

# SPECIAL REPORT

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## Tax Pyramiding: The Economic Consequences Of Gross Receipts Taxes

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### I. Introduction

State governments have traditionally raised revenue from business by taxing corporate income.<sup>1</sup> But in recent years the growing difficulty of administering state corporate income taxes has prompted a search for alternative ways of taxing companies. This search for new business taxes has ironically sparked a resurgence in one of the world's oldest broad-based tax structures: the gross receipts tax, also known as the "turnover tax."

are often compared to retail sales taxes. However, they differ in a critical way. While well designed sales taxes apply only to final sales to consumers, gross receipts taxes tax *all* transactions, including intermediate business-to-business purchases of supplies, raw materials and equipment. As a result, gross receipts taxes create an extra layer of taxation at each stage of production that sales and other taxes do not—something economists call "tax pyramiding."

Advocates of gross receipts taxes generally defend them on two grounds. First, it is argued that their simple structure makes them easy for states to administer and for companies to comply with, in contrast to notoriously complex state corporate income taxes. Second, because they tax an expansive base of all transactions in the economy, they are able to raise a given amount of revenue at lower rates than any other tax, making them politically attractive to lawmakers.

But while gross receipts taxes appear to be a simple alternative to complex corporate income taxes, this simplicity comes at a great cost. Gross receipts taxes suffer from severe flaws that are well documented in the economic literature, and rank among the most economically harmful tax structures available to lawmakers. The economic problems with gross receipts taxes are not the result of poor implementation by lawmakers. The flaws are

### Key Findings:

- *There is a growing trend among states toward replacing corporate income taxes with Depression-era gross receipts taxes.*
- *Gross receipts taxes are poor tax policy. They lead to harmful "tax pyramiding," distort companies' structures, and damage the performance of state and local economies.*
- *The administrative simplicity and low rates of gross receipts taxes are illusory. Lawmakers are forced to add complexity to correct for their structural flaws, and some industries face high effective tax burdens despite low statutory rates.*
- *States in search of alternatives to corporate income taxes should not rely on economically harmful gross receipts taxes.*

Gross receipts taxes have a simple structure, taxing all business sales with few or no deductions. Because they tax transactions, they

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<sup>1</sup> Property, excise, and other indirect taxes commonly affect businesses in addition to corporate income and gross receipts taxes.

inherent in their design. State lawmakers searching for alternatives to complex state corporate income taxes should be wary of gross receipts taxes, and should instead seek more economically neutral ways of taxing business.

## II. Brief History of Gross Receipts Taxes

Although European countries experimented with turnover taxes as early as the 14<sup>th</sup> Century,<sup>2</sup> gross receipts taxes did not appear in the United States until West Virginia lawmakers enacted a “business and occupations privilege” tax on gross business sales in 1921. While the tax was the nation’s first statewide gross receipts tax, the tax was an unimportant revenue source during its early years. After its enactment, West Virginia, like most U.S. states at

the time, continued to rely mainly on property tax revenues throughout the 1920s.

With the onset of the Great Depression in 1929, state finances underwent dramatic change. As state and local economies sank into deep recession, property and income tax collections plummeted sharply, precipitating fiscal crises in many states. Frantic for stable sources of tax revenue, lawmakers soon turned to sales and gross receipts taxes as emergency revenue sources.

### Depression-Era Rise of Gross Receipts Taxes

At the economic low-point of the Depression in 1933, Washington enacted the nation’s second statewide gross receipts tax. The Washington State Department of Revenue describes the tax as a “temporary, emergency revenue

**Table 1**  
*Overview of States with Significant Gross Receipts-Type Taxes*

State	Items Taxed	Deductions and Exemptions
Delaware	Gross receipts tax on all non-exempt goods or services rendered. Rates range from 0.096 percent to 1.92 percent depending on business activity, in addition to place-of-business fees ranging from \$25 to \$75 per location: <ul style="list-style-type: none"> <li>• Manufacturers: 0.180 percent.</li> <li>• Wholesalers: 0.307 percent.</li> <li>• Retailers: 0.576 percent.</li> <li>• Restaurants: 0.499 percent.</li> <li>• Food Processors: 0.154 percent.</li> <li>• Petroleum Products Wholesalers: 0.384 percent, plus a hazardous substances tax of 0.9 percent, plus a surtax of 0.192 percent.</li> <li>• Occupational/Professional/General Services: 0.384 percent.</li> <li>• Steam, Gas, Electric Utilities: 0.1 percent.</li> <li>• Additional rates for more specific industries.</li> </ul>	Exemptions include tobacco, fuel taxes, and transactions between entities owned by the same 5 or fewer individuals or one family.
Kentucky	Alternative minimum calculation for business taxes of 0.095 percent gross receipts or 0.750 percent of gross profits. Kentucky school districts may levy a 3 percent gross receipts tax on utilities.	Exemptions include dividend income, 50 percent of income from coal disposal, and income from safe harbor leases. Investment companies are exempt from the alternative minimum calculation, as are sole proprietorships, partnerships, and some LLCs.
Michigan	Scheduled to expire December 31, 2007: Single Business Tax (SBT), which incorporates features of gross receipts taxes and value-added taxes. Imposed on most business entities, with gross receipts used in calculating the tax base. Current rate is 1.9 percent.	Exemptions include the first \$45,000 of tax base, up to \$48,000 for partnerships and small corporations, with reductions as income rises. Governmental agencies, nonprofits, agricultural producers and others are exempt.

Source: CCH, Inc.; Tax Foundation

<sup>2</sup> John F. Due, *Indirect Taxation in Developing Countries*, Chapter 6 (John Hopkins Press, 1970).

