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CHAPTER 9

The Economics of Gross Receipts Taxes: A Case Study of Ohio

ROBERT LAWSON

Cox School of Business, Southern Methodist University

Gross receipts taxes (GRTs) tax firms on the full value of the revenue they earn. Unlike income taxes, GRTs do not allow the firm to deduct for costs of production, except perhaps for a standard deduction. Gross receipts taxes are not new; Adam Smith ([1776] 1937) wrote of a version known as the alcavala, which operated from the fourteenth through the eighteenth centuries in Spain. In the first half of the twentieth century, many European countries relied on gross receipts or “turnover” taxes until later replacing them with value added taxes. In modern times, several American states levy GRTs (see table 1).

This chapter uses Ohio’s commercial activity tax (CAT) as a case study. On July 1, 2005, Ohio implemented a new tax on the gross receipts of Ohio businesses. The new CAT is levied on

gross receipts, which is defined as the total amount realized, without deduction for the cost of goods sold or other expenses incurred, from activities that contribute to the production of gross income. Examples are

Table 1. Selected States with Gross Receipts Taxes

State	Tax	Base	Rate(s)
Alabama	Utilities gross receipts tax	Electricity, water, and natural gas firms' gross receipts	4% on first \$40,000; \$1,600 plus 3% on \$40,000–\$60,000; \$2,200 plus 2% over \$60,000
Delaware	Gross receipts tax	All business' gross receipts (minus varying standard exclusions depending on the business activity)	0.1006% to 0.7543%, depending on the business activity
Florida	Gross receipts tax on utility services	Gross receipts from the sale, delivery, or transportation of natural gas, manufactured gas, or electricity	2.5%
New Mexico	Gross receipts tax	Gross receipts received by selling property in New Mexico; leasing or licensing property employed in New Mexico; granting a right to use a franchise employed in New Mexico; performing services in New Mexico, and selling research and development services performed outside New Mexico, the product of which is initially used in New Mexico	5.125% to 8.6875% depending on the location of the business
Ohio	Commercial activity tax	Businesses with Ohio taxable gross receipts of \$150,000 or more per calendar year	0.26% on gross receipts above \$150,000
Pennsylvania	Gross receipts tax	Pipeline, conduit, steamboat, canal, slack water navigation, and transportation companies; telephone, telegraph, and mobile telecommunications companies; electric light, water power, and hydroelectric companies; managed care organizations; express companies; palace car and sleeping car companies; and freight and oil transportation companies	4.4% for electric utilities; 5.0% for others

(continued)

Table 1. (continued)

State	Tax	Base	Rate(s)
Texas	Franchise tax ^a	The lowest tax liability from among the following: Total revenue minus 30% of total revenue; total revenue minus cost of goods sold; total revenue minus compensation; total revenue minus \$1 million.	0.5% for a wholesaler or retailer or 1% for all other types (e.g., construction, mining, financial services, agriculture)
Washington	Business and occupation tax	The value of products, gross proceeds of sale, or gross income of the business.	0.471–1.5%, depending on business type

Sources:

Alabama: Findlaw. "Alabama Code Title 40. Revenue and Taxation." <http://codes.lp.findlaw.com/alcode/40/21/3>.

Delaware: State of Delaware, Department of Finance, Division of Revenue. "Gross Receipts Tax Frequently Asked Questions." http://revenue.delaware.gov/information/faqs_gr.shtml.

Florida: Florida Department of Revenue. "Florida Gross Receipts Tax on Utility Services." http://dor.myflorida.com/dor/taxes/grt_utility.html.

New Mexico: Department of Taxation and Revenue. "Gross Receipts Overview." <http://www.tax.newmexico.gov/Businesses/gross-receipts.aspx>.

Ohio: Department of Taxation. "Commercial Activity Tax." http://www.tax.ohio.gov/commercial_activities.aspx.

Pennsylvania: Department of Revenue. "The Tax Compendium, December 2014." http://www.revenue.pa.gov/GeneralTaxInformation/News%20and%20Statistics/Documents/Tax%20Compendium/2014_tax_compendium.pdf.

Texas: Ginn, Vance, and Hon. Talmadge Hefflin. 2015. "Economic Effects of Eliminating Texas' Business Margin Tax." Center for Fiscal Policy, Texas Public Policy Foundation, Austin, Texas. <http://www.texaspolicy.com/library/doclib/MarginTax-CFP.pdf>.

