

Experimental economics

Lecture 10: Tax compliance experiments

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References:

- Alm, J. (2019). What motivates tax compliance? *Journal of Economic Surveys*, 33(2), 353–388.
<https://doi.org/10.1111/joes.12272>

Tax evasion

- ‘Tax evasion’ consists of illegal and intentional actions taken by individuals to reduce their legally due tax obligations. Individuals can evade income taxes by underreporting incomes; by overstating deductions, exemptions or credits; by failing to file appropriate tax returns or even by engaging in barter.
- Tax evasion is important for many reasons, and, indeed, its existence is central to some of the most fundamental issues in public economics. The most obvious is that it reduces tax collections, thereby affecting taxes that compliant taxpayers face and public services that citizens receive.
- Beyond these revenue losses, evasion creates misallocations in resource use when individuals alter their behaviour to cheat on their taxes, such as in their choices of hours to work, occupations to enter and investments to undertake. Its presence requires that government expends resources to detect non-compliance, to measure its magnitude and to penalize its practitioners. Non-compliance alters the distribution of income in arbitrary, unpredictable and unfair ways.
- Evasion may contribute to feelings of unjust treatment and disrespect for the law. It affects the accuracy of macroeconomic statistics. More broadly, it is not possible to understand the true impacts of taxation without considering tax evasion

Tax evasion

- So what motivates individuals (and firms) to evade their taxes? Asked somewhat differently, what motivates them to pay their legally due tax liabilities, thereby complying with the laws and regulations that govern the payment of taxes?
- We will examine this broad question by looking at three specific questions:
 - 1. What does theory say about what motivates tax compliance?
 - 2. What does the evidence – from naturally occurring field data, field experiments and laboratory experiments – show?
 - 3. How can government use these insights to improve compliance?

Insights from Theoretical Research

- The basic theoretical model used in nearly all research on tax compliance starts with the work of Becker (1968) and his economics-of-crime model, as first applied to tax compliance by Allingham and Sandmo (1972) and Srinivasan (1973).
- Here, a rational individual is viewed as maximizing the expected utility of the tax evasion gamble (or lottery), weighing the benefits of successful cheating against the risky prospect of detection and punishment.
- The standard conclusion from this approach is that an individual pays taxes because he or she is afraid of getting caught and penalized if he or she does not report all income. This approach therefore gives the plausible and productive result that compliance depends upon audit and fine rates.
- Indeed, the central point of this approach is that an individual pays taxes because – and only because – of this fear of detection and punishment.

Insights from Theoretical Research

- Comparative statics results are easily derived. For example, it is straightforward to show that an increase in either the probability of detection p or the penalty rate f unambiguously increases reported income. This economics-of-crime approach therefore gives the sensible result that compliance depends upon enforcement. Indeed, it is essential to recognize that this approach concludes that an individual pays taxes because – and only because – of the economic consequences of detection and punishment. This is an important insight, with the obvious implication that the government can encourage greater tax compliance by increasing audit and penalty rates.
- However, it is clear to many observers that compliance cannot be explained only by the benefit-cost calculus of amoral individuals. The percentage of individual income tax returns that are subject to a thorough tax audit is generally quite small in most countries, almost always well less than 1% of all returns. Even in a country like the United States, the Internal Revenue Service (IRS) reported an overall audit rate in 2015 of only 0.8% (Internal Revenue Service, 2016b).
- Similarly, the penalty on even fraudulent evasion seldom exceeds much more than the amount of unpaid taxes, these penalties are infrequently imposed, and civil penalties on non-fraudulent evasion are even smaller. A purely economic analysis of the evasion gamble suggests that most rational individuals should either underreport income not subject to third-party information (including employer source-withholding), or should over-claim deductions not subject to independent verification because it is unlikely that such cheating will be caught and penalized. However, even in the least compliant countries, evasion seldom rises to levels predicted by a purely economic analysis, and, in fact, there are often substantial numbers of individuals in most countries who apparently pay all (or most) of their taxes all (or most) of the time, regardless of the financial incentives they face from the enforcement regime.

Insights from Theoretical Research

- Admittedly, there are reasons why this simplistic analysis somewhat overstates the problem with the standard expected utility approach.
- Consider the United States as an example.
 - First, a standard feature of many individual income tax systems is that a third party (e.g. the individual's employer) reports the relevant part of an individual's taxable income to the tax authority (and often also withholds income taxes on this reported taxable income). This third-party information increases significantly the chances that an individual who underreports income on a filed return will be detected, especially in its combination with employer source-withholding.
 - Second, the 'official' IRS audit rate somewhat understates 'actual' IRS audit policy. In fact, the IRS conducts a range of audits, and for many types of audits, the actual rates are quite high.
 - Third and relatedly, while overall audit rates are quite low, among certain income and occupation classes, they are more frequent. Fourth, the IRS conducts a wide range of audit-type activities, including line matching and requests for information, and these activities are much more frequent.
 - Finally, it is individual perceptions of audit rates that influence behaviour, rather than actual audit rates, and individuals typically misperceive actual audit rates; indeed, it is common for individuals to believe that the audit rates that they face are substantially higher than the audit rates that actually apply to them (Aitken and Bonneville, 1980; Yankelovich and White, Inc., 1984; Webley et al., 1991; Kirchler, 2007).

