



Saying Too Little, Too Late: Public Finance Textbooks and the Excess Burdens of Taxation

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[LINK TO ABSTRACT](#)

Taxation imposes manifold costs beyond the amount of revenue raised. During recent decades economists have investigated the excess burdens of taxation including the costs of ‘deadweight’ distortions, enforcement, and compliance.⁴ Our synthesis of the estimates provided by these investigations indicate that it typically costs much more than a dollar to finance a dollar of government spending. We examine whether leading public finance textbooks discuss the various excess burdens or incorporate excess burdens when calculating the optimal level of public goods. We find that most do neither.

Table 1 gives the locations of the treatments of (1) public goods and (2) the welfare costs of taxation found in six public finance textbooks used in top economics programs in the United States.⁵ In each of the six books, the treatment of public goods precedes the treatment of the welfare costs of taxation (tax efficiency). In fact, after treating public goods, the treatment of tax efficiency comes, on average, 11 chapters later. By the time the author(s) gets to tax efficiency, the focus has long since shifted away from the optimal provision of public goods.

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4. See Slemrod and Gillitzer (2014) for an in-depth discussion of administrative, compliance, and welfare costs of taxation.

5. The process we used to choose these textbooks is explained below.

TABLE 1. Topic separation: Public goods vs. the welfare costs of taxation

Textbook	Chapters in book	Chapter treating public goods	Chapter treating the welfare costs of taxation
Ronald C. Fisher (2006), <i>State and Local Public Finance</i> , 3rd ed.	22	Chapter 2	Chapter 12
Jonathan Gruber (2013), <i>Public Finance and Public Policy</i> , 4th ed.	25	Chapter 7	Chapter 20
David N. Hyman (2010), <i>Public Finance</i> , 10th ed.	18	Chapter 4	Chapter 11
Richard A. Musgrave and Peggy B. Musgrave (1989), <i>Public Finance in Theory and Practice</i> , 5th ed.	34	Chapter 4	Chapter 16
Harvey S. Rosen and Ted Gayer (2008), <i>Public Finance</i> , 9th ed.	22	Chapter 4	Chapter 15
Joseph E. Stiglitz (2000), <i>Economics of the Public Sector</i> , 3rd ed.	28	Chapter 6	Chapter 19
Note: Tax distortions are briefly mentioned by Hyman (2010) in Chapter 2 along with other sources of economic distortions.			

The sequencing and wide separation of these discussions is a manifestation of the broader problem we focus upon: Textbooks say too little, too late, about the excess burdens of taxation. Even when the textbooks do get around to treating tax efficiency, the coverage of the costs of taxation is often inadequate. Such practice is likely to lead students to underestimate the costs of government programs, predisposing them toward increased government spending.⁶ If instead students were instructed on the manifold costs of taxation and these costs were integrated into discussions of public goods, students would probably be less predisposed toward government spending.

Naive public goods theory misleads on costs

Just like the modern textbooks, Adam Smith's *Wealth of Nations* discusses government expenses first and then turns to revenue (Smith 1976/1776, V.1, V.2). However, unlike the modern textbook writers, when Smith discussed expenses he consistently integrated some discussion of their financing. Smith quite consistently preferred such financing to come principally from user fees, though Smith did consider national defense to be a pure public good that should be financed by

6. In some programs (particularly, it seems to us, public-administration programs) public finance is taught over two terms, with one term on spending and one on taxes—a practice that might interrelate with how authors organize the public-finance textbooks they write. Separating course material that way may make it especially hard for students to see how excess burdens affect the efficient quantity of a public good. Students are more likely to see the connections when the basics of cost-benefit analysis, public goods and excess burdens are covered during the beginning of both terms.

general taxation. Thus for Smith the relevance of tax efficiency to public goods should perhaps be limited, while its relevance should be high to modern textbook writers, who more often tend to favor general taxation as the financing mechanism when public goods are demanded.

In their analysis of public goods, textbooks normally depict supply as a marginal cost curve that does not include excess burdens. They normally assume lump-sum taxation with full information, though typically they do not make this explicit. This depiction may be reasonable when politicians are hammering out this year's budget and deciding how to allocate money between programs. However, the depiction is not suitable in discussions of the optimal provision of a public good. Government must raise revenue to provide public goods, and so to assume a nondistortionary lump-sum tax will lead students to overestimate optimal provision.

