

# *A National Retail Sales Tax: Consequences for the States*

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## **Introduction**

The effects of fundamental federal tax reform transcend the federal government and also have implications for how state and local governments deliver services. This paper investigates the effects on state and local governments from federal imposition of one proposed fundamental reform, a consumption tax in the form of a national retail sales tax (NRST).

A NRST would represent one of the most dramatic shifts in the federalist structure of government finance since the introduction of the income tax by Wisconsin in 1911. Implementation of a NRST would have a variety of consequences for state and local governments.<sup>1</sup> Certainly states and localities would benefit from the desirable macroeconomic consequences of fundamental tax reform. At the same time the administrability of income taxes would be compromised; there would be pressures to alter the structure of taxation; the cost of financing government services and capital expenditures would rise sharply; and depending on state policy decisions, there may be marked differences in the ability to target relief through the tax code to specific groups. Perhaps most importantly from the state and local government perspective, they would pay \$346.2 billion in NRST to the federal government, an amount about 50 percent greater than current state and local general sales tax revenues.

The paper is divided into six sections. The first describes proposed federal legislation to impose a NRST in lieu of most other federal taxes. The remainder of the paper examines five effects of the NRST on state and local governments including those on: tax administration, distribution of the tax burden across states, costs of financing state and local government, state and local tax bases, and state and local tax rates.

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<sup>1</sup> See U.S. Joint Committee on Taxation (1996) and Strauss (1999) for general discussions of the issues.

## ***The Fair Tax Act of 2000 and Federal Tax Policy***

Interest in a NRST initially gathered momentum with the introduction of H.R. 3039, the *National Retail Sales Act of 1996*, sponsored by Dan Schaefer and Billy Tauzin. Similar proposals were introduced in Congress in 1997, 1999 and 2001. The most prominent proposal standing today is *The Fair Tax Act of 2003*, H.R. 25 (Linden). Box 1 offers a summary of major features of *The Fair Tax* plan.

**Box 1**  
**Key Features of *The Fair Tax Act of 2003***  
**H.R. 25 (Linden)**

Eliminate personal and corporate income, Social Security, self-employment, Medicare and estate/gift taxes. Retain import duties, miscellaneous excise taxes and sin taxes.

Abolish Internal Revenue Service; create Sales Tax Bureau and Excise Tax Bureau within Treasury to oversee and administer remaining federal taxes.

Implement destination-based national retail sales tax (NRST) with statutory tax liability on final consumers. Firms will generally collect and remit tax on behalf of final consumers. Companion use tax introduced requiring self-assessment by final consumers.

NRST to be administered by states in exchange for a fee equal to 1 percent of total collections. States to have authority over in-state examination and audit. Information sharing compact to be established by the federal government to facilitate enforcement.

Proposed tax-inclusive rate 23 of percent (or tax-exclusive rate of 30 percent).

Exempt inputs and intermediate goods (including services) used to produce taxable goods and services through system of registered vendors and exemption certificates. Exempt exports; tuition for education and training; used goods and property; intangibles; and intercompany sales.

Apply tax to government goods and services that represent final consumption (*government enterprise sales*), with input purchases subject to exemption. For general government activities, tax must be paid on all input purchases, including wages and salaries (i.e., total compensation). No tax on compensation paid to public sector providers of education services.

Introduce *Family Consumption Allowance* offering a monthly rebate to registered families equal to the family-size specific monthly poverty rate times 23 percent. To be administered by the Social Security Administration and made available to all households which choose to register.

Nonresident alien individual and corporate income subject to 23 percent tax, conditional on international tax treaties.

*The Fair Tax Act* would create a destination-based consumption tax with a 23 percent tax-inclusive (or 30 percent tax-exclusive) retail rate. Unlike the existing state sales tax, it would fall on all final consumption and exempt all business inputs. The NRST would replace the major federal taxes, including personal and corporate income taxes, as well as Social Security and Medicare taxes. Social Security and Medicare would be funded from revenues generated from the NRST.

A single NRST instrument would dramatically reshape federal government finances.<sup>2</sup> It would narrow the government's tax portfolio, in turn changing the countercyclical influence of the tax system relative to the status quo due to the sales taxation of durable goods. It would also alter the post-tax distribution of income and limit the ability of the tax system to target specific households and businesses (since the NRST is an indirect tax). At the same time savings would be encouraged, the tax system would be greatly simplified (assuming only limited deviations from the base of the proposed Fair Tax) and a level playing field would be established between public sector expenditures and private sector expenditures. While fiscal illusion associated with multiple tax systems and special tax provisions would be eliminated, it would be replaced by the fiscal illusion associated with a sales tax paid incrementally on each taxable transaction.

The Internal Revenue Service would be abolished and replaced by a Sales Tax Bureau (to oversee the administration of the national sales tax), an Excise Tax Bureau (to coordinate collection of excise taxes outside of the Department of Alcohol, Tobacco and Firearms) and an Office of Revenue Allocation (to address claims and disputes over the destination of taxable transactions). A compact between the states would be established by the Secretary of the Treasury to facilitate destination taxation of interstate transactions. The agreement would allow

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<sup>2</sup> Bickley (2004) provides an overview of various flat tax proposals. Esenwein and Gravelle (2004) discuss a wider array of fundamental tax reform proposals and their possible consequences. Aaron and Gale (1996) provide a detailed analysis of the economic effects that might arise from fundamental tax reform.

conforming states (i.e. states that adopted the federal sales tax structure) to collect tax from sellers located in other conforming states but without a presence in the state of final destination and use.

The sales tax would be administered by the states in exchange for an administrative fee of 1 percent of tax revenues collected and remitted to the Federal government. Statutory tax liability would fall on final consumers with tax collected by firms at the point of sale, thus sharply reducing the number of taxpayers required to file information returns. Certainly the number of households filing use tax returns on international purchases will fall short of the number of income tax filers under the current system. At the same time households will need to file in support of the Family Consumption Allowance (see below). Firms would receive compensation for the costs of collection and monthly remittance of sales tax revenue, equal to the greater of \$200 or 0.25 percent of taxes remitted.<sup>3</sup>

In general all final consumption would be taxed to promote neutrality and all inputs and intermediate goods/services would be exempt from taxation to avoid pyramiding. By taxing all consumption—including the full range of services—the NRST base goes well beyond the base of the sales tax in most states and thus the practical experience of the states in administering the tax. The broad base introduces the practical problem of taxing activities that have largely escaped taxation at the state level. Many of the problems of administration and compliance that have long prevailed under the existing income tax will also arise under a NRST.<sup>4</sup> Hard-to-tax sectors

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<sup>3</sup> There is currently wide variation in the vendor discount extended to firms by the states for collection and remittance of the state sales tax, including many states that provide no discount whatsoever. See [www.taxadmin.org/fta/rate/sale\\_vdr.html](http://www.taxadmin.org/fta/rate/sale_vdr.html).

<sup>4</sup> A national retail sales tax would not likely be any more effective in taxing the underground economy than alternative tax regimes. While those involved in underground activities may escape the income tax, the goods or services produced within the underground sector would similarly escape sales taxation. And while the evader would pay sales tax on purchases in the formal sector under a NRST, there would be no increase in collections relative to the income tax regime. Under the income tax, revenue would have been generated from the value-added chain of

like construction, personal services and repair services, as well as small firms generally, have low compliance rates under the personal income tax, and similarly low compliance rates under the state sales tax.<sup>5</sup>

To ensure a level playing field, all imports of consumable goods and services would be subject to use tax. To the extent possible, tax will be collected in tandem with import duties, which should work reasonably well for tangible goods. Many services (e.g., financial intermediation) and intangibles like electronic music, books and entertainment will present an enforcement problem. The state experience is not encouraging, as use tax noncompliance has been argued to be the most serious challenge to the state sales tax (see Due, 1986 and State of Washington, 2003).

