Riding the Revenue Roller Coaster:
Recent Trends in State Government Finance*

BY TIMOTHY SCHILLER

The fall in state tax revenue during the current recession and the one in 2001 highlights an increase in the variability of this source of revenue that has been observed over the past two decades or so. But states have sources of revenue other than taxes. However, while providing a relatively constant portion of total revenue over the past several years, these sources have generally not damped variability in state revenue arising from variability in taxes. Consequently, variation in state tax revenue remains an important issue for state government finances. In this article, Tim Schiller looks at the causes of the increased variation in state tax revenue during recent business cycles compared with earlier ones. He also reviews strategies for coping with fluctuations in state tax collections.

Growth in state government tax revenue slowed around the start of the recession that began in December 2007, then declined in late 2008. Although a decline in state tax revenue is to be expected during a recession, the current decline in state tax revenue has been sharper than the decline in overall economic activity. A similar relationship was observed in the 2001 recession. In fact, in these two recessions, state tax revenue exhibited much more significant weakness than would have been predicted based on previous recessions. This has been the case for the total tax revenue of all states and for the tax revenue of the states in the Third District (Pennsylvania, New Jersey, and Delaware). The fall in state tax revenue in these two recessions highlights an increase in the variability of this source of revenue that has been observed over the past two decades or so.

States have sources of revenue other than taxes. However, while providing a relatively constant portion of total revenue over the past several years, these sources have generally not damped variability in state revenue arising from variability in taxes (see *Nontax Sources of State Revenue*). Even the funds provided to state governments under the recently enacted federal economic stimulus program will go only a short way in counterbalancing the falloff in state revenue occasioned by the current recession.[1] Consequently, variation in state tax revenue remains an important issue for state government finances.

This article looks at the causes of the increased variation in state tax revenue during recent business cycles compared with earlier ones. The most important cause has been the shift by many states, including the Third District states, toward increased reliance on more variable tax bases — specifically, individual income taxes — and decreased reliance on more stable tax bases, such as sales taxes. In addition, broad changes in the forms of economic activity from which states derive

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[1] The American Recovery and Reinvestment Act of 2009 includes approximately $150 billion in total for state governments over each of the three fiscal years beginning with 2008-09. By comparison, this amount is just a small portion of the nearly $2 trillion in total state revenue collected in fiscal year 2007. Even with the stimulus funds, analysts estimate that states will face large gaps between projected revenues and expenditures in the next several years. See the article by Donald J. Boyd.

Nontax Sources of State Revenue

State governments have sources of revenue other than taxes. They receive revenue from other levels of government (intergovernmental transfers), chiefly the federal government, although some states receive funds from local governments. Some states operate utilities (such as water, electric, and gas) and mass transit systems. States also provide products and services for which they charge fees, for example, education, hospitals, highways, housing, port facilities, waste management, parks and recreation, sale of minerals from public lands, and so forth. States obtain funds through fines, rents, and lotteries. States earn interest on funds held on deposit. States collect contributions from employees for trust funds for state employee pension plans, retiree pensions and medical insurance, and workers' compensation insurance. These contributions and the earnings and capital gains on the funds are sources of state government revenue.

Intergovernmental transfers are a large share of the nontax revenue of the states. This share has been roughly constant at around one-fifth of total revenue over the past 20 years (see the Table on page 25). Some of the transfers from the federal to the state governments are programmatic in such a way that they do not vary so as to offset declines or increases in state tax revenue over the course of the business cycle, although some transfers have that effect. Specifically related to the business cycle are federal transfers that have been enacted during past national economic downturns and in the current recession. Although helpful in counteracting shortfalls in state revenue generally, such transfers tend to be based on broad outlines that do not necessarily take individual state conditions into account, and the actual disbursement of funds at the state level often comes late or even after a recession ends.[a]

Beside intergovernmental transfers, the shares of revenue provided by most other nontax sources listed above have remained roughly constant for the past 20 years or more. However, among other nontax sources of funds, a large and growing share is accounted for by states' insurance trust funds. This share has increased from approximately 18 percent of total revenue in 1987 to 26 percent in 2007. (This amount is included in the "Other" category in the table.) These funds are not available to help states deal with cyclical fluctuations in revenue because they are dedicated to specific purposes, mainly state employee and retiree health-care benefits and pensions. And although investment returns on these funds were high until 2007, recent returns have been low or negative, presenting many states with the need to replenish the funds. So, instead of adding to states' financial strength, these insurance programs are actually financial burdens, and they are becoming more pressing as pension obligations increase.[b]