Insights from Theoretical Research

- Even so, there is little doubt that in many settings the chances of detection and punishment are slight. Especially in circumstances in which third-party sources of information and employer source-withholding are limited, the chances that an individual who does not report truthfully will be caught and penalized are quite limited.
- In addition, there is considerable evidence that the individual's decision goes well beyond a simple amoral benefit-cost calculation based solely on narrowly defined financial considerations. On balance, then, the basic model of individual compliance behaviour implies that rational individuals should report little income, especially when third-party information and employer source-withholding are imperfect.
- However, although compliance varies significantly across countries and is often quite low, compliance seldom falls to a level predicted by the standard economic theory of compliance. Indeed, the puzzle of tax compliance behaviour is why people pay taxes, not why they evade them. This observation suggests that the compliance decision must be affected by other factors or be affected in ways not captured by the standard approach.

Extensions to the Economics-of-Crime Model: Expanding to Behavioural Economics

- The standard neoclassical economic model of human behaviour is based on several main assumptions: individuals are rational, they have unlimited willpower and they are purely self-interested. While these assumptions may be a useful starting point for the analysis of individual behaviour, there is increasing evidence that they are inaccurate and unrealistic depictions of many, perhaps most, individuals. Indeed, there is growing acceptance that, contrary to the standard neoclassical approach:
 - individuals face limits on their ability to compute (e.g. ‘bounded rationality’ and ‘mental accounting’);
 - they systematically misperceive, or do not perceive at all, the true costs of actions (e.g. ‘fiscal illusion’, ‘saliency’ and ‘overweighting’ of probabilities);
 - they face limits on their ‘self-control’ (e.g. ‘hyperbolic discounting’, Christmas savings clubs and automatic enrolment programmes);
 - they are affected by the ways in which choices are ‘framed’ (e.g. ‘reference points’, gains versus losses, ‘loss aversion’, ‘risk-seeking behaviour’ and ‘status quo bias’);
 - they are influenced by the social context in which (e.g. diversity), and the process by which (e.g. voting rules), decisions are made and
 - they are motivated not simply by narrowly defined, individually based financial considerations, but also by notions whose origins stem more from group considerations, such as fairness, altruism, reciprocity, empathy, sympathy, trust, guilt, shame, morality, alienation, patriotism, social customs, social norms, ‘tax morale’ and many other objectives.
- As emphasized by Congdon et al. (2011), these so-called ‘deviations’ can be classified into three broad areas: imperfect optimization (stemming from, say, limited computation abilities or misperceptions), bounded self-control (as demonstrated by hyperbolic discounting) and non-standard preferences (like other-regarding preferences). In short, individuals are not always the rational, outcome-oriented, self-controlled, selfish and egoistic consumers envisioned by much of the standard theory. Behavioural economics uses these deviations from the standard assumptions as the starting point for a more realistic view of how individuals make choices

Summary: Insights from Theoretical Research

- The theoretical analysis of tax compliance behaviour suggests several main insights:
 - First, enforcement matters – but many other factors also matter. An especially important factor is the presence of third-party sources of information, as well as tax withholding systems.
 - Second, an individual does not always behave as assumed in the standard economic approach; that is, an individual may not be able to make all calculations required under expected utility theory, an individual may not be able to determine the true costs of an action, an individual may face limits on his or her self-control, and an individual may be affected by the framing of a decision.
 - Third, an individual is a social creature, and may be influenced by group considerations

Insights from Empirical Research

- Empirical research on tax compliance is notoriously difficult. Hard and useful evidence on tax compliance is very hard to find, for obvious reasons, and indeed the fundamental difficulty in analysing empirically what motivates tax compliance is the lack of reliable information on taxpayer compliance.
- After all, tax evasion is illegal, and individuals have strong incentives to conceal their cheating, given financial and other penalties that are imposed on individuals who are found cheating on their taxes.
- Even so, research has been increasingly creative in finding data to examine evasion using naturally occurring field data, controlled field experiments and laboratory experiments. Further, research has also been creative in finding new methods.