<sup>3</sup> Washington State Department of Revenue, *Tax Reference Manual 2005*, p. 101. Washington State’s temporary tax was replaced and made permanent in 1935 with the launch of the Business & Occupations Tax.

measure during the Depression.”<sup>3</sup> Indiana soon followed suit with a similar “gross income tax” in 1933. Faced with similar fiscal emergencies, a cascade of state and local governments followed suit, often enacting gross receipts taxes on specific industries rather than broad tax bases. By 1934, *Tax Magazine* would report that,

The drive for new revenue resulted in the adoption of gross income or gross sales taxes in fifteen states... The development of the gross income or gross sales taxes is probably the outstanding tax news of the year.<sup>4</sup>

As the fiscal pressures of the Depression waned, interest in gross receipts taxes faded.

Most gross receipts taxes enacted in the 1930s ultimately proved to be short-lived. By the onset of World War II, many had been repealed or struck down by courts as unconstitutional. By the 1950s and 1960s, gross receipts taxes began to fade from state tax policy debates. During the full second half of the 20<sup>th</sup> Century, no state would enact a new broad-based gross receipts tax.<sup>5</sup>

By the late 1970s state and local lawmakers began yielding to the advice of economists, repealing gross receipts taxes in favor of less harmful revenue sources. New Jersey abandoned its state-level gross receipts tax in 1977. Alaska soon followed suit, repealing its tax in 1979.<sup>6</sup> Citing concerns about the health of state and local economies, West Virginia and

*Table 1 (continued)*  
*Overview of States with Significant Gross Receipts-Type Taxes*

State	Items Taxed	Deductions and Exemptions
New Jersey	Expired in July 2006: Alternative minimum assessment for business taxes. Levied on companies with over \$2 million in gross receipts. Rates range from 0.125 percent to 0.4 percent based on receipts.	Exemptions include corporations with less than \$2 million in receipts; S corporations; investment companies; professional organizations; cooperatives.
New Mexico	General gross receipts tax. Widely considered to resemble a retail sales tax. Rate is 5 percent. Counties may add an additional 2.1875 percent. Railroad car companies are taxed at 1.5 percent.	Exemptions include prescription drugs, certain food and medical expenses, interest and dividends, salaries, wages, commissions, homeowner dues, and earnings from farms and Internet businesses.
Ohio	Commercial Activities Tax (CAT) enacted in 2005, to be phased-in over a five-year period. When fully phased-in, rate is 0.260 percent of gross receipts. Imposed on all activity, legal or illegal, that is conducted for or results in gain, profit, or income. Utilities are taxed separately at 4.75 percent, except oil pipelines, which are taxed at 6.75 percent.	Exemptions include nonprofit organizations, entities with less than \$150,000 in receipts, and utilities paying utility taxes.
Texas	Effective January 1, 2007: General gross receipts tax. Rate is 1 percent, calculated on the minimum of either a) total revenue minus total cost of goods, or b) total revenue minus total compensation and benefits. Wholesalers and retailers are taxed at 0.5 percent.	Exemptions include sole proprietors and general partnerships, and businesses with less than \$300,000 in gross receipts (see Footnote 9).
Washington	Business & Occupation (B&O) tax, the nation’s oldest general gross receipts tax. Rates vary widely based on industry: <ul style="list-style-type: none"> <li>• Manufacturing Dairy Products: 0.138 percent.</li> <li>• Travel Agent Commissions: 0.275 percent.</li> <li>• Retailing: 0.471 percent.</li> <li>• Wholesaling: 0.484 percent.</li> <li>• Manufacturing: 0.484 percent.</li> <li>• Gambling Contests of Chance: 1.5 percent.</li> <li>• Additional rates for more specific industries.</li> </ul>	Exemptions include entities with gross income less than \$28,000. Features dozens of specific deductions and exemptions, including investments, dues, interest on agricultural loans, health care providers, beef processing, research and development, insurance premiums, real estate sales, nonprofit organizations, janitorial services, and fruit and vegetable processing.

Source: CCH, Inc.; Tax Foundation

<sup>4</sup> Raymond E. Manning, “State Tax Legislation, 1933.” *The Tax Magazine* (February 1934), p. 63.

<sup>5</sup> Joseph R. Crosby, “The Trouble with the Commercial Activity Tax.” *Ohio Matters* (Ohio Chamber of Commerce, May/June 2005).

<sup>6</sup> John F. Due and John L. Mikesell, *Sales Taxation: State and Local Structure and Administration*, p. 55 (Urban Institute Press, 1994).

Indiana abandoned their decades-old gross receipts taxes in 1987 and 2002, respectively. By the close of 2002, Washington stood alone as the only state with a surviving Depression-era gross receipts tax.

### Case Study: Harmful Effects of Washington State's Gross Receipts Tax

Washington State levies the nation's oldest broad-based gross receipts tax. First enacted in 1933 and significantly revised in 1935, the state's Business & Occupation (B&O) Tax illustrates many of the flaws inherent in taxing gross receipts.

In 2002, a tax reform commission appointed by the state's legislature concluded that the B&O tax results in substantial tax pyramiding and is highly non-neutral across products and industries, violating basic principles of good tax design. From the committee's report:

"Neutrality requires that a tax system minimize the opportunities and incentives for taxpayers to alter their decisions in order to take advantage of differential tax treatment of economic activity.

"The finding for the Washington State tax system is that it causes substantial nonneutralities for both businesses and households. The pyramiding of the B&O tax creates the main non-neutralities for businesses. Pyramiding of taxes is the payment of taxes by different companies on the same goods or services. This occurs when goods or services of one company are inputs for another's production and/or sales. Thus, a tax is paid multiple times on a product as it moves through the production chain.