Theoretically, the more different sources of funds that states have, the less impact changes in the flow of funds from any single source will have on the total. However, in fact, nontax revenues are positively correlated with tax revenue; that is, they tend to vary together in the same way. This is not too surprising because many sources of nontax revenue are affected by the same national and state economic conditions that affect the sources of tax revenue. Thus, the increased variation in state tax revenue that has resulted from the changes in taxation and the economy discussed in this article has not been mitigated by nontax revenue. Despite nontax sources of revenue, fluctuating tax revenue remains a problem for state governments' fiscal management.

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[a] See the article by Richard H. Mattoon and the article by Daniel Wilson.

[b] See my previous *Business Review* article.

their tax revenue, mostly income and retail sales within their borders, have affected tax collections from these sources. Coping with fluctuations in state tax collections has become increasingly important, and this article reviews strategies for doing so.

CHANGES IN SOURCES OF STATE TAX REVENUE

The major sources of tax revenue for the states are individual income taxes, sales taxes, and corporate income taxes. Over the past several decades, the percentage of total tax revenue raised by individual income taxes has increased, and the percentage raised by sales taxes has decreased. Because taxes are based on these and other economic activity within a state, tax revenue varies with state economic conditions. This has always

been the case. However, in the past two decades, state tax revenue has varied more over the course of the business cycle than it did in post-World War II business cycles before the 2001 recession.[2] Changes in sources of state tax revenue over the past 40 years or so have been the cause of the greater variation. Perhaps the most important of these changes has been the shift toward increased reliance on individual income taxes and less on sales taxes.

Data from the U.S. Census of Governments provide a consistent estimate of state tax revenue amounts and sources. These data are available for fiscal years from 1961.[3] For all states in total, from 1961 to 2007 (the latest year for which annual data are available), the tax revenue raised by individual income tax increased from 12 percent to 35 percent of total tax revenue. Sales taxes decreased from 58 percent to 46 percent. The corporate income tax was unchanged at 7 percent. (A range of other taxes, which varies widely across the states, make up the balance of total tax revenue.)

For the three states of the Third Federal Reserve District, the changes among tax sources have been greater than the average among all states. From 1961 to 2007, individual income taxes rose from 0 to 32 percent and 40 percent of total tax revenue in Pennsylvania and New Jersey, respectively, following the inception of the personal income tax in those states.[4] In Delaware, individual income taxes were practically the same portion of total tax revenue in 1961 — 36 percent — as they were in 2007 — 35 percent. Sales taxes declined from 64 percent to 47 percent in Pennsylvania, 58 percent to 41 percent in New Jersey, and 24 percent to 16 percent in Delaware.[5] Corporate income taxes decreased from 13 percent to 7 percent of total tax revenue in Pennsylvania but rose from 7 percent to 10 percent in New Jersey and were practically the same in both years in Delaware, moving up from 9 percent to 10 percent. (The corporate income tax is very variable year to year in all states, so its percentage for any individual year must be interpreted cautiously.)

Since about 1960, revenue in the states in the region as well as across the country has gradually shifted toward greater reliance on income taxes and less reliance on sales taxes, and the shift has continued strongly in the past 10 years. Two factors are responsible for these changes in sources of state tax revenue: One reflects a policy choice by state governments; the other is a consequence of changes in the economy that have altered the ways in which workers are compensated and the ways in which consumers spend their money.[6]

Both of these factors contributed to increased state revenue from individual income taxes during this period. The policy factor was the implementation or increase in individual income taxes. Many states, including Pennsylvania and New Jersey, instituted individual income taxes, raised rates in existing income taxes, and expanded the range of incomes subject to tax, leading this form of taxation to account for a growing share of tax revenue over the years. This policy-induced change was compounded by changes in the ways in which workers are compensated that affected both the amounts and types of individual income. During the 1990s capital gains income rose both absolutely and as a share of individual income. This happened for two reasons. One is that individuals sold financial assets during a period

[2] See the paper by Richard Mattoon and Leslie McGranahan.

[3] The Census Bureau conducts two surveys of state taxes and spending. The quarterly survey covers estimates of revenues received by state revenue departments. The annual survey covers revenues and spending for all state government departments and agencies. The quarterly data are collected by calendar quarter; the annual data are collected for fiscal years (beginning in July for most states).

