Cheating Ourselves: The Economics of Tax Evasion

Joel Slemrod

No government can announce a tax system and then rely on taxpayers' sense of duty to remit what is owed. Some dutiful people will undoubtedly pay what they owe, but many others will not. Over time the ranks of the dutiful will shrink, as they see how they are being taken advantage of by the others. Thus, paying taxes must be made a legal responsibility of citizens, with penalties attendant on noncompliance. But even in the face of those penalties, substantial tax evasion exists—and always has. The history of taxation is replete with episodes of evasion, often notable for their inventiveness. During the third century, many wealthy Romans buried their jewelry or stocks of gold coin to evade the luxury tax, and homeowners in eighteenth-century England temporarily bricked up their fireplaces to escape notice of the hearth tax collector (Webber and Wildavsky, 1986, p. 141).

This essay reviews what is known about the magnitude, nature, and determinants of tax evasion, with an emphasis on the U.S. income tax. Alm (1999), Andreoni, Erard, and Feinstein (1998), and Slemrod and Yitzhaki (2002) offer more comprehensive recent reviews of the literature. It then places this information into a conceptual and policy context.

Tax Evasion in the United States

Determining the extent of evasion is not straightforward for obvious reasons. (Would you answer survey questions about tax evasion honestly?) Because tax

■ *Joel Slemrod is the Paul W. McCracken Collegiate Professor of Business Economics and Public Policy, Professor of Economics, and Director of the Office of Tax Policy Research at the University of Michigan, Ann Arbor, Michigan. His e-mail address is ⟨jslemrod@umich.edu⟩.*

evasion is both personally sensitive and potentially incriminating, self-reports are vulnerable to substantial underreporting (Baumeister, 1982). Moreover, the dividing line between illegal tax evasion and legal tax avoidance is blurry. Under U.S. law, tax evasion refers to a case in which a person, through commission of fraud, unlawfully pays less tax than the law mandates. Tax evasion is a criminal offense under federal and state statutes, subjecting a person convicted to a prison sentence, a fine, or both. An overt act is necessary to give rise to the crime of income tax evasion; therefore, the government must show willfulness and an affirmative act intended to mislead. Some tax understatement is, however, inadvertent error, due to ignorance of or confusion about the tax law (as is some overpayment of taxes). Although the theoretical models of this issue generally refer to willful understatement of tax liability, empirical analyses cannot precisely identify the taxpayers' intent and therefore cannot precisely separate the willful from the inadvertent. Nor can they, in complicated areas of the tax law, precisely distinguish the illegal from the legal. Although this review is intended to address willful tax noncompliance, the difficulty of identifying this behavior is reflected in the varying terms to which the analyses refer, such as "evasion," "noncompliance," "misreporting," and "tax gap." In what follows, when discussing empirical estimates I generally use the term that generated the estimates employed, and use the term "evasion" in discussing theoretical treatments of willful noncompliance.

Tax Evasion by Sources of Income

The most careful and comprehensive estimates of the extent and nature of tax noncompliance anywhere in the world have been made for the federal taxes that the U.S. Internal Revenue Service (IRS) oversees. The IRS has, beginning in 1979, periodically estimated what it calls the "tax gap," meaning how much tax should be paid, but is not paid voluntarily in a timely way (U.S. Department of the Treasury, Internal Revenue Service, 2005b, 2005d, 2005e, 2006). These studies provide separate estimates of the failure to pay the proper amount of tax due to nonfiling; underreporting of tax due on tax returns; and nonpayment or late payment of taxes owed. The IRS comes up with its estimates by combining information from a program of random intensive audits, originally known as the Taxpayer Compliance Measurement Program (TCMP), with information obtained from ongoing enforcement activities and special studies about particular sources of income—for instance, the tips and cash earnings of informal suppliers like nannies and housepainters—that can be difficult to uncover even in an intensive audit.

The Taxpayer Compliance Measurement Program data consist of line-by-line information about what the taxpayer reported and what the examiner concluded was correct. The primary purpose of the TCMP was to improve the process for selecting returns for operational audits, rather than to estimate the tax gap. The program of random audits began in 1963 and lasted until 1988; it was cancelled in 1995 in part to save money, but more importantly because of complaints in Congress that it was unfair to subject one group of taxpayers to detailed audits as a research tool to improve operations, and because of objections within the IRS to

diverting resources from more productive operational audits to audits of taxpayers who are less likely to be noncompliant. Until recently, IRS estimates of the tax gap have been fairly simple extrapolations based on the 1988 data and the assumption that rates of noncompliance for each tax source have not changed since 1988.

A modified version of the Taxpayer Compliance Measurement Program, called the National Research Program (NRP), was recently implemented to examine individual income tax returns from the 2001 tax year. For the NRP, the IRS randomly selected about 46,000 returns for review and examination and, as with previous TCMP studies, it oversampled high-income returns as well as individual taxpayers who reported (Schedule C) sole proprietorship income. Specifically, of the 46,000 in the overall sample, 21,000 had filed a Schedule C reporting sole proprietorship income, comprising 46 percent of the sample, even though only about 6 percent of individual taxpayers actually file a Schedule C. All of these returns were given a manual review by experienced auditors, who classified the returns into three categories of action: 1) accept the return as filed based on completely corroborating information reported by third parties; 2) contact the taxpayer by correspondence to investigate up to three items on the return that could not be corroborated; or 3) conduct an in-person audit of the return. For those returns selected for in-person audits, the classifiers also determined which items were to be reviewed, with auditors granted discretion to follow up on additional items that might arouse suspicion. In contrast to the NRP, the TCMP performed line-by-line audits on all returns in the sample. To correct for the errors potentially introduced by variability in auditor judgment, the tax gap estimates based on the NRP data employed a modified version of the statistical correction procedure developed by Feinstein (1991). Because the line-by-line audits can fail to uncover substantial amounts of noncompliance, the tax gap estimates based on both the TCMP and NRP studies make significant adjustments for undetected noncompliance that rely on special studies of particular sources of income and deductions.

Analyses of the National Research Program data form the basis for the first substantial updates since 1988 of the individual income tax underreporting gap. The IRS released preliminary estimates in March 2005 and updated these estimates in February 2006 (U.S. Department of the Treasury, Internal Revenue Service, 2005c, 2006). Table 1 presents the tax gap figures for 2001 based on the NRP study for the individual income tax filers and on estimates extrapolated from earlier studies for other taxes. The overall gross tax gap estimate is $345 billion, which amounts to 16.3 percent of estimated actual (paid plus unpaid) tax liability. This percentage is not much different than earlier estimates based on extrapolations from the 1988 tax gap studies (for example, U.S. Department of the Treasury, Internal Revenue Service, 1996). However, taking into account changes in methodology and the uncertainty of the estimating procedures, one cannot conclude that the noncompliance rate has remained steady, as opposed to trending up or down. Of the $345 billion estimate, the IRS expects to recover $55 billion, resulting

Table 1

Components of the 2001 U.S. Federal Tax Underreporting Gap

	Tax gap ($billion)	Percentage of amount that should have been reported/filed/ paid/collected
Gross tax gap	345	16.3
Underreporting	**285**	**13***
Individual Income Tax	197	18
Underreported nonbusiness income	56	4
Wages and salaries	10	1
Net capital gains	11	12
Taxable pension annuities, IRA distributions	4	4
Taxable interest and dividends	3	4
Other	28	n.a.
Underreported business income	109	43
Nonfarm proprietor income	68	57
Partnership, S corporation, estate, and net trust income	22	18
Rent and royalty net income	13	51
Farm net income	6	72
Overreported Offsets to Income	15	4
Deductions	14	5
Exemptions	4	5
Other adjustments	−3	−21
Overreported Credits	17	26
Employment Tax	54	7
Self-employment tax	39	52*
FICA and unemployment taxes	15	2*
Corporation Income Tax	30	17*
Large (>$10 million assets) corporations	25	14*
Small (<$10 million assets) corporations	5	29*
Estate and Excise Taxes	4	4*
Nonfiling	**27**	**1***
Individual income tax	25	2*
Other	2	2*
Underpayment	**34**	**2***
Individual income tax	23	2*
Corporation income tax	2	1*
Other	9	1*
Enforced and other late payments	55	3*
Net tax gap (tax not collected)	290	13.7*

Source: U.S. Department of the Treasury, Internal Revenue Service (2006).
Note: Only the figures for the individual income tax and the self-employment tax are based on the IRS' National Research Program results; the rest are IRS extrapolations from earlier TCMP studies.
* Calculated by the author.

in a "net tax gap" (the amount of tax not collected) for tax year 2001 of $290 billion, which is 13.7 percent of the tax that should have been paid.

