

## **Three Characteristics of Tax Structures have Contributed to the Current State Fiscal Crises \***

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There is no single cause of the state fiscal crises at the beginning of the twenty-first century. The requirement that states balance their budgets<sup>1</sup> combined with relatively rapid expenditure growth, the specific characteristics of their tax structures, and poor long term fiscal planning have conspired to leave states in very difficult fiscal straits. Most states probably could have limited the extent of problems with very careful planning, such as through the use of much larger rainy day funds, a longer term perspective in the tax policy decisions that were made during the 1990s, and other mechanisms to smooth their expenditure patterns. Nonetheless, on a year over year basis the revenue pattern of the past 3 years appears to be closer to a 100-year flood than to a 10-year flood, so states would have needed to plan throughout the 1990s to avoid fiscal problems.<sup>2</sup> By 2000 it was too late for states to save enough for the current rainy day. This paper investigates one of the causes of the fiscal dilemma, the structure of state taxes, and the role that it has played in the current fiscal crises.

The paper begins with a review of recent state revenue performance. The second section contains a description of three key characteristics of state tax structures that

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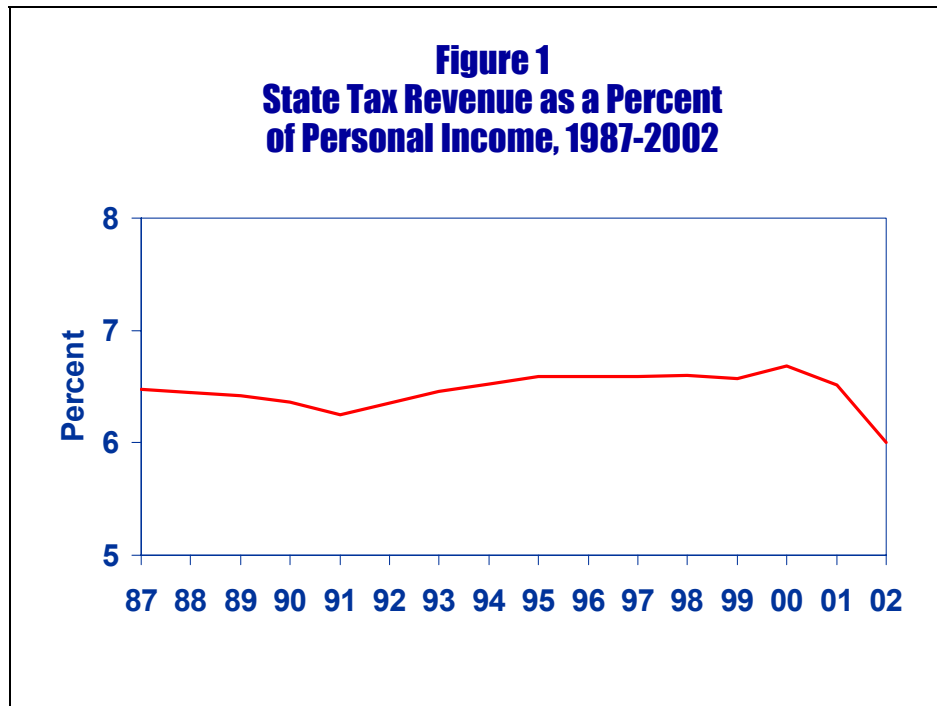
<sup>1</sup> Fox and Murray (1997) discuss why balanced budget requirements are much less restrictive than may be thought.

