

# Can State and Local Governments Rely on Alternative Tax Sources?

William F. Fox

State governments are much more likely than their local counterparts to depend on taxes other than sales, property, and personal income taxes. Excises on alcohol, beer, tobacco, gambling, and business taxes are among the alternative taxes. Local governments, on the other hand, are more likely to impose user fees. Reliance on these alternative state tax sources in aggregate has diminished over the past several decades, despite a pattern of rate increases and new gambling alternatives. Competitive pressures between states and with the federal government are likely to continue limiting reliance on these alternatives. Further, the same competitive forces are reshaping state corporate taxes to operate more like taxes on consumption than the traditional focus on taxing corporate production. In addition, states are seeking to broaden the set of business taxpayers to include those exploiting the state's market and noncorporate businesses. (JEL H7, H20, H71)

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**S**tate and local governments generate a substantial majority of their tax revenues from three sources: property, general sales, and personal income taxes. These three sources are responsible for 76.1 percent of total state and local tax revenue. State government taxes are more diverse, raising only 68.3 percent of revenue from these sources, whereas local governments obtain 87.7 percent of revenue from them (Figures 1 and 2). In fact, local governments raise a larger revenue share from property taxes alone than states do from the combination of the three taxes.

The remaining state and local government revenue sources include several tax instruments, most of which individually provide relatively little revenue. Excise taxes on alcohol, beer, gasoline, tobacco, and gambling are responsible for at least 16 percent of revenue at the state level, but these represent a large group of different taxes, not a single tax on each of these five sources.<sup>1</sup> Local

governments use excise taxes to a much smaller extent. State and local governments also use corporate income and other business taxes, construction and property transfer taxes, severance taxes, inheritance and gift taxes, unemployment insurance taxes, and others.

The significant revenue declines for state (and to a lesser extent, local) governments during fiscal years (FYs) 2009 and 2010 have motivated many governmental entities to expand current revenue sources and search for new ones. Some have continued to seek greater productivity from the larger sources. For example, at least 10 states have raised their income tax rate and 9 states have increased their sales tax rate since the beginning of 2009. But states are also seeking alternatives to the three large taxes, either in hopes that other taxes will be more stable or because it may be politically easier

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<sup>1</sup> Some gambling revenues in Figure 1 are in the "Other Sales" category.

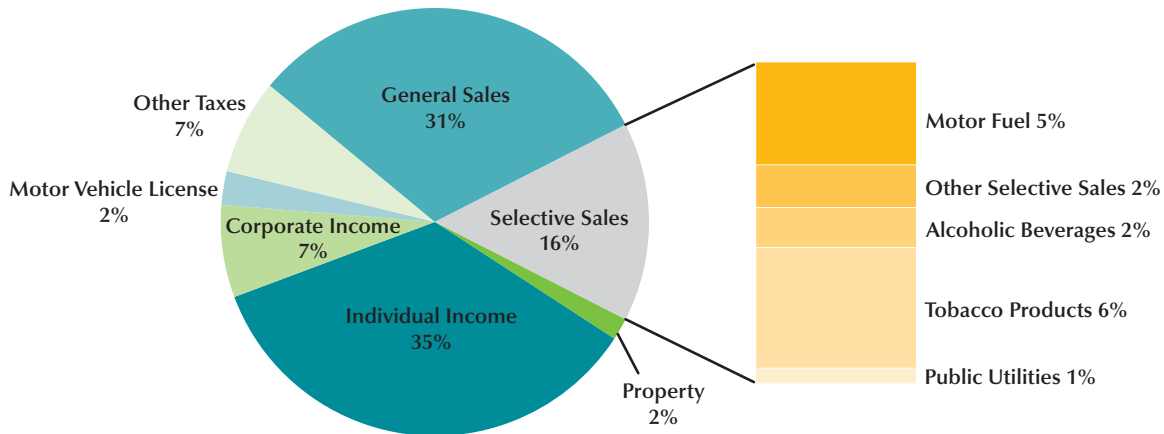
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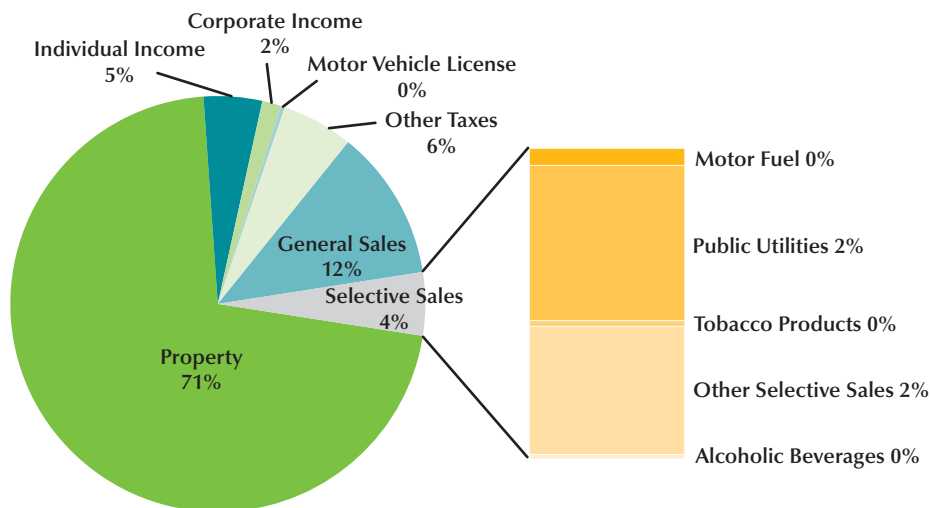
**Figure 1**

**State Tax Revenue (FY 2007)**



**Figure 2**

**Local Tax Revenue (FY 2007)**



to raise rates or broaden taxation to these alternative sources of revenue. Indeed, states have frequently raised their cigarette tax rates or broadened taxation to new forms of gambling, though these changes have not been concentrated solely during the recent recession.