Exemption certificates would be used to provide relief on input purchases, in contrast to the Schaefer and Tauzin proposal that would have required payment of tax and subsequent report filings to receive tax rebates.<sup>6</sup> The exemption system would provide broader relief than the parallel state sales tax by applying more generally to tangible and intangible inputs. It is well established that under the state sales tax a considerable burden falls on business input purchases, roughly 40 percent of total collections.<sup>7</sup> The Federal government would encounter the same vexing problem that the states have long dealt with in defining what constitutes an exempt input purchase. In practice the states have developed component part, ingredient and other rules to

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production in the formal sector, revenues that are lost in the switch to a sales tax. The net result is simply a change in the point of tax collection.

<sup>5</sup> See U.S. Department of Labor (1992) on the personal income tax and State of Iowa (1995) on the sales tax. Murray (1997) provides a more detailed discussion of tax avoidance and evasion problems that might surface for both households and firms under a national retail sales tax. Fox and Murray (2004) discuss the hard-to-tax problems associated with the current state and local sales tax.

<sup>6</sup> The Schaefer/Tauzin system was intended to promote voluntary compliance by mimicking the VAT system, which requires information reporting on exempt transactions to government authorities. The exemption system, on the other hand, only requires misrepresentation to a business vendor. In reality both the credit/invoice and exemption systems require misrepresentation so there is not likely any advantage associated with the VAT.

<sup>7</sup> See Ring (1999), Cline et al. (2004) and Cline et al. (2005).

define what constitutes an exempt sale, but these rules remain subject to uncertainty and litigation. Mixed-use rules for dual-use property will create a new enforcement problem for the federal sales tax.

Exports, used goods and property (including the pre-existing housing stock),<sup>8</sup> education tuition, intangibles (e.g. copyrights, trademarks, patents), and intercompany sales would also receive exempt status. Nonprofit organizations would pay tax on their input purchases at the same time that charitable donations lose their tax-exempt status under the income tax.<sup>9</sup>

Government enterprises selling goods and services would be treated as ordinary businesses, with tax applying to final sales and exemption applying to all purchased inputs. In lieu of taxing *other* government output, all input purchases made by general government entities, including the acquisition of labor services (other than that used to produce education), would be subject to taxation.<sup>10</sup>

Regressivity would be addressed through a *Family Consumption Allowance* (FCA) that would be available to all registered households regardless of income level, with registration only required for those households seeking relief. Monthly rebates would be paid to households based on family size and the monthly poverty level for such families. The rebate would equal the tax inclusive sales tax rate multiplied by the monthly poverty level.<sup>11</sup> Table 1 shows the monthly rebate levels for single and married households of different sizes using sales tax rates developed below. The FCA rebate is a markedly different approach to offering relief than under the current state sales tax. State sales tax systems often provide relief by exempting a portion of

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<sup>8</sup> Credits will be available for business acquisition of property held by final consumers for which sales tax has been paid.

<sup>9</sup> Nonprofits engaged in the sale of goods or services would be required to collect tax on such sales and would benefit from exemption on input purchases.

<sup>10</sup> The bill refers to *wages and salaries*, which is defined to include all compensation, including health, life, disability and unemployment insurance benefits.

<sup>11</sup> The FCA rebate is a transfer payment that operates entirely independent of the NRST and is only linked to the NRST through the tax rate.

the *base* from taxation, for example, food and clothing purchases, although five states provide credits against the income tax in lieu of such exemptions.<sup>12</sup> The FCA rebate, like the food and clothing exemptions under the sales tax, is in principle available to all households, raising the revenue costs associated with providing relief to low-income families.

**Table 1:  
Family Consumption Allowance for Exclusive Tax Rate of 37.4%<sup>1</sup>:  
District of Columbia and 48 Contiguous States**

Single Head of Household					Married Household				
Size of family unit	Number of related children under 18	Annual poverty threshold 20032	Consumption Allowance		Size of family unit	Number of related children under 18	Annual poverty threshold 20032	Consumption allowance	
			Monthly	Annual				Monthly	Annual
1	0	\$8,980	\$204	\$2,445	2	0	\$17,960	\$408	\$4,891
2	1	12,120	275	3,300	3	1	21,100	479	5,746
3	2	15,260	346	4,156	4	2	24,240	550	6,601
4	3	18,400	418	5,011	5	3	27,380	621	7,456
5	4	21,540	489	5,866	6	4	30,520	693	8,311
6	5	24,680	560	6,721	7	5	33,660	764	9,166
7	6	27,820	631	7,576	8	6	36,800	835	10,021
8	7	30,960	703	8,431	9	7	39,940	906	10,876

1. Assumes 20% erosion factor. Inclusive tax rate: 27.2%.

2. Poverty threshold for the 48 contiguous states and the District of Columbia. The poverty threshold is slightly higher for Alaska and Hawaii, which are not included here. Source: Federal Register, Vol. 68, No. 26, February 7, 2003, pp. 6456-6458.

<<http://aspe.hhs.gov/poverty/03poverty.htm>>.

Source: CBER, *The University of Tennessee*.

Implementation of a NRST would represent a significant change in state-federal relations. States would encounter higher costs of financing service delivery and lose much of their current ability to enforce income taxes. This can only strain vertical relationships in a federalist system. States also fear the way in which a federal consumption tax would intrude on their existing sales tax and create pressures to conform state and local tax systems. A survey conducted by the U.S. GAO indicates that over two-thirds of state policymakers surveyed were opposed to the introduction of a federal consumption tax; 80 percent of those surveyed noted their concerns over federal intrusion into a traditional state tax source (U.S. GAO, 1990).

<sup>12</sup> The states are Hawaii, Idaho, Kansas, South Dakota and West Virginia.

New relationships will emerge as the states administer the NRST on behalf of the federal government and interact with the new federal administrative apparatus. It is not clear how taxpayers would view this new regime. The states would collect the NRST through in-state business vendors, state residents would file use tax returns, and audits of in-state taxpayers would be conducted by the states. At the same time, individual taxpayers would receive monthly rebates from the federal government in support of the FCA. One must question whether taxpayers will perceive the states to be akin to the tax farmers of the Roman era.

### **Administration of State Income Taxes and Changes to Tax Structure**

State administration of personal and corporate income taxes benefits greatly from the presence of counterpart taxes at the federal level. While state income taxes do not conform entirely to federal income taxes, the states generally rely on similar definitions and interpretations in structuring and administering their systems, building on the Internal Revenue Code. Elimination of the federal system of income taxation would mean there would be no common basis upon which state taxes would be structured. Independent of other forces, this would lead to greater disparities and distortions in the structure of income taxation across states and increase compliance costs for multistate taxpayers.

Most importantly, elimination of the Internal Revenue Service would deprive the states of an essential enforcement mechanism. The federal government and the states have agreements in place to exchange information and work together to select tax returns for examination and audit (Dubin, Graetz and Wilde, 1992). Information sharing and cooperation are particularly important for the oversight of individual and business taxpayers with a multistate presence. The absence of a federal income tax oversight mechanism would create significant enforcement problems for the states. States might choose to enter into voluntary compacts to share

information and coordinate enforcement activities, as is now done under the sales tax through the Multistate Tax Commission (MTC). But not all states participate in the MTC audit system, and it has proven to be a contentious issue with business taxpayers. An alternative state response would be to eliminate the personal and corporate income taxes and conform the sales tax to the federal NRST.

It is conceivable that some states would choose to conform to the federal NRST while other states would choose not to. State income taxes may become more disparate than they are now, absent a federal model and federal enforcement apparatus. State sales taxes would have more variation than is currently the case since some states would adhere to the federal sales tax model and others would not. In short, the already complicated system of state and local finance may become more complicated still following adoption of a NRST, increasing further the costs of tax administration and tax compliance.