Data

- The most accurate source of information on individual compliance is based on direct measurement of evasion via actual audits of individual returns, as with the Taxpayer Compliance Measurement Program (TCMP) or the National Research Program (NRP) of the U.S. IRS. Here, detailed line-by-line audits of individual tax returns by IRS auditors yield an IRS estimate of the taxpayer's 'true' income, which when compared to actual reported items allow the IRS to calculate measures of income tax evasion (e.g. the 'tax gap').
- Another direct approach is based on survey evidence, in which individuals are asked about their evasion behaviour, especially their attitudes. Still another direct approach uses tax amnesty data, in which declarations of income by amnesty participants are used as an exact measure of evasion. More indirect methods look for traces of evasion behaviour that are left in various indicators (e.g. currency, electricity consumption, labour force participation) that can be measured, so that evasion is not measured directly but rather indirectly via these measurable traces.
- Some researchers have used measures of reported income from individual tax returns as a proxy for evasion, on the assumption that one's total income must be divided between (observable) reported income and (unobservable) unreported or evaded income (Dubin et al., 1990; Gruber and Saez, 2002; Saez et al., 2009).
- Some have used consumption-based (Pissarides and Weber, 1989; Gorodnichenko et al., 2009) or tax deduction-based (Feldman and Slemrod, 2007) measures as an indicator of tax evasion. Some have also used survey-based approaches in which particular occupations are examined to determine individual motivations to participate in the shadow economy (Lemieux et al., 1994; De Paula and Scheinkman, 2011). There are also examples of even more novel approaches. Researchers have used luminosity as measured from outer space to measure 'true' economic activity, which can then be compared to official income accounts to measure evasion (Henderson et al., 2012). Still others have collected their own compliance data from original sources, such as information on discarded cigarette packs to measure the degree to which smokers in a single jurisdiction (e.g. New York City) evade the jurisdiction's cigarette taxes (Chernick and Merriman, 2013), information on commuter tax allowances to estimate fraudulent claims for these allowances (Paetzold and Winner, 2016), information on border differentials in TV license fees to estimate evasion of these fees (Berger et al., 2016) or information on Internet purchases to estimate evasion of sales taxes (Alm and Melnik, 2010).

Data

- However, researchers have become increasingly skeptical about the ability of most all forms of naturally occurring field data to achieve identification of the causal effects of policies (Angrist and Pischke, 2010). The quality of the data is also a particular concern (Slemrod and Weber, 2012; Torgler, 2016b). For example, TCMP/NRP data have some well-recognized deficiencies, even aside from their expense: the audits do not detect all underreported income, non-filers are not often captured, honest errors are not identified and final audit adjustments are not included.
- Survey data often have much useful sociodemographic and taxpayer attitudinal information, but the reliability of their data on tax evasion is highly suspect because individuals may not remember their reporting decisions, they may not respond truthfully or at all or the respondents may not be representative of all taxpayers.
- Amnesty data may also not be representative of all taxpayers because of selection issues; that is, only some individuals opt to participate in an amnesty. The many indirect approaches also exhibit significant problems. For example, the various 'tax gap' estimates attribute any difference between predicted and actual transactions to the shadow economy.

Data

- In part because of concerns with naturally occurring field data, researchers have increasingly employed controlled field experiments (or randomized controlled trials, RCTs). In a ‘typical’ controlled field experiment, a treatment sample of individuals receives a message (e.g. a letter or an electronic notification) telling them some policy-relevant information (e.g. ‘your tax return will be closely examined’, ‘most people pay their taxes’, ‘paying taxes helps others’, ‘taxes provide for public services’).
- A control sample of individuals receives a neutral message. The impact of the policy innovation is then examined by a simple comparison of the treatment group compliance with the control group compliance. To date most controlled field experiments have used this ‘message’ approach, although other approaches are starting to be employed.
- Researchers have also turned to laboratory experiments in compliance research. The basic design of most compliance experiments is similar. Human subjects (generally students) in a controlled laboratory are told that they should feel free to make as much income as possible. At the beginning of each round of the experiment, each subject is given (or earns) income and must decide how much income to report. Taxes are paid at some rate on all reported, but not on underreported, income. However, underreporting is discovered with some probability, and the subject must then pay a fine on unpaid taxes. This process is repeated for a given number of rounds. At the completion of the experiment, each subject is paid an amount that depends upon his or her performance during the experiment.
- Into this microeconomic system, various policy changes can be introduced one at a time, such as changes in audit probabilities or audit rules, in penalty rates, in tax rates, in public good provision and in any other relevant institutions. To date, laboratory experiments have examined virtually all factors that have been suggested as determinants of what motivates tax compliance.