In this paper I examine some of the alternatives to the three major taxes in terms of the characteristics of a good tax system: efficiency, adequacy, and equity. I focus almost entirely on state governments, since local governments generate little tax revenue from sources other than the largest three.

**Table 1**  
**Revenue Shares by Level of Government (2006-07)**

Revenue type	State government	Local government	Total
Tax revenue	73.7	62.2	68.5
Current charges	13.7	25.2	18.9
Miscellaneous revenue	12.6	12.6	12.6
Total	100	100	100

NOTE: Revenue shares are expressed as percents.

Specifically, I concentrate on (i) selective sales taxes, such as those on alcohol, tobacco, and gambling, and (ii) business gross receipts taxes. Each of these taxes is primarily levied by state governments, so most of the paper focuses on the overall picture of state revenue sources. Having said this, state transfers to local governments represented 33.5 percent of local general revenues in 2007; such transfers were 86.8 percent as large as taxes. So, state revenue decisions are likely to have important implications for local governments.<sup>2</sup>

The remainder of the paper consists of five sections. The first section provides a brief description of local taxes. The next three address gross receipts taxes, gambling taxes, and tobacco and alcohol taxes. The final section provides a conclusion and further discussion.

## LOCAL GOVERNMENT TAX SOURCES

Property taxes dominate local tax revenues; combined sales and income taxes generate less than one-fifth of total tax collections. Thirty-five states permit local sales taxes and 14 allow local income taxes. Because of their relatively modest contribution to collections and the small number of states permitting local sales and local income taxes, these taxes are probably best seen as alternative taxes at the local level rather than as potential significant sources of revenue. Reliance on these sources varies significantly across the country. Local governments

in some states (such as Arkansas and Louisiana) and some large cities (such as New York City and Philadelphia) use sales or income taxes heavily, but many other states and cities raise little revenue from these taxes. Hotel/motel taxes raise modest revenue in many cities, and a number of jurisdictions increased these taxes during the recession.

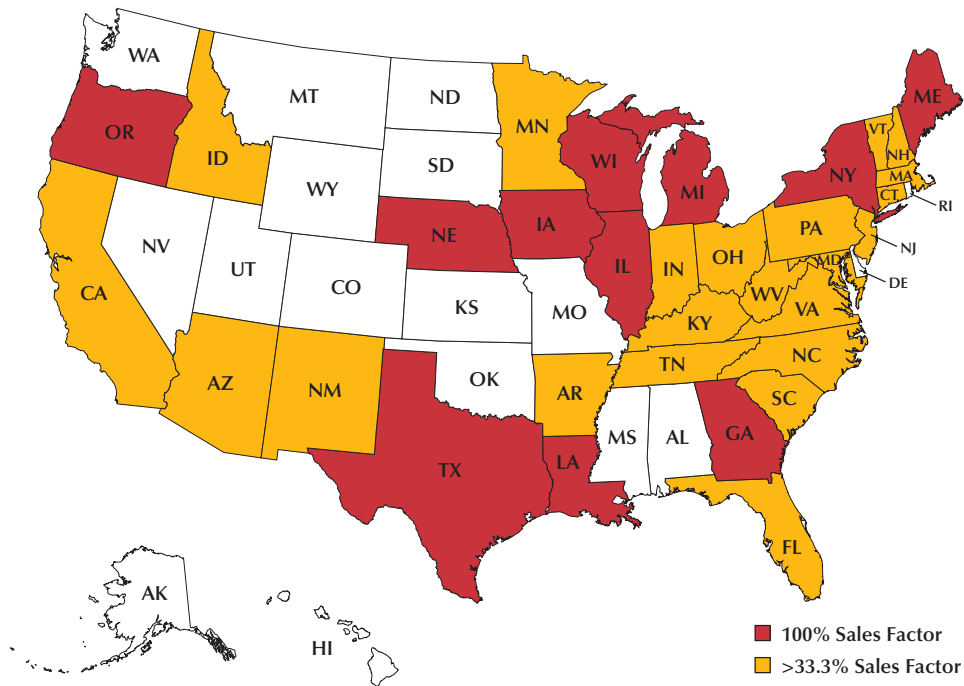
An excellent recent conference hosted by the Lincoln Institute on Land Policy examined local revenue sources in greater detail and considered some of the options available for local governments and private associations.<sup>3</sup> Among these are tax increment financing, business improvement districts, and community facilities districts. One observation is that many of these variants on the major taxes are better seen as ways to earmark revenue rather than as new revenue sources.

Local governments to some extent offset limited tax options by relying more on user fees. As Table 1 shows, states raise a greater share of their total revenues with taxes and local governments make up for the difference with more emphasis on user fees. Various charges, including for hospitals, education, and sewerage, account for just over one-fourth of local general revenues.<sup>4</sup> Local utility revenues, which are not included in total revenues in the table, are about half as large as local current charges, adding further to the reliance on user fees. State and local governments rely similarly on miscellaneous revenues.