Washington: Department of Revenue. "Business & Occupation Tax." <http://dor.wa.gov/find-taxes-rates/business-occupation-tax>.

^a The Texas franchise tax is a hybrid gross receipts tax and income tax.

sales; performance of services; and rentals or leases. The calculation for gross receipts is based on what the taxpayer is required to use for federal income tax purposes, i.e., accrual or cash basis. The tax is being phased in over a five-year period in approximately equal increments beginning July 1, 2005. Businesses with annual gross receipts of \$150,000 or less are not subject to the CAT. . . . On Jan. 1, 2010, the permanent rate of the CAT will be 0.26 percent. (Ohio Department of Taxation 2008)

The purpose of this chapter is to briefly compare a GRT to a sales or excise tax. After showing that there is no relevant economic distinction between these types of taxes, I turn to a legal challenge to Ohio's CAT on grounds that it violates the state constitution's ban on sales taxation of food. I conclude with a discussion of other pros and cons, from a traditional public finance point of view, about GRTs.

THE INCIDENCE OF SALES AND GROSS RECEIPTS TAXES

“Tax incidence” refers to the analysis of who actually bears the burden of a tax. It is important to note the difference between how economists and tax authorities approach tax incidence. Legislators and tax administrators are interested in the legal or statutory burden of a tax. That is, governing statutes specify who is legally liable for a tax. In contrast, economists are interested in who bears the burden of the tax rather than who writes the check to the government. Legal incidence is rarely, if ever, the same as economic incidence. The reason for this divergence is straightforward—the party bearing the legal incidence of a tax may change his or her behavior in ways that result in some, or even all, of the burden of the tax being shifted to other parties.¹ For example, taxing the seller of an item may lead to part of or all the tax being shifted to buyers of the product in the form of higher prices. The widely understood price-increasing consequences of cigarette taxes levied on tobacco firms or alcohol taxes levied on beer and spirits producers are examples of this phenomenon (Li et al. 2014).

Ultimately, all taxes levied on businesses are paid by either consumers, in the form of higher prices; employees, in the form of lower wages; suppliers, in the form of lower prices for their goods and services; or owners, in the form of lower profits. Hence, economic incidence, not legal incidence, provides the true measure of the burden of a tax.

One interesting and, to many noneconomists, surprising fact about the economic incidence of a tax is that the sharing of the tax burden among these various stakeholders is invariant to the legal incidence. Suppose the state levied a 5 percent tax on a product or group of products and required the tax be legally paid by the seller. Now suppose instead that the state levied a 5 percent tax on a product or group of products but required the tax be legally paid by the buyer. In both cases, the result would be some kind of sharing of the burden among these stakeholders dependent on the relative elasticities of supply and demand in the market. The interesting result is that this economic incidence would be the same in either case. Hence, for the purposes of determining economic incidence, the standard conclusion is that legal incidence does not affect the distribution of the burden of the tax between the buyer and seller.

Tax authorities also draw a distinction between the entity legally liable for the tax according to the statute and the one legally responsible for remitting the tax. In the case of the Ohio sales tax, for example, the law states that although the buyer is legally liable for the tax, it is typically, though not in all cases, the seller who must remit it to the state.² In the case of the Ohio CAT,

however, the seller is liable under the statute and is also required to remit the tax. Thus, both the Ohio sales tax and the CAT require the seller to remit the tax; they differ in that the Ohio sales tax assigns statutory liability to the buyer, while the Ohio CAT specifies that the seller is liable.

There may be important differences between requiring the seller versus the buyer to remit a tax in terms of administration, compliance, and enforcement costs (see Slemrod 2008). Such concerns are an important part of determining tax policy, but they do not alter the underlying point that the manner in which the burden of a tax is shared between buyer and seller is independent of the statutory point of tax collection.

THE FORMAL ECONOMICS OF AN AD VALOREM SALES TAX

The following analysis is a standard economic approach to understanding how a tax impacts a given market. Consumers and sellers are responsive to prices as described by demand $f(\cdot)$ (equation 1a) and supply $g(\cdot)$ (equation 1b) functions:

$$Q_d = f(P_d), \quad (1a)$$

$$Q_s = g(P_s), \quad (1b)$$

where Q_d is the quantity of the good purchased by the buyer, P_d is the price paid by the buyer, Q_s is the quantity sold by the seller, and P_s is the price received by the seller.