Table 1 breaks down the aggregate estimate of the 2001 tax gap into its components. About two-thirds of all underreporting of income happens on the individual income tax. For the individual income tax, understated income—as opposed to overstating of exemptions, deductions, adjustments, and credits— accounts for over 80 percent of individual underreporting of tax. Underreported business income is nearly twice as large as underreported nonbusiness income. Taxpayers who were required to file an individual tax return, but did not file in a timely manner, accounted for slightly less than 10 percent of the gap. While the individual income tax comprises about two-thirds of the estimated underreporting, the corporation income tax makes up slightly more than 10 percent, and the employment-tax tax gap makes up about one-fifth of total underreporting.

The most striking and important aspect of Table 1 is the huge variation in the rate of misreporting as a percentage of actual income by type of income (or offset). Only 1 percent of wages and salaries are underreported, and 4 percent of taxable interest and dividends are misreported. (These percentages exclude underreporting associated with nonfiling.) Of course, wages and salaries, interest, and dividends must all be reported to the IRS by those who pay them; in addition, wages and salaries are subject to employer withholding. Self-employment business income is not subject to information reports, and its estimated noncompliance rate is sharply higher. An estimated 57 percent of nonfarm proprietor income is not reported, a total of $68 billion, which by itself accounts for more than a third of the total estimated underreporting for the individual income tax. As with prior estimates of the individual income tax underreporting gap, over half is attributable to the underreporting of business income, of which nonfarm proprietor income is the largest component.

The particularly high noncompliance rate associated with self-employed income has been corroborated through an indirect approach pioneered by Pissarides and Weber (1989) in the United Kingdom. They show that, conditional on household characteristics and recorded incomes, the self-employed spend a higher proportion of their reported income on food, and they argue that this reflects an underreporting of income, not a higher propensity to consume food. After adjustment for the differing variances of self-employment and employee incomes, Pissarides and Weber estimate that self-employed people in the United Kingdom on average underreported their income by about one-third. Feldman and Slemrod (forthcoming) applied this methodology to U.S. individual tax return data by examining whether the relationship between charitable contributions (rather than food expenditure) and income depends on the source of income. They find that, other things equal, reported positive self-employment income of $1.54 is associated with the same level of contributions as $1.00 of wage and salary income, which implies—assuming a negligible wage and salary noncompliance rate and that the self-employed are not inherently more charitable than others—a self-employment noncompliance rate of 35 percent; for positive farm net income, the implied

noncompliance rate is 74 percent. Strikingly, negative reported values for self-employment income are also associated with more contributions than reported by taxpayers with no self-employment income, suggesting that on average these re-ported losses are associated with higher true incomes.

All in all, there is substantial evidence that the extent of evasion for sole proprietor income is high compared to such income sources as wages, salaries, interest, and dividends, and may be more than half of true income. Other compo-nents of taxable income for which information reports are nonexistent or of limited value, such as other nonwage income and tax credits, also have relatively high estimated misreporting rates. The IRS reports that the net misreporting rate is 53.9, 8.5, and 4.5 percent for income types subject to "little or no," "some," and "substantial" information reporting, respectively, and is just 1.2 percent for those amounts subject to both withholding and substantial information reporting (U.S. Department of the Treasury, Internal Revenue Service, 2006).

Who Evades?

One intriguing question is how the level of noncompliance, and its proportion to income, varies by income class. Somewhat surprisingly, little is known about this from the IRS tax gap studies. Christian (1994) did report, based on the 1988 TCMP study, that higher-income people evade *less* than those with lower incomes, relative to the size of their true income; indeed, according to this study those with adjusted gross income above $500,000 on average reported 97.1 percent of their true incomes to the IRS, compared to just 78.7 percent for those with adjusted gross income between $5,000 and $10,000. This pattern appears consistent with the old saying among tax professionals that "the poor evade and the rich avoid," meaning that the rich tend to reduce their taxes through legal "avoidance" measures such as tax shelters, while those with lower incomes attempt more outright evasion. How-ever, the Christian study is not conclusive. These figures do not adjust for the noncompliance the TCMP auditors did not detect. TCMP audits of personal tax returns do not generally investigate corporate or partnership tax returns, so any evasion at those business levels is generally not accounted for; because high-income individuals have proportionately more business income, the relatively high rates shown in this table may overestimate the voluntary compliance of this group. The TCMP audits may not detect sophisticated tax shelters pursued mainly by high-income taxpayers, some of which are legal avoidance but others of which are probably illegal. Finally, many of those categorized as low-income in this study may have reported business losses, so that they are not people with low permanent income and may even, by dint of noncompliance, have placed themselves in the (reported) low-income category.

Tax noncompliance seems related to some other observable characteristics of taxpayers. According to Andreoni, Erard, and Feinstein (1998, pp. 821–22), mar-ried filers and taxpayers younger than 65 have significantly higher average levels of noncompliance than others, and econometric studies by Clotfelter (1983) and Feinstein (1991) that control for income and marginal tax rates come to similar

conclusions. Baldry (1987) found evidence, in an experimental setting, that men evade more than women.

There also seems to be substantial heterogeneity in tax evasion. The TCMP studies concluded that, within any group defined by income, age, or other demographic category, there are some who evade, some who do not, and even some who overstate tax liability. For example, for taxpayers with reported income between $50,000 and $100,000 in 1988, 60 percent understated tax, 26 percent reported correctly, and 14 percent overstated tax (Christian, 1994, p. 39). These studies do not explore to what extent this heterogeneity is explained by different "tastes" for evasion as opposed to different opportunities to evade. I return to this issue later.

Big Business and Tax Evasion

Businesses play a central role in the tax system. For taxes that by statute fall on employees (and independent contractors), businesses "withhold" tax; remit the tax on behalf of the employees; and provide the IRS with information reports of these activities that can be matched against the individuals' reports to the IRS. In addition, a prominent tax is levied on corporate business entities—the corporation income tax. As Table 1 shows, the IRS estimates noncompliance with the corporation income tax in 2001 to be $30 billion, which corresponds to a noncompliance rate of 17 percent. Of this $30 billion, noncompliance by corporations with over $10 million in assets make up $25 billion. But the estimated noncompliance *rate* of the larger companies is lower: 14 percent, compared to 29 percent for corporations with less than $10 million of assets.

This estimate has not been updated by the National Research Program. Instead, the estimates for the corporation income tax gap come from three sources, according to the U.S. General Accounting Office (1988): For small corporations the IRS used Taxpayer Compliance Measurement Program data, adjusted for underreporting unlikely to be detected by that method. For medium-sized corporations, the gap was calculated by estimating, based on operational (that is, non-TCMP) audits from the mid-1980s, how much tax revenue would have been generated if the IRS examined all these corporations' tax returns. Finally, for large corporations, because the IRS routinely examines a high percentage of these companies, examination results were used as the basis of estimates of the tax gap.

The Bureau of Economic Analysis also calculates an annual measure of corporate tax misreporting. In 2000, its 13.8 percent estimate of the ratio of misreporting to actual liability was close to, but slightly lower than, the extrapolated IRS estimate. Petrick (2002, p. 7) discusses the Bureau of Economic Analysis methodology and Slemrod (2004, fn. 5) compares it to the IRS tax gap studies.

Because these estimates are largely based on operational audits, and because most big corporations are routinely audited, some caveats apply to the tax gap estimates they generate. The deficiencies proposed by the examination team are not a perfect measure of actual noncompliance. Due to the complexity of the tax law, exactly what is actual tax liability—and therefore what is actual tax noncompliance—is often not clear. Second, any given examination is not perfect. Some

noncompliance may be missed, and there will also be mistakes in characterizing as noncompliance what is legitimate tax planning. For this reason, the data reflect not only the reporting behavior of the companies but also the enforcement behavior of the tax authority. Knowing that the resolution of the ultimate tax liability is often a long process of negotiation that may or may not involve the judicial system, the tax liability per the originally filed return, as well as the initial deficiency assessed by the examination team, may be partly a tactical "opening bid" that is neither party's best estimate of the "true" tax liability. Indeed, IRS Commissioner Mark Everson (2005) testified to the President's Advisory Panel on Tax Reform that the IRS had "a reputation for trading [penalties] away," so that it was "always in the interest of the noncompliant taxpayer to take an aggressive position with the Service."

The proposed deficiency also does not necessarily capture the long-term effect of tax noncompliance on the present value of revenues collected, both because some of the proposed tax deficiency may involve temporary adjustments in tax liability—such as immediate expensing versus depreciation—that will have offsetting consequences in future years, and because upward adjustments made to the taxable income of corporations with negative taxable income would not increase that year's tax liability, but would in general increase the present value of tax liability to the extent that it reduces the expected amount of loss carryforwards.