<sup>3</sup> See Ingram and Hong (2010).

<sup>4</sup> General revenues include taxes and charges and exclude utility revenues, liquor state revenues, and insurance trust revenues.

<sup>2</sup> See state and local government finance statistics at [www.census.gov/govs/estimate/index.html](http://www.census.gov/govs/estimate/index.html).

**Figure 3****Sales Factor Apportionment (2008)**

NOTE: White states either have no corporate income tax or allow equal weight on the sales factor.

## GROSS RECEIPTS TAXES

This section includes a discussion of gross and net receipts taxes and how they differ from sales taxes and an analysis of these taxes.

### *Understanding Net and Gross Receipts Taxes*

Gross receipts taxes (GRTs), levies imposed on every transaction, have a long history among U.S. states. Several states, including Washington and Delaware, have maintained GRTs for many years. Other states, such as Indiana and West Virginia, replaced GRTs with other forms of business taxes several decades ago. Three states, Michigan, Ohio, and Texas, have added variants of GRTs in more recent years. A number of states continue to discuss the possibility of adding GRTs. Further, many states have increased the weight on the sales factor in their corporate income tax (CIT) apportionment formula

to impose a greater percentage of the tax on a destination basis.<sup>5</sup> A 100 percent sales factor apportionment formula allocates a company's tax burden among states according to gross receipts, so these taxes have some similarities to GRTs (Figure 3).

Various states are also considering adoption of net receipts taxes (NRTs). The distinction between NRTs and GRTs is that the former allow deductions for certain purchases and normally for the purchase of intermediate goods. For example, last year's California tax commission proposed an NRT. Rhode Island's governor recently recommended an NRT but withdrew his recommendation in late January. The Texas and Michigan tax structures lie between a GRT and an NRT.<sup>6</sup>

<sup>5</sup> At least nine states have now moved the siting of sales of services for the sales factor to a destination basis, consistent with the treatment of goods.

<sup>6</sup> For example, the Michigan tax allows deductions for purchases of intermediate goods but not for services.

Policymakers have generally viewed GRTs as options for taxing business rather than as sales taxes intended to be paid by consumers, though the sales taxes in some states, such as New Mexico, are called GRTs. Admittedly, the differences between sales taxes as imposed in the United States and GRTs are modest in some respects, particularly as the latter have been structured in recent years. Sales taxes have traditionally allowed two major exemptions—sales for resale and component parts of manufactured goods—both of which are taxable under GRTs. The deductions allowed under an NRT and a sales tax are more difficult to distinguish, but the set of deductions would be much broader under the NRT since it would allow exemption of *all* intermediate input purchases.

GRTs have often been imposed on an origination basis and sales taxes on a destination basis.<sup>7</sup> For example, Washington State taxes transactions based on the seller's location. Sales taxes are generally due where goods are shipped (the point of destination), not the point from which the goods are shipped (the point of origination). The states that recently adopted GRTs have all imposed these taxes on a destination basis, again making the GRT more parallel to a sales tax.

States have implemented GRTs for a variety of reasons but generally as a replacement for other taxes, particularly income-based corporate taxes. The new Michigan GRT was intended to partially replace the single business tax that had previously been eliminated. Also, GRTs are seen as a means of taxing a broader set of firms than is possible with CITs since GRTs are imposed on unincorporated businesses, nonprofitable firms, and businesses protected by PL 86-272.<sup>8</sup> GRTs are also a way to tax the service sector—something that has proven elusive through the sales tax in many states—since service producers would also be liable for the tax.

### **Evaluating Gross Receipts Taxes**

Some consider the ability to extend taxation to a broader set of taxpayers and to some services

<sup>7</sup> This distinction is true for sales taxes on goods. Sales taxes on services have often been levied on an origination basis.

<sup>8</sup> PL 86-272 is a federal preemption that prevents states from imposing a CIT on firms whose only relationship with a state is solicitation of orders for the sale of tangible personal property. PL 86-272 applies only to income-based taxes.

an advantage of GRTs compared with the CIT. GRTs are also perceived as entailing lower compliance and administrative costs than the CIT, since the GRT requires measurement of only gross receipts, not of profits. The GRT base is effectively the numerator in the CIT apportionment formula. Thus, the Ohio GRT return was created the size of a postcard. NRTs entail additional complexity and likely require apportionment because of the difficulty of tracking where deductions are to be attributed. This issue is addressed in more detail later in the text.

Alternatively, rather than allow deductions, as is permitted with NRTs, some states (for example, Washington and Texas have multiple rates and allow deductions) have adopted multiple tax rates, with higher rates generally on industries that produce items that are sold primarily to final markets or have fewer production steps. The use of multiple tax rates imposes somewhat higher administrative and compliance costs as decisions must be made on the tax rate that applies to each type of commodity or each firm. In Washington State, for example, the same firm may sell goods and services in more than one of the 28 classifications and be subject to multiple tax rates (though the same tax rates sometimes apply to more than one classification). Further, the economic distortions with a multiple-rate GRT may be similar to those with a single-rate GRT.