Buyers respond to higher prices by decreasing the amount they want to purchase, so

$$\Delta Q_d / \Delta P_d < 0. \quad (2a)$$

Sellers respond to higher prices by increasing the amount they want to sell; thus,

$$\Delta Q_s / \Delta P_s > 0. \quad (2b)$$

The market is in equilibrium when the buyers and sellers want to buy and sell the same quantity of the good:

$$Q_d = Q_s. \quad (3)$$

In the absence of taxation, it is easy to solve for the price that equilibrates the market. However, if an ad valorem tax, t_s , is introduced, then a wedge is driven between the price the buyer pays and the price the seller receives,³ so

$$P_d = (1 + t_s) P_s, \quad (4a)$$

$$P_s = P_d / (1 + t_s). \quad (4b)$$

The tax increases the price paid by buyers:

$$\Delta P_d / \Delta t_s > 0. \quad (5a)$$

Likewise, the tax decreases the price received by sellers:

$$\Delta P_s / \Delta t_s < 0. \quad (5b)$$

The quantity purchased and sold decreases:

$$\Delta Q_d / \Delta t_s < 0, \quad (6a)$$

because of equations 2a and 5a, and

$$\Delta Q_s / \Delta t_s < 0, \quad (6b)$$

because of equations 2b and 5b.

THE FORMAL ECONOMICS OF A GROSS RECEIPTS TAX

Like a sales tax, the GRT drives a wedge between buyers and sellers but in an apparently different way. The existence of a sales tax means that buyers will pay a higher price for the product than the sellers receive (as in equation 4a above). In contrast, the gross receipts, t_g , is levied on gross receipts such that the total amount paid by the buyers, R_d , is greater than the gross amount received by the sellers, R_s :

$$R_d = (1 + t_g) R_s. \quad (7)$$

Gross receipts are simply the multiplication of price and quantity:

$$R_d = P_d Q_d, \quad (8a)$$

$$R_s = P_s Q_s. \quad (8b)$$

Rearranging terms from equations 3, 7, 8a, and 8b, we find

$$P_d = (1 + t_g) P_s, \quad (9)$$

which, for $t_g = t_s$, is identical to equation 4a.

Thus, a GRT of a given percentage rate is literally identical to a general sales tax of the same rate facing any given market.

DIFFERENCES BETWEEN THE APPLICATION OF SALES AND GROSS RECEIPTS TAXES IN PRACTICE

Just as there are subtle but important administrative, compliance, and enforcement differences between general retail sales taxes and other types of sales taxes (e.g., value added taxes), there are important administrative and economic differences between GRTs and general sales taxes in practice. The biggest difference between the two taxes is the manner in which GRTs “cascade” or “pyramid” as products are sold from firm to firm in the intermediate stages of production.

The analysis in the foregoing sections assumed only a single stage of production in order to show the equivalence of a retail sales tax and the GRT in the simplest way possible. That conclusion is still valid: A GRT and a sales/excise tax are identical when applied to any given market.

Recognizing that the GRT applies at all stages of production complicates matters, but it does not change the fundamental result that a GRT is a sales tax. For every GRT that pyramids, there is an equivalent noncascading retail sales tax that could be applied to that product. Consider table 2, illustrating the production of bread.

In this example, a 0.82 percent retail sales tax rate is exactly equivalent to a 0.26 percent GRT rate. In the case of the GRT, the 0.26 percent tax would generate a total of \$1.72 in tax revenue from the various stages of production. In the case of the sales tax, the government simply waits until the end of production and applies the 0.82 percent sales tax to the final product value.⁴ In either case, the government collects the same \$1.72 from the sale of this product, though the tax is administratively collected at different stages of the production process.

It would complicate matters still further once we recognize that there are differences in the stages of production for different goods. One would have to

Table 2. The Tax Incidence of Bread Production—A Hypothetical Example

Agent	Valued Added (\$)	Gross Value (\$)	Sales Tax ^a (\$)	Gross Receipts Tax ^b (\$)
Wheat farmer	100.00	100.00	0.00	0.26
Miller	50.00	150.00	0.00	0.39
Baker	50.00	200.00	0.00	0.52
Retail grocer	10.00	210.00	1.72	0.55
Total	210.00	210.00	1.72	1.72

^a Sales tax rate is 0.82%.