[4] Personal income taxes were first collected in fiscal year 1962 in New Jersey and fiscal year 1971 in Pennsylvania.

[5] Delaware does not have a general sales tax but does tax certain items, such as tobacco and motor fuels.

[6] See the article by William F. Fox.

TABLE

Percent of Total Revenue

	Intergovernmental		Taxes		Other	
	1987	2007	1987	2007	1987	2007
All States	19.8	21.6	47.7	37.6	32.5	40.8
Pennsylvania	19.8	19.6	47.8	37.0	32.4	43.4
New Jersey	15.4	17.5	48.6	44.4	36.0	38.1
Delaware	14.1	16.7	47.8	39.1	38.1	44.2

Source: U.S. Census Bureau, State Government Tax Collections

of rising prices for stocks and bonds, generating taxable income. The other is that stock options became more common as a form of employee compensation, and the exercise of these options generated taxable income.

While these changes were boosting state tax revenue from individual income taxes, several factors were diminishing the relative amounts raised by sales taxes. One factor was a policy change: States exempted some goods, mainly food and medicine, from sales taxes. Other changes that tended to reduce the relative amounts raised by sales taxes resulted from changes in consumer spending patterns. One of these changes was a gradual shift toward more consumption of services and less consumption of goods. The decline of sales tax revenue from this cause is due to the fact that many services are exempt from state sales taxes and that states have difficulty enforcing compliance with taxation of services. Another, more recent change is the growth in shopping across state borders, which has been facilitated by the Internet.

VARIABILITY OF STATE TAX REVENUE HAS INCREASED

Income tends to vary more over the business cycle than consumption: People tend to maintain consumption through borrowing or drawing on their savings when their income declines during economic slowdowns, and they tend to save at least a portion of their income when it increases during economic expansions. Consequently, tax revenue derived from income varies more than tax revenue derived from consumption (sales tax). (See Figures 1 to 4.) Therefore, the shift in sources of state tax revenue to greater reliance on the income tax base and less reliance on the sales tax base has increased the variation of state tax revenue over the course of the business cycle. This variability is absolute; that is, tax revenue in any given period varies compared to its average over a number of periods. It is also relative; that is, variation in tax revenue is greater than the variation in economic

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conditions in each state. The overall variability in tax revenue occurs even when states have not enacted increases or decreases in taxes (although many states, including those in the Third District, have during the years under review here).

Variability, as measured by standard deviation, in the annual growth rate of individual income taxes is nearly twice that of sales taxes. As reliance on the less stable income tax has grown, states have experienced a two-thirds increase in the standard deviation of annual total tax growth from the 1960s to the early 2000s. For the Third District states, the standard deviation of annual growth was less in the early 2000s than in the 1960s, but — as is the case for the national average — the standard deviation increased from the 1980s to the 1990s and early 2000s. (These annual data are not adjusted for occasional legislative changes that raised or lowered taxes, but other research that takes these changes into account still finds increased variability. See below.)

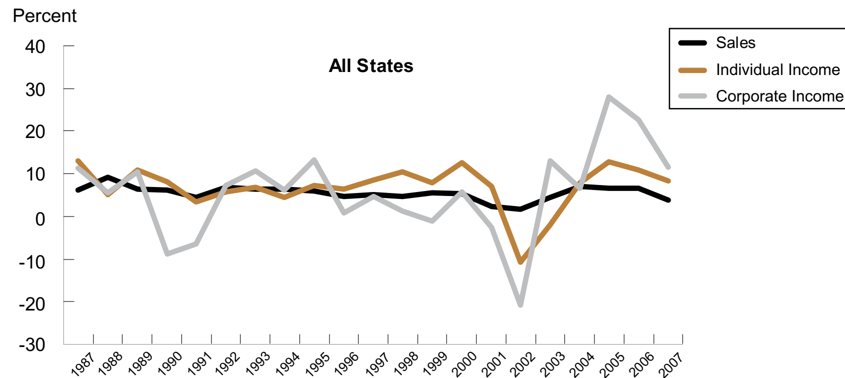
Besides the increase in absolute variability, state tax revenue has also become more variable with respect to state economic conditions. That is, changes in measures of economic activity in a state, such as employment, output, and income, have become associated with proportionately larger changes in state tax revenue in recent years, mainly the past 10 years, than in earlier years. (For example, see Figures 5 to 8, which illustrate that state tax revenue varies more than total income within a state.) The increased variability in total state tax revenue is almost wholly due to a large increase in the variability of income tax revenue. Research cited earlier (Mattoon and McGranahan) indicates that changes in a state's economic conditions as measured by state employment or a composite index of state economic conditions have been associated with twice as much change in income tax revenues in the years since 1998 than in the years before 1998.[7] This research controls for large changes in taxation and the timing of collections in individual states. It finds that the increase in cyclical variability of income tax revenue since 1998 is measurable in 36 of the 43 states with an income tax and statistically significant in 10, including two Third District states, New Jersey and Pennsylvania.