Elimination of state income taxes would dramatically change state tax portfolios, thereby affecting overall revenue elasticity and stability. Adopting the NRST base would enhance elasticity relative to the existing state sales tax in large part due to the inclusion of services; the overall elasticity would be at or near one. But the elasticity would be well below that for existing state income taxes (Bruce, Fox and Tuttle, 2004). Stability may also be enhanced by the inclusion of services in the sales tax base, although some services like residential construction are very cyclically sensitive.

Property values and state and local property tax bases would be affected in several important ways. First, the loss of mortgage interest deductibility would generally raise housing costs, thus reducing the demand for residential property. Lower interest rates envisioned following transition to a NRST would help temper this decline. While there may be significant

transition effects, the long-run impact on the housing stock is expected to be modest.<sup>13</sup> Second, the grandfathering of existing property and sales taxation of new property would have distributional effects. As the tax-inclusive price of new housing rises, demand will shift towards the existing housing stock driving up its price until a new equilibrium is reached. This will in turn create windfall gains for existing owners of property, the same property owners who have long benefited from the mortgage interest deduction.

The overall property tax base should expand from two sources. First, the residential property tax base will on net increase as property values will be inclusive of the NRST, just as the value of property today is inclusive of any state sales tax on building materials and construction services. The second source is the commercial and industrial component of the property tax base. Higher savings rates and lower interest rates, coupled with sales tax exemption of structures, equipment and construction services should increase business demand for property. Together there would be a significant jump in state and local property tax bases following adoption of a NRST.

### **Distributional Effects and Targeting Taxpayer Relief**

Aside from any state-level policy changes, the introduction of a NRST would have differential distributional consequences for the states due to the loss of deductibility of state income, property and (currently) sales taxes. Under current federal policy those states with the highest tax burdens would witness the largest increase in post-federal reform tax burdens, while states with small governments would see the smallest increase.

Estimates of household distributional effects arising from a NRST depend on whether one takes an annual or lifetime perspective on tax burdens and household income. Estimates of annual tax burdens and annual income have the longest tradition in the literature. These

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<sup>13</sup> See Bruce and Holtz-Eakin (1999) and Gravelle (1996).

measures are relatively transparent and are relied upon heavily within federal research bodies. The introduction of a NRST would be highly regressive in terms of annual taxes paid and annual income earned, although regressivity for those towards the bottom of the income distribution can be effectively offset through rebates like the FCA (Gale et al. 1996).

The lifetime perspective on the distribution of tax burdens recognizes that income is much more volatile than consumption over the life cycle. Using annual tax burdens and lifetime income (e.g., Metcalf, 1997 and Feenberg et al. 1997) and lifetime tax burdens and lifetime income (e.g., Fullerton and Rogers, 1996 and Altig et al. 2001) produces much lower estimates of regressivity for various consumption tax proposals. With rebates like the FCA, the lifetime distribution of tax burdens under a consumption tax roughly mirrors the lifetime burden under the current federal tax regime.

One of the subtleties of movement to a consumption tax is intergenerational equity. People who have long paid federal (and state) income taxes will confront a new tax system; people entering the system will be subject to only the new regime. Younger individuals with higher savings propensities are expected to gain under fundamental tax reform, while middle-aged and older taxpayers will lose as capital income is taxed when spent on consumption (Altig et al. 2001). States with older populations will thus lose relative to states with younger populations.

State policy conformity to the national system of taxation would further alter the distribution of household income. In terms of horizontal equity there would be significant improvement by evenly taxing all consumption should state sales tax bases mirror the national sales tax base. In terms of vertical equity, the absence of a personal income tax would benefit primarily middle-to-high income taxpayers; low-income households, which pay little or no

income tax, would lose the benefits of any state earned income tax credits. Should the states conform their sales tax systems to the federal NRST by uniformly taxing things like food and clothing, regressivity would be increased to the extent these items are more regressive in consumption than average purchases. Generally states that rely on income taxes, and in particular states with progressive rate structures, would see the largest change in tax burdens under conformity. States that rely heavily on the sales tax, on the other hand, would see less change following conformity.

The states have a longstanding practice of enacting equity provisions within their fiscal systems, a practice that would not likely change under complete state conformity. One means of pursuing equity objectives would be to build on the federal FCA, operating rebate or credit systems using the information reports provided in support of the FCA. A simple piggyback system based on a state's unique taste for redistribution would be one option. Another option would be a *smart card* with embedded sales tax credits. Such targeted relief would be similar to that afforded through a direct income tax<sup>14</sup> and would come at much lower government revenue and firm compliance cost than a sales tax-based exemption available to all households.<sup>15</sup>

Another mechanism to affect income distribution would be the property tax. Virtually all states currently offer some form of relief under the property tax, in some instances inclusive of renters.<sup>16</sup> One practical problem would be the challenge associated with verification of

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<sup>14</sup> One difference between a rebate and an income tax is that under the latter, tax relief is provided through exemption whereas under the FCA system individuals must first pay tax and then receive relief through the rebate. Once such a FCA system is up and running, taxpayer liquidity will not be an issue as monthly rebate checks can be used to offset monthly sales tax liabilities.

<sup>15</sup> The tax rate and thus efficiency effects of not targeting relief can be significant. Feenberg et al. (1997) show that the rate of a national consumption tax would move from 17.2 percent to 19.8 percent with a food exemption and rise to 30.3 percent if food, medical care and housing were omitted in the base.

<sup>16</sup> Homestead exemptions, which remove a portion of residential property from the tax base, are available in 48 states. Twenty-six states have circuit breaker programs that limit tax liability as a share of income. Other relief programs are available in some states, targeted to specific groups of the population like the elderly and veterans. See NCSL (2002).

household income absent the income tax, something that might be addressed through information reports on the federal FCA.

State discretion in targeting relief to specific business groups would be hampered in the absence of a direct state corporate income tax that builds on unique taxpayer characteristics. The use of targeted tax incentives to promote economic development would be curtailed but certainly not eliminated. Incentives under the sales tax would no longer be relevant to the extent states conformed to the NRST and exempted all input purchases. But pressures to provide property tax incentives and other types of concessions would increase. States and localities could choose alternative modes of relief, like charging lower user fees on services such as water and sewer and by reducing any remaining business taxes to retain and attract business activity.

### **Costs of Financing State and Local Governments**

A NRST would raise the marginal cost to state and local taxpayers of funding government services through income, property and sales taxes relative to the status quo. This may be desirable to the extent federal deductibility lowers the price of consuming government services versus other forms of consumption and leads to higher-than-optimal government spending.

The direct outlays of state and local governments would increase sharply through the payment of the NRST to the federal government on labor and nonlabor input acquisitions (see below). States with larger state/local government sectors would see the largest increase in tax burdens. Government capital costs would rise as the tax exempt status of state and local debt is eliminated through abolition of the federal income tax. Some offset would be provided to the extent that market interest rates fall due to increased rates of personal saving although the extent of this offset is uncertain. Neutrality between consumption of government and private goods and

services would be achieved, as would neutrality between public and private investments, but at a high financial cost to states and localities.

Public sector expenditures may face pressure due to the elimination of deductibility of charitable donations, the taxation of input purchases on the part of nonprofit institutions and the taxation of necessities including food, health care and housing services. Charitable donations will likely fall, reducing the income of nonprofits, while the costs of service provision will increase by the amount of federal and potentially state sales taxes. At the same time the cost of necessities will rise sharply. Together this may increase the demand for services provided by state and local governments.

### **Impact on State Tax Bases**

A NRST would affect state sales tax bases through two means, one arising from policy changes that might accompany adoption of the NRST and the other from behavioral changes and avoidance and evasion.