^b Gross receipts tax rate is 0.26%.

recalculate the figures in the table to determine a different retail sales tax rate for each good that would be equivalent to the GRT rate.

Thus, in the aggregate, the GRT should be viewed as the equivalent of a series of selective sales or excise taxes on goods and services that apply at different rates, depending on the differences in the stages of production across goods and services markets.

Additionally, note that even retail sales taxes pyramid in many instances. Holcombe (1996, 273) notes that sales taxes often tax “construction materials such as lumber and concrete, even when those materials are sold as inputs into the production process, such as to construct a factory or warehouse.” In addition, he notes that “to the extent that nonretail transactions are taxed, a general sales tax has the inefficiencies associated with the turnover tax.” Quick and McKee (1988) highlight this cascading by noting that retail sales tax laws do not allow firms to fully exempt intermediate goods, and thus these goods can be taxed repeatedly by the retail sales tax. Likewise, Ring (1989) provides an extensive discussion of nonretail, business-to-business transactions that are subject to retail sales taxes. He estimates that 30 percent of Ohio’s sales tax is paid on business-to-business transactions. A follow-up study (Ring 1999) finds similar results.

The phenomenon of pyramiding means only that the effective sales tax rate on the final product is higher than the published statutory GRT rate; it does not mean that it is not a sales tax. To conclude that the double taxation of a good as it moves from one stage of production to another is not a sales tax would be to reach the strange conclusion that taxing the sale of an item once is a sales tax but taxing the sale of that item twice is not. Instead, the real meaning of pyramiding is that items with multistage production processes face higher effective taxes. If pyramiding disqualifies a tax from being a sales tax, then there is no such thing as a sales tax.

Furthermore, it is the academic consensus that GRTs that apply to all stages of production are still theoretically sales taxes. Holcombe (1996, 267) remarks: “A turnover [gross receipts] tax is like a sales tax in that it is a tax paid as a fixed percentage of the value of a transaction, but a turnover tax taxes all transactions, not just retail sales.” Likewise, the authoritative Musgrave and Musgrave (1984, 434–35) cover turnover taxes in their textbook chapter on sales taxes.

OHIO GROCERS ASSOCIATION ET AL. V. WILKINS

The discussion above indicates that no important economic distinction can be made between sales/excise taxes and GRTs. The sensible conclusion then

would be that the Ohio CAT, inasmuch as it is clearly a GRT, is in fact economically identical to a sales or excise tax. The Ohio Grocers Association, along with three food retailers and one food wholesaler, filed suit on February 17, 2006, against William Wilkins in his official capacity as Ohio's tax commissioner, arguing that the Ohio CAT violated Ohio's constitutional ban on applying sales or excise taxes to food.⁵

The plaintiffs sought (1) a declaration that the CAT, when applied to receipts from the sale of food for human consumption off the premises where sold, violates Article XII, Section 3(C) of the Ohio Constitution; (2) an order invalidating the CAT when applied to receipts from the sale of food for human consumption off the premises where sold; (3) an order enjoining Tax Commissioner Wilkins, his agents, and successors to refrain from levying or enforcing the CAT; and (4) an order requiring Tax Commissioner Wilkins to refund any amounts paid under the CAT with regard to receipts from the sale of food for human consumption off the premises where sold.

In a second count, the Ohio Grocers Association and co-plaintiffs sought similar relief on the grounds that the CAT also violated the Ohio Constitution's provision (Article XII, Section 13) that "no sales or other excise taxes shall be levied or collected (1) upon any wholesale sale or wholesale purchase of food for human consumption, its ingredients or its packaging; . . . or (3) in any retail transaction, on any packaging that contains food for human consumption on or off the premises where sold."

Although the State of Ohio pursued some other arguments, its primary defense was that the Ohio "CAT is a franchise and privilege tax imposed on doing business in Ohio. It is not a transactional tax, which is the kind of tax prohibited in Section 3(C), Article XII, and Section 13, Article XII of the Constitution."⁶ That is, the state holds that since the statutory incidence of the CAT falls on the seller and is calculated after the point of sale, the CAT is not a sales tax. In contrast, sales taxes (according to the state) assign statutory liability to the buyer (though they are remitted by the seller in most cases) and are calculated at the point of sale. This argument emphasizing the statutory liability of the tax and its administrative timing as being critical determinants of whether the tax is a sales tax is odd, to say the least, from the standpoint of standard public finance principles.