"The B&O tax pyramids an average of 2.5 times, but this rate varies considerably across industries. The B&O tax on many services pyramids at about 1.5 times, whereas for some types of manufacturers the rate of pyramiding is over five or six times. This causes effective B&O tax rates (the rate paid on the value added to goods and services by an enterprise) to vary considerably from industry to industry."

The commission found the B&O tax causes tax pyramiding of up to 6.7 times on some manufacturing industries, while some services are taxed just 1.4 times. Effective tax rates vary from less than 1 percent on retail trade to more than 3 percent on electric and gas utilities, leading to potentially large economic distortions in the state's economy.

The following table (*see page 5*) illustrates the sharp degree of tax pyramiding under the B&O tax, and the wide variation in effective tax rates on industries.

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### The "New Era" of Gross Receipts Taxes

Just as the nation's few remaining gross receipts taxes were being repealed by states, lawmakers in New Jersey gave birth to a surprising new trend in business taxation that some have called a "new era of gross receipts taxes."<sup>7</sup>

As part of a business tax reform in 2002, New Jersey launched an "alternative minimum assessment" (AMA), enacting the first statewide gross receipts tax in decades. The AMA required companies to pay the larger of either regular corporate income taxes, or a gross receipts tax. Although the tax was short-lived—it expired four years later in July 2006—its effects were dramatic, laying the groundwork for a resurgence of gross receipts taxes in recent years.

In January 2005, Kentucky followed New Jersey's lead and enacted an "alternative minimum assessment" gross receipts tax. In July 2005, Ohio lawmakers enacted the controversial Commercial Activity Tax (CAT), replacing corporate franchise and personal property taxes with a broad-based gross receipts tax that is phased-in over five years. Reminiscent of Depression-era arguments, Ohio lawmakers cited plummeting revenue from corporate franchise taxes as the main reason for establishing a gross receipts tax.<sup>8</sup>

In May 2006, Texas joined the growing list of states with gross receipts taxes. Governor Rick Perry signed into law a sweeping tax reform bill, replacing Texas's corporate franchise tax with a "margin tax" based on gross business receipts.<sup>9</sup> Citing the difficulty of administering corporate income taxes, Texas lawmakers defended the margin tax as a way to close "gaping loopholes" in the tax base and enact "a [statutory] tax rate that is substantially lower than the one we have today."<sup>10</sup>

After several decades of dormancy, gross receipts taxes are again rising in popularity. Just as states turned to gross receipts taxes during the Depression's fiscal crises, the perceived crisis of administration in state corporate in-

<sup>7</sup> Giles Sutton, Nicholas E. Ford, Jamie C. Yesnowitz and Chris Hopkins, "The Continuing Evolution of Gross Receipts Taxes." Conference Presentation. (Grant Thornton LLP's 9th Annual Printing Industry Tax Conference, February 12-14, 2006).

<sup>8</sup> Brian Sigriz, "Examining Ohio's Commercial Activity Tax." *State Tax Notes* (February 20, 2006).

<sup>9</sup> Because the Texas "margin tax" allows deductions for either compensation or the costs of goods sold, it is more properly classified as a hybrid gross receipts tax rather than a "pure" one.

<sup>10</sup> Texas Office of the Governor, "Gov. Perry Signs Landmark Business Tax Reform," News Release (May 18, 2006). Available at <http://www.governor.state.tx.us/divisions/press/pressreleases/PressRelease.2006-05-18.1748>.

come taxes has reignited debate over the simple but flawed structure of gross receipts taxes.

### Other Gross Receipts Taxes

In addition to broad-based gross receipts taxes, many state and local governments over the years have enacted hybrid business taxes that, while not pure gross receipts taxes, resemble them in economically important ways.

Delaware, New Mexico and Hawaii each levy taxes commonly referred to as “gross re-

ceipts taxes,” but which incorporate elements of both sales and gross receipts taxes. Michigan levies a “Single Business Tax” that incorporates some features of a gross receipts tax and some of a European-style value-added tax. Finally, many states tax the gross receipts of only certain industries, such as utilities, telecommunications and gambling.

Overall at least 30 states and the District of Columbia levy some form of broad-based or industry-specific gross receipts tax. Because of statutory complexity and wide diversity of provisions, it is difficult to classify many state taxes as “gross receipts taxes” with any degree of confidence. Table 1 provides an overview of states that can reasonably be said to levy taxes that resemble gross receipts taxes in important ways.

### III. The Mechanics of the Gross Receipts Tax

Before any tax can be levied its *base*, or what gets taxed, must be determined. Under corporate income taxes, the difference between a company’s sales and its costs of production serves as the tax base. While sales are relatively simple to measure, assigning business costs to arrive at taxable income is fraught with complexities, making corporate income an inherently difficult tax base to administer.<sup>11</sup>

Further complicating corporate income taxes is that companies often do business in more than one jurisdiction. This requires difficult questions of where companies earned income, which states have taxing authority over it, and for how much. These questions have become increasingly unmanageable in recent years as the number of companies operating in multiple states has increased.<sup>12</sup>

The perception among lawmakers that there are growing administrative problems of state corporate income taxes has sparked an interest in moving toward simpler tax bases in recent years, including gross receipts taxes. Conceptually, implementation of a gross receipts tax is straightforward. Companies total up in-state revenue earned during a time period, apply the statutory tax rate, and pay the

(continued from page 4)