#### Policy Effects

How state bases are affected depends in part on the outcomes of two broad policy decisions, one determined by the states and the other by the federal government. Both have the potential to broaden state bases. First, the effects depend on states' political responses to federal adoption of the tax. States could choose to conform their base to the NRST base since they would be expected to administer the federal tax and would have political cover for extending their sales taxes to many currently untaxed items. Conformity would generally result in broader and more sensible state tax bases. Table 2 gives estimates of the tax base for every state using the broad base proposed in the NRST by comparison with each state's current tax base. The base is estimated by assuming that evasion, avoidance and political choices narrow the potential

NRST base by 20 percent, and that the base is distributed across states in proportion to the share of the national total GSP that is in each state.<sup>17</sup> The estimated NRST base is on average 2.1 times larger than the existing sales tax base<sup>18</sup> and is bigger in all states except Hawaii. Illinois, which currently has a very narrow base, would experience the biggest increase, a 3.2-fold jump.

Three advantages from state conformity with the NRST base are apparent. The NRST base would lessen compliance and administration costs relative to separate federal and state tax structures. State bases, and therefore revenues, can also be expected to be more elastic with the NRST definition. The aggregate states' actual sales tax base has grown much more slowly than the economy, as the base has fallen from 43.8 percent of GDP to 33.1 percent between 1979 and 2003 (see Figure 1). The NRST base, on the other hand, has risen faster than GDP, growing from 68.6 percent to 71.5 percent of GDP over the same time period.<sup>19</sup> The states' need for a broader, more elastic tax base would increase if they choose to eliminate their personal and corporate income taxes in response to the disbanding of the IRS. Also, the NRST base is more sensible because taxation of intermediate transactions would be eliminated and because the distorting effects of a narrow base on relative prices (and therefore consumption) would be significantly reduced.<sup>20</sup>

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<sup>17</sup> The erosion applies only to the private sector tax base, which is equal to consumption plus residential housing. Evasion alone is substantial under the current federal-state tax system. For the federal corporate income tax the gap is estimated to be from 22.7 percent to 26.1 percent of collections. (Lenter et al., 2003 and Rice, 1992) For the personal income tax, the IRS (1996) estimates a gap of over 20 percent of collections. The estate tax gap is estimated at 13 percent (Eller, Erard and Ho, 2001) while the social security gap is estimated to be nearly 12 percent (Brown and Mazur, 2003). Fox and Murray (2004) summarize the literature on sales tax gaps, which range between 24.9 percent and 40 percent. Almost 9 percent of Iowa's estimated sales tax gap was attributable to consumption of business inventories. Thus, the extent of erosion assumed here is generally consistent with noncompliance with other U.S. taxes.

<sup>18</sup> The existing base is calculated using the adjustments that John Mikesell (2004) developed for each state.

<sup>19</sup> Of course, policy decisions to broaden the set of exemptions have been an important reason for the base narrowing of the current structure, and these pressures would exist with the NRST as well (see Fox, 1998).

<sup>20</sup> See Merriman and Skidmore (2000) for one estimate of how consumption behavior has been altered by the failure of most states to broadly tax consumption. See Cline et al. (2005) for discussion of current sales taxation of intermediate transactions.

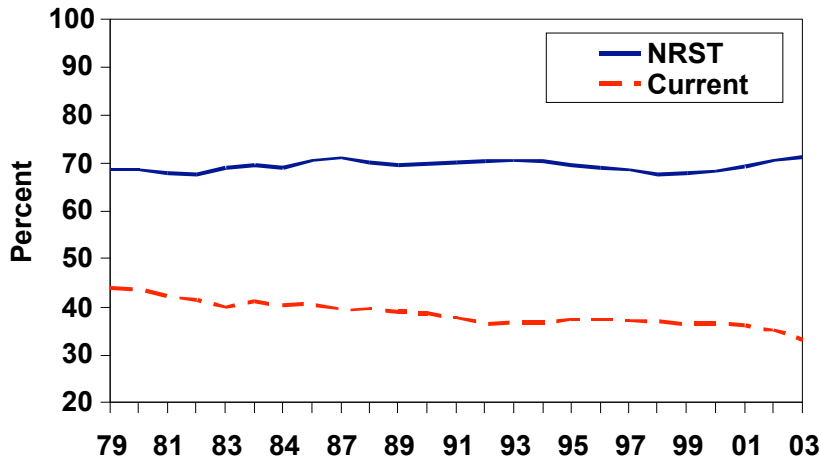
**Table 2:  
Sales Tax Base, FY2003 (Billions of Dollars)**

<b>Area</b>	<b>Current Base</b>	<b>NRST Base*</b>	<b>NRST/ Current</b>
United States	3,501.236	7,315.412	2.1
Alabama	47.365	89.003	1.9
Alaska	0	21.108	na
Arizona	76.570	122.253	1.6
Arkansas	38.081	50.925	1.3
California	414.984	971.912	2.3
Colorado	63.214	126.584	2.0
Connecticut	51.093	116.773	2.3
Delaware	0	33.257	na
Florida	251.305	369.708	1.5
Georgia	118.474	216.138	1.8
Hawaii	42.692	31.450	0.7
Idaho	16.840	27.270	1.6
Illinois	105.817	340.387	3.2
Indiana	70.171	144.714	2.1
Iowa	34.538	69.515	2.0
Kansas	35.633	63.152	1.8
Kentucky	47.002	86.776	1.8
Louisiana	69.417	93.851	1.4
Maine	17.150	27.628	1.6
Maryland	69.200	143.090	2.1
Massachusetts	74.161	202.183	2.7
Michigan	127.796	247.471	1.9
Minnesota	75.448	141.888	1.9
Mississippi	35.143	48.844	1.4
Missouri	66.741	131.980	2.0
Montana	0	17.020	na
Nebraska	25.828	43.776	1.7
Nevada	33.728	58.334	1.7
New Hampshire	0	32.980	na
New Jersey	98.934	268.564	2.7
New Mexico	29.822	38.003	1.3
New York	212.698	557.313	2.6
North Carolina	88.715	212.255	2.4
North Dakota	8.599	14.210	1.7
Ohio	135.230	273.261	2.0
Oklahoma	33.411	67.521	2.0
Oregon	0	81.307	na
Pennsylvania	126.019	303.534	2.4
Rhode Island	10.955	26.440	2.4
South Carolina	51.526	86.203	1.7
South Dakota	12.081	17.814	1.5
Tennessee	77.352	134.658	1.7
Texas	278.547	547.934	2.0
Utah	31.307	51.374	1.6
Vermont	6.338	13.909	2.2
Virginia	94.456	204.459	2.2
Washington	92.403	165.031	1.8
West Virginia	18.988	32.040	1.7
Wisconsin	74.829	134.919	1.8
Wyoming	10.631	14.695	1.4

\*Assuming conformity and 20% avoidance.

Source: CBER, The University of Tennessee.

**Figure 1:  
U.S. Sales Tax Bases as a Percent of GSP, 1979-2003**



Nonetheless, we think it unlikely that many states would voluntarily conform to the federal structure. One piece of evidence is that states have not fully conformed to the federal individual income or corporate income taxes, despite obvious administrative and compliance advantages of doing so. They have generally adopted a measure of federal income but otherwise deviate from federal policy; only Rhode Island has chosen to determine state tax liability as a percentage of the federal liability. Some economic incentives for maintaining distinct state bases are described below.