Economists raise several key efficiency issues with GRTs and generally argue that they are poor tax instruments. GRTs can cascade unevenly into input and output prices since they are levied at every stage of the production process. This cascading distorts relative prices compared with a uniform tax.<sup>9</sup> A Washington State study measured the degree of cascading from a GRT (defined as the effective tax rate on an industry divided by the actual tax rate) for a range of different industries.<sup>10</sup> On average the effective rate was 2.5 times the stated tax rate, but the degree of cascading varied from 6.7 times for industries such as food manufacturing and petroleum refining to 1.4 times for data processing. Washington's decision to use multiple rates, with a general tendency for lower rates on input costs,

<sup>9</sup> Neither the sales tax nor the CIT is uniform across all commodities.

<sup>10</sup> See the 2002 Washington State Tax Structure Study Committee report.



should lessen the extent of cascading relative to a fixed-rate GRT, though this entails the compliance costs described previously. The Washington data should account for the effects of multiple tax rates on cascading. Washington has had a GRT for many years, so the extent of cascading there includes how firms have adapted their behavior to the tax.

The incentives to produce and consume are altered as the cascading tax changes relative prices, which leads to economic inefficiencies. The differential propensity for the tax to cascade raises relative production costs for industries such as food manufacturing and presumably encourages production in Washington of more lightly taxed industries relative to more heavily taxed industries. Firms can limit the extent of cascading taxes to some degree by vertical integration. But economic inefficiencies also arise to the extent that firms are induced to vertically integrate to lessen the taxation of intermediate inputs, rather than because it represents more efficient business practice. Firms that vertically integrate should be able to limit the extent of tax cascading and thereby gain a competitive advantage that helps keep their production costs low. However, decisions to vertically integrate when it is not the best business practice, other than for tax savings, entail efficiency losses to the economy.

Economists generally prefer the CIT, which is often seen as the alternative to the GRT, under the expectation that the CIT does not incur the efficiency disadvantages created by the GRT. In some cases, this perspective may arise because the CIT is evaluated in an ideal setting, not as the tax actually operates. The CIT introduces its own distortions, and more careful analysis suggests that the distortions of the GRT relative to the CIT may not be as great as has been implicit in discussions about these taxes. The actual state CIT is apportioned for about 70 percent of the revenue received by states. This apportionment can be better viewed as a tax on the factors in the formula—payroll, property, and sales. As states increase the weight on the sales factor, the tax moves toward a point where the burden across states is allocated on the basis of gross receipts—that is, the tax operates much like a sales tax on corporations. Arithmetically, distribution of the burden based on gross receipts cre-

ates some incentive for vertical integration, albeit smaller than with the GRT.<sup>11</sup>

The CIT is a tax on payroll and property to the extent that these factors are weighted in the apportionment formula, potentially creating distortions not introduced by the GRT. In addition, recent analysis of industry structure more intensely questions some of the conventional wisdom on the economic inefficiencies of GRTs compared with CITs. Yang (2010a) finds that GRTs may provide an incentive for firms to vertically integrate, but this depends on the extent to which intermediate good pricing in the upstream market is affected by the fall in demand that occurs with imposition of the GRT in the downstream market. The GRT may discourage vertical integration if upstream prices are flexible enough to move downward in response to the tax. Some recent research suggests that the extent of vertical integration is less than has often been thought (Hortaçsu and Syverson, 2009). Yang (2010a) also finds that GRTs may allow profits in the upstream state to be shifted to the downstream state (assuming the firms are in different states), which can increase the well-being of the downstream state—albeit at the expense of the upstream state—so that national welfare is likely reduced. Also, GRTs do not create an incentive to alter a company's legal structure, as is encouraged by the CIT.

GRTs should be more difficult to avoid than CITs since firms can plan for taxes only by altering where items are sold, not by changing their measured profits. Firms are unlikely to choose not to sell in a state merely to avoid a low rate tax.<sup>12</sup> They do, however, alter their measured profits by changing their corporate structure, moving production to low-tax states, and making decisions to avoid establishing corporate nexus, such as is possible through PL 86-272. This limitation from PL 86-272 applies only to income-based taxes.

No careful studies exist on the winners and losers from the cascading process, though the expect-

<sup>11</sup> Personal correspondence with Dave Merriman, November 2007.

<sup>12</sup> Origin-based taxes distort cross-state producer prices and destination-based taxes distort cross-state consumer (or buyer) prices. The assumption is that distortions in producer prices across states have greater implications for efficiency than distortions in consumer prices across states. This assumption may become less reasonable as Internet sales grow if states cannot enforce destination-based taxes.

tation is that heavy buyers of items with the greatest cascading bear the greatest tax burdens. The propensity for GRTs to cascade alters both horizontal and vertical equity since the tax implicit in each final sale depends on the extent of cascading and the ability to shift these taxes into consumer prices.

At first blush, the NRTs are expected to eliminate the distortions in relative prices and incentives for vertical integration that arise from GRTs because the tax appears to be a destination value-added tax (VAT). The tax is a VAT if all sales are totally within a single state and would be neutral on all factors. However, NRTs do not serve as VATs when sales occur across state borders; the tax is imposed on a destination basis and deductions are allowed for purchases of intermediate goods by both in-state and out-of-state firms selling in the state (or in-state firms selling out of state). Border adjustments, which occur with VATs around the world, are necessary to ensure that cross-state transactions are treated neutrally on a destination basis. However, the only adjustment for the selling firm with an NRT is for purchases from the immediately preceding input providers in the production chain. As a result, the NRT state tax liability implicit in any sales from out-of-state firms will be only on the value added from the selling firm plus any additional value added in the NRT state. So, the NRT base on cross-state sales will often be less than the full value of a good or service, whereas the full value should be taxable when all production in the chain is in state. Tax will also be implicit in sales from firms in the NRT state to out-of-state buyers to the extent that there is any value added by firms earlier in the production chain in the NRT state. Thus, firms can avoid tax by undertaking all earlier steps in the production process in a state with lower taxes or by vertically integrating.