#### Tax Pyramiding Caused By Washington State’s Gross Receipts Tax

Industry	SIC Code	Effective Tax Rate on Value Added	Degree of Tax Pyramiding
Manufacturing - Food	20	2.0 %	6.7
Manufacturing - Petroleum Refining	29	3.1	6.7
Manufacturing - Aircraft & Parts	372	2.6	5.3
Manufacturing - Rubber & Plastics	30	2.0	4.3
Manufacturing - Primary Metal	33	2.0	4.1
Manufacturing - Apparel & Textiles	22-23	2.0 %	4.1
Manufacturing - Lumber & Wood Products	24	1.9	4.0
Manufacturing - Professional & Scientific Instruments	38	1.8	4.0
Manufacturing - Industrial & Commercial Machinery & Equipment	35	1.9	3.9
Manufacturing - Furniture & Fixtures	25	1.8	3.7
Manufacturing - Other Transportation Equipment	37	1.9 %	3.7
Manufacturing - Paper Products	26	1.7	3.7
Manufacturing - Stone, Clay & Glass	32	1.6	3.4
Manufacturing - Chemical Products	28	1.5	3.3
Construction	15-17	1.6	3.3
Manufacturing - Electronic Equipment (Except Computers)	36	1.4 %	2.8
Manufacturing - Leather & Leather Products	31	1.4	2.8
Movies, Amusement & Recreation	78-79	2.3	2.7
Miscellaneous Repair Services	76	1.4	2.7
Manufacturing - Miscellaneous Manufacturing Industries	39	1.2	2.7
Manufacturing - Printing and Publishing	27	1.4 %	2.6
Railroad, Air, Water & Other Transportation	40-47	1.8	2.5
Mining & Quarry	10-14	1.2	2.4
Manufacturing - Fabricated Metal	34	1.1	2.3
Lodging Services	70	1.1	2.2
Barbers, Dry Cleaning and Other Personal Services	72	2.0 %	2.1
Agriculture, Forestry & Fishing	1-9	1.4	2.0
Auto Repair Services	75	1.0	2.0
Communications	48	1.2	1.9
Wholesale Trade	50-51	0.9	1.9
Legal, Engineering & Accounting	81-89	2.1 %	1.8
Advertising, Mailings, and Other Business Services	73	1.6	1.7
Retail Trade	52-59	0.8	1.6
Medical & Health Services	80	2.0	1.6
Finance, Insurance & Real Estate	60-67	1.5	1.6
Electric, Gas & Other Utilities	49	3.2 %	1.5
Computer Programming and Data Processing	737	1.3	1.4
<i>State Total</i>		1.5 %	2.5

Source: Washington State Tax Structure Study Committee, “Tax Alternatives for Washington State: A Report to the Legislature,” Volumes 1 & 2 (November 2002).

<sup>11</sup> Arthur P. Hall, “The Compliance Costs and Regulatory Burden Imposed by the Federal Tax Laws.” *Tax Foundation Special Brief* (January 1995).

<sup>12</sup> Chris Atkins, “A Twentieth Century Tax in the Twenty-First Century: Understanding State Corporate Tax Systems.” *Tax Foundation Background Paper*, No. 49 (September 2005).

tax. This relatively simple process eliminates the need for complex determinations of corporate profit, an attractive feature to state revenue officials.

However, the administrative simplicity of gross receipts taxes comes at a high price. Taxes on gross sales have long been recognized as inherently non-neutral taxes, causing potentially large economic distortions throughout the economy. Although few states levy pure gross receipts taxes, the following analysis of their economic effects applies in varying degrees to all states levying gross receipts-type taxes.

#### IV. Tax Pyramiding, Vertical Integration and Effective Tax Rates

Economists agree that the marketplace, rather than peculiarities of the tax code, should determine both the relative prices of goods and the way companies choose to organize themselves. For this reason, there is general consensus that the tax system should be as *economically neutral* as possible. A well designed tax should aim to minimize how much it steers individuals' choices away from those they would have made in the absence of taxes.

Gross receipts taxes have long been recognized as being non-neutral, compared to other broad-based taxes.<sup>13</sup> Structural features of gross receipts taxes tend to distort the composition of goods produced in the economy, as well as the structure of firms that provide them, making them an economically harmful revenue source.

#### Gross Receipts Taxes Lead to Tax Pyramiding

Under a gross receipts tax every item that changes hands between companies is taxed, regardless of whether it is a final product or raw material. As a result, in industries where products move through multiple stages of production—from raw material to manufacturing, distribution, and so on—the value created in early stages of production is taxed repeatedly in subsequent stages. Economists call this phenomenon “tax pyramiding.” This repeated taxing at each link in the production chain results in punitively high effective tax rates on complex products produced in stages by more than one company, and low rates on products with few production stages or that are produced entirely in-house.

Table 2 provides a stylized illustration of how tax pyramiding affects three hypothetical

**Table 2**  
*How Tax Pyramiding Penalizes Industries with Multiple Production Stages*

Lumber Products Production Stage	Cost of Business Inputs	Value Added	Sale Price to Next Production Stage	Gross Receipts Tax (1 Percent, Fully Forward- Shifted)
Timber Cutting	\$ 0	\$ 1,000	\$ 1,000	\$ 10
Milling and Processing	\$ 1,010	\$ 1,000	\$ 2,010	\$ 20.10
Wholesale Distribution	\$ 2,030.10	\$ 1,000	\$ 3,030.10	\$ 30.30
Retail Sales	\$ 3,060.40	\$ 1,000	\$ 4,060.40	\$ 40.60
Total		\$ 4,000		\$ 101.01
<b>Effective Tax Rate on Lumber and Wood (\$101.01 ÷ \$4,000): 2.53 percent</b>				
<b>Auto Repair</b>				
Parts Manufacturing	\$ 0	\$ 1,000	\$ 1,000	\$ 10
Retail Sales of Parts & Labor	\$ 1,010.00	\$ 1,000	\$ 2,010.00	\$ 20.10
Total		\$ 2,000		\$ 30.10
<b>Effective Tax Rate on Auto Repair (\$30.10 ÷ \$2,000): 1.51 percent</b>				
<b>Computer Programming</b>				
Programming Labor Time	\$ 0	\$ 1,000	\$ 1,000	\$ 10
Total		\$ 1,000		\$ 10
<b>Effective Tax Rate on Computer Programming (\$10 ÷ \$1,000): 1 percent</b>				

*Note:* Illustration assumes a one percent gross receipts tax levied on business sales, full forward-shifting of the economic incidence of the tax, and \$1,000 of value added at each stage of production. Producers at the first stage of production are assumed to have zero input costs to simplify calculations.