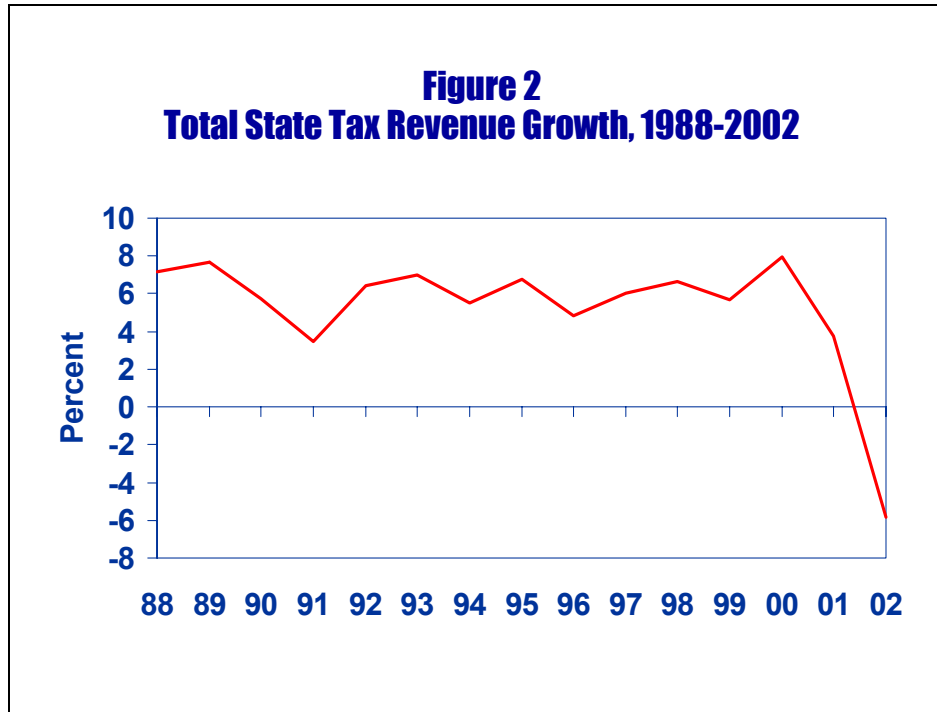
<sup>2</sup> During 2002, states' real decline in tax revenues was significantly greater than any year since at least 1970. Revenue growth has been negative in real terms for two consecutive years though the revenue malaise has not as yet been as prolonged as the experience of 1980 through 1983. But, revenue growth during the first half of fiscal 2003 suggests another year of growth that is negative in real terms

determine how tax revenues respond to economic growth. The final section concludes by putting these factors together to analyze the implications for the future.

### State Tax Revenues in Review

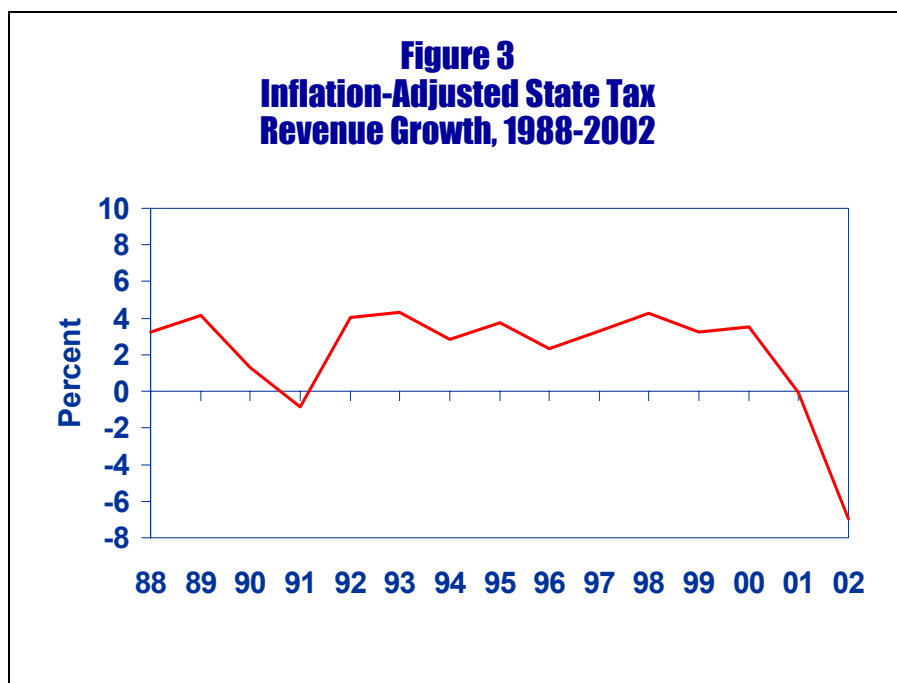
Recent short-term tax revenue performance certainly leads to the conclusion that poor revenue growth has been an important contributor to the states' fiscal crises. State tax revenues in 2002 comprised the lowest share of personal income in more than 15 years (see Figure 1). State tax revenue in 2002 declined by more than 6.4 percent from 2001 (see Figure 2), the only decline in nominal state tax revenue since 1970. Inflation-adjusted tax revenues have fallen in other years, but the real 2002 decline is also much greater than the experience of any other recent year (see Figure 3).