Firms also can potentially lower their tax liability by creating a sales corporation in a non-NRT state for purposes of selling in an NRT state. The firm would then sell to the sales corporation, take a deduction for the value of this intermediate transaction, and resell in the NRT state. Both firms in the NRT state and firms in other states can lessen their tax liability by creating sales corporations. The bottom line is that NRTs (i) do not operate as

VATs, (ii) create inefficiencies that are difficult to assess, and (iii) have not been carefully analyzed at this time (see Bankman et al., 2009).

GRTs should perform well in adequacy terms. As a general rule, the breadth of the base with both a gross and net tax allows substantial revenue to be raised at rates that are very low compared with those levied on corporate profits. Revenue-neutral rates on a broad NRT can probably be in the 2 percent range and on gross receipts can be much lower. For example, Texas levied a 0.5 percent rate GRT and Ohio imposed a 0.26 percent rate GRT. The revenue-neutral rates must be higher to the extent that additional exemptions or deductions are permitted under a true NRT. The new Texas tax has underperformed expectations but it was created with three alternative deductions, which makes it difficult to anticipate the revenues.

Tax revenues with both the NRT and the GRT should grow over time with economic activity. No measures of the revenue elasticities with respect to economic activity have been developed as yet for GRTs and NRTs, but they should be close to 1 (Ohio estimated the elasticity as slightly less than 1) unless there are strong trend changes in the number of steps in the overall economic production chain. Also, state policy decisions to narrow the base could lower the long-term revenue growth. CITs had very poor revenue performance during the 1990s and into the early 2000s, but the revenues grew very rapidly during the later stages of the economic expansion of the 2000s. GRTs are expected to be more stable than CITs, since the volatility of total sales is expected to be much lower than the volatility of corporate profits.

## GAMBLING TAXES

States rely relatively heavily on imposing a series of selective excises on goods and services that are considered unique options for taxation. Alcohol, gasoline, and tobacco products have long been the focal point for specialized taxation. Gambling has become a target during the past 45 years as states continue to expand options for gambling. Experience of the past decades suggests that taxpayers find excises on these sources (or at least increases in these taxes) more politically

palatable than broad-based taxes. Perhaps people find “sin taxes” acceptable or consider taxes on these commodities more “voluntary” than broad-based taxes. The next two sections focus on taxation of gambling and alcohol and tobacco. Gasoline taxes are not considered here since the revenue is frequently earmarked for road usage and changes in the rates and bases have been less common than for gambling and tobacco taxes.

The contribution to state finance by the range of selective excise taxes has diminished dramatically over the past 60 years. Combined, these taxes raised 40 percent of state tax collections in 1947 but only about 15 percent in 2007. The share has continued to fall over the past 15 years despite the frequency with which some tax rates have been increased.

States have moved broadly into taxation of gambling since New Hampshire adopted the first modern lottery in 1964. Every state except Hawaii and Utah now allows and taxes some form of gambling. Today, 43 states operate lotteries, 11 of which have been adopted since 1991.<sup>13</sup> Twelve states allow commercial lotteries, five of which have been adopted since 1991. Since 1991, racinos (race tracks with casinos) have been permitted in 12 states. In addition, 43 states allow parimutuel gambling and 32 have gambling at Native American facilities. Lotteries raise almost three-fourths of state gambling tax revenues and casinos raise another 20 percent. Parimutuels and racinos generate modest shares, though the racino share has increased in recent years with growth in the number of venues and states that allow them.

States continue to adopt new forms of gambling or to allow gambling at new or expanded facilities as sources for additional revenue. For example, Kentucky’s governor has proposed adoption of racinos, Illinois has proposed outsourcing the lottery, Pennsylvania is permitting casino gambling, and other states are seeking ways to use the Internet to expand gambling. Despite these increases, gambling has remained a near-constant share of total state tax revenues for some years—between 2.1 and 2.5 percent.

Gambling taxes have exhibited mixed performance in adequacy terms.<sup>14</sup> The revenues appear to be relatively stable; the first decline in at least three decades occurred in 2009. The 2.6 percent fall in gambling revenues in 2009 was small compared with the total state tax revenue decline of 8.3 percent and the personal income tax decrease of 13.6 percent during 2009, suggesting less instability than the larger state tax revenue sources.

Both major gambling sources have exhibited some revenue volatility in recessions. Growth rates for lottery revenue alone have generally decreased over the past several decades and revenues actually fell in 2001 and 2002 and declined again, at least in 2009 and possibly 2010. Casino revenues appear to have decreased during both 2008 and 2009. Casino revenues adjust relatively rapidly to norms when revenues perform below equilibrium, such as during a recession. This suggests that gambling revenues may resume their growth sooner in post-recession periods than sales and income taxes (Nichols and Tosun, 2008).