As noted earlier, income taxes have become a larger share of total state tax revenue in recent years, and capital gains have become a larger portion of income. In combination,

[7] The composite index is the state coincident index computed by the Federal Reserve Bank of Philadelphia. The components of the index are employment, the unemployment rate, average hours worked in manufacturing, and wages and salaries adjusted for inflation.

FIGURE 1

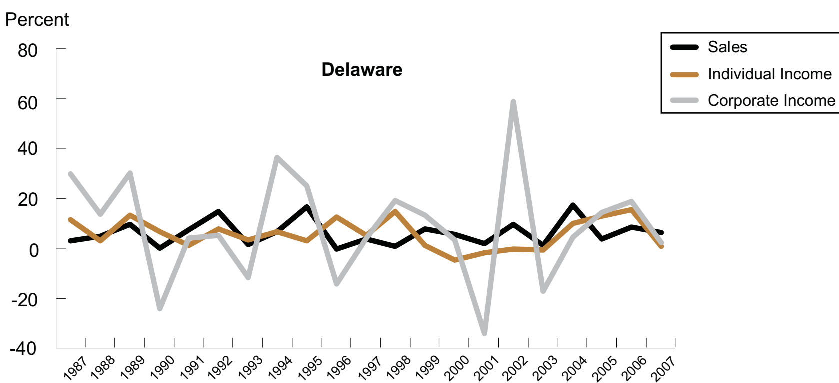
Annual Change in Tax Revenue



Source: U.S. Census Bureau, State Government Tax Collections.
Data are actual tax collections not adjusted for changes in tax laws.

FIGURE 2

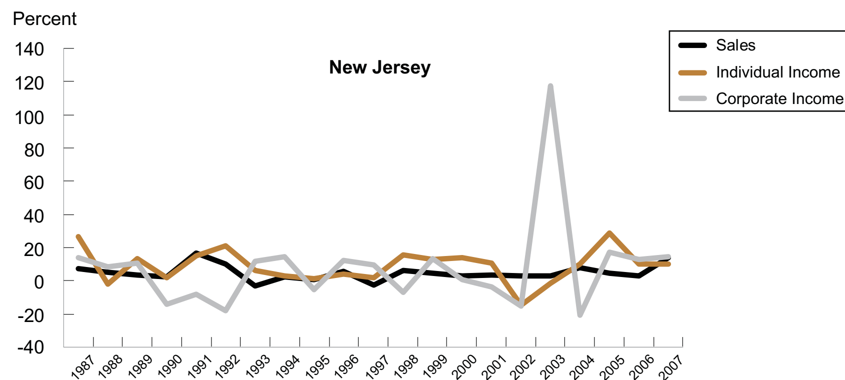
Annual Change in Tax Revenue



Source: U.S. Census Bureau, State Government Tax Collections.
Data are actual tax collections not adjusted for changes in tax laws.

FIGURE 3

Annual Change in Tax Revenue



Source: U.S. Census Bureau, State Government Tax Collections.
Data are actual tax collections not adjusted for changes in tax laws.

these two factors have made capital gains a larger share of taxable income. Furthermore, most states, including Delaware and New Jersey in the Third District, have progressive income tax rates, so variations in capital gains income that move taxpayers across tax brackets tend to have magnified effects on the variation of income tax revenue. Because capital gains are more variable than wage income, especially over the course of a business cycle, and because they can have a more than proportional effect on income taxes, the increase in their share of total income has been a primary factor in the increase in the variability of income tax revenue and total revenue.