Each of the three largest taxes, personal income, corporate income, and sales, generated less revenue in 2002 than in 2001. The largest decline was in the corporate income tax, which fell 11.7 percent, followed by the personal income tax with a 10.2 percent decline and the sales tax with a 0.9 percent decline. Such large declines have certainly created difficulties for states, particularly since the degree to which tax revenues fell was unexpected in most states.

The problem was exacerbated by weak collections in 2001 and 2003. Nominal revenue growth in 2001 was only 3.7 percent, the second lowest since 1991, and revenues declined slightly in real terms. Collections were up 2.5 percent for the first quarter of 2003 (Jenny, 2002b), but will still be lower than 2000 unless revenue growth accelerates significantly.



On the other hand, strong revenue growth during the 1990s provided states with the opportunity to plan for contingencies. State tax revenues grew faster than personal income in seven of the nine years between 1992 and 2000<sup>3</sup>, despite some efforts to limit tax receipts through policy changes such as taking the sales tax off food and non-prescription drugs, reducing tax rates, exempting certain pensions from the personal income tax and providing tax rebates (see Jenny 2002). State governments combined could have created rainy day funds of \$131 billion between 1992 and 2001 (even at zero interest return) if they had held spending from tax-financed sources to the same share of personal income in each year as in 1992. This would have represented a rainy day fund equal to 23.4 percent of 2001 state tax revenues. The balance would have been sufficient to maintain the spending share in 2002 (assuming this is an appropriate goal) with \$97 billion remaining to finance shortfalls in 2003 and 2004.<sup>4</sup> Thus, an argument can be made

<sup>3</sup> This can be seen from the positive slope during most years in Figure 1.

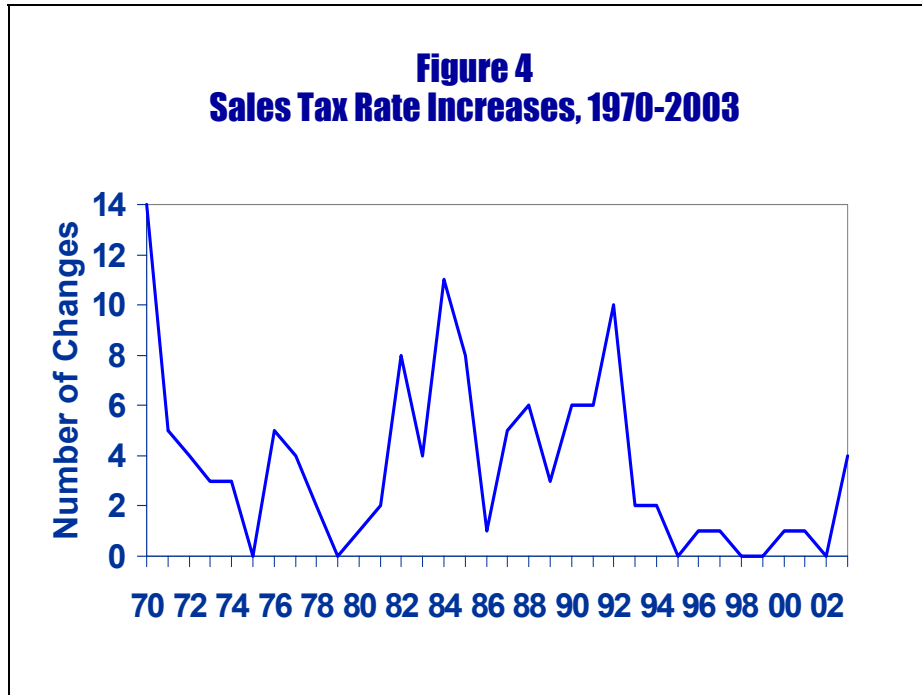
<sup>4</sup> The calculation was conducted for the aggregate of states. The capacity to maintain tax financed

that revenue side problems can be attributed both to poor planning by the states in smoothing out spending growth and to the extent of revenue deterioration during the last several years.