Perhaps more troubling is that the growth trend for gambling tax revenue has been modest compared with other taxes, such as personal income and sales taxes. This suggests a low, long-term revenue elasticity. Gambling tax revenues rose somewhat more slowly than the average tax source from 1998 through 2008, and much of the increase in gambling revenues has resulted from new games or new states legalizing various forms of gambling. In the past decade, at least six states added lotteries, six added racinos, and one allowed casino gambling. Dadayan and Ward (2009) find that gambling revenues grew much more slowly than other tax sources if the effect of new entrants is excluded.<sup>15</sup>

Empirical analysis by Garrett and Coughlin (2009) is consistent with slow lottery revenue growth. They note that lottery revenues peaked in West Virginia in 1999 and have not grown in real per capita terms in Iowa since 1977. Nichols and Tosun (2009) examined long-run and short-run revenue elasticities for casino revenue. They found

<sup>13</sup> See Dadayan (2009).

<sup>14</sup> The discussion of performance of gambling revenue draws heavily from Dadayan and Ward (2009).

<sup>15</sup> Of course, some of the change in tax revenues from other sources can also be attributed to higher rates.



that long-run elasticities are initially relatively high—between those for income and sales taxes—when states first adopt casinos. However, the elasticities fall over time and are lower than for both income and sales taxes for more mature markets, such as Atlantic City and Nevada. The revenue data suggest that states will find it difficult to maintain the share of revenue provided by gambling unless new forms can be found in coming years.

Previous research has focused on gambling tax revenues and not net new revenues to the government. The increase in revenue that a state can obtain from higher gambling taxes can be determined only in a general equilibrium setting since employment and other effects also occur with the adoption of gambling. The net effect of legalizing gambling and imposing a tax or raising gambling tax rates will probably be smaller than the revenues generated by the tax. The expenditures on gambling by in-state residents are not available for other purposes, which presumably means lower revenues from sales and excise taxes. Additional revenue could be obtained from cross-border gamblers but the potential for most states to benefit from cross-border gambling is limited. Interestingly, adoption of gambling in neighboring states appears to have little effect on the income elasticity of gambling in the home state (Garrett and Coughlin, 2009), which suggests that policy changes in neighboring states have little effect on the gambling revenue in the home state.

The efficiency consequences of gambling taxes, as with taxes on alcohol and tobacco, are a complicated function of the distortions in individual consumption behavior caused by imposition of the tax (that is, the reduction in consumption caused by the price increase resulting from imposition of the tax) and the social effects from consumption of the commodities. The efficiency effects become even more complicated when aggressive government advertising to encourage consumption is taken into account. State legalization of gambling in forms that may be more addictive, such as casinos rather than lotteries, potentially increases the social consequences. This paper is focused on the revenue-raising effects of taxes, so the broader set of social consequences associated with consumption of the taxed goods and services is not addressed here.

Most of the related research on gambling is specific to lotteries, so much of the following analysis applies specifically to lotteries. Tax rates on gambling, and particularly lotteries, are often very high. For example, the net proceeds available to state governments from lotteries average 23.5 percent of total expenditures and 26.6 percent if administrative expenditures are added to the proceeds.<sup>16</sup> This is consistent with an average tax rate between 31 and 36 percent on lotteries, a very high tax rate compared with rates often imposed on other activities. The resulting distortion in relative prices can entail significant losses in economic well-being (by reducing gambling) with two exceptions: The efficiency losses associated with high tax rates are much smaller if consumption is relatively unresponsive to price and if the tax is intended to limit the negative social consequences by discouraging gambling.

This paper focuses on the revenue side of government, not how the tax revenue is used. However, research on lotteries provides an exception that should be considered. Theoretical research indicates that lotteries elicit higher levels of public expenditures than do other voluntary mechanisms to support public services. High lottery tax rates may also not be as distortive if players are participating because they expect to receive benefits from the expenditures or they value the additional finance for public service provision—in simpler terms, consumption may not be decreased as much as anticipated by the tax. For example, Landry and Price (2007) find that lottery expenditures are higher when the revenues are earmarked for education. They interpret this as meaning that lottery players are taking the education expenditures into consideration when choosing to participate in the lottery. Further, they find that casino gambling is a substitute for the lottery in states where the proceeds go into the general fund, but not in states where the funds are earmarked for education. This suggests that players in earmark states consider the education benefits associated with the lottery and not merely the love of gambling when they choose to play the lottery. Further, Landry and

<sup>16</sup> For income and apportionment of state-administered lottery funds by state for 2008, see [www2.census.gov/govs/state/08lottery.pdf](http://www2.census.gov/govs/state/08lottery.pdf).

Price (2007) find that lottery receipts rise in states where the proceeds to education are a greater share of the expenditures.

Gambling taxes are generally seen as regressive, though research indicates that the extent of regressiveness can vary by type of game and over time. For example, Miyazaki, Hansen, and Sprott (1998) find that most lotteries are regressive. More recent research by Garrett and Coughlin (2009) concludes that lotteries are regressive, though the degree of regressivity changes over time. The extent of regressiveness is generally observed to depend on the game. Perhaps surprisingly, the regressiveness of online games is similar to that for other instant games. Large jackpot games are less regressive than smaller games, such as instant games. Oster (2004) finds that lotteries become less regressive as the size of the jackpot rises and suggests that lotteries might even become progressive at very high payouts.

A small set of gamblers is often responsible for a substantial share of consumption (though this may be less true for lotteries than for other forms of gambling). Thus, the incidence on the median and many low-income households can be much smaller than on the average household. This may lessen the implications of regressiveness on low-income households but emphasizes the propensity of gambling taxes to be on addictive behavior.