When textbooks leave excess burdens unmentioned, they are de facto teaching the lump-sum tax perspective. The author of a textbook might deny assuming nondistortionary taxes, declaring 'Just because I didn't elaborate the manifold costs doesn't mean I have denied such costs; rather, they are implicitly represented in the marginal-cost curve.' We think that such a defense is inadequate. Normally governments must raise the revenue to provide the public good. Raising revenue generates enforcement costs, compliance costs, and deadweight distortions. When textbook authors don't explicitly discuss these costs when discussing the optimal provision of a public good, it leads students to forget that taxes are distortionary and ignore these welfare costs when doing their analyses.

Adam Smith on the excess burdens of taxation

Smith's four maxims of taxation underscore the excess burdens of taxation. Smith's brief presentation of these maxims comes at the very beginning of his lengthy treatment of taxation: "Before I enter upon the examination of particular taxes, it is necessary to premise the four following maxims with regard to taxes in general" (1976/1776, 825).

The first maxim is that individuals' tax payments should be "in proportion to the revenue which they respectively enjoy under the protection of the state" (*ibid.*). Smith associates the proportionality principle with "equality" in taxation. The most straightforward interpretation of Smith's proportionality principle is as a proportional tax, that is, a tax where the tax rate does not vary with changes in the tax base. Although Smith does not speak of excess burdens in connection with proportionality, such connection follows to the extent that proportional taxes reduce administrative, compliance, and enforcement costs.

The second maxim is that tax obligations “ought to be certain, and not arbitrary. The time of payment, the manner of payment, the quantity to be paid, ought all to be clear and plain to the contributor, and to every other person” (ibid.). Without certainty, Smith says, the tax-gatherer “can either aggravate the tax upon any obnoxious contributor, or extort, by the terror of such aggravation, some present or perquisite to himself. The uncertainty of taxation encourages the insolence and favours the corruption of an order of men who are naturally unpopular” (ibid., 825-826). Smith argues that certain and non-arbitrary tax payments reduce the excess burdens of taxation.

The third maxim is that “Every tax ought to be levied at the time, or in the manner, in which it is most likely to be convenient for the contributor to pay it” (ibid., 826). Here Smith clearly highlights excess burden. He says that taxes “upon the rent of land or of houses” or “upon such consumable goods as are articles of luxuries” are conveniently paid.

The fourth maxim is more elaborate and broken down into four sub-points. It is entirely and explicitly about excess burden, including the psychic costs arising from “trouble, vexation, and oppression.” We quote the paragraph in full:

Every tax ought to be so contrived as both to take out and to keep out of the pockets of the people as little as possible, over and above what it brings into the public treasury of the state. A tax may either take out or keep out of the pockets of the people a great deal more than it brings into the public treasury, in the four following ways. First, the levying of it may require a great number of officers, whose salaries may eat up the greater part of the produce of the tax, and whose perquisites may impose another additional tax upon the people. Secondly, it may obstruct the industry of the people, and discourage them from applying to certain branches of business which might give maintenance and employment to great multitudes. While it obliges the people to pay, it may thus diminish, or perhaps destroy, some of the funds which might enable them more easily to do so. Thirdly, by the forfeitures and other penalties which those unfortunate individuals incur who attempt unsuccessfully to evade the tax, it may frequently ruin them, and thereby put an end to the benefit which the community might have received from the employment of their capitals. An injudicious tax offers a great temptation to smuggling. But the penalties of smuggling must rise in proportion to the temptation. The law, contrary to all the ordinary principles of justice, first creates the temptation, and then punishes those who yield to it; and it commonly enhances the punishment too in proportion to the very circumstance

which ought certainly to alleviate it, the temptation to commit the crime. Fourthly, by subjecting the people to the frequent visits and the odious examination of the tax-gatherers, it may expose them to much unnecessary trouble, vexation, and oppression; and though vexation is not, strictly speaking, expence, it is certainly equivalent to the expence at which every man would be willing to redeem himself from it. It is in some one or other of these four different ways that taxes are frequently so much more burdensome to the people than they are beneficial to the sovereign. (Smith 1976/1776, 826-827)

No contemporary public finance textbook that we are aware of even comes close to discussing excess burdens as comprehensively as Smith did in 1776.