COPING WITH THE INCREASED VARIABILITY OF STATE TAX REVENUE

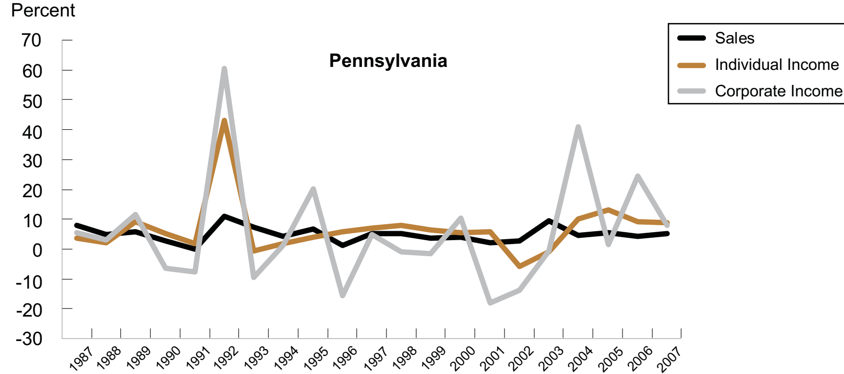
During much of the time when the variability of state tax revenue was rising, it was not a problem because the variability was mostly positive; that is, state tax revenue was rising, usually by as much as or more than state income. But variability showed its other face when a national recession occurred in 2001. In fiscal year 2002, total state tax revenue for the 50 states declined 4 percent in nominal terms, the first decline in the history of the census data series on annual state revenue since its inception in 1962. Besides the usual recession-related weakness in state revenue, a decline in investment-related income was a significant cause of a drop in individual income tax revenue. This was in sharp contrast to the late 1990s when rising investment returns boosted individual income tax revenue.[8]

Because the 2001 recession was relatively mild and brief, it did not prompt much change in state tax poli-

[8] See the article by Nicholas Jenny.

FIGURE 4

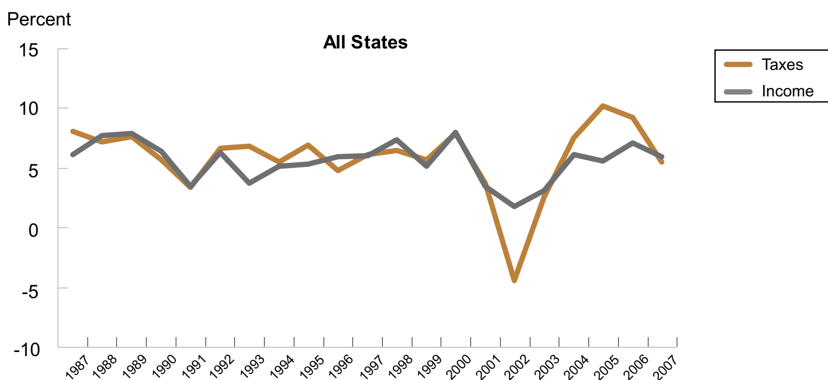
Annual Change in Tax Revenue



Source: U.S. Bureau of Economic Analysis, State Annual Personal Income: U.S. Census Bureau, State Government Tax Collections.
Data are actual tax collections not adjusted for changes in tax laws.

FIGURE 5

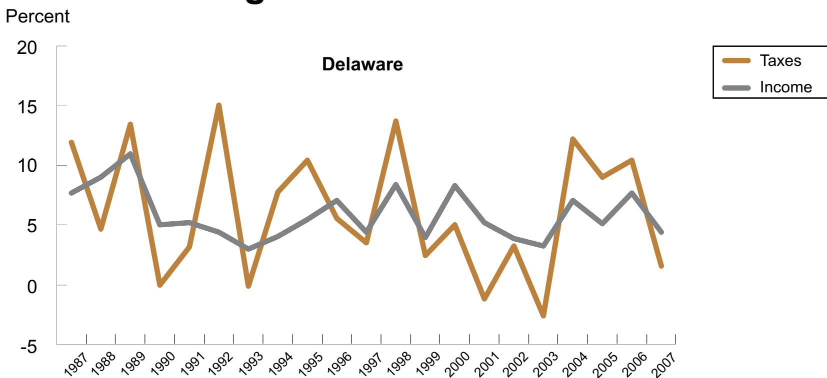
Annual Change in Tax Revenue and Income



Source: U.S. Bureau of Economic Analysis, State Annual Personal Income: U.S. Census Bureau, State Government Tax Collections.
Data are actual tax collections not adjusted for changes in tax laws.