## ALCOHOL AND CIGARETTE TAXES

State and local alcohol and tobacco taxes raised \$21.5 billion in FY 2007. These taxes are imposed almost exclusively by states since local governments generate less than \$1 billion from them. A wide range of taxes is levied on these commodities, often by type of product. Cigarettes, chewing tobacco, beer, wine, and spirits are frequently taxed with different rates and bases.

The underlying growth of these taxes is expected to be slow since each is generally levied on some form of quantity purchased rather than value.<sup>17</sup> At least in part to offset the slow underlying growth rate, states have frequently increased

tobacco tax rates. Forty-six states and the District of Columbia combined have raised cigarette tax rates at least 100 times since 2000.<sup>18</sup> Hawaii has increased rates the most—nine times—but many other states have raised rates multiple times. The average year-end tobacco tax rate has grown from about 20 cents per pack in 1989 to about \$1.34 per pack in 2009 (Figure 4).<sup>19</sup> The federal tax rate was increased to \$1.01 per pack in 2009 so the combined tax, including federal, state, and local rates, reaches much higher.

State tobacco tax revenues have risen relatively fast over the past 15 years and at approximately the same rate as the individual income tax. But the revenue increases have been mostly because of the rate changes.<sup>20</sup> Still, revenues have not risen nearly as fast as tax rates have been increased, suggesting higher rates have significantly lowered the number of taxed packs that are purchased and likely has changed where they are purchased.

Some alcohol tax rates have also been increased in recent years but much less frequently than those for tobacco products. Further, alcohol taxes generate a much lower share of total tax revenue than tobacco taxes. Alcohol raises only about 26 percent of state combined tax revenues.

As with gambling taxes, understanding the efficiency effects of alcohol taxes is affected by a given state's multiple taxation goals, including discouraging smoking or alcohol consumption, paying for the health care costs associated with smoking or drinking, and collecting general revenues on a relatively price-inelastic commodity. Views of how the revenues should be spent also differ. For example, those concerned with reducing consumption of alcohol or tobacco products often lobby for the additional tax revenue to be earmarked for anti-consumption programs.

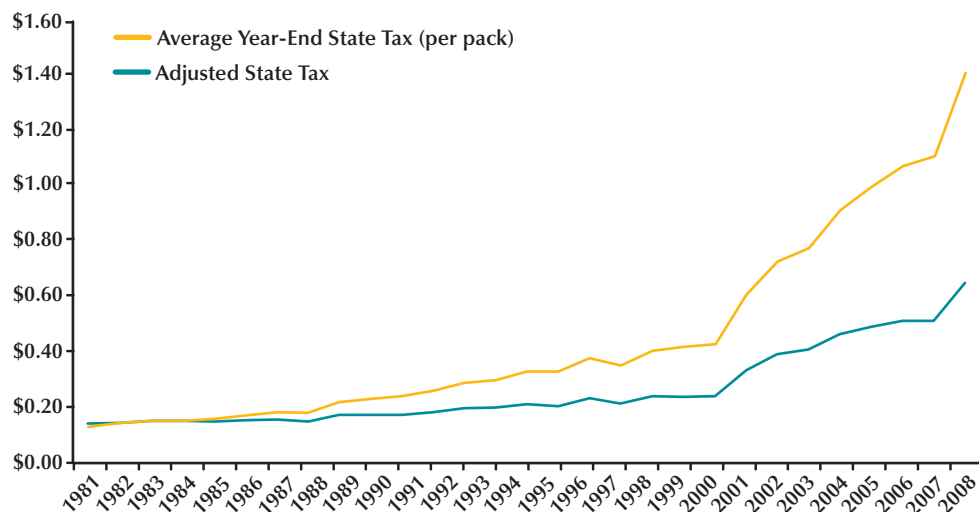
Much of the related research is on cigarette taxes, so most of the following discussion applies specifically to cigarettes. Tobacco tax rates have

<sup>18</sup> See [www.taxadmin.org/fta/rate/cig\\_inc02.html](http://www.taxadmin.org/fta/rate/cig_inc02.html) for cigarette tax increases from 2000 to 2010.

<sup>19</sup> See [www.tobaccofreekids.org/research/factsheets/pdf/0097.pdf](http://www.tobaccofreekids.org/research/factsheets/pdf/0097.pdf) for state cigarette excise tax rates and rankings.

<sup>20</sup> State tobacco tax revenues contain revenues from all tobacco products, including cigarettes, cigars, and chewing tobacco.

<sup>17</sup> A number of exceptions exist, such as Tennessee's mixed drink tax.

**Figure 4****Tobacco Tax Rates**

become high relative to the pretax price, which could create important distortions in consumption behavior. State cigarette tax rates vary substantially across states, from 17 cents per pack in Missouri to \$3.46 per pack in Rhode Island. Tobacco tax rates can easily exceed 100 percent on the pretax price when taxes at all levels are combined. The American Heart Association, which served as an advocate for many of the tax rates increases, is pleased that cigarette sales have diminished, but state fiscal planners may not appreciate the impact on revenues.

Rate differentials create the potential for significant bootlegging and increased cross-border sales. Lovenheim (2008) finds that between 13 and 25 percent of consumers purchase cigarettes in lower-tax states or on Native American reservations. As a result, cigarette consumption is relatively unresponsive to home state price increases (such as those associated with tax rate hikes). Indeed, consumption may actually increase in some cases as tax rates rise and home state consumers increase out-of-state purchases. So, home state tax rate increases may not decrease consumption and may have little effect on revenues since smuggling and cross-state purchasing rise with the tax rate increases.