Some analysis and estimates of the excess burden

One would like to think that economists can neatly distinguish the components of the excess burden of taxation, provide a precise estimate of the magnitude of each component, and then add up the component estimates to arrive at an estimate of the total excess burden.⁷ Unfortunately, for a number of reasons it is not that simple. Consider some of the complicating factors. First, cost depends on how the relevant choice is contextualized.⁸ Second, taxation takes many forms. Third, it is very difficult to arrive at monetary values for the subjective costs from fear, anxiety, anger, and frustration from what Smith called “unnecessary trouble, vexation, and oppression.” Fourth, there is no definitive way to divide the components; for example, should enforcement be separated from compliance? Fifth, some potential components, such as ones having to do with tax evasion, tax avoidance, or black markets, might mitigate other components, such as suppressed work or opportunity. Sixth, empirical estimation is necessarily very crude and inexact. Seventh, the costs vary over time; for example, perhaps technology is making it easier for people to comply with tax law.

One component of excess burden is compliance cost, the costs of conforming to often complex and changing tax laws. Joel Slemrod and Jon Bakija estimate that “individual taxpayers spend as much as 3 *billion* hours of their own

7. For a breakdown of components and estimates, see James Payne (1993, 150, 247-248). Incidentally, Payne insists that all of his estimates are conservative, lower-bound estimates (*ibid.*, 9).

8. The Laffer curve illustrates why context matters. If people believe that tax rates are high, then they are also likely to believe that cutting tax rates will raise revenue.

time on tax matters, or about 27 hours per taxpayer on average. That is the equivalent of over 1.5 million full-time (but hidden and unpaid) IRS employees!” (2008, 3-4, emphasis in original). The IRS (2012, Table 2.1) reports that tax preparation fees reported as itemized deductions were about \$6.9 billion. Slemrod and Bakija (2008, 162) report that their “best estimate of the total annual cost of enforcing and complying with the federal corporate and personal income taxes in tax year 2004 is \$135 billion. This amounts to slightly more than 10 cents per dollar raised.” In other words, for each dollar collected via income taxes, the inclusion of compliance costs alone would bring the total burden to \$1.10.⁹

Tax wedges are another important cost of taxation. In labor markets, the average taxpayer works less when she faces higher marginal tax rates. Although average tax rates are easily used to calculate one’s tax bill from gross income, the effects of taxes on one’s decisions to work and save are determined by the overall *marginal* tax rate (MTR) from federal, state, and local taxes.¹⁰ Edward Prescott (2004) reported that in 1970 labor supplies were nearly equal in the United States and Europe. Also in 1970, MTRs were similar in the United States and Europe. By the mid-1990s, MTRs in Europe increased to about 60 percent, compared to 40 percent in the United States—and Europeans were working about a third less than Americans. Prescott (2004, 8) finds that much of the difference in labor supply is explained by the differing MTRs.

Some analysts discuss disincentives to save as another cost of taxation; higher MTRs reduce the incentive to save. Taxes on dividends, capital gains, interest income, and corporate and business profits reduce savers’ rates of return. Although there is little agreement on how much these taxes affect savings, Jonathan Gruber (2013) notes that more recent studies suggest that consumption decisions are strongly affected by after-tax interest rates. Edgar Browning (2008) argues that one reason Americans save less than many other countries is the relatively high American MTRs on capital income. Progressive taxes also place the largest tax burden on higher income people who tend to save the most. Browning (2008) says that total savings is especially reduced by progressive taxes that reduce the return to savings for high-income individuals, who tend to save the most.

9. Payne (1993) made a much higher estimate of compliance costs borne by households and businesses, about 24 cents per tax-revenue dollar. Payne separately estimated enforcement costs, meaning the “governmental cost of tax collection,” but he found they “prove to be relatively small.” He added: “Virtually all of the costs of operating the U.S. tax system are shifted onto the private sector” (Payne 1993, 9, 29, see also 119-126).

10. Browning (2008, 154) reports that the average MTR in the United States is about 40–45%. Gruber (2009) notes that a reasonable estimate for the labor supply elasticity of primary workers is 0.1 whereas the labor supply elasticity of secondary workers is much higher at 0.5–1.0, with most of the response coming from changes in labor force participation. If the labor supply elasticity were 0.5 and if MTRs increase by 10 percentage points, then the increase in tax rates would decrease labor supply by 5 percent.