FIGURE 6

Annual Change in Tax Revenue and Income



Source: U.S. Bureau of Economic Analysis, State Annual Personal Income: U.S. Census Bureau, State Government Tax Collections.
Data are actual tax collections not adjusted for changes in tax laws.

cies in response, although some states enacted tax increases to compensate for the shortfall in tax collections. The recession that began in 2007 appears to be having the same negative influence on state individual income tax revenues as the 2001 recession. Furthermore, the current recession has also brought a larger drop in consumption spending than the 2001 recession. The decline in consumption spending has been especially sharp for expensive durable goods, such as motor vehicles and home appliances. Consequently, state sales tax revenues have fallen more than in the 2001 recession.[9]

Most state governments are legally required to balance expenditures and revenues for each fiscal year.[10] Consequently, when actual revenues fall short of the amounts needed for budgeted expenditures, there are only a few ways the gap can be closed.[11] First, taxes can be increased. Second, spending can be cut. Third, temporary strategies can be used, such as reassignment of funds in state accounts. For example, some states have a limited ability to record expenditures and revenues in prior or subsequent fiscal years, most states can postpone capital expenditures, and some states might be able to restructure payment schedules for long-term debt. Fourth, states can use their rainy day funds: savings accumulated from prior years and reserved for recourse when revenues fall below budgeted amounts.

All of these ways of coping with gaps between budgeted expenditures and actual revenues were implemented among the states as they formulated budgets in 2009.[12] According to a

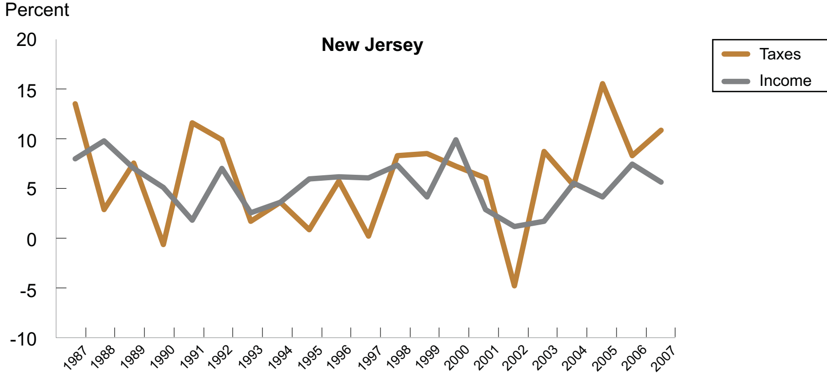
[9] See the article by Donald Boyd and Lucy Dadayan.

[10] For most states, borrowing may be used to fund capital spending projects, but borrowing cannot be used to fund operating expenditures.

[11] See the article by Janet Stotsky.

FIGURE 7

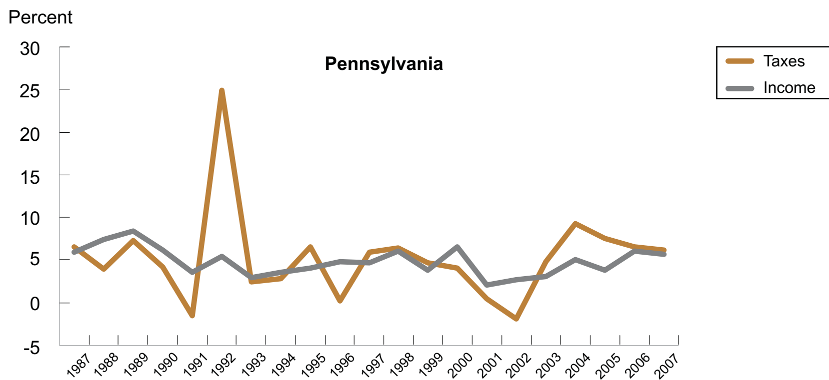
Annual Change in Tax Revenue and Income



Source: U.S. Bureau of Economic Analysis, State Annual Personal Income: U.S. Census Bureau, State Government Tax Collections.
Data are actual tax collections not adjusted for changes in tax laws.