Based on an examination of previously undisclosed IRS operational audits and appeals data merged with confidential tax return data for corporations, Hanlon, Mills, and Slemrod (forthcoming) calculated that tax noncompliance of large corporations, as measured by tax deficiencies proposed by IRS auditors, amounted in the period 1983 to 1998 to approximately 13 percent of "true" tax liability, slightly lower than the IRS and Bureau of Economic Analysis estimates. All in all, 60 percent of the proposed deficiency was either agreed to by the taxpayer or upheld at a later stage. This 60 percent sustention rate is almost certainly an upper bound estimate of the rate for all companies, however, because it excludes the (generally more contested) tax return filings that had not been settled when the data set was compiled.

They also found that the largest companies (those with assets greater than $5 billion) had the greatest percentage of firms with a tax deficiency (74 percent) and the highest proposed deficiency rate (14.6 percent, versus a range of 9.9 percent to 13.4 percent for the other six groups). This finding is consistent with the larger firms with more complex operations having more opportunities for tax noncompliance. There was also some evidence suggesting that the noncompliance rate for corporations relative to their size is "U-shaped," with medium-sized businesses among the set of large companies having the lowest rate of noncompliance.[1]

---

[1] In a study of much smaller companies, Rice (1992) did not find a similar association between firm size and tax compliance, although he concluded that managers of corporations whose profit performance is below its industry norm may utilize tax noncompliance as a strategy to cut costs. In contrast, high-profit companies may take advantage of their greater ability to underreport income without being audited.

On average, Hanlon, Mills, and Slemrod (forthcoming) found that private companies have higher proposed deficiency rates than public companies (17.1 percent versus 12.5 percent), which is similar to the survey results analyzed in Cloyd (1995) and Cloyd, Pratt, and Stock (1996). Privately held firms may be more aggressive in angling for lower taxes because they have fewer capital market pressures and thus can sacrifice reporting high financial accounting earnings in an attempt to reduce taxes owed. We also found a positive relationship between the amount of intangible assets a firm holds (as proxied by research and development expenses and market-to-book ratio) and its tax deficiency rate, which is consistent with the idea that these firms have greater tax planning opportunities. Finally, the percentage of annual executive compensation in the form of bonuses and the level of equity incentives from exercisable stock options are positively related to the proposed tax deficiency.

How U.S. Tax Evasion Compares to Other High-Income Countries

How does the magnitude and nature of tax evasion in the United States stack up against other high-income countries? The answer to that question is elusive. No other country has undertaken a broad-based analysis of tax evasion like the Taxpayer Compliance Measurement Program or the National Research Program. Australia, Canada, Sweden, and the United Kingdom have in place small-scale random audit programs for selected taxes and taxpayer groups, but detailed results of these programs are generally not published (although they presumably inform their tax agencies' risk management assessments and resource allocation decisions). The Swedish Tax Agency (2004) estimated the total gap as a percentage of taxes to be 9 percent in 1997 and 8 percent in 2000. Although no official U.K. estimate has been released, an official document does speculate that "it is likely that the United Kingdom has a tax gap of a similar magnitude" to that of Sweden and the United States (O'Donnell, 2004).

It is also instructive to compare estimates of U.S. income tax evasion with noncompliance rates estimated for the value-added tax, a consumption tax that, while a staple of foreign revenue systems, is not in the U.S. tax arsenal. According to a confidential study made in 2005 by the Forum on Tax Administration, a subsidiary body of the OECD's Committee on Fiscal Affairs, only a few countries were prepared to make public their estimates of overall noncompliance, which ranged from 4.0 to 17.5 percent.[2] These estimates are generally based on "top-down" exercises, which compare actual revenues from the value-added tax to a theoretical tax base and tax amount derived by examining consumption expenditure adjusted to account for factors that affect the base for the value-added tax

---

[2] The 4.0 to 17.5 percent range was cited in the report of the President's Advisory Panel on Federal Tax Reform (2005, p. 202), but the citation suggests that the numbers present an OECD-wide picture, when they in fact represent a small number of countries; nor was the OECD responsible for any of the research that led to these figures. I am grateful to Richard Highfield of the OECD for providing this information.

(for example, tax policy choices concerning goods that are exempt from the value-added tax, or which pay different rates). The United Kingdom is the most transparent with this approach. Its most recent report suggests a gap for its value-added tax in 2003–2004 and 2004–2005 of 13.5 percent, down from an average of 15.7 percent in 2000–2003 (HM Revenues and Customs, 2005). The U.K. reports claim to have validated their top-down estimates with "bottom-up" estimates, but the details of this procedure are not published. Earlier studies across Europe found a wide range of estimated noncompliance rates for the value-added tax (Agha and Haughton, 1996): 2 to 4 percent for revenue foregone for the United Kingdom in 1986 (Tait, 1988); 40 percent of revenue uncollected in Italy (Pedone, 1981); 6 percent for the Netherlands in 1976; and 8 percent for Belgium in 1980 (Oldman and Woods, 1983). Silvani and Brondolo (1993) report calculations of the net evasion rate for the value-added tax in 19 mostly developing countries and report a median evasion rate of 31.5 percent, with New Zealand the lowest at 5.1 percent and Peru the highest at 68.2 percent. In this study, the evasion rates were "prepared by the national authorities following a standard methodology supplied by the authors, which essentially compares VAT revenue collected to the potential VAT base (times the average VAT tax rate)" (p. 1).

Finally, there are voluminous cross-country estimates of the extent of what is referred to as the shadow, irregular, underground, informal, or black economy. Although the definition of the shadow economy is often not precise, it typically entails the production and distribution of services that are themselves not illegal, but become unlawful either by tax evasion or the bypassing of regulations. The underground economy is generally measured as a fraction of GDP, not tax liability, and would include business activity that is not subject to regulations, but which does not generate taxable income. It also excludes some forms of tax evasion such as the overstatement of deductions and credits, and the use of sophisticated tax shelters. In spite of these definitional differences, the underreporting of business income, particularly proprietor income that is the focus of estimates of the underground economy, comprises a significant fraction of the estimated tax gap even in the United States.

The methodology for estimating the underground economy generally relies on inferring the level or trends in the underground economy from data on measurable quantities, such as currency demand, electricity consumption, or national income accounts. For example, Feige (1989) estimates the size of the underground economy by assuming that most unreported economic activity takes place in cash, and that there is a "base year" when the underground economy did not exist; under these assumptions, increases in cash holdings over the base year indicate a growing underground economy. Similarly, Tanzi (1980, 1983) pioneered a methodology based on regressions explaining the ratio of currency to M2, and he interpreted the portion of this ratio explained by *changes* in the tax level as an indication of *changes* in the size of the underground economy. It is very difficult to verify the accuracy of these estimates. Even Tanzi (1999, p. F340) himself has recently said that "as long as the estimates remain as divergent as they have been,

they cannot provide much of a guidance for policy." Breusch (2005) has recently presented a compelling critique of one widely used methodology for generating estimates of the underground economy. Such estimates may say more about the relative extent of the shadow economy, across time and countries, than about its absolute magnitude. According to the calculations of Mummert and Schneider (2002, Table 1) based on the currency demand approach, in 2001–2002 the United States had the smallest shadow economy (relative to official GDP) among 21 OECD countries, at 8.7 percent, only just more than half the average of 16.7 percent. Switzerland (9.4 percent) and Austria (10.6 percent) were the next lowest, while Italy (27.0 percent) and Greece (28.5 percent) were the highest.

Another useful international perspective is the system of tax administration and enforcement. According to OECD (2004), of the 24 OECD countries that reported the data, in 2001 the United States had the second-lowest ratio of administrative costs to net-of-refund revenue collections, at 0.52 percent, compared to a 1.11 percent unweighted average, and the lowest ratio of full-time staff of the national revenue body to the labor force. This does not necessarily signal an inappropriately low attention to tax enforcement; it could instead reflect a more efficient use of staff and computers, as well as economies of scale.

Like all but two OECD countries, the United States relies on withholding-at-source arrangements for the collection of the bulk of personal tax revenue on wage and salary income. Unlike most OECD countries, the United States does not use withholding-at-source for the collection of personal income tax on dividends or interest. Neither does it use withholding-at-source for independent personal services or royalties and rents, though many OECD countries do. The United States *does* maintain the most substantial program of information reporting of any OECD country. An extremely wide variety of transactions must be reported to the IRS, including interest, dividends, real estate transactions, rents, sales of securities, and wages. In 2002–2003, some 1.3 billion such reports were received (96 percent electronically) and computer-matched with taxpayer records; the program entailed some 4.3 million taxpayer contacts and resulted in additional assessments amounting to almost $5 billion.