Distortions arising from reductions in the tax base via exemptions and deductions are another matter sometimes treated as a cost of taxation. According to the Internal Revenue Service (2013, Table 5), adjusted gross income since 1970 is 15% to 25% less than personal income. Taxpayers have the incentive to move their income into areas that are not taxed. This distorts taxpayers' choices.

The welfare costs of taxation cannot be measured with great precision. Bev Dahlby (2008) presents various estimates of the marginal costs of public funds (MCF) for various taxes. But MCF is only one of several frameworks that have been used in measuring the welfare costs of taxation; others include marginal excess burden (MEB), marginal efficiency costs (MEC), and marginal welfare costs (MWC). This makes it difficult to summarize and compare the results from the various studies.

Table 2 lists the results from nine publications that assess the costs of raising tax revenue from labor income in the United States. Over the last thirty years, individual income and payroll taxes have been the source of at least eighty percent of all federal tax revenue (OMB 2014, 34-35). Column 2 shows estimates of the cost of raising a dollar in income tax revenue when compliance costs are excluded; estimates range from \$1.07 to \$1.52, with one outlying high estimate of \$3.00. As discussed, Slemrod and Bakija (2008) estimate that there is a \$0.10 compliance cost when raising a dollar in tax revenue; column 3 thus includes compliance costs by adding ten cents to the estimates in column 2.

TABLE 2. Estimates of the cost of raising a dollar in tax revenue from a labor income tax

Source for estimate (1)	Estimate (excludes compliance costs) (2)	Estimate plus compliance costs of \$0.10 (3)
Ahmed and Croushore (1996)	\$1.12 to \$1.17	\$1.22 to \$1.27
Ballard, Shoven, and Whalley (1985)	\$1.16 to \$1.31	\$1.26 to \$1.41
Browning (1987)	\$1.32 to \$1.47	\$1.42 to \$1.57
Feldstein (1999)	\$3.00	\$3.10
Fullerton and Henderson (1989)	\$1.17 to \$1.25	\$1.27 to \$1.35
Gruber and Saez (2002)	\$1.29	\$1.39
Jorgenson and Yun (1991)	\$1.38 to \$1.52	\$1.48 to \$1.62
Jorgenson and Yun (2001)	\$1.35 to \$1.40	\$1.45 to \$1.50
Stuart (1984)	\$1.07	\$1.17
<i>Median</i>	<i>\$1.29 to \$1.31</i>	<i>\$1.39 to \$1.41</i>
<i>Average</i>	<i>\$1.43 to \$1.50</i>	<i>\$1.53 to \$1.60</i>
Note: The elasticity of taxable income with respect to the after tax share was 1.04 in Feldstein (1999). In comparison, Gruber and Saez's (2002) elasticity was 0.4. See Slemrod and Gillitzer (2014, 90-91) for an insightful discussion of the reasons for these differences.		

Considering all nine publications, the median estimate of the cost to raise a dollar in revenue through a tax on labor income (column 2) is about \$1.30; including ten cents of compliance costs, the figure is about \$1.40 (column 3). A \$1.40 cost to raise a dollar in income tax revenue implies that textbook writers who assume that it costs a dollar to raise a dollar are ignoring about 30 percent of the costs.

These estimates do not seem to be controversial. In 2005, the President's Council of Economic Advisers reported: "A recent study estimated that the excess burden associated with increasing the individual income tax by one dollar is 30 to 50 cents. In other words, the total burden of collecting \$1.00 in additional income taxes is between \$1.30 and \$1.50, not counting compliance costs" (Bush CEA 2005, 77). In a *Journal of Economic Literature* review, Slemrod (2005, 817) said this estimate cited by the CEA "is a reasonable characterization of where the literature stands."

The costs of raising funds through a general sales tax are similar. Charles Ballard, John Shoven, and John Whalley's (1985) estimate of the MEB for consumer sales taxes puts the cost of raising a dollar of public funds between \$1.25 and \$1.39. Dale Jorgenson and Kun-Young Yun (1991) estimate the MEC of a sales tax on consumer and investment goods to be about \$1.26; in later work, Jorgenson and Yun (2001) estimated the MEC to be about \$1.18. All of these estimates omit compliance and enforcement costs, so the full cost of raising a dollar of public funds would be even higher.