On the external validity of laboratory tax compliance experiments

- An essential issue for laboratory experiments to inform policy debates is the “external validity” of the experimental results; that is, does behavior in the laboratory apply to behavior that occurs in the naturally occurring world? Alm, Blomquist and McKee (2015) examine this issue of external validity in the specific context of laboratory experiments on tax compliance, using two different types of evidence.
- Laboratory methods are now widely accepted as a methodological approach in economics and, increasingly, they have been used to examine specific public policy issues. There is much to be gained from careful laboratory experiments. They offer a low cost means of testing (and replicating) policy innovations, and they generate precise data on individual behavior, thereby allowing estimation of behavioral responses. Importantly, they allow many policy innovations to be introduced singly and exogenously in a controlled environment, and as a result, laboratory experiments are typically seen as having a high degree of “internal validity” (Brewer 2000; Campbell and Stanley 1966; Shadish, Cook, and Campbell 2002) because the causal relation between variables can be properly demonstrated.
- However, as emphasized by Plott (1987), using laboratory experiments can allow more general inferences regarding human behavior only when the setting implemented in the laboratory parallels what is observed in the naturally occurring world. Even beyond this requirement of “parallelism” is the need for generalizing behavioral observations from the laboratory to the field, or “external validity.” Internal validity can be demonstrated through the evaluation of the design. However, external validity can only be verified empirically and only with respect to the specific setting being investigated. Following slides investigate the external validity of laboratory experiments, and does so in the context of experiments on tax compliance behavior

On the external validity of laboratory tax compliance experiments

- Laboratory methods have been used to examine a wide range of policies that may affect the compliance decision, policies that have not always proven amenable to either theoretical analyses or empirical analyses with field data. However, laboratory studies of compliance are sometimes viewed with skepticism. The most common criticism is that the student subjects typically used in experiments may not be representative of taxpayers.
- Undergraduates may have little experience with filing tax returns, and their economic and demographic backgrounds may differ from those of taxpayers. Another criticism is that the context of laboratory compliance experiments does not closely enough resemble the context in which actual compliance decisions are made. As a result, there is a concern that experimental results on policy innovations that rely upon student subjects in laboratory compliance experiments cannot be generalized to the population.
- A first question examines whether behavior of laboratory participants is replicated by behavior of individuals making a similar decision in the naturally occurring world; that is, do participants in laboratory experiments exhibit different patterns of behavior than individuals in a similar naturally occurring setting? To answer this question, we utilize a special data set from the U.S. Internal Revenue Service (IRS) assembled as part of its National Research Program (NRP). These data allow us to compare actual taxpayer behavior with data generated by laboratory subjects, where everyone is engaged in a similar tax reporting decision.
- A second question examines a different aspect of external validity: that is, do students behave differently than nonstudents in identical laboratory experiments? We are able to answer this question with further analysis of previously reported data from laboratory experiments that compare the decisions of a population of adults with those of undergraduate students, both of whom participate in the identical laboratory experiment.