Source: Tax Foundation

<sup>13</sup> “Federal Non-Income Taxes: An Examination of Selected Revenue Sources,” *Tax Foundation Research Publication*, No. 1 (April 1965), p. 44-46.

<sup>14</sup> This assumption is made for simplicity only. The conclusions of the illustration are unaffected if the tax incidence is instead assumed to be shifted backward, or divided in some fashion between buyers and sellers.

industries: lumber products, auto repair, and computer programming. The illustration assumes a one percent gross receipts tax on sellers, which is assumed to be fully passed forward onto buyers at subsequent stages of production.<sup>14</sup>

In the illustration lumber is produced in four stages: timber cutting, milling and processing, wholesale distribution, and retail sales. As wood products pass from one company to the next as they move through production stages, the full value of each business-to-business sale is taxed. By the end of the fourth stage, this repeated taxation results in an effective tax rate of 2.53 percent on the total value added for lumber products—more than two and one-half times the statutory rate. In contrast, auto repair services are produced in just two stages of production, resulting in an effective tax rate of 1.51 percent. Computer programming is the only industry that completely avoids tax pyramiding, as it is produced entirely in one stage.

### Why Can't Gross Receipts Taxes Be Made Transparent?

A basic principle of good tax design is that taxes should be transparent to taxpayers. Just like consumers need information about prices to make good buying decisions in the marketplace, taxpayers need good information about the “price” of government programs in order to make good choices about the level of spending they demand from elected officials.

Gross receipts taxes are commonly criticized for being non-transparent taxes. While businesses are legally required to pay gross receipts taxes, in many cases the economic burden of them is passed forward to consumers in the form of higher prices. Yet unlike retail sales taxes, it is not possible for lawmakers to simply require gross receipts taxes to be itemized on printed sales receipts given to consumers, because it is not possible to directly observe the total amount of gross receipts tax that is “pyramided” into the final price of goods. As a result, consumers routinely bear the burden of gross receipts taxes without any knowledge that the tax is being imposed on them.

This lack of transparency is not simply the result of poor tax design by lawmakers. It is an inherent feature of gross receipts taxes. Imposing non-transparent taxes that disguise the true cost of spending programs may be politically advantageous to lawmakers, but in a democratic society that requires informed citizens, it is poor tax policy.

The difference between a 1 percent and a 2.53 percent effective tax rate illustrated in Table 1 may appear unimportant. But even small differences in effective tax rates can have dramatic consequences over time. Investors in the economy are sensitive to rates of return in different industries, and small differences in effective tax rates can mean the difference between starting a company in one industry and abandoning another. Over time, variations in effective tax rates caused by tax pyramiding have the potential to distort investment patterns in the economy for the worse, altering the industrial landscape of state and local economies over time.

### Attempts to Reduce Tax Pyramiding Lead to Tax Complexity

In practice, the problem of tax pyramiding is well understood by lawmakers. Most gross receipts taxes attempt to mitigate tax pyramiding in some way. The two most common methods are (1) offering tax credits, deductions and exemptions to industries with high levels of pyramiding, and (2) enacting differential tax rates for different economic sectors based on estimates of tax pyramiding throughout the economy.

For example, Washington State's Business & Occupation (B&O) Tax was enacted in 1935 with a uniform rate of 0.25 percent on all industries. As revenue demands forced up tax rates over time, concerns about the inequity and inefficiency of the tax prompted lawmakers to enact separate rates for various industries, along with a range of targeted tax incentives. By 2005, lawmakers had enacted six separate tax rates ranging from 0.138 percent to 1.6 percent based on industry, as well as 8 distinct tax incentive programs for the B&O Tax alone.<sup>15</sup>

All these attempts to reduce tax pyramiding have failed. Studies routinely find substantial tax pyramiding under gross receipts taxes, despite the best efforts of lawmakers.<sup>16</sup> This is not surprising, as no legislature is equipped to undertake the formidable task of continuously adjusting tax law to reflect changing estimates of tax pyramiding in the

<sup>15</sup> Washington State Department of Revenue, “Descriptive Statistics for Tax Incentive Programs: 2006 Report Covering Activity During Calendar Year 2005” (September 1, 2006). Available at <http://dor.wa.gov/docs/reports/2006/DescriptiveStatistics2006.pdf>.

<sup>16</sup> For example, studies of Washington State's gross receipts find substantial tax pyramiding, despite the state's differential tax rates and incentives. See Washington State Tax Structure Study Committee, “Tax Alternatives for Washington State: A Report to the Legislature,” Volumes 1 & 2 (November 2002).

economy over time. Instead, the main effect of lawmakers' attempts to mitigate tax pyramiding through differential rates and tax credits has been to sharply increase tax complexity—effectively abandoning the purported simplicity of gross receipts taxes.

In this way, gross receipts taxes pose a stark

choice to lawmakers. They may enact either a simple tax that leads to economically harmful tax pyramiding, or a highly complex tax that does not. Unlike many other broad-based taxes, gross receipts taxes make it impossible for lawmakers to achieve both tax simplicity and economic neutrality.