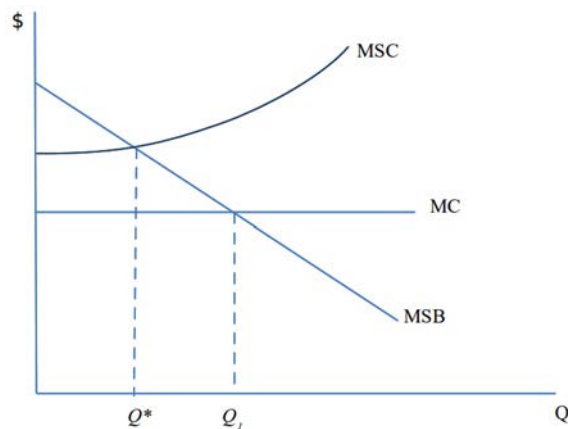
However, there are cases where the marginal cost of raising a dollar in public funds can be much lower. Examples include Pigovian taxes and raising revenue by reducing distortionary tax subsidies. Ballard and Steven Medema (1993) calculated that a Pigovian tax that reduced a negative externality had a marginal cost to raise a dollar of \$0.73. Don Fullerton and Yolanda Henderson (1989) calculated that raising a dollar by reducing an investment tax credit that distorted asset choices had a marginal cost of \$0.62. Ballard and Fullerton (1992) develop a model in which the marginal cost of raising a dollar in public funds can be a dollar or less. Excess burdens may be negative in these cases, but because compliance and administrative costs are ignored in these studies the full costs would be higher than the authors' estimates. Policymakers may be able to reduce marginal excess burdens by choosing those types taxes that have lower excess burdens. All else equal, replacing high MEB taxes with low MEB taxes is a good idea. This is one reason that Henry George argued for taxes on land (see Foldvary 2005). But one might be suspect of a reform proposal to replace more distortionary taxes with less distortionary taxes, from concern that by the end of the legislative process the more distortionary taxes will be left in place with the less distortionary taxes merely added on top of them.

Integrating the full cost into public good analysis

We noted that public finance textbooks have segregated public goods theory from tax issues. Textbooks present the efficient quantity of public goods in the opening chapters and taxation is presented toward the end of the text. The derivation of the efficient quantity of public goods follows the standard formulation (Samuelson 1954; 1955), where the efficient quantity occurs where the marginal social benefit (MSB) equals the marginal resource cost (MC).¹¹ The MSB is the vertical summation of the individual MB schedules; the vertical summation is because of the non-rival aspect of a public good.

For simplicity, in Figure 1, the marginal cost curve is horizontal, implying a constant marginal resource cost to produce Q . Here Q is defined as a composite public good that can be thought of as encompassing defense, schooling, et cetera. In Figure 1, Q can increase either because the size of government programs increase or there is an increase in the number of government programs. Students are told that resources are optimally allocated at Q_1 where MSB and MC intersect.

Figure 1. How welfare costs affect the optimal level of public goods

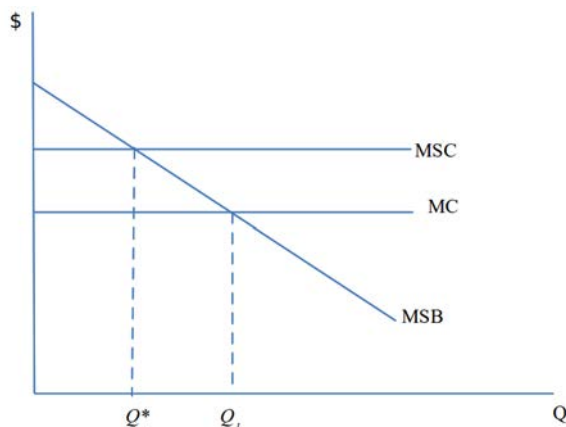


11. In the early chapters of the textbooks, welfare costs and compliance costs are ignored; these chapters emphasize market failure in the provision of public goods caused primarily by free-rider issues which imply that markets underprovide public goods.