Also, until the current slowdown states were much more prone to limit revenue declines fell by raising tax rates during or immediately after economic downturns. It is too early to see the full extent of rate hikes that will be enacted during the years following the 2001 recession, but 2001 and 2001 only saw about 10 cases of tax increases (base or rates), some of which are temporary. The sales tax provides a good example where fewer rate increases have occurred (see Figure 4) by comparison with other economic slowdowns (1970, 1975, 1980, 1982, 1990). Numerous selective sales tax rate changes, and particularly tobacco taxes (nineteen states in 2002 alone), have been enacted during the current malaise. Among the reasons for the reticence to raise rates are the general tax cut spirit in the U.S. and the already high tax rates. The observation that relatively few rate increases have occurred should not be seen as an encouragement for more rate hikes during the next few years. Instead, the plea is for much better planning to prevent a recurrence in the future. Increases in the tax structure because of short term revenue problems are no better tax policy than were the tax structure reductions enacted by a number of states based on above equilibrium revenue growth in the 1990s.

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expenditures as a share of personal income varies significantly by state.



### Three Characteristics of State Tax Structures

State revenue growth patterns during the past decade appear to have been an aberration. The strong revenue performance of the 1990's was the result of an unusual set of events including the longest economic expansion in post-World War II history, remarkable performance of the equity markets, very strong productivity growth, and enormous spending on new technologies. Similarly, the past three years are not good indicators of future revenue performance. Nonetheless, there are a series of underlying characteristics of state tax sources that have been very important to tax revenues in the past and will continue to drive revenue performance as the economic expansion unfolds. These characteristics are the inelasticity of most state tax sources, the eroding of several important state tax bases, and the instability of most state tax revenues. This section examines each of these in some detail.

#### Inelasticity of Most Tax Sources

Econometrically estimated elasticities are not readily available in a consistent format for all taxes. Bruce, Fox and Tuttle (2002) used data from 1968 to 2000 to estimate income and sales tax elasticities for every state. The point estimates for each tax differed across states, with the sales tax having a much tighter distribution than the income tax. The average state long-term income tax elasticity was estimated to be 1.76, with only two states having measured elasticities below one.<sup>5</sup> The average sales tax elasticity was estimated to be 0.81, with only nine states having measured elasticities above 1.0. The point estimate for income tax elasticities is higher in every state than for the sales tax.

Simple revenue elasticity estimates were calculated arithmetically for the four largest tax sources, personal income, corporate income, general sales, and selective sales taxes, across the most recent business cycle to provide estimates for additional taxes. The cycle was measured from peak to peak using 1988 to 2000 and from trough to trough using 1991 to 2002 (see Table 1). These taxes represent 91.4 percent of all state taxes. Specific elasticity calculations are heavily affected by whether 2002 is included in the data with peak-to-peak elasticities being higher than trough-to-trough elasticities.<sup>6</sup>

The overall state tax structure was approximately unit elastic for the aggregate of states, but this owes primarily to the highly elastic performance of the personal income tax. The sales tax was approximately unit elastic and the corporate income tax was very inelastic. The combined selective sales taxes, comprised mostly of motor vehicle, alcohol, and tobacco taxes, are frequently levied on a unit basis and the revenues tend to

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<sup>5</sup> See Dye and McGuire (1991) and Sobel and Holcombe (1996) for earlier elasticity estimates.

<sup>6</sup> Above equilibrium tax revenue growth in the 1990s and a greater revenue decline in 2002 than in 1991 are two possible explanations for the differences in elasticity calculations. In fact, the very poor 2002 performance means any elasticity calculated using 2002 as an ending point is likely to be very low.

rise only with consumption. Not surprisingly, these taxes were very inelastic during the most recent business cycle.

These revenue elasticities are what are often termed buoyancies since the effects of policy changes in the tax rates and bases have not been excluded. The sales tax revenue elasticity was increased significantly by 28 state tax rate increases during the 1990s compared with only 8 rate decreases (some of each were temporary)<sup>7</sup> On the other hand a more even set of rate changes occurred for the corporate and individual income taxes. Eleven states increased and 9 decreased the maximum corporate tax rate and 9 increased and 10 decreased their maximum individual income tax rates.