Finally, the United States is in the minority of OECD countries (nine out of 30) in requiring that individuals file tax returns. Half of the OECD countries operate a system in which most wage earners need not file due to exact, cumulative employer withholding, and in other countries the tax authority sends taxpayers a "pre-populated" tax return based on the information they receive from third parties, requiring the taxpayer only to verify that the information is correct.

The Positive Theory of Tax Evasion: Models and Tests

The Deterrence Model of Tax Evasion

The standard framework for considering an individual's choice of whether and how much to evade taxes is a deterrence model first formulated by Allingham and Sandmo (1972), who adapted Becker's (1968) model of the economics of crime. In this model, taxpayers decide whether and how much to evade taxes in the same way

they would approach any risky decision or gamble—by maximizing expected utility—and are influenced by possible legal penalties in just the same way they are influenced by any other contingent cost. Optimal tax evasion depends on the chance of getting caught and penalized, the size of the penalty for evasion, and the individual's degree of risk aversion. In an intriguing extension of the theory, Yitzhaki (1974) pointed out that if the penalty (and any associated nonpecuniary costs) for discovered evasion is proportional to the tax understated (rather than, as Allingham and Sandmo assumed, the income understated), then the tax rate has no effect on the terms of the tax evasion gamble. As the tax rate rises, the cost of a detected understatement of taxes rises in exact proportion to the reward from a successful understatement of taxes, so the reward-to-risk ratio is unchanged. In this situation, a higher tax rate has only an income effect and, for example, if a taxpayer's level of (absolute) risk aversion increases as after-tax income falls, a higher tax rate will *decrease* tax evasion.

Thirty-plus years of subsequent analysis has extended this model in a number of dimensions, including allowing an endogenous probability of detection, analyzing evasion jointly with the labor supply decision (thus directly addressing the shadow economy), incorporating sources of uncertainty other than the chance of audit, and addressing general equilibrium considerations. Andreoni, Erard, and Feinstein (1998) offer a comprehensive survey of the theory, and Sandmo (2005) provides a nice retrospective on tax evasion modeling.

A recent literature adapts the theory of tax evasion, which for the most part concerns individual decision makers, to the tax compliance decisions made by businesses. Arguably, we would expect large public companies to act in a risk-neutral manner, rather than like the risk-averse individuals in the Allingham and Sandmo (1972) model. Furthermore, in large, publicly held corporations, decisions about tax compliance are not made by the shareholders directly but by their agents, like the chief financial officer or a vice president responsible for tax matters. To align the incentives of the decision makers and the shareholders, the corporation should tie the agent's compensation to observable outcomes that affect after-tax corporate profitability. Crocker and Slemrod (2005) show that this implies that, if penalties for evasion were to apply to the agent, the principal can alter its compensation contract with the agent, possibly offsetting the intended consequences of the IRS policy (see also Chen and Chu, 2005). The conclusion that enforcement strategies directed at the tax director and those directed at the corporation itself may impact corporate behavior differently is especially pertinent in light of the Sarbanes-Oxley rules, which create important changes in the responsibility for misreporting: for instance, they require that the chief executive officer sign the company's federal income tax return. Slemrod (2004) expands on the issues related to tax noncompliance by businesses.

Attempts to verify the predictions of the Allingham and Sandmo (1972) model empirically have focused on how evasion is affected by enforcement intensity and the level of tax rates. However, empirical tests have been plagued by the same measurement issues that arise in assessing the magnitude of tax noncompliance.

Clotfelter (1983) examines the micro data from the Taxpayer Compliance Measurement Program studies and finds that noncompliance is strongly positively related to the marginal tax rate; however, Feinstein (1991) finds a negative impact. As with any cross-sectional study of the impact of taxes on behavior, their approach is made difficult by the fact that the marginal tax rate is a (complicated, nonlinear) function of income, making it difficult to identify the tax rate and income effects separately without making strong functional form assumptions. (Having data from two separate years in which the tax rate as a function of income differs, as Feinstein did, mitigates this problem to some degree.) Beron, Tauchen, and Witte (1992) examined TCMP data aggregated to the 3-digit zip code level and concluded that increasing the odds of an audit significantly increased reported adjusted gross income and tax liability for some income groups, but not all. However, the district-level audit rate is not exogenous, perhaps reflecting something about the compliance characteristics of the population. The authors use the level of IRS resources relative to the number of returns as an instrument for the audit rate, arguing that the IRS has not been able to allocate its resources so as to achieve its goals, but this approach is invalid to the extent that the IRS succeeds in targeting its resources toward areas believed to be particularly noncompliant.

Field experiments offer another source of evidence. Slemrod, Blumenthal, and Christian (2001) analyze the results of a randomized controlled experiment conducted by the State of Minnesota Department of Revenue. They found that low- and middle-income taxpayers who received a letter promising an audit reported slightly more, but statistically significantly more, income than those who did not receive such a letter, and the difference was larger for those with greater opportunities to evade. However, high-income taxpayers receiving an audit threat on average reported *lower* income. The authors speculate that sophisticated, high-income taxpayers view an audit as a negotiation, and view reported taxable income as the opening (low) bid in a negotiation that does not necessarily result in the determination and penalization of all noncompliance.

Perhaps the most compelling empirical support for the Allingham and Sandmo (1972) deterrence model is the cross-sectional variation in noncompliance rates across types of income and deductions, as indicated in Table 1. Line item by line item, there is a clear positive correlation between the rate of compliance and the presence of enforcement mechanisms such as information reports and employer withholding. Klepper and Nagin (1989) showed compellingly that, across line items, noncompliance rates are related to proxies for the traceability, deniability, and ambiguity of items, which are in turn related to the probability that evasion will be detected and punished. They also find evidence of a substitution-like effect across line items, such that greater noncompliance on one item lowers the attractiveness of noncompliance on others, because increasing the latter jeopardizes the expected return to the former by increasing the probability of detection. Another example of the link from a lack of deterrence to tax compliance involves state use taxes, which are due on sales purchased from out-of-state vendors but consumed in the state of residence. These taxes are largely unenforceable (except

perhaps for some expensive items like cars), and noncompliance rates are in the range of 90 percent (Bruce and Fox, 2000, pg. 1380).

However, there has been no compelling empirical evidence addressing how noncompliance is affected by the *penalty* for detected evasion, as distinct from the *probability* that a given act of noncompliance will be subject to punishment.

The demonstrated deterrent effect of detecting (and penalizing) noncompliance is important because IRS enforcement activities have declined sharply in recent years. Between 1996 and 2004, the share of nonbusiness individual returns audited dropped from 1.67 percent to 0.74 percent. The share of corporate returns subject to face-to-face audits dropped from 2.62 percent to 0.71 percent, and the coverage ratio for corporations with assets over $250 million fell from 51.7 percent in fiscal year 1997 to 29.7 percent in fiscal year 2003 (U.S. Department of the Treasury, Internal Revenue Service, 2005a, Table 10). In part, the reduction in face-to-face audits may reflect a more efficient use of computerized checks as a substitute. However, the number of criminal tax cases recommended for prosecution by the IRS declined by 50 percent between 1992 and 2002 (IRS data cited in Johnston, 2003). The use by the IRS of its three main weapons for collecting tax debts from recalcitrant tax evaders—levies (garnishing wages or seizing money from bank accounts), liens (taking ownership of the taxpayer's property until a tax debt is paid), and outright seizures of property—also declined sharply. Between 1996 and 2004, the number of levies fell from 3.1 million to 2.2 million, liens fell from 750,000 to 534,000, and seizures fell from 10,449 to 440 (U.S. Department of the Treasury, Internal Revenue Service, 2005a, Table 16).

Some of the decline in IRS enforcement is a temporary phenomenon—in response to the IRS Restructuring and Reform Act of 1998, the IRS had to divert resources temporarily towards its reorganization efforts—and many of the enforcement indicators mentioned above have started to rebound a bit. In November 2005, the IRS Commissioner announced plans to increase the number of audits it conducts in 2006, focusing more of its resources on taxpayers with incomes over $100,000 and self-employed workers who deal largely in cash (Herman and Silverman, 2005). But some of the decline is due to a longer-term trend. For instance, between 1992 and 2002, the number of tax returns grew by 12 percent, but the number of IRS tax auditors fell by a quarter from 16,000 to 12,000 (Johnston, 2003, based on IRS data). Real operating costs actually fell between fiscal year 1993 and 2000, but have risen by slightly more than 7 percent from 2000 to 2005. During this time, both the complexity of the tax law and the sophistication of abusive tax shelters and other means of evading taxes increased notably. The decline in enforcement poses the danger that tax evasion will increase.