When the funds are not raised voluntarily, however, compliance and other excess burdens are especially important. When excess burdens are included in the analytics, the relevant cost curve is MSC which is the sum of MC and the marginal welfare costs of taxation. A familiar proposition in public finance is that welfare costs of taxation increase by the square of the tax rate (Musgrave and Musgrave 1989, 281-285). On such proposition, a doubling of revenue would quadruple the total welfare cost of taxation. As public good production expands, then, the marginal welfare cost of taxation should be thought to increase, and to increase at an increasing rate. In Figure 1, then, MSC not only lies above MC but also increases at an increasing rate. The efficient output is Q^* , which is less than Q_1 .

Figure 2 shows the case where Q is one public good, such as 'basic science' (let us grant that it is a pure public good). The marginal cost of funds (not shown in the figure) is determined by the total level of government spending. Assuming that basic science funding is a small part of overall spending, the marginal cost of funds is not substantially affected by increasing expenditures on basic science. In this case, MSC is a horizontal line above MC , but still $Q^* < Q_1$. Then, if the size of other programs or the number of government programs were to be increased, the marginal cost of funds would rise, which would shift the MSC curve upward in Figure 2, reducing the optimal Q^* .

Figure 2. How welfare costs affect the optimal level of a public good



As there are compliance and welfare costs associated with raising the revenue necessary to finance a public good, the optimal-provision analyses presented in public finance textbooks are incomplete if not misleading. Without being shown a curve such as MSC in our Figures 1 and 2, the student will have no hint that excess burdens affect the choice of Q , unless perhaps the surrounding text articulates the

point. But textbooks generally fail to do even that; they generally don't discuss the welfare costs of taxation until at least six chapters later.

An examination of texts and supplements used at top schools

We examine the treatment of public goods, the costs of taxation, and related cost-benefit analysis in six textbooks and eight supplemental readings used in public finance courses at five top schools.¹² It is likely that most public finance courses in the United States use one of these textbooks. We record whether each text explicitly notes that the cost of raising an additional dollar of tax revenue typically costs more than a dollar. Special attention was paid to whether cost-benefit analysis of public goods includes the welfare costs of taxation. Table 3 summarizes our findings.

TABLE 3. Textbooks, welfare costs of taxation, and cost-benefit analysis

Textbook (1)	Discusses optimal provision of a public good? (2)	Discusses cost-benefit analysis? (3)	Discusses welfare costs of taxation? (4)	Explicitly notes that the cost of an additional dollar of tax revenue exceeds a dollar? (5)	Welfare costs of taxation explicitly incorporated in optimal provision of a public good? (6)	Welfare costs of taxation explicitly incorporated in cost-benefit analysis? (7)
Fisher (2006)	Yes	No	Yes	No	No	No
Gruber (2013)	Yes	Yes	Yes	Yes	No	No
Hyman (2010)	Yes	Yes	Yes	No	No	No
Musgrave and Musgrave (1989)	Yes	Yes	Yes	Yes	Yes	No
Rosen and Gayer (2008)	Yes	Yes	Yes	No	No	No
Stiglitz (2000)	Yes	Yes	Yes	No	No	No

12. The textbooks and supplemental readings included were determined as follows. First, we accessed the 2009 *U.S. News & World Report* rankings of the top ten graduate programs in economics. Next we conducted online searches at each school's website to find any syllabi for public finance courses that included a course textbook. This yielded five syllabi, from five of the schools (Harvard, Massachusetts Institute of Technology, Stanford, Northwestern, and University of Pennsylvania). There are six textbooks and ten supplemental readings on the list; we examine all six textbooks and the eight supplemental readings that we were able to access. All syllabi except for Columbia and Princeton were from undergraduate courses. The syllabi from Columbia and Princeton were from applied master's programs. See the Appendix for the complete list of schools and readings.