**Table 1**  
**Aggregate State Revenue Elasticities**

Year	1988-2000	1991-2002
Total Tax Revenue	1.06	0.93
Personal Income	1.32	1.12
General Sales	1.03	0.96
Selective Sales	0.86	0.75
Corporate Income	0.59	0.45

Recent history is not a good indicator of the future both because of the unique influence of economic events on revenue performance<sup>8</sup> and because of the effect that frequent policy changes have had. The reasonable presumption is that tax revenues will generally grow more slowly in coming years, or at least that the elasticities will be lower than during the last business cycle. Personal income taxes are likely to have lower

<sup>7</sup> Of course, the elasticity was lowered by the legislated base expansions as will be discussed below.

<sup>8</sup> For example, stock market gyrations increased and subsequently decreased individual income, corporate income, sales and inheritance taxes.



elasticities in the next decade than in the past because they will not benefit as fully from capital gains and the exercise of stock options, factors that affect revenues but are generally not accounted for in personal income. The general sales tax will not be raised by so many rate increases and will experience continued base narrowing (though the SSTP could reverse some of the base erosion). The corporate income and selective sales taxes were very inelastic during the most recent business cycle and there is no reason to expect this pattern to change.

### Eroding Tax Bases

Tax base erosion is a separate issue from inelasticity though base erosion has been a very important cause of the sales and corporate income tax inelasticity. Base erosion has been causing slow revenue growth for both taxes over the long term, but the extent of erosion appears to become exaggerated in economic slowdowns, causing even worse revenue deterioration. The remainder of this section examines the causes of sales and corporate tax base erosion.

**Sales Tax.** The sales tax base has been declining relative to personal income for decades (see Fox, 1998, and Mikesell, 2003), as can be seen in Figure 5. The base has fallen from about 51.4 percent of personal income in the average state in 1979 to 41.5 percent in 2001. Inspection of Figure 5 evidences that the base falls dramatically around recessions and flattens out or rises in expansions. However, the base does not recover to the pre-recession share of personal income. The decline can be attributed to four basic causes: cross border shopping, technological changes, legislated exemptions, and changing purchasing patterns.<sup>9</sup> Cross border shopping via mail order and electronic commerce has been growing at a dramatic pace and has consistently narrowed the tax base. Purchasing

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<sup>9</sup> See Fox (1988, 2003) for further discussion of these points.

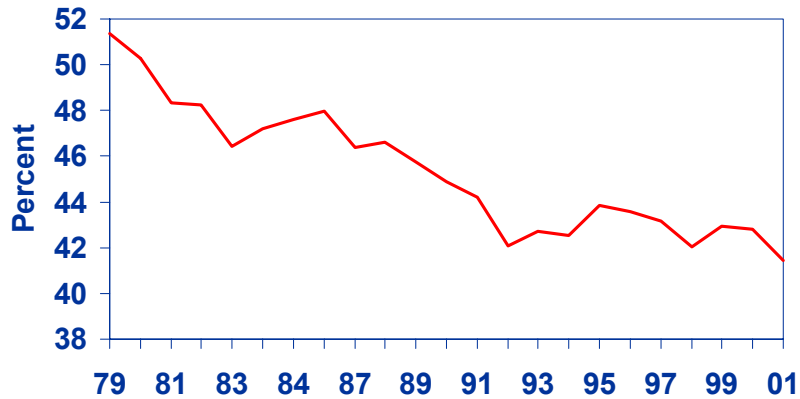
items remotely does not normally by itself alter their taxability, but does affect the ability to collect the revenues. For example, the rapid growth of mail order and internet-based purchasing has significantly reduced collections. Bruce and Fox (2001) estimated that state and local governments will lose \$14.0 billion in 2003 sales tax revenues (beyond the revenues already being lost from other types of cross border shopping) based on nearly \$1.8 trillion in electronic commerce sales.<sup>10</sup> They estimated that 70 percent of the revenue loss would arise from B2B transactions, with the remainder coming from B2C. Electronic commerce is expected to continue growing at a very rapid rate, and will be nearly \$4.5 trillion by 2007 when the growth rates will slow to only about 10 percent annually. Revenue losses can be anticipated to grow with the e-commerce sales unless a combination of the Streamlined Sales Tax Project and Congressional action works to expand state ability to collect taxes on remote activity.