Second, the effects depend on whether Congress ultimately enacts legislation that enables the states to collect the state sales tax on a destination basis, in part as a quid pro quo for the states collecting the NRST. Congress could allow states to require remote vendors to collect the state sales tax on their behalf, i.e., federal legislation could establish nexus based on firms' economic exploitation of state markets. This would probably result in broader state tax bases even if the states do not conform to the NRST, depending on the relationship between increased

collection of tax on remote transactions and behavioral changes discussed below.<sup>21</sup> H.R. 25 indicates that the tax is to be collected on a destination basis among *conforming* states based on the sharing of information within a compact, with no mention of changes in the definition of nexus. It seems unlikely that Congress would expand the nexus definition to include economic exploitation of the state market since the federal NRST could probably be collected more efficiently on an origination basis. It is even possible that destination collection of the state sales tax could result in firms being required to comply with both a destination and an origination tax within the U.S., something that Congress would seem very unlikely to require.

Tax competition is encouraged by enforcement of destination taxation through compact rather than by nexus rules because states can avoid the destination provisions for their vendors by not conforming. Further, many states will be hesitant to levy high tax rates on firms or products that are primarily sold into national markets, such as many digitized services and transactions over the Internet, in the absence of effective collection of a destination tax. This can be partially achieved by not conforming. Low population states have the strongest incentives to serve as tax havens by undercutting more populous states (see Kanbur and Keen, 1993). This is consistent with tax competition tending to drive state tax rates to zero on many goods and services that are traded between states, meaning the states are not likely to conform to the NRST base. States that do conform will have less control over their tax rates than when destination-based taxation can be effectively imposed.

### Behavioral Effects and Evasion

The remainder of this section investigates how the NRST would affect state bases if states do not conform and Congress does not grant nexus. Specifically, how would behavioral

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<sup>21</sup> See Bruce and Fox (2004) for estimates of current state losses from states' inability to fully collect the sales and use taxes on remote commerce.

changes affect state tax bases? A key issue is how a NRST as a substitute for the personal income tax would increase or decrease consumption of goods and services in existing state tax bases. The NRST can potentially affect state bases through five avenues: altering savings decisions, encouraging home production, discouraging work outside the home, changing the pattern of consumption and creating new incentives to evade. These are a combination of incentives that could change consumption levels or change the degree of non-compliance.

To understand the analysis it is important to realize that there is no difference between a retail sales tax and a flat rate income tax in simple, theoretical economic models in which people do not save. The tax is either subtracted out before income is taken home (the income tax) or is paid in higher prices after all income is taken home (the sales tax). In this context, the two taxes have the same effects on behavior so there would be no base narrowing from the substitution of one tax for another at the federal level. Of course, these models abstract from many aspects of actual taxes, such as the effect of a progressive income tax on decisions to work and the effect of taxes on savings.

Some base narrowing may occur, at least in the short run, once savings are allowed for, because the income tax is imposed on some forms of savings twice, once when the savings are earned and again when the return to savings is received. As a result, the sales tax would encourage savings (reduce the current disincentive to save with the income tax), which suggests some reduction of consumption and presumably of state sales tax bases. This paper defers to others that focus on the effects of taxes on savings behavior and specifically on how income versus sales taxes would affect savings.<sup>22</sup> Still, the effects on state tax bases may be modest because many retirement vehicles are already tax favored, such as savings vehicles like 401k and 403b plans and IRAs. Special treatment is also afforded to other forms of savings such as

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<sup>22</sup> See Bernheim (2002) as an example.

through Section 529 plans and the returns to some forms of savings, such as capital gains, are taxed at very low rates. In any event, the sales tax base is only affected in the transition unless savings occur to grant bequests. The base falls in the near term as savings are increased, but the base expands when the savings (plus returns to savings) are used for future consumption. Thus, though there may be some narrowing in the short run as savings respond to the new tax structure, we do not anticipate a significant long-term narrowing of state tax bases because of greater savings.

Three of the other avenues where it might appear that the NRST would shrink the base do not generally stand up under careful scrutiny. A revenue neutral sales tax in place of the personal income tax should have the same effect on work effort as the income tax.<sup>23</sup> A sales tax affects decisions to work (the labor/leisure choice) much like the income tax because the tax is imposed on items purchased with earnings but is not levied on leisure. Two caveats should be noted. First, under H.R. 25 a progressive income tax is being replaced by a flat-rate sales tax, so as a general rule the tax rate (at least at the margin) is increased for low-income taxpayers and reduced for high-income people. This could affect work effort to the extent that these groups have different work elasticities with respect to after-tax wages. Second, work will increase if future consumption is complementary with leisure, which seems reasonable if future consumption is thought of as occurring during retirement. On the other hand, though these two price effects might encourage more work, the income effect of being able to save more easily for retirement should reduce work effort. Once combined, these offsetting influences probably have a modest effect, if any, on total work effort.

The retail sales tax is not imposed on home production, such as do-it-yourself projects, the service component of preparing foods at home, driving oneself to a vacation, and so forth.

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<sup>23</sup> This abstracts from the fact that the NRST is also being designed to replace the corporate income tax.

Of course, the income tax is not imposed on the value of this production either, so there is no change in the incentives to do home production rather than purchase goods and services, except to the extent that taxpayers perceive the incentives to be different (i.e., the short-run sticker shock from the price increase). Similarly, the NRST should have essentially no effect on the relative prices of goods since the tax is imposed on all consumption. Thus, it should not alter the consumption of goods and services in state tax bases compared with those that are not.<sup>24</sup>

Additional evasion beyond the extent that already occurs for state sales taxes is the main reason why narrowing of the base may occur. The high combined sales tax rate required under a NRST (described below) creates a different set of incentives and opportunities for evasion than with the state sales and federal income tax structures that currently exist. Retailers have a number of options available for evasion including understating sales, claiming that sales were for tax exempt purchases (such as for intermediate products), stating that goods were used internally by the retailer rather than being sold (effectively falsifying another form of exempt sale) and claiming that goods and services were exported (see Murray, 1997). Entrepreneurs have the incentive to claim that purchases made for personal use were made by the business (or for mixed-use goods, to claim that more is for personal use). Indeed, people have strong incentives to form small businesses in order to evade the sales tax. Consumers also have the incentive to evade the tax by purchasing remotely (such as buying digitized services over the Internet from foreign suppliers). The incentives to engage in these evasion activities rise with the tax rates, so a combined federal, state, and local NRST rate should increase these incentives relative to today.

The extent of sales tax evasion is an empirical issue, and one on which we have little research (Fox and Murray, 2004). Over the years a number of analysts have asserted that

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<sup>24</sup> There is a slight change in relative prices since the federal tax would be imposed on goods and services exclusive of the state tax rate.

evasion will become a significant problem under a retail sales tax when rates exceed 10 percent (for example Tanzi, 1995), but we have been unable to uncover any empirical basis for this statement. Experience with the VAT may provide some evidence on what would happen with high sales tax rates. At an aggregate level VAT gaps have been estimated to be as small as 2-4 percent of revenues and as high as 40 percent (Agha and Haughton, 1996). At the margin the incentives for a vendor to evade are generally the same with the VAT as the retail sales tax, suggesting that there is little reason to believe that vendors will evade the sales tax considerably more than the VAT.<sup>25</sup> A vendor reduces his tax liability by the tax rate times the amount of underreporting with either the VAT or the sales tax, and consumers have the same incentive to purchase remotely to evade the taxes. VAT credits provide an audit record, but similar records could be required for exempt transactions under the sales tax. Of course, a fraudulent credit-invoice system could cause the outflow of public funds while a fraudulent exemption system means only forgone revenue.

The magnitude of evasion could be lessened to the extent that the federal government provides incentives for states to enhance administration. Cooperative efforts between states (the state compact), expanded audit activities, and other means could be found to enhance compliance.