Behavioral Models

Although the Allingham and Sandmo (1972) approach has dominated the economics literature, some have argued that it misses important elements of the tax evasion decision in such a way that the model predicts a compliance rate much lower than what we actually observe. For example, Feld and Frey (2002, p. 5) assert

that it is "impossible to account for tax compliance in terms of expected punishment." The dismissive argument goes as follows: given the average probability of audit (less than 1 percent for individual returns with no business income), the penalties typically assessed for noncompliance (typically 10 percent of the amount underpaid), and what we know about the degree of risk aversion from other contexts, noncompliance should be much, much higher than it apparently is.

But this dismissive argument is not persuasive, because the low average audit coverage rate vastly understates the chances that the average dollar of unreported net income would be detected. A wage or salary earner whose employer submits the employee's taxable income and Social Security number electronically to the Internal Revenue Service, but who does not report that income on his own personal return, will be flagged for further scrutiny with a probability much closer to 100 percent than to 1 percent. Thus, the low rates of noncompliance for labor income reported in Table 1 by no means patently contradict the deterrence theory. Whether the 57 percent noncompliance rate of nonfarm sole proprietors is lower than deterrence theory predicts is less clear; Andreoni, Erard, and Feinstein (1998, pp. 821–822) argue that it is lower.

Nonetheless, considerable experimental (and anecdotal) evidence suggests that the story of tax evasion involves more than amoral cost–benefit calculation. Frey (1997) argues for the importance of differentiating between intrinsic motivation, under which taxpayers comply with tax liabilities because of "civic virtue," and extrinsic motivation, in which they pay because of threat of punishment. He suggests that increasing extrinsic motivation—say with more punitive enforcement policies—may "crowd out" intrinsic motivation by making people feel that they pay taxes because they have to, rather than because they want to. In an experimental setting, Scholz and Lubell (2001) find that the level of cooperation in certain settings declines significantly when penalties are introduced, suggesting that the increased deterrence motivation did not compensate for the changes higher penalties bring about in how people frame their decisions.

Some laboratory experiments have found that subjects respond not only to the probabilities and stakes of a tax evasion game, but also to the context provided to them (Spicer and Becker, 1980; Alm, Jackson, and McKee, 1992). In particular, tax evasion decisions may depend on perceptions of the fairness of the tax system. If, the argument goes, perceived tax equity strengthens the social norm against evasion, then evasion becomes more costly in terms of bad conscience (if not caught) or bad reputation (if caught). Falkinger (1995) elaborates on this argument, while Cowell (1990, p. 219) reports on experiments that fail to find links between perceived inequities in the tax system and noncompliance. An individual can also find unfairness in what the government uses tax revenues for—a person with some of the spirit of Henry David Thoreau may avoid taxes because that person thinks government (nontax) policy wrong (Andreoni, Erard, and Feinstein, 1998). Such individual judgments can be complex; for example, expenditures on warfare might be tolerated in a patriotic period, but rejected during another period characterized by antimilitarism (Daunton, 1998).

These patterns suggest that a form of reciprocal altruism may be at work—a form in which the taxpayer's behavior depends on the behavior, motivations, and intentions not of any subset of other individuals, but of the government itself.[3] Levi (1998, p. 91) argues that if citizens believe that the government will act in their interests, that its procedures are fair, and that their trust of the state and others is reciprocated, then people are more likely to become "contingent consenters" who cooperate in paying taxes even when their short-term material interest would make free-riding the individual's best option.

Some survey evidence supports this view. Torgler (2003) and Slemrod (2003) show a positive relationship across countries between survey-based attitudes toward tax evasion on the one hand and professed trust in government, and Slemrod (2003) finds that the same relationship holds across individuals within the United States and Germany. A 2002 poll in the Czech Republic indicated that a person would be more likely to evade taxes if that person believed government services were substandard (Hanousek and Palda, 2004). Of course, such survey responses may also reflect after-the-fact rationalization of noncompliant behavior.

If perceptions matter for tax compliance, a natural question is to what extent tax compliance behavior can be manipulated by the government to lower the cost of raising resources. Appeals to conscience go back at least to Hammurabi's reign in ancient Babylon, when the tax collector sent the following notice when payments were late: "Why have you not sent to Babylon the 30 lambs as your tax? Are you not ashamed of such behavior?" (as cited in Webber and Wildavsky, 1986, p. 58). Appeals to patriotism to induce citizens to pay their taxes (and, often, buy war bonds) are common in recent times; the U.S. Secretary of Treasury during World War I, William Gibbs McAdoo, referred to these campaigns as "capitalizing patriotism." Kang and Rockoff (2006) discuss the World War I experience, while Jones (1996) discusses fiscal propaganda during World War II.

That such campaigns are successful during ordinary (nonwar) times in swaying taxpayers from their otherwise optimal compliance strategy has not been compellingly demonstrated. In a randomized field experiment with Minnesota taxpayers in a peacetime setting, Blumenthal, Christian, and Slemrod (2001) find no evidence that either of two written appeals to taxpayers' consciences had a significant effect on compliance. One letter stressed the beneficial effects of tax-funded projects, while the other conveyed the message that most taxpayers were compliant. Torgler (2004), using a controlled field experiment in Switzerland, also found that moral suasion has hardly any effect on taxpayers' compliance behavior.

Survey evidence also suggests that attitudes about the acceptability of tax

---

[3] Some have proposed substituting the expected-utility-maximization framework with an alternative framework, in the spirit of the prospect theory developed by Kahneman and Tversky (1979). For example, Dhami and al-Nowaihi (2004) argue that, compared to an Allingham and Sandmo (1972) model, such a framework (with the addition of a stigma cost for discovered evasion) can more satisfactorily explain the level of observed evasion, the non-ubiquity of evasion, and the fact that tax rates negatively affect evasion.

evasion vary considerably across countries. In the World Values Surveys done between 1999 and 2002, respondents were asked whether, given the chance, tax evasion is never, sometimes, or always justified, where a value of 1 corresponds to "never justifiable" and a value of 10 corresponds to "always justifiable." The U.S. average was 2.28, just slightly below the OECD average of 2.34. These attitude measures of the World Values Survey across countries are associated, holding other factors constant, with already-discussed measures of the shadow economy and widely used survey measures of actual evasion (Torgler, 2004).

The difficulties of separating out whether people pay their taxes because they feel they "ought to," or whether they fear the penalties attendant to not doing so, is well illustrated by some evidence from a recent survey sponsored by the IRS Oversight Board (U.S. Department of the Treasury, Internal Revenue Service Oversight Board, 2006). While 96 percent of those surveyed in 2005 mostly or completely agreed that "It is every American's civic duty to pay their fair share of taxes," 62 percent also said that "fear of an audit" had a great deal or somewhat of an influence on whether they report and pay their taxes "honestly."

The Normative Theory of Taxation and Its Policy Implications

Fairness and Incidence Concerns

The normative questions raised by tax evasion are often complex, involving issues of fairness, efficiency, and how to measure social costs and benefits, so that how to apply economic reasoning to the range of relevant policy instruments is still being formulated. Tax evasion affects the distribution of the tax burden as well as the resource cost of raising taxes—bread-and-butter concerns of public economics.[4] If the estimated $290 billion net income tax gap could somehow be costlessly eliminated, that money could be used to finance worthy government projects, or used to finance an across-the-board cut in tax rates that would benefit compliant taxpayers. But expanding government programs could be financed in a number of other ways, such as raising tax rates or broadening the income tax base, and a tax reduction could be financed by cuts in overall spending; the real question is whether curbing evasion would improve the equity and efficiency of the public finances. Moreover, curtailing tax evasion is in fact not costless, and these costs must be considered in developing optimal policy.

Good tax policy should be designed with the realities of evasion in mind. If all Americans were genetically predisposed to underpay their legal tax liability by 20 percent, at no cost to them, tax evasion wouldn't matter at all. Government would simply readjust everyone's "sticker price" tax liability upward so that the desired amount of tax would be collected, even after the 20 percent "discount" was taken. Each taxpayer might think that he or she is beating the system, but in fact no

---

[4] This section draws from the lengthier treatment in Slemrod and Bakija (2004).

one gains in either relative or absolute terms compared to a world with no evasion—we are, in effect, "cheating ourselves." Similarly, if opportunities or pre-dilections for evasion were systematically related to income, then the tax rate schedule could just be adjusted to achieve whatever degree of progressivity is deemed optimal. Of course, not everyone evades taxes by the same proportionate amount or by an amount strictly related to income, both because of differences in personal characteristics—like attitudes toward risk, the tax system, and honesty—and because of different opportunities and potential rewards for evasion. As a result, tax evasion can cause serious inequities and inefficiencies.