FIGURE 8

Annual Change in Tax Revenue and Income



Source: U.S. Bureau of Economic Analysis, State Annual Personal Income: U.S. Census Bureau, State Government Tax Collections.
Data are actual tax collections not adjusted for changes in tax laws.

survey conducted at mid-year, 22 states had cut spending (including Delaware, New Jersey, and Pennsylvania), 11 had raised taxes (including Delaware, New Jersey, and Pennsylvania), 12 had raised fees (including New Jersey), 12 had used other funds to replace general revenue, and eight had tapped rainy day funds.

All of these means of coping with tax revenues that do not meet projected amounts have limitations. Tax increases and spending cuts require legislative or executive action, or both, and are usually politically difficult to accomplish. Temporary strategies are often limited in scope and, by their nature, are often insufficient to compensate for large gaps between current revenues and expenditures or long periods of low revenue. Rainy day funds are prudent and potentially adequate for emergency situations, but in most states, they have not been adequate to compensate for revenue shortfalls during economic contractions; in fact, estimates of the amounts required for this purpose are much larger than most states have amassed heretofore.[13] Several strategies have been suggested for smoothing state tax revenue or otherwise coping with its fluctuations.[14] These could be used individually or in combination. First, states could be more conservative in planning expenditures so that they would not be left with spending programs that would require radical curtailment when tax collections decline. Second, states could assign larger amounts of revenue to rainy day funds when revenues are high, to be tapped when revenues declined. Third, states could designate tax collections from capital gains income as windfalls, not to be used to fund large ongoing spending programs. Fourth, states could expand the sales tax base in order to decrease the share of tax collections derived from other, more variable sources.

More comprehensive approaches to state government finances are also possible. For example, states could model both tax revenue and expenditure needs over the course of state-specific business cycles (that is, using economic data, such as employment and income, at the state level to chart the business cycle rather than using time frames and data related to the national cycle). Ideally, this modeling would produce a picture of how each of a state's different types of taxes varies over its business cycle and how each type of spending varies. This information could be used to calculate the amount needed for a rainy day fund. It could also be used to reorient taxes toward less variable sources. Additionally, knowledge of the cyclical variation of tax revenue and expenditure

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[12] See the report by the National Conference of State Legislatures.

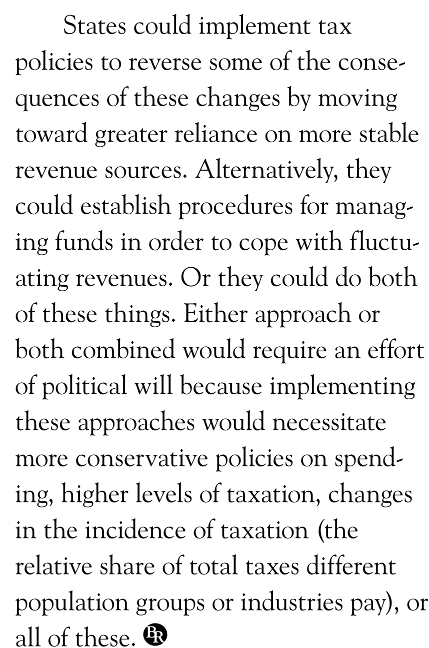
[13] See the article by Gary Wagner and Erick Elder.

[14] See the article by Elaine Maag and David Merriman.

needs could be used to match more dependable revenue sources with those expenditure categories that are most necessary year to year and to match more variable revenue sources with programs that can be scaled back or postponed with the least adverse consequences.[15]

SUMMARY

Over the past two decades or so, state tax revenue has grown, but it has become more variable, especially over the course of the business cycle. In part, this has been the result of policy actions such as growing reliance on individual income taxes and the reduction in the sales tax base. Additionally, economic changes have tended to increase the variability in state tax revenue. Significant changes have been the growth of nonwage income, particularly capital gains, as a share of total taxable income, which has increased the variability of the income tax base, and the growth of service consumption relative to goods consumption, which has reduced the revenue-generating potential of state sales taxes, a relatively stable source of revenue.



States could implement tax policies to reverse some of the consequences of these changes by moving toward greater reliance on more stable revenue sources. Alternatively, they could establish procedures for managing funds in order to cope with fluctuating revenues. Or they could do both of these things. Either approach or both combined would require an effort of political will because implementing these approaches would necessitate more conservative policies on spending, higher levels of taxation, changes in the incidence of taxation (the relative share of total taxes different population groups or industries pay), or all of these.

[15] See the article by Gary Cornia and Ray Nelson and the one by Russell Sobel and Gary Wagner.

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