### **Impacts on State Tax Rates<sup>26</sup>**

The effect on state and local tax rates is examined in terms of the rates that would be needed to meet existing collections if states conform to the NRST and other policy responses

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<sup>25</sup> Some have argued that vendors will be more likely to report VAT liabilities accurately because they must misreport excessive credits to the government while fraudulent sales tax exemptions are based on a relationship between the two vendors. It seems unlikely that this would dramatically change compliance, particularly since governments are generally unable or unwilling to undertake broad-based effective audits of VAT credits. Further, when evasion occurs a taxable vendor must misreport tax liabilities with both taxes, with the difference being that it is the buyer with the VAT and the seller with the sales tax.

<sup>26</sup> The authors thank Bill Gale for fruitful interchange on the tax rates.

states would be expected to make if the federal government adopted the NRST. The first section below provides estimates of the necessary tax rates at both the federal and state levels, and the second discusses how economic and political forces would affect state and local policy towards tax rates. It is generally assumed that states maintain their current income taxes and can maintain revenue productivity absent IRS enforcement.

### NRST Rates

The necessary NRST rate depends on the political and administrative capacity to tax the potential base. We estimate the necessary tax-exclusive federal rate to be 35.5 percent<sup>27</sup> if the states do not conform (a 26.2 percent tax-inclusive rate) and 37.4 percent if they do conform to the NRST, assuming 20 percent erosion of the base<sup>28</sup> because of political decisions in Congress and evasion and avoidance by taxpayers (see Table 3).<sup>29</sup> The rate could be 27.5 percent without conformity (a 21.6 percent tax-inclusive rate) and 28.7 percent with conformity assuming that tax could be collected on 100 percent of the potential base, a practical impossibility. The differences with and without conformity arise because the federal government would need to remit payments to state and local governments if they adopted the NRST, just as state and local

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<sup>27</sup> Tax exclusive and tax inclusive tax rates are reported here. Tax exclusive refers to rates that are added onto the tax base (such as with state sales taxes) and tax inclusive refers to rates that are included in the tax base (such as with the personal income taxes).

<sup>28</sup> By comparison, only about 38 percent of consumption is taxed under the current system of state sales taxes (see Cline, et al. 2005), meaning 62 percent base erosion.

<sup>29</sup> All calculations are made for 2003. The estimated rates depend on a set of policy decisions, some of which are not included in H.R. 25. We presume that *after tax* transfers to people will remain constant. This is achieved by increasing the dollar amount of transfers in cases where the transfers are not currently subject to the federal income tax, but leaving them unchanged otherwise. Thus, part of social security payments and unemployment compensation are subject to income tax and elimination of the income tax is presumed to offset the effects of imposing the NRST. Transfers to government are generally not assumed to rise even after the NRST is imposed, with the exception of those for Medicaid. Also, several adjustments are made in consumption from the NIPA accounts, which is a key component of our tax base estimate. Imputed rents on housing and food grown and eaten on farms are subtracted from consumption, presuming that these will not be taxable. We exclude general sales taxes that are imposed at retail on sales to final consumers, based on the expectation that the federal tax base will be determined before the state sales tax is imposed. But, many state and local taxes are collected before the retail level, and these are not excluded. Thus, selective sales taxes on alcohol, tobacco and fuel, most of which are imposed prior to retail, are included in the taxable base. Also, general sales taxes that are levied on intermediate transactions remain in the taxable base in cases where the states do not conform to the NRST. States are not assumed to maintain the after tax value of transfers to either people or governments.

governments would need to remit payments to the federal government.<sup>30</sup> Details behind calculation of the federal and state and local rates are included in the Appendix.

**Table 3:  
Estimated NRST Federal and State Tax Rates (Percentage)**

Avoidance assumption (%)	NRST Base (bil \$)	Exclusive Rate				Inclusive State & Federal Rate
		Federal (when there is no state rate)	Federal (when there is a state rate)	State	State & Federal	
0	8,721.3	27.5	28.7	6.6	35.3	26.1
5	8,369.9	29.2	30.5	7.2	37.6	27.3
10	8,018.4	31.0	32.5	7.8	40.3	28.7
15	7,666.9	33.1	34.8	8.6	43.3	30.2
20	7,315.4	35.5	37.4	9.4	46.9	31.9
25	6,963.9	38.3	40.5	10.5	51.0	33.8

The necessary state and local tax rate if states conform to the NRST base is assumed to equal the amount required to replace existing state and local sales tax revenues plus the amount required to finance the NRST imposed by the federal government on state and local government consumption and investment divided by the NRST base. We estimate the average necessary state and local rate to be 9.4 percent with 20 percent base erosion. Thus the average combined federal and state NRST rate is 46.8 percent in this case (or a 31.9 percent tax-inclusive rate).<sup>31</sup> The combined rate could be 34.1 percent with zero base erosion (a 27.8 percent tax-inclusive rate). The combined rate would be even higher if states eliminate corporate and individual income taxes and replace the revenues with the NRST-based tax or if base erosion is greater than 20 percent.

The existing weighted-average state and local sales tax rate on current tax bases is 6.7 percent, meaning the NRST state and local rate must rise by more than two percentage points

<sup>30</sup> No attempt is made to discuss how the tax would be structured to avoid any constitutional questions regarding one level of government imposing a tax on another level.

<sup>31</sup> In this case the inclusive rate is calculated jointly for federal and state government using all revenues except for revenues that governments pay to themselves.

despite the more than doubling of the tax base if 20 percent base erosion occurs. The reason is that state and local governments would need to pay \$346.2 billion in taxes to the federal government (with the 35.5 percent rate), a liability that is about 50 percent greater than replacement of existing sales tax revenues.

The necessary tax rate differs by state based on the arithmetic sum of the state's current reliance on sales taxes and the payments that the state must make for the federal NRST (which is a function of the relative size of each state and local government), divided by the non-state and local government NRST base in the state. The tax rates were estimated under the assumption that all states, including those that have no sales tax rate today, would fund their NRST payments to the federal government with a state tax on their NRST base. States would need to use an alternative source, including the general sales tax as one option, to finance their NRST payments if they do not conform to the NRST. Estimates for each state are provided in Table 4. Assuming 20 percent base erosion the rates vary from a high of 16.7 percent in New Mexico to a low of 4.3 percent in Delaware, which currently has no broad based sales tax.<sup>32</sup> Interestingly, the rate could drop 0.1 percent in Illinois because the base expansion is so large. The combined federal, state, and local tax-exclusive rate would vary from a high of 54.1 percent in New Mexico to a low of 41.7 percent in Delaware. On average, the revenue requirement to pay the NRST is larger than to replace existing sales taxes, meaning differences in the amount paid to the federal government are an important source of the cross-state variation in the required tax rate.

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<sup>32</sup> States may only be able to set such widely different rates if they can effectively collect the tax on a destination basis.