The available evidence indicates significant non-compliance by both businesses and individuals with the use tax, which is the basis for taxation of remotely purchased items. The State of Washington (2003) found the use tax to have a 27.9 non-compliance rate for registered business taxpayers. Interestingly, non-compliance was greatest for the largest firms, which are those with over \$50 million in receipts. Except for a few items like automobiles, compliance is nearly non-existent for individuals, even in states where allowance for payment is made on the individual income tax return.

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<sup>10</sup> See Bruce and Fox (2000) for a description of the methodology used in estimating the sales tax revenue effects. E-commerce estimates are from Forrester.

**Figure 5**  
**Sales Tax Base as a Percent of**  
**Personal Income, 1979-2001**



Recent technological advances have also had profound influences on the breadth of the sales tax base, and the effects are growing. First, new technologies provide the mechanisms through which many remote transactions can occur as they lower the cost of ordering and obtaining goods and services from remote locations. Second, the technologies have fostered a new set of services including e-mail, on-line information, and on-line games. In most states, sales taxes are structured so that services are only taxable if enumerated, meaning many of these new technologies are not currently taxable. Third, digitization allows a set of goods, such as books and music, to be accessed in different formats that can change the taxability of the transaction in some states (since it alters the form from tangible personal property). For example, canned software is taxable in every state when sold via diskettes but is exempt in about one-third of the states when downloaded via the Internet. Books and music are normally taxable in states but are not taxable in some states when digitized. Thus, technological advances shrink the sales tax base unless states modernize their structures.

States have legislated many new exemptions in recent years, particularly in years when tax revenues were growing very rapidly. For example, Missouri and Georgia recently exempted food from the sales tax, bringing the number of exempting states to 30. Sales tax holidays, which have been enacted in 10 states since 1997, are another example (see Hawkins and Mikesell, 2001). A variety of reasons have been used to justify the exemptions including equity, economic development and administrative convenience. A careful analysis of new exemptions would probably lead to the conclusion that some represent good tax policy and others do not, but the net effect is to narrow the base.

Finally, the consumption of services continues to grow rapidly, as evidenced by services increasing from 47.4 percent of consumption in 1979 to 58.8 percent in 2002. The relative transition from consumption of goods to services erodes the base since most goods are included in the tax base (with the notable exception of food for consumption at home) and most services, and particularly professional services, are exempt. The effects of declining goods consumption have been less pronounced than they might otherwise have been because food for consumption at home accounts for about one-half of the reduction in goods, meaning one untaxed set of transactions has tended to replace another set in many states.

**Corporate Income Tax.** The corporate income tax base, like for the sales tax, has been eroding for many years. Fox and Luna (2002) recently demonstrated that the effective corporate income tax rate has fallen by about one-third since the late 1980s, even as the simple average nominal tax rate rose about 0.1 percent. Thus, the effective tax rate decline must be substantially the result of an eroding taxable base relative to national

income account definitions of corporate profits. Three primary factors have contributed to this trend: legislated base changes, federal tax base shrinkage, and tax planning.

First, several types of legislated exemptions have narrowed the base. Discretionary tax concessions intended for selected firms and concessions built into the tax code that are intended for all firms are granted in essentially every state.<sup>11</sup> States have also lowered the tax liability for at least some firms by altering the traditional three-factor apportionment formula. The UDITPA-based three-factor formula is now the exception rather than the rule (see Edmiston, 2000), with over two-thirds of the states at least double weighing the sales factor. Thirteen states have sales factors that exceed 50 percent and nine states have a single sales factor apportionment formula for at least some taxpayers (Cline 2002).

