table 1
Grading the States on a Growth-Oriented Fiscal Policy

State	Ranking (low is good! Overall Tax Burden	Change Burden, 1990-98	% Income Taxes	FINAL GRADE
Alabama	3	19	22	B+
Alaska	42	1	1	C
Arizona	16	4	3	B+
Arkansas	15	48	31	C
California	33	30	39	C-
Colorado	9	11	32	B
Connecticut	47	49	23	F
Delaware	39	45	47	F
Florida	6	29	1	A-
Georgia	14	16	36	B-
Hawaii	45	5	38	D
Idaho	32	32	35	C-
Illinois	20	26	16	B-
Indiana	13	38	32	C+
Iowa	24	10	29	C+
Kansas	36	42	24	D
Kentucky	28	43	46	D+
Louisiana	23	13	11	B
Maine	50	50	21	F
Maryland	21	22	49	C-
Massachusetts	30	41	48	D
Michigan	27	17	26	C
Minnesota	46	24	40	F
Mississippi	22	36	12	C+
Missouri	11	44	37	C+
Montana	31	7	20	C
Nebraska	29	25	17	C
Nevada	7	14	1	A-
NewHampshire	1	40	9	B+
New Jersey	35	46	15	C-
New Mexico	29	25	17	C
New York	49	6	42	D-
North Carolina	19	23	44	C
NorthDakota	40	47	10	D
Ohio	25	31	45	C-
Oklahoma	17	27	30	C+
Oregon	10	3	50	B
Pennsylvania	18	33	27	C+
Rhode Island	37	39	25	D+
South Carolina	12	8	28	B
SouthDakota	4	18	1	A
Tennessee	2	20	8	A
Texas	5	15	1	A
Utah	38	21	34	D+
Vermont	44	37	18	D-
Virginia	8	28	41	B
Washington	34	12	1	C
West Virginia	26	9	19	C+
Wisconsin	47	34	43	F
Wyoming	41	2	1	C

SOURCE: Author's calculations, U.S. Bureau of Census data

normal grading practice; also given the overall mediocre performance of the states in pursuing a pro-growth fiscal policy, tough grading seems justified).

The grades by state are listed (Table 1), along with the rankings of each state in each of the three categories. The best states are South Dakota, Tennessee and Texas, all awarded "A"s. All three states are in the lowest five in the nation in terms of overall tax burden, all reduced their burden (albeit slightly) from 1990 to 1998, and all have no income tax or, in the case of Tennessee, a very limited one. Ranking nearly as high are Florida and Nevada, which received "A-" grades. Note that all five states do not have a general income tax on individuals.

At the other end of the spectrum, we have the failing states: Connecticut, Delaware, Maine, Minnesota and Wisconsin. All are eastern and midwestern states. Generally, they fared poorly on all criteria. For example, Wisconsin had the fourth highest overall tax burden, and the eighth worst composition of taxes (high reliance on the individual income tax). While in terms of tax changes in the 1990s, Wisconsin ranked a bit higher, its overall tax burden actually rose slightly, compared with 29 states where it declined. A similar abysmal pattern prevailed in most of the other states that received a failing grade.

While the grades were calculated strictly on the basis of statistical evidence, obviously there is some judgment involved as to what tax variables to consider and what weights to assign to them. Are my rankings eccentric and differ wildly from other such rankings? I looked at three other attempts to grade the states on the basis of their tax policies. I examined the Small Business Survival Committee's (Keating 2001) *Small Business Survival Index 2001*, grades made by the American Legislative Exchange Council(ALEC) (Lathrop 2001), and a *Bloomberg Personal Finance* grading of the states according to "wealth friendliness" (Saler 2001). The SBSC ranked the states; I applied letter grades using the same grading scale for my evaluations. The SBSC was looking at state friendliness to small business, emphasizing tax variables but not exclusively tax factors. The ALEC study includes several different grades; and are based on expenditures, not taxes. Since most states have balanced budget amendments, taxes tend to be very close to spending. I took the grade for the year 2000.

Table 2 shows the grades on the three other rankings as well as mine. There are 17 states on which there is general agreement that the fiscal policy is okay ("C" grade) to excellent ("A"): Alabama, Arizona, Arkansas, Colorado, Florida, Louisiana, Missouri, Nevada, New Hampshire, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Virginia, Washington and Wyoming; and 14 states on which there is general agreement that the policy is okay ("C") to poor ("F"): California, Connecticut, Hawaii, Idaho, Kansas, Kentucky, Maine, Massachusetts, Minnesota, New York, North Carolina, Ohio, Rhode Island and Wisconsin. On the other 19 states, there is less agreement. On the whole, however, the similarities are far more striking then the differences.