Though all texts included separate-chapter discussions of cost-benefit analysis, public goods, and the welfare costs of taxation, Table 3 clearly shows that public finance textbooks commonly segregate cost-benefit analysis from discussion of excess burdens. No text incorporated excess burdens into cost-benefit analyses or the optimal provision of public goods. However, at the end of chapter 16, Richard Musgrave and Peggy Musgrave (1989) mention that the welfare cost of taxation does increase the cost of public spending. They note that:

...the deadweight loss of the marginal tax dollar...must be known to determine the proper size of the budget, because it sets the costs (tax dollar plus deadweight loss) which need be measured against the benefits derived from the marginal expenditure dollar. (Musgrave and Musgrave 1989, 293)

Also, Jonathan Gruber (2013, 600-601) discusses tax efficiency before his discussion of optimal taxation. Gruber cites Jerry Hausman's (2000) study that estimated that a wireless communications tax generates a marginal welfare cost of 72 to 90 cents per dollar raised. However, unlike the Musgrave and Musgrave (1989) discussion, there is nothing in Gruber (2013) that links the welfare cost of taxation to public spending.

Taken together Tables 1 and 3 make the case that public finance textbooks commonly segregate public good theory and tax theory. Again, an author might respond to our critique by saying something like: 'What do you mean? Following tradition, in the earlier chapters I discuss public goods. Then in later chapters I explain that a dollar of revenue typically costs about \$1.40 [or whatever]. Readers should be able to apply the concepts that they learn to earlier chapters.' Such an explanation, however, is never presented in their texts; expenditure theory is never explicitly integrated into tax theory in these public finance textbooks.

An author could also say: 'My book looks at minimizing the welfare costs of taxation given some target level of public funds.'¹³ This misses the point that the target level of public funds depends crucially on the excess burdens of the tax. Figure 1 shows that it is analytically easy to incorporate excess burden into public goods theory.¹⁴

In Table 4, we consider materials specified in the course syllabi as supplemental. These supplements focus on specific issues in public finance ranging

13. Slemrod and Gillitzer (2014, esp. ch. 7), who integrate compliance and welfare costs into their tax analysis, also assume that the target level of public funds is exogenous.

14. The framework of Figure 1 follows the framework outlined in Brennan, Bohanon, and Carter (1984) which proposes a public finance pedagogy along the lines suggested in this article.

from tax issues in developing economies to the institutional history of the American tax system.

TABLE 4. Supplemental materials, welfare costs of taxation, and cost-benefit analysis

Supplemental material (1)	Discusses optimal provision of a public good? (2)	Discusses cost-benefit analysis? (3)	Discusses welfare costs of taxation? (4)	Welfare costs of taxation explicitly incorporated in optimal provision of a public good? (5)	Welfare costs of taxation explicitly incorporated in cost- benefit analysis? (6)
Bird and Oldman, eds. (1990), <i>Taxation in Developing Countries</i> , 4th ed.	No	Yes	Yes	No	Yes
Case (1986), <i>Economics and Tax Policy</i>	No	No	Yes	No	No
Cordes, Ebel, and Gravelle, eds. (2005), <i>The Encyclopedia of Taxation and Tax Policy</i>	No	No	Yes	No	No
Goode (1984), <i>Government Finance in Developing Countries</i>	No	Yes	No	No	No
Lewis (1984), <i>Taxation for Development</i>	No	No	Yes	No	No
Prest (1985), <i>Public Finance in Developing Nations</i> , 3rd ed.	No	No	Yes	No	No
Slemrod and Bakija (2008), <i>Taxing Ourselves: A Citizen's Guide to the Debate Over Taxes</i> , 4th ed.	No	No	Yes	No	No
Steuerle (2004), <i>Contemporary U.S. Tax Policy</i>	No	No	Yes	No	No
Notes: Case (1986) discusses the provision of public goods (pp. 40, 120-121, 140) and how taxes cause welfare costs (pp. 122, 142-143). In the encyclopedia edited by Cordes et al. (2005), Watson (2005, 121-122) discusses welfare costs. Goode (1984) discusses cost-benefit analysis (pp. 62-74) and the consequences of heavy taxation (p. 95). Lewis (1984, 15-16) discusses public goods and the welfare costs of taxation. Prest (1985, 35), Slemrod and Bakija (2008, 3-4, 144-146, 160-163), and Steuerle (2004, 12-13) discuss welfare costs and collection costs of taxation.					