Evasion creates horizontal inequity because equally well-off people end up with different tax burdens. Attempts to reduce tax evasion can create vertical equity concerns, as when the IRS is criticized for spending resources to reduce fraud related to the Earned Income Tax Credit, whose recipients are low-income house-holds, instead of devoting those enforcement resources to tax shelters that are pursued by high-income households.

Tax evasion also imposes efficiency costs. The most obvious are the resources taxpayers expend to implement and camouflage noncompliance, and the resources the tax authority expends to address it. In addition, when the tax system is otherwise close to optimal it provides a socially inefficient incentive to engage in those activities for which it is relatively easy to evade taxes. For example, because the income from house painting can be done on a cash basis and is therefore harder for the IRS to detect, this occupation is more attractive than otherwise. Although a supply of eager and cheap housepainters undoubtedly is greeted warmly by pro-spective buyers of that service, the work of the extra people drawn to house painting, or any activity that facilitates tax evasion, would have higher value in some alternative occupation.

The same argument applies to self-employment generally, as the enhanced opportunity for noncompliance inefficiently attracts people who would otherwise be employees. The opportunity for noncompliance can distort resource allocation in a variety of other ways, such as causing companies that otherwise would not find it attractive to set up a financial subsidiary, or set up operations in a tax haven, to facilitate or camouflage abusive avoidance or evasion.

A tax incidence story also lurks here. The supply of eager housepainters bids down the market price of a house painting job. Thus, the amount of taxes evaded overstates the benefit of being a tax-evading housepainter. The biggest loser in this game is the scrupulously honest (or risk-averse) housepainter, who sees his or her wages bid down by the unscrupulous competition, but who dutifully pays taxes.

Similarly, a tax policy instrument that facilitates evasion for *all* corporations (as opposed to noncorporate businesses) might attract entry, so that its effects are shifted to corporations' customers through lower prices. The windfall gains to those companies that successfully play the tax lottery by acting aggressively probably accrue to the shareholders in their role as residual claimants, perhaps shared to some extent with the tax managers through their compensation contracts. If there are particular characteristics of corporations in certain sectors that facilitate evasion

or abusive avoidance, such as the presence of corporate intangibles, the apparent gains that accrue to firms in these sectors via a lower effective tax rate will be partially eroded to the extent that competitors have similar characteristics, and thus the apparent tax gains will partly benefit some other constituency, including this sector's customers.

Optimal Tax Enforcement Policy

The mere presence of tax evasion does not imply a failure of policy. Just as it is not optimal to station a police officer at each street corner to eliminate robbery and jaywalking completely, it is not optimal to eliminate tax evasion (for a formal demonstration of this point, see Baldry, 1984). The recognition of tax evasion introduces a new set of policy instruments whose optimal setting is at issue; for instance, what should be the extent of audit coverage, the strategy for choosing audit targets, and the penalty imposed on detected evasion? The reality of tax evasion also invites a rethinking of standard taxation problems.

With respect to penalties, it has been well known since Becker (1968) that a government concerned with maximizing the expected utility of a representative citizen will want to set the penalty for detected crimes as high as possible, so that even with a low resource cost of enforcement, the overall expected deterrent effect will be large. But this argument ignores, inter alia, the possibility of a corrupt tax administrator who abuses the system or, alternatively, harshly punishes someone who makes an honest mistake. The harsher the penalty, the more damage a corrupt administrator could inflict and, in the case of an honest mistake, the more capricious the system. Hence the harsher the penalty, the more detailed and cautious the prosecution process must be. In addition, with harsher penalties, courts may be more reluctant to find the taxpayer guilty of evasion, so that one practical consequence may be fewer penalties imposed. This argument also flies in the face of the common notion that the level of punishment should in some sense "fit" the crime. In the absence of explicitly modeling the interaction between the penalty rate and administrative costs, analytical models usually assume a ceiling on the penalty rate.

Regarding how many resources to devote to enforcing the tax laws, Slemrod and Yitzhaki (1987) show that one superficially intuitive rule—increase the probability of detection until the marginal increase of revenue thus generated equals the marginal resource cost of so doing—is incorrect. Although the cost of hiring more auditors, buying better computers, and the like, is a true resource cost, the revenue brought in does not represent a net gain to the economy, but rather a transfer from private (noncompliant) citizens to the government. The correct rule equates the marginal *social benefit* of reduced evasion (which is not well measured by the increased revenue) to the marginal resource cost. The distinction suggests that unregulated privatization of tax enforcement, in which profit-maximizing firms would maximize revenue collection net of costs, would lead to socially inefficient overspending on enforcement. Greater enforcement might also entail nonpecuniary costs, such as invasion of privacy (Slemrod, 2006). In Slemrod and Yitzhaki (1987), the social benefit is related to the reduced risk-bearing that comes

with reduced tax evasion; more generally, social benefits can accrue via increased efficiency; it would also tend to mitigate the inefficiencies discussed earlier. Cowell (1990, p. 136) suggests another complication: perhaps a specific social welfare discount should apply to the utility of those who are found to be guilty of tax evasion and thus "are known to be antisocial." In sum, no one has yet compellingly translated the theoretically correct characterization of optimal enforcement into a statement about how much evasion should be tolerated. But just as an important difference exists between oil reserves and "economically recoverable" oil reserves, a parallel difference exists between tax evasion and economically (read optimally) recoverable tax evasion.

The tools of efficiency analysis and optimal taxation can be extended to cover enforcement policy instruments. Ignoring distributional concerns, these tools reveal that all tax policy instruments—not just the standard instruments such as tax rates—should be utilized so as to equalize the marginal efficiency cost per dollar of revenue raised, which should in turn equal the marginal social benefit of raising revenue (Mayshar, 1991; Slemrod and Yitzhaki, 1996, 2002). Distributional considerations can be introduced into this framework, as well. Unfortunately, the empirical analysis needed to flesh out the policy implications of these rules is not far along. However, their logic suggests that, given the costs and difficulties of detecting noncompliance of the self-employed, the higher rates of noncompliance make at least some degree of economic sense.[5]

The normative theory has not yet made much progress in providing concrete policy advice regarding the key tools of tax administration, especially the role of information reporting by arms-length parties. The ability of the IRS to rely on reports by firms about wages and salaries paid to employees explains why the (optimal) noncompliance rate of labor income is so much lower than for self-employment income, for which no such information reports exist. The ability to match firm-to-firm sales is touted by advocates as a major administrative advantage of value-added taxes, and the difficulty of monitoring firm-to-consumer sales and to distinguish them from firm-to-firm sales has been noted as the Achilles heel of administering a retail sales tax. Overall, when relatively disinterested third parties can be required to provide information, as with wages and salaries, high compliance rates can be achieved at fairly low cost. But when only interested parties are involved, an alternative mechanism—such as in a credit-invoice value-added tax (where taxes on input purchases can be deducted only if the seller produces an invoice for taxes paid)—must be found or else compliance will be low absent costly

---

[5] The recent theoretical and empirical attention to the elasticity of taxable income is welcome, because it recognizes that all behavioral responses—of which tax evasion is one—are symptoms of the efficiency cost of price distortions due to taxation. For useful starting points on this literature, see Feldstein (1999) on the theory, Gruber and Saez (2002) on the empirical work, and Slemrod (1998) for a critical review of both. What distinguishes traditional, "real" responses to taxation, such as labor supply, on the one hand, from evasion responses is that while, with some exceptions, economists generally accept that inalterable preferences guide the former, the evasion response is mediated by the set of enforcement policies that government chooses.

auditing. Formal modeling of these differences is in their infancy. Kopczuk and Slemrod (2006) have suggested a modeling strategy based on the importance of monitorable arms-length transactions among firms and between firms and employees, and Gordon and Li (2005) have argued that the financial sector is a key to tax administration in developing countries.

The ubiquity and importance of evasion call into question one of the canons of undergraduate public finance textbooks—that the incidence and efficiency of taxes does not in the long run depend on which side of the market the tax is levied. Once the reality of tax evasion is recognized, the incidence and efficiency of a tax system may depend critically on which side of the market *remits* the tax to the government and which side must report its transactions to the government. A uniform value-added tax and a uniform national retail sales tax may look identical in a world of no evasion or administrative costs, but they may have very different effects in the real world, a point noted by the President's Advisory Panel on Federal Tax Reform (2005, pp. 191–222).