On August 24, 2007, the trial court ruled summarily in favor of the State of Ohio, making quite explicit the importance of legal incidence and timing in the court's judgment:

The Court further finds that the CAT is imposed directly on the business for the privilege of doing business in Ohio,

and therefore the “incidence” of the tax rests upon the business not the consumer. While the tax may ultimately be passed on to the consumers in the form of higher prices, it cannot be directly billed to and paid by the purchaser. As such, the Court finds that the CAT is significantly different from a sales tax.⁷

The court also found the administrative timing of the collection of the tax to be important:

In addition, the Court finds that unlike a sales tax, the very terms of the CAT tie the obligation to pay the CAT to a time or date, not a specific transaction or sale.

However, on September 2, 2008, the appellate court ruled in favor of the plaintiffs, echoing the economic logic presented above:

Though appellee suggests the CAT is a franchise tax and is not equivalent to a sales or transactional tax, by its very operation when applied to gross receipts derived from the sales of food, a transactional tax is precisely what the CAT becomes. This is so because the tax is measured *solely* by gross receipts and is based on aggregate sales, including those from the sales of food. Because the CAT is not based on each transaction or each individual sale, appellee contends the CAT is constitutional. However, though not based on individual sales at the time they are made, the CAT is merely based on the aggregate of all sales within a specified time frame. If the legislature is prohibited from collecting a tax on the individual sale, it logically follows the legislature would be prohibited from collecting a tax on the aggregate of those same sales.⁸

The State of Ohio appealed the case to the Ohio Supreme Court, which ruled in September 2009.⁹ The case was closely watched. Aside from the interesting legal and economic issues at stake, if the state lost, it faced the daunting prospect of having to refund hundreds of millions of dollars to food sellers. In the end, the Ohio Supreme Court, placing a high burden of proof on the plaintiffs, ruled that the CAT would be constitutional “if it may plausibly be

interpreted as permissible”¹⁰ and then, notwithstanding the economic arguments made by the plaintiffs and the appellate court, merely accepted the state’s assertion that the CAT was a tax on “the privilege of doing business” instead of an excise tax. Hence the court effectively rendered Ohio’s constitutional prohibition on taxing the sale of food economically nugatory.

OTHER ECONOMIC EFFECTS OF GROSS RECEIPTS TAXES

It might be argued that GRTs, which tend to have broader tax bases than retail sales or excise taxes, would be preferred on public finance grounds. Leaving aside the constitutional issue, states without constitutional prohibitions on taxing food might find other taxes to be sounder policy options. Here I explore five reasons for this.

First, since the tax base is gross receipts rather than net receipts, the tax is effectively larger on low profit margin firms (e.g., grocers) than on higher profit margin firms. Moreover, the taxation of gross receipts rather than net receipts means that firms incurring losses are still subject to the tax.¹¹ Hence, the tax bears no relation to firms’ ability to pay, one of the widely accepted normative criteria for tax equity.

Second, the tax also violates the benefit principle, another commonly accepted normative criterion for taxation. Under this criterion, tax burdens should be related to the benefits received from the government services funded by the taxation. Since the GRT makes no adjustments for the intensity of firms’ use of government funded services (e.g., roads), it is not consistent with the benefit principle of tax equity.

Third, the taxation of gross receipts rather than net receipts means that the tax falls more heavily on goods with multifirm production processes. To the extent that the tax is shifted forward, the tax pyramids or cascades with each subsequent stage of production. Chamberlain and Fleenor (2006) examine the degree of tax pyramiding under Washington State’s GRT for approximately three dozen industries. They find that the tax pyramids 2.5 times for the average industry examined, but is greatest (6.7 times) in the food manufacturing industry. Such compounding of the tax with each business-to-business transaction in the production process belies the GRT advocates’ claim that it is a low rate tax applied evenly to all goods and services produced. Consequently, GRTs create an artificial incentive for firms to vertically integrate (Chamberlain and Fleenor 2006).