As shown in column 6, only Wayne Thirsk (1990, 192-199) in the text edited by Richard Bird and Oliver Oldman (1990) explicitly takes account of welfare costs in his cost-benefit analysis.¹⁵ Two of the supplements offer passing verbal comments that suggest that welfare costs of taxation are intertwined with spending policy. Karl Case (1986, 122), in his book designed for an international law course, writes: “When a tax distorts or alters economic decisions...the burden imposed

15. This can be seen immediately where Thirsk lists a parameter for excess burden in his Table 15.1 (1990, 194).

on society is greater than the amount of tax collected.” The book by C. Eugene Steuerle (2004) is designed to review the evolution of federal tax policy since WWII; it goes into little depth on tax or public good theory. Nevertheless, Steuerle acknowledges that: “Taxes by their very nature distort behavior... Even when distortions are minimized for some level of tax collection, those taxes, because of their remaining effect on behavior must be justified by the gains from the programs they support” (2004, 12).

Are intermediate texts in microeconomics different?

We have focused on public finance textbooks because we assume that compliance costs and welfare costs are more likely to be integrated into discussions of the optimal provision of public goods in these area-specific texts than in more general economics texts. To check the reasonableness of this assumption, we chose as our sample four undergraduate intermediate micro texts authored by renowned economists: Edgar Browning and Mark Zupan (2009); Austan Goolsbee, Steven Levitt, and Chad Syverson (2013); Hal Varian (2010); and Steven Landsburg (2011). For each text we examined the discussion of the optimal provision of a public good. The selection of the four textbooks was done casually, and it is meant only to illustrate a problem the extent of which, among the very many intermediate micro texts, is uncertain.

All four of these texts ignore the welfare cost of taxation when discussing the optimal quantity of a public good. Browning and Zupan (2009, 576), Goolsbee, Levitt, and Syverson (2013, 673) and Varian (2010, 703) all illustrate the optimal provision of a public good with a diagram similar to our Figure 1 but without an *MSC* curve. Landsburg (2011) does not graphically show the optimal provision of a public good, but in his discussion of public-goods provision he too ignores the welfare costs of taxation:

Because nonexcludable and nonrivalrous goods are supplied inadequately by the marketplace, they are often provided by the government. If it would cost \$300 to build a streetlight that 100 neighbors value at \$10 apiece, we have seen that the market can fail to provide the streetlight. A government, however, can assess a tax of \$3 per neighbor and use the proceeds to build the light, yielding a clear gain in social welfare. (Landsburg 2011, 468)

The failure of these general texts to include welfare costs in their discussions of the optimal provision of a public good is consistent with the failure of specialty public finance texts to integrate taxation's welfare costs into public-good provision analyses.

Results and conclusion

The coercive extraction of tax dollars is a costly activity. Estimates of the total cost of raising a dollar from the U.S. personal income tax are substantial in magnitude. So one would think that public finance textbook discussions of cost-benefit analysis and the optimal provision of public goods would explicitly incorporate the welfare costs and compliance costs of taxation. But in our sample of the public finance textbooks used at elite institutions, none integrates the welfare costs of taxation into discussions of the optimal provision of public goods or cost-benefit analysis. When these costs are ignored, the purportedly optimal quantity of public goods is in fact too high. Fortunately, this bias could—quite easily—be eliminated from public finance textbooks.

Appendix

Top ten graduate economics programs, 2009 ranking by *U.S. News & World Report*

1. Harvard University
2. Massachusetts Institute of Technology
3. Princeton University
4. University of Chicago
5. Stanford University
6. University of California, Berkeley
7. Yale University
8. Northwestern University
9. University of Pennsylvania
10. Columbia University

Harvard University required texts

- Bird and Oldman (1990)
- Case (1986)
- Cordes, Ebel, and Gravelle (2005)
- Fisher (2006)
- Goode (1984)

- Gruber (2007)
- Gupta, Clements, and Inchauste (2004)
- Lewis (1984)
- Musgrave and Musgrave (1989)
- Newbery and Stern (1987)
- Prest (1985)
- Rosen and Gayer (2007)
- Shome (1995)
- Steuerle (2004)
- Stiglitz (2000)

Massachusetts Institute of Technology required text

- Gruber (2009)

Princeton University

From syllabus “There are no textbooks ...”

University of Chicago

No syllabus found

Stanford University required text

- Rosen and Gayer (2008)

University of California, Berkeley

No syllabus found

Yale University

No syllabus found

Northwestern University required texts

- Gruber (2009)
- Slemrod and Bakija (2008)

University of Pennsylvania required text

- Hyman (2010)

Columbia University

No text information readily available from online syllabus

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