On the external validity of laboratory tax compliance experiments

FIGURE 1

Distribution of Reporting Compliance Rates for Taxpayer Sample

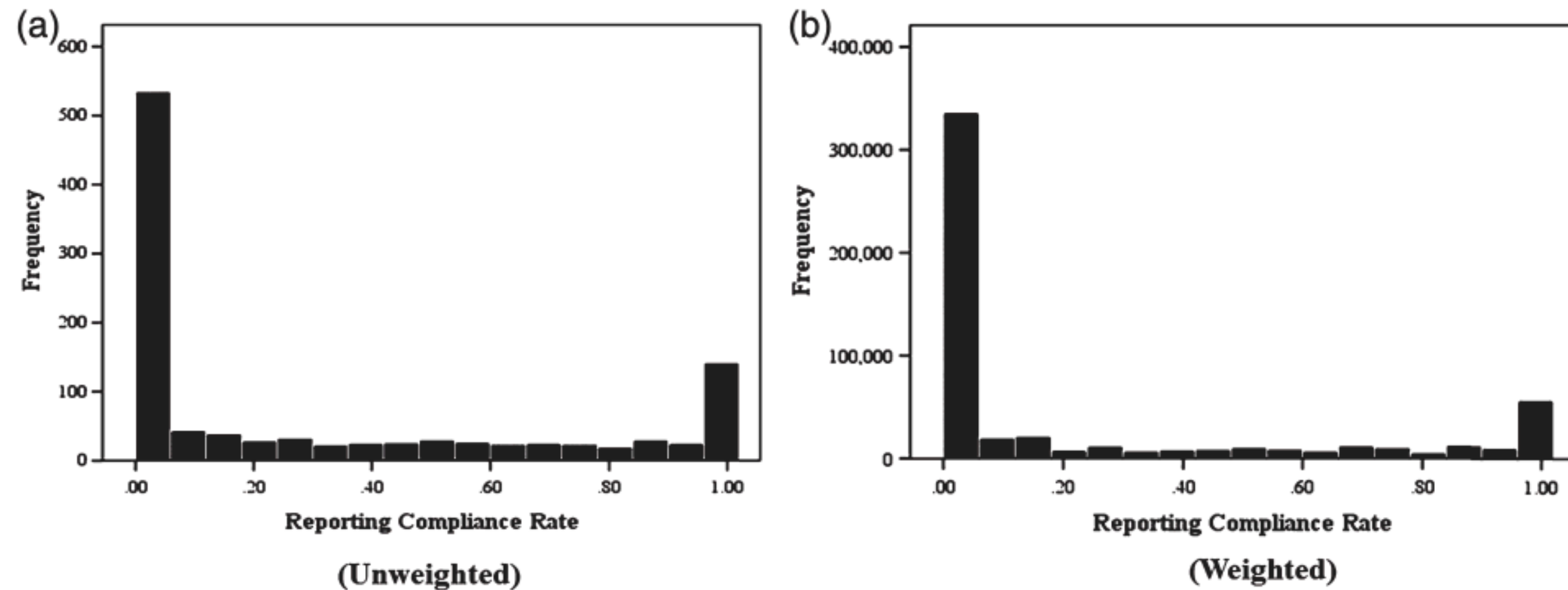


FIGURE 2

Distribution of Reporting Compliance Rates for Experimental Sample

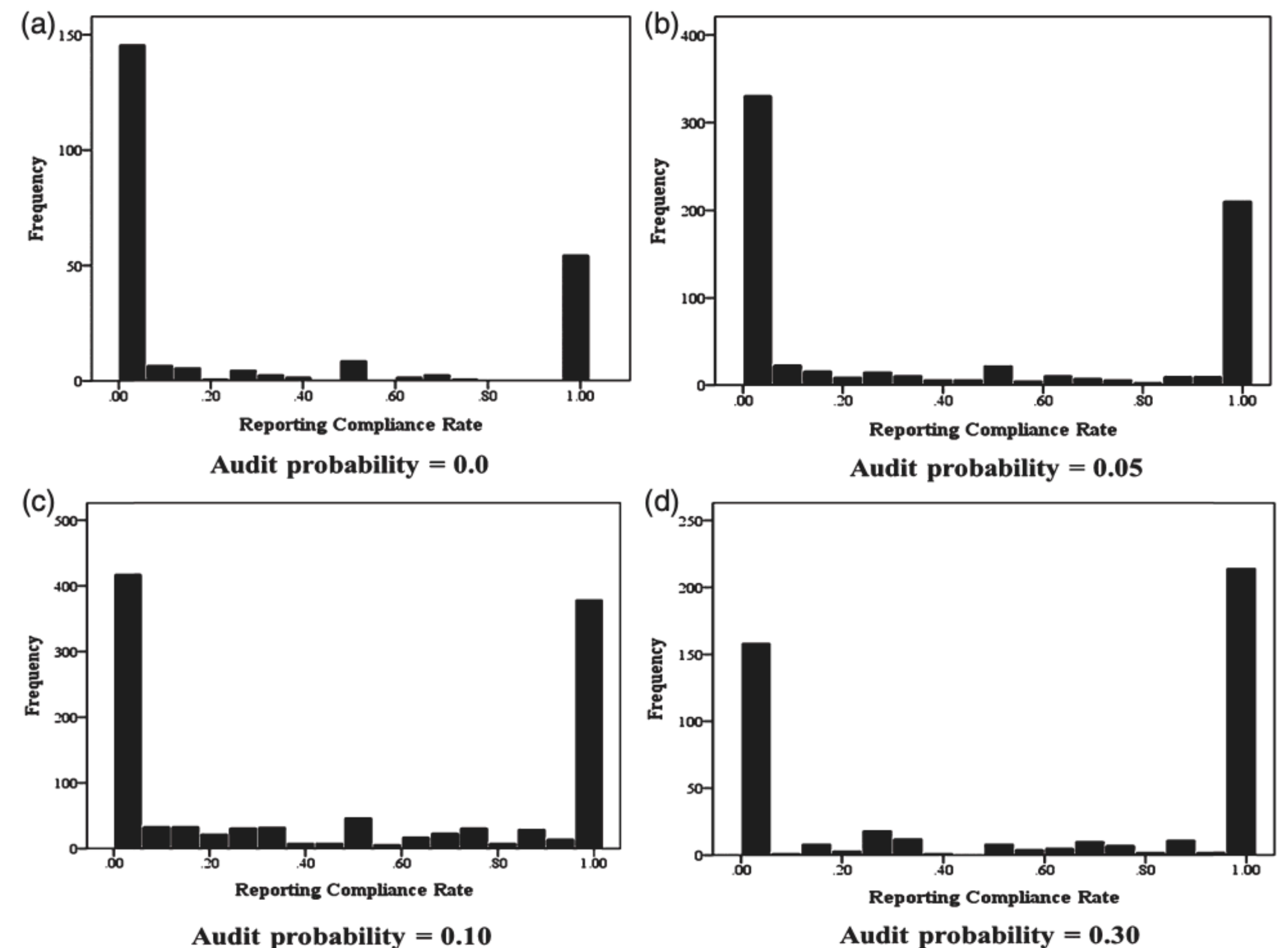


TABLE 8

Estimates for Reporting Compliance: Positive Inducements via Social Programs Experiments