Conclusions

Tax evasion is widespread, always has been, and probably always will be. Variations in dutifulness and honesty can explain some of the across-individual and, perhaps, across-country heterogeneity of evasion. But the stark differences in compliance rates across taxable items that line up closely with detection rates suggest strongly that deterrence is a powerful factor in evasion decisions.

The overall net noncompliance rate for all U.S. federal taxes and the individual income tax seems to stand at about 14 percent. But given the current state of theory and evidence on tax evasion, it isn't clear in what way or how much enforcement might most efficiently be increased. Although the normative theory of taxation has been extended to tax system instruments such as the intensity of enforcement, the empirical knowledge to put these rules into operation is sparse. Furthermore, theory is only beginning to address core issues such as the role of third-party reporting of information that facilitates enforcement of the taxation of wages and salaries, but helps little for self-employment income. Modeling these information flows—and the critical role played by firms—is an important item in the future research agenda.

References

Agha, Ali, and Jonathan Haughton. 1996. "Designing VAT Systems: Some Efficiency Considerations." *The Review of Economics and Statistics,* May, 78(2): 303–8.

Allingham, Maurice, and Agnar Sandmo. 1972. "Income Tax Evasion: A Theoretical Analysis." *Journal of Public Economics*, November, 1(3–4): 323–38.

Alm, James. 1999. "Tax Compliance and Administration." In *Handbook on Taxation*, ed. W. Bartley Hildreth and James A. Richardson, 741–68. New York: Mercel Dekker.

Alm, James, Betty R. Jackson, and Michael McKee. 1992. "Estimating the Determinants of Taxpayer Compliance with Experimental Data." *Economic Development and Cultural Change*, March, 39(4): 107–14.

Andreoni, James, Brian Erard, and Jonathan Feinstein. 1998. "Tax Compliance." *Journal of Economic Literature,* June, 36(2): 818–60.

Baldry, Jonathan. 1984. "The Enforcement of Tax Laws: Efficiency Implications." *Economic Record,* June, 60(169), 156–59.

Baldry, Jonathan. 1987. "Income Tax Evasion and the Tax Schedule: Some Experimental Results." *Public Finance,* 42(3), 357–83.

Baumeister, Roy F. 1982. "A Self-Presentational View of Social Phenomena." *Psychological Bulletin,* 91(1): 3–26.

Becker, Gary S. 1968. "Crime and Punishment: An Economic Approach." *Journal of Political Economy,* March–April, 76(2), 169–217.

Beron, Kurt J., Helen V. Tauchen, and Ann Dryden Witte. 1992. "The Effect of Audits and Socioeconomic Variables on Compliance." In *Why People Pay Taxes,* ed. Joel Slemrod, 67–89. Ann Arbor: University of Michigan Press.

Blumenthal, Marsha, Charles Christian, and Joel Slemrod. 2001. "Do Normative Appeals Affect Tax Compliance? Evidence from a Controlled Experiment in Minnesota." *National Tax Journal,* March, 54(1): 125–38.

Breusch, Trevor. 2005. "The Canadian Underground Economy: An Examination of Giles and Tedds." *Canadian Tax Journal,* 53(2): 367–91.

Bruce, Donald, and William F. Fox. 2000. "E-Commerce in the Context of Declining State Sales Tax Bases." *National Tax Journal,* December, 53(4): 1373–90.

Chen, Kong-Ping, and C. Y. Cyrus Chu. 2005. "Internal Control vs. External Manipulation: A Model of Corporate Income Tax Evasion," *RAND Journal of Economics,* Spring, 36(1): 151–64.

Christian, Charles W. 1994. "Voluntary Compliance with the Individual Income Tax: Results from the 1988 TCMP Study." In *The IRS Research Bulletin,* 1993/1994, Publication 1500 (Rev. 9–94), 35–42. Washington, D.C.: Internal Revenue Service.

Clotfelter, Charles. 1983. "Tax Evasion and Tax Rates: An Analysis of Individual Returns." *The Review of Economics and Statistics,* August, 65(3): 363–73.

Cloyd, Bryan. 1995. "The Effects of Financial Accounting Conformity on Recommendations of Tax Preparers." *Journal of the American Taxation Association.* Fall, 17(2): 50–70.

Cloyd, Bryan, Jamie Pratt, and Toby Stock. 1996. "The Use of Financial Accounting Choice to Support Aggressive Tax Positions: Public and Private Firms." *Journal of Accounting Research,* Spring, 34(1): 23–43.

Cowell, Frank. 1990. *Cheating the Government: The Economics of Evasion.* Cambridge, MA: MIT Press.

Crocker, Keith, and Joel Slemrod. 2005. "Corporate Tax Evasion with Agency Costs." *Journal of Public Economics,* September, 89(9–10): 1593–1610.

Daunton, Martin. 1998. "Trusting Leviathan: British Fiscal Administration from the Napoleonic Wars to the Second World War." In *Trust and Governance,* ed. Valerie Braithwaite and Margaret Levi, 102–34. New York: Russell Sage Foundation.

Dhami, Sanjit, and Ali al-Nowaihi. 2004. "Why Do People Pay Taxes? Prospect Theory versus Expected Utility Theory." http://www.le.ac.uk/economics/research/RePEc/lec/leecon/dp05-23.pdf.

Everson, Mark. 2005. Testimony given to the President's Advisory Panel on Federal Tax Reform. March 3.

Falkinger, Josef. 1995. "Tax Evasion, Consumption of Public Goods, and Fairness," *Journal of Economic Psychology,* March, 16(1): 63–72.

Feige, Edgar L. 1989. "Monetary Methods of Estimating Informal Activity in Developing Nations." In *Demographic Change and Economic Development,* ed. Alois Wenig and Klaus F. Zimmerman, 211–32. Berlin: Springer Verlag.

Feinstein, Jonathan. 1991. "An Econometric Analysis of Income Tax Evasion and its Detection." *RAND Journal of Economics,* Spring, 22(1): 14–35.

Feld, Lars P., and Bruno S. Frey. 2002. "Trust Breeds Trust: How Taxpayers Are Treated." *Economics of Governance,* July, 3(2): 87–99.

Feldman, Naomi, and Joel Slemrod. Forth-

coming. "Estimating Tax Noncompliance with Evidence from Unaudited Tax Returns." *The Economic Journal.*

Feldstein, Martin. 1999. "Tax Avoidance and the Deadweight Loss of the Income Tax." *The Review of Economics and Statistics,* November, 81(4): 674–80.

Frey, Bruno. 1997. "A Constitution for Knaves Crowds Out Civic Virtues." *The Economic Journal,* July, 107(443): 1043–53.

Gordon, Roger H., and Wei Li. 2005. "Tax Structure in Developing Countries: Many Puzzles and a Possible Explanation." NBER Working Paper 11267.

Gruber, Jonathan, and Emmanuel Saez. 2002. "The Elasticity of Taxable Income: Evidence and Implications." *Journal of Public Economics,* April, 84(1): 1–32.

Hanlon, Michelle, Lillian Mills, and Joel Slemrod. Forthcoming. "An Empirical Examination of Corporate Tax Noncompliance." In *Taxing Corporate Income in the 21st Century,* ed. Alan Auerbach, James R. Hines Jr., and Joel Slemrod. Cambridge: Cambridge University Press.

Hanousek, Jan, and Filip Palda. 2004. "Quality of Government Services and the Civic Duty to Pay Taxes in the Czech and Slovak Republics, and other Transition Countries." *Kyklos,* 57(2): 237–52.

HM Revenues and Customs. 2005. *Measuring Indirect Tax Losses—2005.* London, December.

Herman, Tom, and Rachel Emma Silverman. 2005. "IRS to Increase Audits Next Year." *Wall Street Journal,* November 23, p. D1.

Johnston, David Cay. 2003. "Tax Inquiries Fall as Cheating Increases." *New York Times,* April 14, p. A16.

Jones, Carolyn C. 1996. "Mass-based Income Taxation: Creating a Taxpayer Culture, 1940–52." In *Funding the American State: The Rise and Fall of the Era of Easy Finance,* ed. W. Elliot Brownlee. New York: Woodrow Wilson Center Press and Cambridge University Press.

Kahnemann, Daniel, and Amos Tversky. 1979. "Prospect Theory: An Analysis of Decision under Risk." *Econometrica,* March, 47(2): 263–91.

Kang, Sun Won, and Hugh Rockoff. 2006. "Capitalizing Patriotism: The Liberty Loans of World War I." NBER Working Paper 11919.