**Table 4:  
Estimated NRST and Current Sales Tax Rates**

<b>Area</b>	<b>State and local sales tax rate</b> <sup>1,2</sup>	<b>NRST exclusive rate</b>	<b>Difference between current rate and NRST rate</b>
United States average	5.94	9.44	3.50
Alabama	7.95	11.40	3.45
Alaska	1.05	7.32	6.27
Arizona	7.65	11.90	4.25
Arkansas	7.95	12.32	4.37
California	7.95	9.57	1.62
Colorado	6.15	8.94	2.79
Connecticut	6.00	7.74	1.74
Delaware	-	4.27	4.27
Florida	6.70	11.36	4.66
Georgia	6.80	9.33	2.53
Hawaii	4.00	12.57	8.57
Idaho	6.10	10.88	4.78
Illinois	7.50	7.42	-0.08
Indiana	6.00	8.23	2.23
Iowa	6.60	9.85	3.25
Kansas	6.75	11.15	4.40
Kentucky	6.00	10.14	4.14
Louisiana	8.55	13.73	5.18
Maine	5.00	10.33	5.33
Maryland	5.00	8.08	3.08
Massachusetts	5.00	6.40	1.40
Michigan	6.00	9.15	3.15
Minnesota	6.70	9.65	2.95
Mississippi	7.00	14.61	7.61
Missouri	6.80	9.53	2.73
Montana	-	7.87	7.87
Nebraska	6.30	12.10	5.80
Nevada	7.35	10.17	2.82
New Hampshire	-	4.49	4.49
New Jersey	5.95	7.35	1.40
New Mexico	6.50	16.74	10.24
New York	8.45	9.51	1.06
North Carolina	7.05	8.42	1.37
North Dakota	5.50	10.80	5.30
Ohio	7.15	9.47	2.32
Oklahoma	8.10	12.87	4.77
Oregon	-	7.79	7.79
Pennsylvania	6.25	7.17	0.92
Rhode Island	7.00	8.42	1.42
South Carolina	5.60	12.11	6.51
South Dakota	5.25	10.65	5.40
Tennessee	9.40	11.04	1.64
Texas	7.90	10.01	2.11
Utah	6.45	11.56	5.11
Vermont	6.00	8.40	2.40
Virginia	5.00	7.30	2.30
Washington	8.35	12.20	3.85
West Virginia	6.00	12.91	6.91
Wisconsin	5.40	9.02	3.62
Wyoming	5.15	11.72	6.57

1. Aggregate rates are weighted averages that include county and city rates.

Source: The Sales Tax Clearinghouse Inc., <<http://theetc.com/STrates.stm>>.

## Behavioral Effects on Rates

This section examines how the setting of tax rates by state and local governments might be influenced by imposition of a federal sales tax rate without considering the effects described above from conforming to the NRST. Economists refer to the behavioral relationship between tax rates at different levels of government as vertical competition or fiscal interdependence between governments. Theoretical analysis of vertical competition does not provide a clear conclusion on how states will respond to federal imposition of the NRST (see Keen, 1998). For example, the state rate will tend to rise with imposition of a federal rate because the reduction in state bases caused by incentives created by the NRST (discussed above) lowers state government services and, as a result, makes these services more valuable at the margin (effectively meaning that states will raise the rate to replace some of the revenue lost by a narrower base). On the other hand, the “best tax rate” for states will depend on how price elastic the taxable base is. States would be able to increase total receipts by lowering their rates if the base response (as the base grows back somewhat as a result of lower state rates) is sufficiently elastic.

The likely direction and extent of state responses to the federal tax is an empirical question since there is no theoretical resolution to the issue. Relatively little empirical research has been done on vertical competition, and no empirical investigation of vertical competition between federal and state governments in the U.S. has been possible for broad-based consumption taxes. The empirical research that has been conducted to date reaches mixed conclusions and provides little guidance for how state policy can be expected to respond to federal imposition of the tax. Some evidence suggests that states tend to raise their gasoline and tobacco tax rates in response to federal increases (Besley and Rosen, 1998). Research on the U.S. individual income tax has found that states tend to increase their personal income and their

sales tax rates in response to federal income tax rate increases (see Esteller-More and Sole-Olle, 2001). But research on a sample of OECD countries from the mid-1970s to the mid-1980s reached the opposite finding for subnational income taxes (Goodspeed, 2000). Provincial income tax rates were also positively related to the national rate in Canada (see Esteller-More and Sole-Olle, 2002). On the other hand, Canadian provinces are found to lower their corporate tax rates in response to federal corporate rate increases (Hayashi and Boadway, 2001).

Two other effects suggest a tendency for state and local governments to lower their sales (and possibly other) tax rates. First, state and local income and property taxes are subsidized by the current deductibility from the federal income tax, which encourages state and local governments to raise income and property tax rates and potentially to expand the size of government. This same incentive exists now for state sales tax rates, at least if the deduction for 2004 and 2005 is perceived as permanent. But states have not had an opportunity as yet to react to deduction of sales taxes, so this effect is probably not built into the rates at this point. The incentive to raise property, income or sales tax rates will be eliminated with the NRST since there will be no deductibility. Thus, the incentive should be for smaller state and local governments and slightly lower rates than occurs with deductibility.

Second, the NRST creates neutral taxation of public and private production since the tax is the same on private and public production (i.e. consumers must pay the tax on any private goods they purchase and on any production by the state and local governments) whereas taxes are generally paid only on private consumption and production today. Thus, state and local government public production is discouraged relative to the current tax structure in the sense that the cost of any public production is increased by the federal tax rate and this could encourage lower state and local taxes under the NRST.

## **Conclusion**

This paper has examined the way in which the introduction of a national retail sales tax would affect state and local government finances. The federal proposal would take the form of a pure destination-based consumption tax, unlike the current state and local sales tax that falls on an array of business purchases and fails to tax all final consumption. Vertical equity concerns would be addressed through monthly rebates afforded to all households.

While many desirable macroeconomic consequences would follow from adoption of a national retail sales tax, there would also be serious effects on state and local government finances. Absent the IRS, it would be more difficult to maintain viable income tax systems. And the costs of financing state and local government services would rise sharply. State and local tax bases would be substantially broadened if they conform to the NRST base; nonetheless, higher rates would be necessary to replace existing revenues and to finance costs of paying the federal tax on state and local government service delivery. Together there seems to be little in a national sales tax that states and localities would find palatable.

## References

- Aaron, Henry J. and William G. Gale. *Economic Effects of Fundamental Tax Reform*. Washington, DC: Brookings Institution Press, 1996.
- Agha, Ali and Jonathan Haughton. "Designing VAT Systems: Some Efficiency Considerations." *Review of Economics and Statistics* 78 (1996): 303-308.
- Altig, David, Alan J. Auerbach, Laurence J. Kotlikoff, Kent A. Smetters and Jan Walliser. "Simulating Fundamental Tax Reform in the United States." *American Economic Review* 91 (2001): 574-595.
- Bernheim, B. Douglas. 2002. "Taxation and Savings," *Handbook of Public Economics: Volume 3*, edited by Alan J. Auerbach and Martin Feldstein, Elsevier: Amsterdam, 1173-1250.
- Besley, Timothy and Harvey Rosen. 1998. "States' Responses to Federal Tax Setting: Evidence from Gasoline and Cigarettes," *Journal of Public Economics*, 73, 383-398.
- Bickley, James M. "Flat Tax Proposals and Fundamental Tax Reform: An Overview." Congressional Research Service Brief for Congress, September 30, 2004.
- Brown, Robert E. and Mark J. Mazur. "IRS's Comprehensive Approach to Compliance Measurement." Presentation to the Spring Symposium of the National Tax Association, June 2003.
- Bruce, Donald and William F. Fox. 2004. "State and Local Tax Revenue Losses from E-Commerce: Estimates as of July 2004," *State Tax Notes*, 33 (7).
- Bruce, Donald, William F. Fox and Markland Tuttle. "Tax Base Elasticities: A Multi-State Analysis of Long-run and Short-run Dynamics." September 2004, 38pp.
- Bruce, Donald and Douglas Holtz-Eakin. "Fundamental Tax Reform and Residential Housing." *Journal of Housing Economics* 8 (1999): 249-271.
- Cline, Robert, William F. Fox, Thomas Neubig and Andrew Phillips. "Total State and Local Business Taxes: AAA 50 State Study of the Taxes Paid by Business," *State Tax Notes* 27 (March 1, 2004).
- Cline et al. 2005. "Sales Taxation of Business Inputs: Existing Tax Distortions and the Consequences of Extending the Sales Tax to Business Services," *State Tax Notes*, 33, 457-470.
- Dubin, Jeffrey A., Michael J. Graetz and Louis L. Wilde. "State Tax Amnesties: Causes." *The Quarterly Journal of Economics* 107 (1992): 1057-1070.
- Due, John F. "Implications for Australia the Experience of the United States, Canada and Other Countries with the Retail Sales Tax." In *Changing the Tax Mix*, edited by John Head. Sydney, Australian Tax Research Foundation, 1986.