Independent Variable	Dependent Variable: Tax Compliance Rate			
	Model 1	Model 2	Model 3	Model 4
Constant	.5429** (.064)	.5028** (.081)	.5537** (.083)	.4842** (.069)
Period income	-.0007* (.0004)	-.0007* (.0004)	-.0007* (.0003)	-.0007* (.0003)
Cumulative wealth	-.0001** (.00003)	-.0001** (.00003)	-.0001** (.00003)	-.0001** (.00003)
Audit probability	.0807 (.132)	.0906 (.132)	.1072 (.131)	.1224 (.156)
Lag audit	.0051 (.015)	.0049 (.015)	.0034 (.015)	.0050 (.0154)
Tax credit	.1131** (.047)	.1376** (.055)	.1259** (.053)	.1392** (.057)
Unemployment benefit	.2468** (.088)	.2541** (.089)	.2364** (.112)	.2382* (.118)
Student		.0475 (.054)	.0103 (.0864)	-.1053 (.122)
Student X Tax credit			.1310 (.098)	.1313 (.087)
Student X unemployment benefit			.1182 (.103)	.1236 (.102)
Student X Audit probability				.3250 (.253)
Wald χ^2	803.52**	845.66**	894.84**	904.90**
Panels	216	216	216	216
N	4104	4104	4104	4104

Note: Panel estimations with clustered (subject level) standard errors. The dependent variable is the ratio of reported taxes to true taxes of individual i in period t .

* and ** indicate significance at the 5% and 1% levels, respectively.

TABLE 7

Estimates for Reporting Compliance: Information Services Experiments

Independent Variable	Dependent Variable: Tax Compliance Rate			
	Model 1	Model 2	Model 3	Model 4
Constant	.9200** (.0754)	.9074** (.076)	.9337** (.078)	.9162** (.105)
Period income	-.0016** (.0004)	-.0016** (.0004)	-.0017** (.0003)	-.0017** (.0003)
Cumulative wealth	-.0003** (.00003)	-.0003** (.00003)	-.0003** (.00003)	-.0003** (.00003)
Audit probability	-.1653 (.194)	-.1634 (.194)	-.1105 (.183)	-.1602 (.269)
Lag audit	.1632** (.022)	.1630** (.022)	-.0105 (.015)	-.0104 (.015)
Tax liability uncertainty	-.0491** (.023)	-.0429* (.020)	-.2254** (.042)	-.2257** (.042)
Tax agency information	.0636** (.0255)	.0622** (.024)	.0752** (.032)	.0752** (.035)
Student		.0222 (.020)	-.0426 (.037)	-.0117 (.135)
Student X Tax liability uncertainty			.3071** (.057)	.3078** (.057)
Student X Tax agency information			.0780 (.068)	.0778 (.068)
Student X Audit probability				-.0889 (.363)
Wald χ^2	228.06 **	229.43 **	245.58 **	247.40 **
Panels	131	131	131	131
N	2489	2489	2489	2489

Notes: Panel estimations with clustered (subject level) standard errors. The dependent variable is the ratio of reported taxes to true taxes of individual i in period t .

* and ** indicate significance at the 5% and 1% levels, respectively.

On the external validity of laboratory tax compliance experiments

- We are able to examine whether the “moments of the data” (e.g., the mean reporting compliance rate and its distribution) are similar when estimated in naturally occurring versus laboratory settings, and also whether the “treatment effects” of policy innovations are similar when estimated with different subjects (e.g., students and nonstudents).
- The analysis indicates that there is an overall similarity between the behavior of individual taxpayers in the field and of student subjects making comparable decisions in the laboratory, so that data from the laboratory closely align with data from the field.
- The analysis also indicates that student and nonstudent subjects exhibit broadly similar behavior in the laboratory, even though there are some small differences in their responses to individual policy treatments. These results confirm that compliance behavior in the laboratory generalizes beyond the laboratory.

Table 2 Multivariate regressions of compliance decisions on public policy variables, experimental design variables and individual-level variables

Variable	Extensive margin						Intensive margin					
	(1)		(2)		(3)		(4)		(5)		(6)	
	Coef.	(St. E.)	M. Eff.	(St. E.)	M. Eff.	(St. E.)	Coef.	(St. E.)	Coef.	(St. E.)	Coef.	(St. E.)
Random audit	-.19	(.158)					.09	(.054)				
Audit probability	1.48***	(.141)					-.34***	(.039)				
Fine size	.11**	(.037)					-.008	(.009)				
Audit#Fine	.53***	(.132)					-.29***	(.037)				
Amnesty	- 5.02***	(.064)					-.04	(.022)				
Flat tax	-.22**	(.076)					-.12***	(.030)				
Tax rate	-.70***	(.100)					.008	(.039)				
Loaded framing			.03	(.048)					-.07	(.039)		
Directive way			.42***	(.089)					.10	(.087)		
Tax task			-.09	(.095)					.08	(.077)		
Earned income			.02	(.065)					-.06	(.048)		
Redistribution			.15***	(.023)					.08***	(.017)		
RL public good			.17***	(.028)					.09***	(.024)		
Age					4e-5	(.001)					.0001	(.001)
Male					-.03***	(.010)					-.15***	(.021)
Student					.05	(.035)					-.11*	(.054)
Income					-.06***	(.008)					.006	(.012)
Risk averse (HL)					.02*	(.010)					.02	(.020)
Constant	- 1.22***	(.219)	-	-	-	-	.19*	(.076)	.10	(.103)	.32***	(.079)
# Observations	185,425		155,997		29,420		94,999		84,550		6908	
# Clusters	12,112		9700		1549		8878		6839		1075	
Round FE	YES		YES		YES		YES		YES		YES	
Country FE	YES		YES		NO		YES		YES		NO	
Study FE	YES		YES		YES		YES		YES		YES	
Year FE	YES		YES		NO		YES		YES		NO	