### Do Gross Receipts Taxes Punish Companies with Low Profit Margins?

Gross receipts taxes are based on business sales rather than profits. For this reason, they are often criticized for hurting low-margin, high-volume companies. For example, Washington State's 2002 assessment of its gross receipts tax concluded that the tax "[c]ontributes to a relatively large tax burden on low profit margin industries compared to other states."<sup>17</sup>

This is unquestionably true. The gross receipts tax may be simpler to administer, but it is not a neutral tax. High-volume, low-margin firms will generally carry a larger share of the tax burden, and perhaps diminish somewhat over time, in a state that switches from a corporate income tax to gross receipts tax. Meanwhile, firms with low volume but a high margin would pay a smaller share of the tax burden.

A simple example illustrates the problem. Consider two companies subject to a one-percent gross receipts tax: a low-profit-margin grocer, and a high-profit-margin software developer. As illustrated below, both companies initially have \$1 million of sales. The grocer has a profit margin of 5 percent and earns \$50,000 profit, while the software developer has a profit margin of 50 percent and earns \$500,000. However, because both firms have identical sales, they pay the same amount of gross receipt tax—\$10,000.

#### Gross Receipt Tax Burdens Are Unrelated to Company Profits

	Low-Margin Grocery Retailer	High-Margin Software Developer
Sales	\$1,000,000	\$1,000,000
Cost of Business Inputs	\$950,000	\$500,000
Profit	\$50,000	\$500,000
Profit Margin (Profit ÷ Sales)	5%	50%
Gross Receipts Taxes Due (One Percent Tax)	\$10,000	\$10,000
<b>Gross Receipts Taxes as a Percentage of Profit</b>	<b>20%</b>	<b>2%</b>

Source: Tax Foundation

When expressed as a percentage of profit, the low-margin grocer will pay 20 percent in gross receipts taxes, while the high-margin software developer will pay just 2 percent of profits. This has led many observers to criticize gross receipts taxes for imposing an inequitable tax burden on low-profit-margin companies.

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### Tax Pyramiding Encourages Vertical Integration

Because gross receipts taxes result in tax pyramiding, companies have powerful incentives to cut the number of production stages for products by absorbing suppliers. By consolidating into larger firms with fewer taxable business-to-business transactions, industries can lower their effective tax burdens under gross receipts taxes. This consolidation of previously separate companies is known as "vertical integration."

For example, if the lumber and wood products industry in Table 2 were able to vertically integrate its four stages of production into a single larger company, the industry's effective tax rate on value added could be cut by more than half, from 2.53 percent to just 1 percent. In this way, gross receipts taxes provide powerful financial incentives toward vertical integration, even when doing so is economically wasteful from the perspective of society as a whole.<sup>17</sup>

### Limits of Tax-Induced Vertical Integration

At first glance, one might imagine that gross receipts taxes might encourage entire industries to merge into a single large enterprise, avoiding all taxes on business-to-business transactions. However, there are limits to how much industries will consolidate in response to gross receipts taxes.

While companies can reap tax savings by vertically integrating under a gross receipts tax, those savings come at a price, because tax-induced integration generally makes companies *less efficient*. The reason is that prior to doing business in states with a gross receipts tax, companies will have already been pressured by competition to organize in the best possible way. If the imposition of a tax then entices

<sup>17</sup> For a detailed discussion of tax-induced integration see William F. Fox and Matthew Murray, "Economic Aspects of Taxing Services," *National Tax Journal* (March 1988), p. 28.

<sup>18</sup> See Appendix A for a mathematical illustration of this effect.



them to alter their structure for tax reasons, companies will suffer an efficiency loss as a result. That suggests industry consolidation under a gross receipts tax will continue up to the point where the tax benefits to companies of doing so just offsets those companies' efficiency losses from adopting poor organizational structures for tax reasons.<sup>18</sup>

This vertical integration caused by gross receipts taxes may benefit particular companies

*(continued from page 8)*

However, despite this flaw of non-neutrality that is inherent in gross receipts taxation, there are two reasons to be wary of the criticism that this is "unfair," especially if the unfairness is explained in terms of the firm's "ability to pay."

First, ability to pay is a concept imported from the world of individual income taxation. It has no place in a discussion of business taxes.<sup>2</sup> The burden of gross receipts taxes is ultimately borne by consumers, workers and shareholders, not the companies themselves, so expressing gross receipts taxes as a percentage of profits does not measure companies' ability to pay. In fact, the workers, consumers and shareholders who actually bear the burden of the tax may be rich or poor, and that mix has nothing to do with the company's sales volume or profit margin.

Second, gross receipts taxes are not the only tax with this feature. Every non-income tax will result in tax burdens that are unrelated to profit margins, because they are not based on income. Retail sales taxes, property taxes, and cigarette and alcohol excise taxes all are paid partly by companies' shareholders and workers, but impose burdens that are unrelated to profit margins.

As a general rule, it is more appropriate to express the burden of a tax as a percentage of its base, rather than some other denominator. For example, retail sales taxes should normally be expressed as a percentage of sales, while income taxes should be expressed as a percentage of income. Because the base of gross receipts taxes is sales and not profits, expressing their burden as a percentage of profit can result in misleading comparisons with other taxes.

Despite these caveats, the criticism that gross receipts taxes unfairly ignore companies' profit margins is compelling to many who are accustomed to the comparative neutrality of an ideal corporate income tax. For this reason, it is easy to see why gross receipts taxes are viewed by many in the general public as unfair business taxes.

<sup>1</sup> Washington State Tax Structure Study Committee, "Tax Alternatives for Washington State: A Report to the Legislature," Volumes 1 & 2 (November 2002).

<sup>2</sup> The exceptions are companies organized as sole proprietorships and partnerships, in which the profits of the company are also the income of the individuals who may bear some portion of business taxes. Corporations do not have this feature. See "Reexamining the Federal Corporation Income Tax," *Tax Foundation Project Note No. 42*, p. 9 (January 1958).

or industries by giving them an unwarranted tax advantage over competitors. But because this economic distortion shrinks the overall output of the economy, it is never profitable from the standpoint of society as a whole.