Eller, Martha Britton, Brian Erard and Chih-Chin Ho. "Noncompliance with the Federal Estate Tax." In William G. Gale, James R. Hines and Joel Slemrod, editors, *Rethinking Estate and Gift Taxation*. Washington, DC: Brookings Institution Press, 2001.

Esenwein, Gregg A. and Jane G. Gravelle. "The Flat Tax, Value-Added Tax, and National Retail Sales Tax: Overview of the Issues." Congressional Research Service Report for Congress, September 24, 2004.

Esteller-More, Alex and Albert Sole-Olle, 2001. "Vertical Income Tax Externalities and Fiscal Interdependence: Evidence from the U.S.," *Regional Science and Urban Economics* 31, 247-272.

Esteller-More Alex and Albert Sole-Olle, 2002. "Tax Setting in a Federal System: the Case of Personal Income Taxation in Canada," *International Tax and Public Finance* 9, 235-257.

Feenberg, Daniel R., Andrew W. Mitrusi and James M. Poterba. "Distributional Effects of Adopting a National Retail Sales Tax." National Bureau of Economic Research, working paper 5885. January, 1997.

Fox, William F. "Can the Sales Tax Survive a Future Like its Past?" in *The Future of State Tax Policy*, edited by David Brunori, Washington: Urban Institute Press, 1998.

Fox, William F. and Matthew N. Murray. "Sales Taxation in a Global Economy." In James Alm, Jorge Martinez-Vasquez and Sally Wallace, *Taxing the Hard-to-Tax*. Elsevier, 2004.

Fullerton, Don and Diane Lim Rogers. "Lifetime Effects of Fundamental Tax Reform." In Henry J. Aaron and William G. Gale, eds., *Economic Effects of Fundamental Tax Reform*, pages 321-354. Washington, DC: The Brookings Institution Press, 1996.

Gale, William G. "The National Retail Sales Tax: What Would the Rate Need to Be?" The Brookings Institution, April 2005.

Gale, William G., Scott Houser and John Karl Scholz. "Distributional Effects of Fundamental Tax Reform." In Henry J. Aaron and William G. Gale, eds., *Economic Effects of Fundamental Tax Reform*, pages 281-320. Washington, DC: The Brookings Institution Press, 1996.

Goodspeed, Timothy. 2000. "Tax Structure in a Federation," *Journal of Public Economics*, 75: 493-506.

Gravelle, Jane G. "Effects of Flat Taxes and Other Proposals on Housing: An Overview." Congressional Research Service Report for Congress, June 17, 1996.

Hayashi, Masayoshi and Robin Boadway, 2001. "An Empirical Analysis of Intergovernmental Tax Interaction: The Case of Business Income Taxes in Canada," *Canadian Journal of Economics*, 34 (2), 481-503.

- Kanbur, Ravi, and Michael Keen. 1993. "Jeux Sans Frontieres: Tax Competition and Tax Coordination When Countries Differ in Size." *The American Economic Review* 83: 877-892.
- Keen, Michael, 1998. "Vertical Tax Externalities in the Theory of Fiscal Federalism," *International Monetary Fund Staff Papers*, 45, 454-485.
- Lenter, David, Joel Slemrod and Douglas Shackleford. "Public Disclosure of Corporate Tax Return Information: Accounting, Economics and Legal Perspectives." *National Tax Journal* 56 (2003): 803-830.
- Merriman, David and Mark Skidmore, 2000. "Did Distortionary Sales Taxation contribute to the Growth of the Service Sector?" *National Tax Journal*, 53 (1), 125-142.
- Metcalf, Gilbert E. "The National Sales Tax: Who Bears the Burden?" Cato Policy Analysis No. 289. December 8, 1997.
- Mikesell, John L. "State Retail Sales Tax Burdens, Reliance, and Breadth in Fiscal Year 2003." *State Tax Notes* (July 12, 2004): 125-131.
- Murray, Matthew N. "Would Tax Evasion and Tax Avoidance Undermine a National Retail Sales Tax?" *National Tax Journal* 50 (1997): 167-182.
- National Conference of State Legislators. *A Guide to Property Taxes: Property Tax Relief*. Washington, DC: National Conference of State Legislators, November 2002.
- Rice, Eric M. "The Corporate Tax Gap: Evidence on Tax Compliance by Small Corporations." In Joel Slemrod, editor, *Why People Pay Taxes: Tax Compliance and Enforcement*. University of Michigan Press, 1992.
- Ring, Raymond J. "Consumers' Share and Producers' Share of the General Sales Tax." *National Tax Journal* 52 (1999): 79-90.
- State of Iowa. Department of Revenue. *Iowa Sales Tax Gap: Study of Registered Retailers*. Des Moines: Department of Revenue, 1995.
- Strauss, Robert P. "Federal Consumption Taxes: Implications for the State and Local Sector." *Tax Notes* (February 22, 1999): 1173-1190.
- Tanzi, Vito. *Taxation in an Integrating World*. Washington: The Brookings Institution, 1995.
- U.S. Department of Labor. *The Underground Economy in the United States*. Washington, DC: Department of Labor, 1992.
- U.S. General Accounting Office. *State Tax Officials Have Concerns About a Federal Consumption Tax*. Washington, DC: U.S. General Accounting Office, March 1990.

U.S. Internal Revenue Service. *Federal Tax Compliance Research: Individual Income Tax Gap Estimates for 1985, 1988, and 1992*. Washington, DC, 1996.

U.S. Joint Committee on Taxation. *Impact on State and local Governments and Tax-Exempt Organizations of Replacing the Federal Income Tax*. Washington, DC: U.S. Government Printing Office, 1996.

Washington State Department of Revenue. *Department of Revenue Compliance Study. Research Report, 2003-1, January 17, 2003*.

## Appendix

The federal and the average state rates are estimated using equations 1 and 2 below.

These equations must be solved simultaneously if the states conform to the NRST;  $t_s$  is zero if the states do not conform.  $G_F$  and  $G_S$  are assumed to equal their respective components of gross product. All households are assumed to request the FCA and an average household size of three is used to estimate poverty level income.

$$1. \text{ FEDERAL EQUATION: } t_{FE} = \frac{R_F + V + t_{FE}G_F + t_{SE}G_F + t_{FE}T + t_{FI}D}{B}$$

$$2. \text{ STATE EQUATION: } t_{SE} = \frac{R_S + t_{SE}(G_S - e) + t_{FE}(G_S - e)}{B}$$

$$C = PCE - f - h - s$$

$$B = C + I_R + G_F + G_S - e$$

$$T = S_F - UI + M - SSI$$

C = Consumption

PCE = Personal consumption expenditures

f = Food produced and consumed on farms

h = Imputed rent on housing

s = State and local general sales taxes

$I_R$  = Residential investment

$t_{SE}$  = State exclusive NRST rate

$t_{FE}$  = Federal exclusive NRST rate

$t_{FI}$  = Federal inclusive NRST rate,  $t_{FI} = \frac{t_{FE}}{1 + t_{FE}}$

$G_F$  = Federal consumption

$G_S$  = State and local government consumption

$e$  = State and local government education wages

$R_F$  = Required federal tax revenue

$V$  = vendors' compensation, equal to  $.0025 * t_{FE} * B$

$R_S$  = State and local sales tax collections

$D$  = FCA

$T$  = Transfer payments

$SF$  = Federal government social benefits, total to persons

$UI$  = Federal government social benefits, unemployment insurance

$M$  = Medicaid Transfers

$SSI$  = Taxable Social Security benefits