Second, Fox and Luna conclude that federal tax base decline could account for as much as 30 percent of the erosion of the state corporate effective tax rate. The corporate tax structure in almost every state begins with the federal definition of profits so state tax bases move with the federal base. Federal base shrinkage has received considerable attention in recent years because of the growing diversion between corporate book income and federal taxable income. For example, Talisman (1999) found that book income was approximately equal to taxable income in 1991 but had grown to be 40 percent greater by 1996. Desai (2002) developed simulations to measure the role that differential treatment of depreciation, reinvested earnings abroad, and non-qualified stock options have had on the divergence of taxable income and book income. Findings of the simulations evidence that each of these determinants mattered with the relative roles

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<sup>11</sup> Some overlap exists between these two groups. In some cases, states build a discretionary concession into the code but describe the characteristics of qualifying firms so narrowly that only one or a very small number of firms could possibly obtain the concession.

changing over time. But, these three only accounted for about one-half of the divergence. Tax sheltering is seen as a significant cause of the divergence that remains unexplained by the simulations.

Desai finds that depreciation plays a smaller role in the differentials estimated using the simulations for the 1990s than for the 1980s. Excess depreciation accounted for about two-thirds of the deviation during the 1980s, but for no more than one-fifth during the 1990s. The exercise of non-qualified stock options accounted for the largest share of the divergence in recent years (about one-half), after playing no role until 1992. The exercise of stock options reduces corporate taxable income but not book income. Some states may not experience a net revenue loss since the excess of the market over the strike price is taxable under the individual income tax. But a revenue loss can be expected in the 24 states where the maximum corporate rate is higher than the maximum individual rate and in the nine states with no individual income tax. Reinvested earnings abroad are responsible for one-third or more of the simulated divergence. This can result either because foreign activity is growing rapidly or because of reduced repatriation of earnings. Effects of changes in re-invested earnings on state corporate profits taxes should be small since few states tax foreign earnings.

#### Volatile Tax Revenues

As described above, the three major state taxes began to slow during 2001, fell dramatically in 2002, and are rebounding slightly in 2003. Despite the small rebound in 2003, revenues may end the year lower than in 2000. This pattern, combined with the rapid growth of revenue in many states during the 1990s evidences the general volatility of state tax sources. The degree of volatility across the most recent business cycle appears

to have been greater than the norm. For example, each of the three major tax sources declined more than would have been expected given the modest recession, but the most dramatic difference was in the individual income tax. The main causes appear to be the timing of the slowdown relative to tax years and the importance of non-labor income in recent tax receipts. Quarterly income tax payments appeared to remain high for the first part of calendar year 2001, causing fiscal year 2001 tax collections to be overstated relative to the ultimate income tax liabilities. Then, taxpayers began to reduce their quarterly payments for the remainder of calendar year 2001 and into 2002 and received refunds when they cleared their 2001 liability in April 2002. Thus, while personal income tax withholding for the U.S. fell an average of only 0.4 percent between April and June 2002, estimated payments and declarations fell 21.7 percent (Jenny, 2002a). Effectively, 2002 tax revenues were reduced both by the need to refund overpayments for tax year 2001 and because of lower non-wage income growth in 2002.

The sales tax slowed less than might have been expected because consumer-spending patterns were stronger than the norm for a recession. Auto and housing sales have remained relatively robust since 2001 (though weakening slightly in early 2003) and have buoyed sales tax collections. The precipitous declines in business investment and particularly in telecommunications spending, much of which is sales taxable, have been the primary causes of the sales tax's slowdown.

Economists have often presumed that long-run revenue elasticity and stability are opposite sides of a coin that move in an inverse fashion. This is a simplistic and often incorrect interpretation of how revenues respond across the business cycle. Bruce, Fox and Tuttle (2002) addressed this issue in their analysis of state sales and individual

income tax elasticities. First, they found that states are affected very differently by cyclical and trend growth conditions. Specifically, the short run elasticities (and other parameters) differ from the trend elasticities. Thus, trend elasticities cannot be used to examine instability. Second, there is normally a statistically significant difference in the short run revenue elasticities during above and below equilibrium conditions for both the sales and income taxes. Specifically, the elasticities are generally much higher in above equilibrium conditions, such as during much of the 1990s, than when revenues are below equilibrium, such as now. In fact, the short run elasticity for both taxes is only slightly above 0 in the average state when revenues are below equilibrium. These characteristics ensure volatile revenue growth since revenues grow faster in above equilibrium conditions both because the economy is growing more rapidly and because revenues are growing faster relative to the economy.<sup>12</sup> Another implication of this finding is that tax revenues will respond slowly to economic growth once states have gotten into a below equilibrium situation such as now. Nonetheless, the total revenue growth in any year is the sum of base response to economic growth and the adjustment to offset any pre-existing disequilibrium. The combined effects mean that tax bases grow less than would be expected from the short run elasticity when above equilibrium and faster than would be expected when below equilibrium.