### Some Industries Taxed More Heavily Than Others

Because gross receipts taxes disturb the structure of companies, they have a secondary effect of creating wide disparities in effective tax rates on different products and industries. Industries that vertically integrate following the imposition of gross receipts taxes—as well as those that are naturally vertically integrated—face low effective tax rates, while those that remain decentralized face high effective rates. These arbitrary differences between tax burdens faced by industries have the potential to create large economic distortions throughout the economy.

In the simple case where taxes are assumed to be fully passed forward to consumers in the form of higher prices, different effective tax rates will affect consumers directly by making some products more expensive than others for tax reasons.<sup>19</sup> In the more complex case where the burden of taxes is split between owners of capital or workers, the movement of plant, equipment and workers from tax-disadvantaged industries into tax-advantaged ones will tend to magnify the economic harm of gross receipts taxes over time. Appendix A outlines a mathematical illustration of how gross receipts taxes fall unevenly on different industries in the economy, potentially distorting investment away from smaller and more efficient firms and toward larger, less efficient organizations.

### Discrimination in Favor of Imports over Domestic Producers

In theory, well designed state tax systems should tax imports on the same basis as domestically produced goods, and they should exempt all exports from taxation, as they will be taxed as imports in other states. Under such a system, companies' decisions to import or export will be guided by economic forces rather than tax considerations. However, this interstate tax neutrality is impossible under gross receipts taxes.

<sup>19</sup> For a discussion of the effects of tax-induced changes in relative prices, see Fox and Murray, *op. cit.*, p. 29.

On the importing side, gross receipts taxes have an inherent tendency to favor imported goods over domestically produced products. The reason is simple: imports from states without gross receipts taxes pass through fewer taxable stages of production than goods produced domestically, particularly if they are imported as finished products. As a result, gross receipts taxes place in-state companies at a tax disadvantage to out-of-state importers not subject to gross receipts taxes.<sup>20</sup>

On the exporting side, gross receipts taxes cannot be made economically neutral either. In an ideal tax system, exports would be fully refunded for state taxes paid. However, this is

an impossible task for states with gross receipts taxes. Tax pyramiding conceals tax burdens from intermediate stages of production, making it impossible for authorities to observe the total amount of taxes paid on final exported products. Attempts to rebate only taxes paid at the final stage of production will consistently result in under-rebating, placing exporters located in states with gross receipts taxes at a competitive tax disadvantage compared with firms located elsewhere.

## V. Can Gross Receipts Taxes Be Made Neutral?

The fundamental design flaw of gross receipts taxes is their repeated taxation of products as they move through stages of production. This problem is inherent in their structure, and cannot be fully corrected without fundamentally altering the nature of the tax. As a result, it is not possible for lawmakers to craft an economically neutral gross receipts tax.

For example, one way of correcting the problem of tax pyramiding caused by gross receipts taxes is to tax products only at their final stage of production—that is, when sold to consumers—rather than at all intermediate steps. However, doing so would effectively convert the tax into a retail sales tax. Another way of eliminating tax pyramiding is to tax only the value added at each stage of production, rather than taxing the full value added from all previous stages repeatedly at every stage of production. However, doing so would also fundamentally alter the tax, converting it into a European-style value added tax.

Because the economic non-neutralities caused by gross receipts taxes cannot be corrected without abandoning the very definition of “gross receipts tax,” they represent an inherently flawed tax structure compared with other broad-based business taxes.

## VI. Conclusion

Lawmakers in search of replacements for deteriorating state corporate income tax bases should be wary of gross receipts taxes. Inherent flaws in their structure encourage small companies to inefficiently consolidate for tax reasons,

### Adam Smith’s Celebrated Critique of Gross Receipts Taxes

Gross receipts taxes have a long and controversial history. One of the earliest examples was Spain’s notorious *alcabala* tax (alternatively spelled *alcavala*), first imposed in 1342, and not fully eliminated until the 20<sup>th</sup> Century. In his celebrated discussion of public finance in the *Wealth of Nations*, Adam Smith famously pilloried the Spanish gross receipts tax for damaging the Spanish economy, and ultimately laying the groundwork for the country’s rapid economic decline in the 17<sup>th</sup> Century:

The famous alcavala of Spain... was at first a tax of ten per cent., afterwards of fourteen per cent., ... upon the sale of every sort of property whether movable or immovable, and it is repeated every time the property is sold. The levying of this tax requires a multitude of revenue officers sufficient to guard the transportation of goods, not only from one province to another, but from one shop to another.

It subjects not only the dealers in some sorts of goods, but those in all sorts, every farmer, every manufacturer, every merchant and shopkeeper, to the continual visits and examination of the tax-gatherers. Through the greater part of a country in which a tax of this kind is established nothing can be produced for distant sale...

It is to the alcavala, accordingly, that Ustaritz imputes the ruin of the manufactures of Spain. He might have imputed to it likewise the declension of agriculture, it being imposed not only upon manufactures, but upon the rude produce of the land.

Despite over two centuries of criticism from economists, gross receipts taxes continue to enjoy wide popularity among lawmakers—illustrating their continued political appeal, and lawmaker’s general unawareness of their damaging economic effects.

Source: Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Book V, Chapter II (1776).

<sup>20</sup> Gross receipts taxes in other countries have attempted to correct for this disparity through complex systems of tariffs on imported goods—an option clearly not available to state lawmakers. See Due (1970), *op. cit.*, p. 121.

they create wide disparities in effective tax rates across products and industries, and they introduce non-neutralities in the tax treatment of importers and exporters. Each of these effects introduces costly and unnecessary distortions into state economies.