Klepper, Steven, and Daniel Nagin. 1989. "The Anatomy of Tax Evasion." *Journal of Law, Economics, and Organization,* Spring, 5(1): 1–24.

Kopczuk, Wojciech, and Joel Slemrod. 2006. "Putting Firms into Optimal Tax Theory." *American Economic Review Papers and Proceedings,* May, 96(2): 130–34.

Levi, Margaret. 1998. "A State of Trust." In *Trust and Governance,* ed. Valerie Braithwaite and Margaret Levi, 77–101. New York: Russell Sage Foundation.

Mayshar, Joram. 1991. "Taxation with Costly Administration." *Scandinavian Journal of Economics,* 93(1): 75–88.

Mummert, Annette, and Friedrich Schneider. 2002. "The German Shadow Economy: Parted in a United Germany?" *Finanzarchiv: Public Finance Analysis,* July, 58(3): 286–316.

O'Donnell, Gus. 2004. *Financing Britain's Future: Review of the Revenue Departments.* Presented to Parliament by the Chancellor of the Exchequer by Command of Her Majesty, HM Treasury. March 17. CM 6163. http://www.hmtreasury.gov.uk/budget/budget_04/associated_documents/bud_bud.

Oldman, Oliver, and LaVerne Woods. 1983. "Would a Value-Added System Relieve Tax Compliance Problems?" In *Income Tax Compliance: A Report of the ABA Section on Taxation Invitational Conference on Income Tax Compliance.* Chicago: American Bar Association.

Organisation for Economic Co-operation and Development. 2004. *Tax Administration in OECD Countries: Comparative Information Series.* Centre for Tax Policy Administration. Paris, France.

Pedone, Antonio. 1981. "Italy." In *The Value Added Tax: Lessons from Europe,* ed. Henry J. Aaron, 31–42. Washington D.C.: The Brookings Institution.

Petrick, Kenneth A. 2002. *Corporate Profits: Profits before Tax, Profits Tax Liability, and Dividends.* Methodology paper, U.S. Department of Commerce, Economics and Statistics Administration, Bureau of Economic Analysis, September. http://bea.gov/bea/ARTICLES/NATIONAL/NIPA/Methpap/methpap2.pdf.

Pissarides, Christopher A., and Guglielmo Weber. 1989. "An Expenditure-Based Estimate of Britain's Black Economy." *Journal of Public Economics,* June, 39(1): 17–32.

President's Advisory Panel on Federal Tax Reform. 2005. *Simple, Fair, and Pro-Growth: Proposals to Fix America's Tax System.* Washington, D.C.: U.S. Government Printing Office.

Rice, Eric. 1992. "The Corporate Tax Gap: Evidence on Tax Compliance by Small Corporations." In *Why People Pay Taxes,* ed. Joel Slemrod, 125–61. Ann Arbor: University of Michigan.

Sandmo, Agnar. 2005. "The Theory of Tax Evasion: A Retrospective View." *National Tax Journal,* December, 58(4), pp. 643–63.

Scholz, John T., and Mark Lubell. 2001. "Cooperation, Reciprocity, and the Collective Action Heuristic." *American Journal of Political Science,* January, 45(1): 160–78.

Silvani, Carlos and John Brondolo. 1993. "An Analysis of VAT Compliance." International Monetary Fund Fiscal Affairs Department mimeo, November.

Slemrod, Joel. 1998. "Methodological Issues in Measuring and Interpreting Taxable Income Elasticities." *National Tax Journal,* December, 51(4): 773–88.

Slemrod, Joel. 2003. "Trust in Public Finance." In *Public Finance and Public Policy in the New Century,* ed. Sijbren Cnossen and Hans-Werner Sinn, 49–88. Cambridge, MA: MIT Press.

Slemrod, Joel. 2004. "The Economics of Corporate Tax Selfishness." *National Tax Journal,* December, 57(4): 877–99.

Slemrod, Joel. 2006. "Taxation and Big Brother: Information, Personalization, and Privacy in 21st Century Tax Policy." *Fiscal Studies,* March, 27(1): 1–15.

Slemrod, Joel, and Jon Bakija. 2004. *Taxing Ourselves: A Citizen's Guide to the Debate over Taxes.* 3rd ed. Cambridge, MA: MIT Press.

Slemrod, Joel, Marsha Blumenthal, and Charles Christian. 2001. "Taxpayer Response to an Increased Probability of Audit: Evidence from a Controlled Experiment in Minnesota." *Journal of Public Economics,* March, 79(3): 455–83.

Slemrod, Joel, and Shlomo Yitzhaki. 1987. "The Optimal Size of a Tax Collection Agency." *Scandinavian Journal of Economics,* 89(2): 25–34.

Slemrod, Joel, and Shlomo Yitzhaki. 1996. "The Cost of Taxation and the Marginal Efficiency Cost of Funds." *International Monetary Fund Staff Papers,* March, 43(1): 172–98.

Slemrod, Joel, and Shlomo Yitzhaki. 2002. "Tax Avoidance, Evasion, and Administration." In *Handbook of Public Economics,* ed. Alan J. Auerbach and Martin S. Feldstein. Volume 3, pp. 1423–70. Amsterdam: Elsevier B.V.

Spicer, Michael W., and Lee A. Becker. 1980. "Fiscal Inequity and Tax Evasion: An Experimental Approach." *National Tax Journal,* June, 33(2): 171–75.

Swedish Tax Agency. 2004. *Taxes in Sweden.* Solna, Sweden.

Tait, Alan. 1988. *Value Added Tax: International Practice and Problems.* Washington, D.C.: International Monetary Fund

Tanzi, Vito. 1980. "The Underground Economy in the United States: Estimates and Implications." *Banco Nazionale del Lavoro Quarterly Review.* December, 135(2): 427–53.

Tanzi, Vito. 1983. "The Underground Economy in the United States: Annual Estimates, 1930-80." *IMF Staff Papers.* June, 30(2): 283–305.

Tanzi, Vito. 1999. "Uses and Abuses of Estimates of the Underground Economy." *The Economic Journal,* June, 109(456): F338–F347.

Torgler, Benno. 2003. "Tax Morale, Rule-Governed Behaviour, and Trust." *Constitutional Political Economy,* June, 14(2): 119–140.

Torgler, Benno. 2004. "Moral Suasion: An Alternative Tax Policy Strategy? Evidence from a Controlled Field Experiment." *Economics of Governance,* November, 5(3): 235–53.

U.S. Department of the Treasury. Internal Revenue Service. 1996. *Federal Tax Compliance Research: Individual Income Tax Gap Estimates for 1985, 1988, and 1992.* Pub. 1415 (rev. 4-96), April, Washington, D.C.

U.S. Department of the Treasury. Internal Revenue Service. 2005a. *IRS Data Book: 2004.* Publication 55b, Washington, D.C. From http://www.irs.gov/taxstats/compliancestats/article/0,,id=97177,00.html.

U.S. Department of the Treasury. Internal Revenue Service. 2005b. *New IRS Study Provides Preliminary Tax Gap Measure.* IR-2005-38, March 29. Washington, D.C.

U.S. Department of the Treasury. Internal Revenue Service. 2005c. *Preliminary Update of the Tax Year 2001 Individual Income Tax Underreporting Gap Estimates,* 8–16. Washington, D.C.: Office of Research, Analysis, and Statistics. From http://www.irs.gov/taxstats/compliancestats/article/0,,id=97177,00.html.

U.S. Department of the Treasury. Internal Revenue Service. 2005d. *Tax Gap Facts and Figures.* Washington, D.C.

U.S. Department of the Treasury. Internal Revenue Service. 2005e. *Understanding the Tax Gap.* FS-2005-14, March. Washington, D.C.

U.S. Department of the Treasury. Internal Revenue Service. 2006. *Updated Estimates of the TY 2001 Individual Income Tax Underreporting Gap. Overview.* February 22. Washington, D.C.: Office of Research, Analysis, and Statistics.

U.S. Department of the Treasury. Internal Revenue Service Oversight Board. 2006. *2005 Taxpayer Attitude Survey.* http://www.ustreas.gov/irsob/releases/2006/02212006.pdf.

U.S. General Accounting Office. 1988. *IRS' Tax Gap Studies.* GAO/GGD-88-66BR. Washington, D.C.

Webber, Carolyn, and Aaron B. Wildavsky. 1986. *History of Taxation and Expenditure in the Western World.* New York: Simon & Schuster.

Yitzhaki, Shlomo. 1974. "A Note on 'Income Tax Evasion: A Theoretical Analysis.'" *Journal of Public Economics,* May, 3(2): 201–2.