Bruce, Fox and Tuttle are unable to provide a definitive conclusion on whether the sales or the income tax is more volatile, with the conclusion depending in part on the definition given to volatility. The income tax has a much higher equilibrium income elasticity, so the very low responses to income growth in below equilibrium conditions

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<sup>12</sup> On the other hand, there is a tendency for revenues to adjust back to the equilibrium level, which tends to offset the higher elasticity.



lead to a greater degree of disequilibrium, but the time required to adjust to a new equilibrium is about the same for both taxes.

### **Implications for the Future**

The three tax structure characteristics described in the previous section have several important implications for state finances. One is that states will recover slowly from their current difficulties. The difficult conditions that most states expect during 2004 evidence this. Another is that the next crisis is around the corner, awaiting the next economic slowdown. Eroding bases and volatile tax structures will haunt states during the next slowdown as they have during this one, even if the effects are likely to be less pronounced than has been the recent experience.

States need to remember the current experiences and respond by using some combination of three policy actions. First, they can try to redesign their tax structures to achieve more desirable structures, though this is generally easier said than done. The volatility of tax structures is very difficult to reduce without fundamental changes in tax design. For example, a true consumption tax would be less volatile than a transactions (sales) tax since the consumption of autos and other durables is more stable than the sales. Taxation of more services, labor income rather than labor and non-labor income (under the individual income tax) and greater use of the property tax would also lower volatility to some extent. But, states are not likely to enact such radical changes in their tax sources.

States are also constrained in their capacity to prevent base erosion. Much of the erosion is the result of globalization of the economy and changing consumption patterns. While there are some ways to lessen the effects, states cannot prevent them.

To some degree the inelasticity of tax sources should be less of an issue in the future. The overall tax elasticity is the revenue-weighted average of the individual tax elasticities. The weights are being altered as the relative importance of taxes changes over time. For example, the personal income tax has grown from 19.1 percent of state tax revenues in 1970 to 35.4 percent in 2002 as the selective sales taxes fell from 27.3 to 14.7 percent. Thus, the individual income tax has nearly twice as much effect on the overall elasticity and the selective sales taxes only half as much as three decades ago. Future real revenue growth may not threaten the levels achieved in the 1990s, but the total trend revenue elasticity should not deteriorate significantly in states with income taxes. Of course, tax planning and globalization will continue to erode the sales and corporate income tax elasticities.

Discretionary state tax policy is the main caveat to any comments about base erosion and future revenue growth. Tax policy in the 1990s was heavily influenced by short run political cycles rather than long run funding needs. In the future, policy changes must be made with an eye on ensuring that the long-term revenue needs are met rather than on short-term revenue conditions if the effects of cycles are to be lessened. States must restrain the urge to let short-term revenue surpluses lead to structural changes. Decisions to reduce tax structures, and particularly to narrow the bases, must be taken with consideration of how they influence the ability to finance government across the business cycle. Similarly, states should not use poor planning and the resulting cyclical pressures as an excuse to raise tax rates during an economic slowdown.

Second, states need to continue seeking ways to lower the expenditure growth path. This certainly eases budget problems but does not directly address problems that

would still arise during cyclical downturns. This paper, however, is not the place to address the specifics of how to accomplish these reforms.

Third, states must build much larger rainy day funds and other balances and must be prepared to use them to deal with true cyclical funding problems. The next down cycle is unlikely to be of the magnitude of the current situation, but balances must surely be greater than 10 percent of general fund revenues to deal with the financing problems. Large balances create several obvious problems. Building and retaining balances of the size necessary to smooth out expenditure problems is politically difficult and may ultimately result in inefficient spending if Legislatures become too tempted to spend available balances. Thus, rules must be developed on how the funds can be expended. A related issue is that states would not be confronted with the tight cyclically imposed budget pressures that can be a motivation to reconsider expenditure priorities and to make cuts where appropriate. Of course, states will still be subject to the pressures of making the annual budgetary decisions necessary to build rainy day funds.

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