The design flaws of gross receipts taxes are fundamental and cannot be remedied without

abandoning their structure. As a result, lawmakers searching for alternatives to complex corporate income taxes should avoid gross receipts taxes and instead consider other broad-based taxes that are more economically neutral and less likely to harm state economies.

## Appendix A:

# Mathematical Illustration of the Effect of Gross Receipts Taxes on Vertical Integration and Effective Tax Rates

### Introduction

The following simple model illustrates how gross receipts taxes encourage companies to inefficiently vertically integrate, leading to disparate effective tax rates on different goods and industries throughout the economy.

### I. Effect on Firm Structure in a Two-Firm Industry

Consider an industry with two firms that jointly produce a product in two stages: manufacturing and retail. The manufacturing company (“upstream” firm) assembles the product, and the retail company (“downstream” firm) sells the finished product to retail consumers. For simplicity, assume the upstream firm sells all its output to the downstream firm, and both companies are competitive price takers.<sup>21</sup>

If the companies operate independently, the after-tax profit of the upstream firm is given by

$$\Pi_u = R_u(1-t) - C_u,$$

where  $R$  is the upstream company’s revenue,  $t$  is the gross receipts tax rate, and  $C$  is the upstream company’s total cost of production. Similarly, the after-tax profit of the downstream firm is given by

$$\begin{aligned} \Pi_d &= R_d(1-t) - C_d \\ &= R_d(1-t) - (R_u + K_d), \end{aligned}$$

where  $R$ ,  $t$  and  $C$  are defined as above. However, because the production costs of the downstream firm consist of both purchases from the upstream firm and its own internal costs of production,  $C_d$  can be decomposed into the sum of  $R_u + K_d$ , where  $R_u$  is the cost of purchases of intermediate goods from the upstream firm, and  $K_d$  represents the downstream firm’s own internal production costs.

In this case, the total tax burden faced by the industry is equal to

$$T_{unmerged} = (R_d + R_u) \cdot t.$$

Under what conditions will this industry vertically integrate for tax reasons? Note that in the absence of taxes, companies will organize as efficiently as possible. If taxes cause companies to change structure, the resulting firms will be less efficient, and will have higher total costs of production for a given level of output than they would otherwise have.

Imagine the upstream and downstream firms above vertically integrate into a single company. The profit of the new merged firm is given by

$$\begin{aligned} \Pi_{merged} &= R_d(1-t) - C_{merged} \\ &= R_d(1-t) - (C_u + K_d + \varepsilon), \end{aligned}$$

<sup>21</sup> This assumption allows us to abstract from the effects of strategic interaction between firms when some degree of monopoly power is present, which is not relevant to the illustration.

<sup>22</sup> In practice this inefficiency cost of tax-induced vertical integration likely varies with output. For simplicity here it is assumed to be a fixed production cost.

where  $\epsilon$  represents the increased total cost of production due to the merged firm being organized less efficiently.<sup>22</sup> The total tax burden of this vertically integrated industry is then given by

$$T_{merged} = R_d \cdot t,$$

which is less than the total tax burden of the unmerged industry by an amount equal to  $R_u \cdot t$ . However, these tax savings are partially offset by reduced efficiency, as represented by the addition of  $\epsilon$  to the merged company's costs. When considering whether to vertically integrate, firms will compare the difference in profitability between merged and unmerged structures, and choose accordingly. This difference is given by

$$\Delta = \Pi_{merged} - \sum_{j=u,d} \Pi_j = R_u \cdot t - \epsilon.$$

This implies that under a gross receipts tax, industries will vertically integrate up to the point where the tax benefits of doing so—that is,  $R_u \cdot t$ —just outweigh the efficiency losses from tax-induced integration  $\epsilon$ . More formally,

if  $\epsilon > R_u \cdot t$ , firms will remain separate;  
if  $\epsilon < R_u \cdot t$ , firms will vertically integrate; and  
if  $\epsilon = R_u \cdot t$ , firms will be indifferent between integrating or remaining separate.

As a result, the introduction of a gross receipts tax will distort the structure of companies in industries for which the efficiency losses  $\epsilon$  from tax-induced integration are small compared to the tax benefits from collapsing production stages.

## II. Effects on Effective Tax Rates Across Industries

The vertical integration caused by gross receipts taxes has a secondary effect: it leads to disparate effective tax rates on different industries, potentially distorting investment patterns in the economy and magnifying the economic harm of gross receipts taxes over time.

To see why, imagine industries  $A$  and  $B$ , each consisting of a two-firm production chain as described in section I. In industry  $A$ , let the efficiency costs of tax-induced integration be large; that is, let  $\epsilon > R_u \cdot t$ . In industry  $B$ , let the efficiency loss from tax-induced integration be small; that is, let  $\epsilon = 0$ .

Under a gross receipts tax, firms in industry  $A$  will remain separate, while firms in industry  $B$  will vertically integrate for tax reasons. Once firms have fully adjusted their structure in response to the tax, the effective tax rate on value added faced by industry  $A$  is given by

$$T_A = \frac{R_u \cdot t + R_d \cdot t}{R_d - C_u - K_d}.$$

By comparison, the effective tax rate on value added faced by industry  $B$  is given by

$$T_B = \frac{R_d \cdot t}{R_d - C_u - K_d}.$$

The effective tax rates faced by  $A$  and  $B$  differ by only one term in the numerator:  $R_u \cdot t$ . Because  $R_u \cdot t$  is assumed to be positive, the effective tax rate on the unmerged industry,  $T_A$ , is strictly greater than the rate faced by the integrated industry,  $T_B$ . As a result, gross receipts taxes are inherently punitive toward decentralized industries that cannot easily integrate production stages in response to the tax.



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