For the extensive margin estimations, we use a Probit model on the decision to evade (average marginal effect for Columns 2 and 3), where the dependent variable equals 1 if declared income is equal to earned income, to 0 otherwise. For the intensive margin estimations, we use OLS regressions on the compliance rate (defined as income declared divided by income earned or received), estimated on the subsample of evaders. Both models report in parentheses standard errors clustered at the individual level

Significance levels: *: 5%; **: 1%; ***: 0.1%

Summary: Insights from Empirical Research

- 1. Audits – both the level and the type of audit – matter and matter a lot. There is much evidence that suggests that more audits increase compliance. Audits also typically have a ‘spillover’ effect, or an increase in compliance independent of revenues generated directly from the audits themselves. Audits also have a greater deterrent impact than fines, despite their theoretical equivalence, at least in an expected value sense.
- 2. Perceptions of audit rates affect compliance; that is, cognitive considerations matter. In particular, individuals appear to substantially misperceive audit rates, typically overweighting a (low) probability of audit.
- 3. Fines, whether financial or non-financial, affect compliance, but their deterrent effects are small. Due largely to difficulties of generating independent variation in fine rates, most evidence on the impact comes from laboratory experiments. Laboratory experiments typically find that a higher fine rate leads to marginally more compliance.
- 4. Positive inducements, whether to individuals or to groups, improve compliance. Laboratory experiments consistently find that rewards to individuals increase compliance, including programmes in which an individual who reports more income receives more government benefits (e.g. social insurance benefits) (Alm et al., 2012a) or an individual who is found to be honest becomes eligible for rewards (e.g. a lottery) (Alm et al., 1992a; Feld et al., 2006; Bazart and Pickhardt, 2011). Laboratory experiments also find that an increase in payoffs to groups, such as public goods financed by tax payments, improves compliance (Becker et al., 1987; Alm et al., 1992a, b, c, 1999; Fochmann and Kroll, 2016).

Summary: Insights from Empirical Research

- 5. Tax rates affect compliance, but the effects are nuanced. For example, the level of tax rates matters in an individual's compliance decision, with an increase in tax rates generally (though not always) reducing reported income. However, one's tax rate relative to others' (e.g. 'fiscal inequity') matters; that is, if an individual believes that his or her tax rate is 'too high' relative to others, then the individual will tend to comply less (Spicer and Becker, 1980; Alm et al., 1999).
- 6. The social and institutional environment in which individuals live affects compliance. The overall setting in which an individual lives, works and functions has important effects on individual compliance, effects that go well beyond the ways in the environment affects behavioural incentives. One compelling explanation for these differences in compliance behaviour is that there seems to be a 'social norm' of compliance, in which one's compliance depends upon various factors that reflect and capture the many aspects of one's environment. Further, these social norms seem to be affected by the institutions that face individuals and by individuals' attitudes towards these institutions.
- For example, individuals who have a negative attitude towards government tend to comply less, both in the laboratory (Webley et al., 1991) and in the naturally-occurring world (Pommerehne and Weck-Hannemann, 1996). Further, 'trust' in institutions affects the viability of government policies by affecting these social norms: when individual trust in government is greater, enforcement tends to be more effective in deterring non-compliance.
- 7. Individual participation in the choice of institutions affects compliance; that is, process (versus outcome) is an essential determinant of compliance. A related and important finding is that individual participation in the choice of institutions – the process as distinct from the outcome – has real effects, independent of the actual levels of tax, audit and fine rates. For example, subjects in laboratory experiments pay more when they choose the use of their taxes by voting than when the identical use is imposed upon them, their compliance is greater when the vote indicates a clear group consensus, and their compliance is significantly and dramatically lowered by the imposition without taxpayer choice of an unpopular programme, even an unpopular programme with no financial benefits to individuals.