Fourth, the tax burden on goods can be affected by the timing of the value added in a multistage production process. Value added that occurs earlier in

the production process will be subject to more pyramiding and ultimately lead to a higher final price for the consumer. Consider, for example, a three-stage production process that begins when Firm A sells \$10 of material to Firm B. Firm B then adds \$170 of value to the product and sells it for \$180 to Firm C. Firm C finishes the product and sells it to a consumer for \$200. Adding a 10 percent GRT, assumed to be fully shifted to consumers, to this production process results in sales prices of \$11.00 from Firm A to Firm B, \$199.10 ($= \181×1.1) from Firm B to Firm C, and \$241.01 ($= \219.10×1.1) from Firm C to the consumer.

Suppose instead that more of the value added occurs earlier in the production process: Firm A sells \$170 of material to Firm B. Firm B refines the product and sells it for \$180 to Firm C. Firm C finishes the product and sells it to the consumer for \$200. Applying a 10 percent GRT to this process yields prices of \$187.00, \$216.70, and \$260.37 at the respective stages of the production process. These simple examples illustrate that production processes with the same number of stages and the same value added will be taxed differently based on the timing of the value added in the production process.

Fifth, the application of a GRT to business-to-business sales means that, to the extent the tax is shifted forward, suppliers located in the state have higher prices than do suppliers located outside the state. The GRT, then, creates an incentive for in-state firms to find suppliers located outside the state; obviously, this incentive is mitigated by any accompanying increase in transportation costs. Not surprisingly, however, Ohio has adopted an economic nexus rationale for subjecting out-of-state firms to the CAT for their sales in Ohio.

CONCLUSION

Gross receipts taxes, such as Ohio's CAT, are economically identical to sales or excise taxes in any given market in which they are applied. As such, it would seem that such taxes, when applied to gross receipts derived from food, contradict applicable legal provisions exempting food from sales or excise taxation. In deeming the Ohio CAT to be constitutional, the Ohio Supreme Court has confused statutory incidence for economic incidence and in the process undermined the Ohio Constitution's ban on the sales taxation of food. More generally, all but six of the forty-five states with sales taxes exempt groceries from sales taxes or subject them to a reduced rate (Kasprak 2012). Hence understanding that GRTs are equivalent to sales taxes is important for states that wish to reduce the sales tax on groceries.

Independent of the CAT's constitutionality, the inequities and inefficiencies of GRTs make them poor tax instruments compared to available alternatives, such as either conventional sales taxes or value-added taxes.

NOTES

1. In certain market environments, it may also be possible to observe overshifting or price increases greater than the amount of the tax imposed. See Kenkel (2005).
2. This is similar to income tax withholding, where employers must withhold and send tax payments to the government on behalf of their employees. It is still the employee, however, who is legally liable for the tax.
3. An ad valorem tax is expressed as a percentage of the sales price. All sales and many excise taxes are ad valorem in nature. However, some excise taxes, such as the gasoline tax, are fixed unit taxes expressed as a certain amount of money per unit. Unit taxes still drive a wedge between buyers and sellers: $P_d = P_s + t$.
4. The results in table 2 assume that the full economic burden of the tax falls on the seller and that none of the tax is passed on to the buyer in the form of a higher price. This assumption is made purely for simplicity.
5. Ohio Grocers Assn. v. Wilkins, Complaint for Declaratory and Injunctive Relief. Court of Common Pleas, Franklin County, OH. Case No. 06CVH-02-2278. Full disclosure: The author was the expert witness hired on behalf of the plaintiffs.
6. Ohio Grocers Assn. v. Wilkins, Defendant's Memorandum Opposing Plaintiff's Motion for Summary Judgment and Cross-Motion for Summary Judgment. Court of Common Pleas, Franklin County, OH. Case No. 06CVH-02-2278.
7. Ohio Grocers Assn. v. Wilkins, Franklin County Court of Common Pleas Case No. 06CVH-02-2278.
8. Ohio Grocers Assn. v. Wilkins, 178 Ohio App.3d 145, 2008-Ohio-4420.
9. Ohio Grocers Assn. v. Levin, 123 Ohio St.3d 303, 2009-Ohio-4872. Note that the named defendant changed because there was a new tax commissioner in Ohio following the 2008 election.
10. Ohio Grocers Assn. v. Levin, Ohio Supreme Court, No. 2008-2018.
11. Note, too, that taxing firms experiencing losses may serve as an impediment for start-up firms, since such firms often require some time before becoming profitable.

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