Table 2
Four Different Evaluations of Fiscal Policy By State

State	SBSC	ALEC	Bloomberg	Vedder	Median
Alabama	B+	B	B+	B+	B+
Alaska	B-	F	A	C	C+
Arizona	C+	B	B	C	B-
Arkansas	C+	C	C	C	C
California	D-	C-	C-	C-	C-
Colorado	B	B	B	B	B
Connecticut	C-	D	C-	F	D+
Delaware	C	F	B	F	D
Florida	A-	A	A	A-	A
Georgia	C	D	C	B-	C
Hawaii	F	F	C	D	D+
Idaho	C	C	C-	C-	C
Illinois	B-	C-	C	B-	C+
Indiana	C+	C-	B-	C+	C+
Iowa	D	C-	C	C+	C
Kansas	F	C-	C-	D	D+
Kentucky	C-	D	C	D+	C-
Louisiana	C+	C	A-	B	B-
Maine	F	D	D	F	D-
Maryland	C	B	C+	C-	C+
Massachusetts	C	F	C	D	C-
Michigan	B	A	C+	C	B-
Minnesota	F	D	D+	F	D-
Mississippi	B	C-	C+	C+	C+
Missouri	C+	B	C+	C+	C+
Montana	D+	C+	D-	C	C-
Nebraska	C-	B	D+	C	C
Nevada	A	A	A	A-	A
New Hampshire	B+	A	B	B+	B+
NewJersey	D+	B	C	C-	C
New Mexico	D-	F	C+	C	D+
NewYork	D-	C+	D	D-	D
North Carolina	C-	D	C-	C	C-
North Dakota	C	C+	B-	D	C+
Ohio	D	C-	C	C-	C-
Oklahoma	C	C-	C	C+	C
Oregon	D+	C+	D+	B	C
Pennsylvania	C	C+	C+	C+	C+
Rhode Island	F	D	F	D+	D-
South Carolina	C+	C	C	B	C
South Dakota	A	A	A	A	A
Tennessee	B	B	A+	A	A-
Texas	B+	B	B	A	B+
Utah	C-	D	B-	D+	C-
Vermont	D	C+	D+	D-	D+
Virginia	B-	C+	C+	B	B-
Washington	A	C+	A	C	B
West Virginia	D	D	C+	C+	C-
Wisconsin	C	D	D	F	D
Wyoming	A	B	A+	C	A-

SOURCE: See references, Table 1; median is calculated by author.

Among the better states, all four evaluations give "A" or "A-" grades to South Dakota, Florida and Nevada. The grades for Tennessee and Texas vary only between "A" and "B". At the other end of the scale, there are somewhat greater differences. Still, Maine and Minnesota received "D" or "F" grades on all evaluations, and the grades for Connecticut and Wisconsin varied between "C" and "F". My grade for Wisconsin was the harshest of the four surveys, although two of the three others gave a lowly "D" grade. The one state where the differences were more striking was Delaware, who also received a "F" grade on the ALEC report, but a good "B" from Bloomberg and a mediocre but acceptable "C" from the SBSC. On the whole, however, there seems to be considerable consistency in the rankings.

Among the nation's largest states, California, New York, and Ohio received below average marks. By contrast, above average to good grades were received by Texas, Florida, Pennsylvania (barely), Illinois and Michigan. While states tended to have rankings similar to their neighbors, there are interesting exceptions. South Dakota (median grade of "A" on the four surveys) far outdistanced North Dakota (median grade of "C+.") While Wisconsin (median grade of "D") was similar to neighboring Minnesota (D-), it was quite a bit worse than neighbors Michigan (B-) or Illinois (C+). Alaska is always hard to figure. It has no income taxes, and even rebates money to citizens from the oil revenue rich Permanent Fund. Hence one grade of"A". Yet it has the highest spending in relation to personal income of any state, hence one grade of "F," possible only because of its unusual availability of oil revenues.

The reader might say: "the ratings are subjective, reflecting the anti-government bias of the sponsors. The people as a whole do not feel that way." That is simply not true. People's feelings are ultimately expressed by their migration decisions: if an area is viewed as undesirable, they leave, and if they like a place, they move into it. Looking at the median grade (the middle of the four rankings; where the median was between two grades, the higher grade was awarded), a total of 3,794,000 native born Americans moved from 1990 to 1999, net, into the states receiving "A" or "B" grades in Table 2, whereas 2,096,000 moved away from the states receiving a "D" grade (no states received an "F" using the median). Another 1,698,000 moved away from states receiving a "C" grade. People preferred states with a low tax/pro-growth fiscal climate - and voted with their feet!

Conclusions

Taxes matter. Indeed, they matter a great deal. Low taxes mean less government spending, and more resources stay with private persons and companies. This leads to greater savings, investment and work. On average, the market disciplined private sector makes more productive use of resources than the politically driven non-market allocations in the public sector. To be sure, some taxes are worse than others from the standpoint of increasing economic prosperity. Income taxes are particularly harmful, especially those levied on individuals. Sales taxes are less harmful, and property taxes are somewhere in

between. The use of the benefit principle of public finance seems to make economic sense where possible, as fees and user charges do not seem to have the adverse growth effects of taxes. Federal grants to state do not directly seem to promote economic growth.

Justice Louis Brandeis famously said America was a "laboratory for democracy", a place where social experiments could be undertaken without impacting on the whole country. The competition between governments is good, putting some constraints on the taxing propensities of state and local governments. We see enormous variety in the taxation policies of the states. Some states follow sound fiscal policies, while others pursue policies that are harmful for economic growth, thus lowering the income and wealth of present day citizens and leaving their children and grandchildren with a less prosperous future. The massive movement of Americans to the relatively low tax/pro-growth states provides strong evidence that Americans generally want to live in places where the burden of government is small.

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