Thursby and Thursby (2000) conclude that commercial smuggling accounted for about 4 percent of cigarette sales in the 1970s and subsequently declined as tax rate differentials fell. They also find that higher federal tax rates increased smuggling. The recent spate of tax rate increases and resulting wide diversity of rates suggest that smuggling may be growing again. Slemrod (2007) has argued that policy changes that reduce smuggling may be effective in helping states achieve the objectives of less consumption and more revenue, since these are means of enforcing destination taxation on cigarettes. The Prevent All Cigarette Trafficking (PACT) Act of 2009 requires vendors to collect excise taxes on cigarettes that are delivered. This requirement should limit the extent of bootlegging and cross-border shopping.

Joint ownership of cigarette tax bases by the federal and state governments suggests that tax rate decisions by one level of government can affect the other. Tax rate increases by one level of government reduce the base taxed by that level (as consumption decreases and/or illegal sales increase) and create a vertical externality as the other level of government also faces a smaller base and reduced tax revenue. The non-rate-increasing government

could choose to raise or lower its rate in response to the fall in tax revenues. A higher rate would be intended to offset the revenue loss and a lower rate to keep the taxable base from shrinking.

Much of the research on the vertical relationships between federal and state governments has been aimed at cigarette taxes because the rates are easy to specify and some of the other necessary data for the analysis are available, but there has also been research on other taxes. Studies across several different taxes have often found a positive relationship, suggesting that states raise their tax rates as the federal government increases its tax rates (see Deveraux, Lockwood, and Reoano, 2007, and Yang, 2010b, for examples of cigarette taxes). But the results are not fully consistent. Fredriksson and Mamun (2008) find a tendency for states to lower their cigarette tax rates as the federal government increases its rate (there is a negative vertical reaction function). As a result, they find that state tax revenues decline as the federal tax rate increases, both because states lower their rates (relative to what they otherwise would be) and the federal rate increase reduces the taxable base.

Similarly, horizontal relationships can exist because one state's tax rate increase can affect another state's tendency to raise or lower its tax rate. The expectation is that a neighboring state's rate increase should raise the home state's revenues since the neighboring state's rate increase would encourage additional cross-border shopping by out-of-state buyers (or less cross-border purchasing in the neighboring state should its rate be lower). The home state could reduce its tax rate because of the additional revenues it receives from more cross-border shopping or raise its rate because it can now do so without fear of creating losses from reduced purchases within its borders. Research has generally found that states use increases in neighboring states as "cover" to raise their own tax rates (the horizontal reaction function is positive), so the home state also raises its rates. This response could also be seen as a yardstick effect.

Not surprisingly, research has found that consumers are more likely to bear a federal cigarette tax rate increase than a state rate hike (Barnett, Keeler, and Hu, 1995). Simply, consumers are better able to find alternative places to buy cigarettes

that are not subject to a rate hike imposed by a single state than by the federal government.

## DISCUSSION AND CONCLUSION

History tells us that states will continue to change policy related to alcohol, tobacco, and gaming. More states will allow broader access to gambling and will continue to impose taxes on the newly adopted games. Alcohol and tobacco tax rates will rise further. However, competition between states for gambling and sales of alcohol and tobacco will likely make it increasingly difficult for rates to rise dramatically higher. Cross-border shopping and bootlegging have grown and will limit states' ability to push tax rates dramatically higher even as the PACT Act assists states in imposing cigarette taxes. As a result, revenues from these sources will rise in nominal terms but at best will remain flat and in all likelihood will fall relative to total state tax revenues over the longer term—continuing the decades-long pattern.

States will also continue to examine options for altering business taxes. The jury is still out on the best ways to tax businesses at the state level. The underlying impetus for business tax policy changes appears to be lower taxes on production (taxes at the origin) to enhance economic development. States have also sought to expand the set of tax-paying businesses to reduce the burdens on heavy manufacturing and to ensure that "out-of-state" and "in-state" firms are taxed more evenly. States have used two principal methods to achieve these objectives: reforming the CIT and adopting new tax instruments. Taxation at the source or origin with the CIT has been reduced by increasing the weight on the sales factor in the formula and altering the siting provision for sales of services to a destination basis. These changes effectively cause the CIT to operate more like a sales tax (though only on profitable corporations), suggesting that these methods are possible ways to mask increases in the sales tax. Of course, states have made other reforms/changes, such as greater reliance on combined reporting, but it is less clear how these alter the extent of taxation at the source. Some states have also expanded the CIT to include other busi-



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ness structures, most notably limited liability corporations.

Another approach taken by states has been the adoption of new structures such as GRTs or NRTs. These tax structures are more easily expanded to noncorporate businesses, unprofitable firms, and out-of-state firms selling within a state. In many cases, these taxes are built into prices in the destination state so they also operate as sales taxes, although GRTs are likely to cascade more than sales taxes. Many other effects of these taxes require additional study before states go too far down this road.

Cross-state competition sustains pressure on states' ability to tax at the origin, making it likely that transitions in business taxation will continue. Fiscal stresses from the recession may slow some changes that otherwise would occur, but these will not curtail the longer-term trend toward taxes on consumers rather than producers. Elimination of corporate taxes is an option well worth considering that states have not seriously addressed yet. Explicit, broad-based sales taxes at flat rates are a better tax policy than a sales tax imposed through the CIT veil.

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