Summary: Insights from Empirical Research

- 8. The information that tax authorities have on income sources is an essential component of a compliance strategy. Compliance is far greater on income subject to employer withholding and to third-party information sources than on income not subject to these features.
- 9. The information that individuals are provided about the tax system and about other individuals affects compliance, but in sometimes surprising ways. For example, higher audit rates have no impact on compliance if this 'official' information is not provided; if it is provided, higher audit rates increase compliance (Alm et al., 2009). However, the effects of information on compliance can also be counterintuitive. Telling individuals that they will be 'closely examined' (via a message) generally increases the compliance rate of these individuals (Slemrod et al., 2001); however, the compliance rate of those individuals who infer that they will not be closely examined falls, and the net impact on overall compliance is often negative (Alm and McKee, 2006).
- 10. The knowledge that taxpayers have – or do not have – about the tax system affects compliance, but the impacts are unresolved. Taxpayers often do not know what they should pay in taxes, given a complex and uncertain tax system. As a result, they have increasingly come to rely upon paid tax practitioners (and also tax preparation software) in the preparation of their taxes. Because field data also indicate that compliance is generally lower for returns prepared by a practitioner (Erard, 1993, 1997), the use of tax practitioner is associated with reduced tax compliance.
- 11. Demographics matters. There is consistent evidence that compliance may be motivated, or at least affected, by numerous demographic variables. For example, the analysis of TCMP data suggests that compliance tends to be lower for individuals who are younger, who are single and who are self-employed. There is also evidence that individuals in laboratory experiments are more likely to decrease their compliance if they are male, if they are younger and if they do not prepare their own taxes.¹
- 12. Individuals are motivated by many factors beyond narrow financial interest. Individuals who are identified as having greater sympathy (e.g. 'concern for another's well-being', measured by the frequency of pro-social behaviour) are more compliant, and individuals who are 'primed' to elicit empathy (e.g. 'putting yourself in someone else's shoes') or to do the 'moral' action are more compliant.

Summary

- The empirical evidence indicates that individuals are motivated by narrowly defined, and individually based, financial considerations (e.g., audits, penalties). However, the evidence also indicates that they are motivated by non-financial considerations (e.g., sympathy, empathy, guilt, shame, morality). Further, there is some evidence that they are motivated by social considerations (e.g., social norms, public goods, voting, neighbour behaviour). There is also evidence that individuals are motivated by information and by the ways in which they process this information.
- Finally, the evidence is clear that there is great heterogeneity across individuals; that is, individuals cannot be represented by a single representative agent, but must be considered a collection of different segments.
- This last conclusion – on individual heterogeneity – is especially important. Put differently, there is no ‘typical’ individual who responds predictably and reliably to all policies. People are complicated, motivated by many different factors and responsive (if at all) in different ways. In this regard, Gould (1996) emphasizes that it is grossly misleading to represent a complex system by a single, so-called representative agent, who behaves in some average or typical way. Instead, most systems have incredible variety – a ‘full house’ of individual behaviours – and the proper understanding of any system requires recognition of this basic fact.
- People exhibit a remarkable diversity in their behaviour. There are individuals who always cheat and those who always comply, some who behave as if they maximize the expected utility of the tax evasion gamble, others who seem to overweight low probabilities, individuals who respond in different ways to changes in their tax burden, some who are at times cooperative and at other times free riders and many who seem to be guided by such things as social norms, moral sentiments and equity.
- These findings suggest that it is unlikely that a single unifying theory of tax compliance can ever be devised, one that incorporates the incredible variation in individual behaviour exhibited by the many analyses of taxpayer compliance, one that explains the behaviour of all individuals at all times, or even one that explains the actions of the same person at all times.

Devising Policies to Improve Compliance

- What does all of this work suggest about devising government policies to improve compliance?
- First, there is scope for an improvement in policies to increase detection and punishment (e.g. the Enforcement Paradigm). Traditionally, there are three main aspects of tax administration: taxpayer registration, taxpayer audit and collections. Improvements in each of these areas are feasible, all of which would enhance detection and punishment. These policies include such obvious actions as increasing the number of audits, improving the quality of the audits (and of the auditors), using more systematic audit selection methods (e.g. ‘scoring’ methods), improving information-sharing across governments, increasing penalties for tax cheating, applying these penalties often and consistently, publicizing tax evasion convictions in the media as an alternative type of non-financial penalty, relying more heavily on source-withholding whenever possible, facilitating payments through the banking system, granting additional power for collecting delinquent accounts and increasing taxpayer registration and identification via better use of third-party information. These are all standard methods for increasing enforcement, and one consistent with a paradigm that views the taxpayer as a potential criminal who must be deterred from cheating.
- Second, there is scope for an improvement in the services of the tax administration by becoming more ‘consumer-friendly’, along the lines of the Service Paradigm. Such policies include promoting taxpayer education, providing taxpayer services to assist taxpayers in filing returns and paying taxes, improving phone advice service, improving the tax agency website, simplifying taxes and tax forms and simplifying the payment of taxes. The basic thrust of these actions is to treat the taxpayer more as a client than as a potential criminal.
- Third, there may be scope for a government-induced change in the culture of paying taxes, consistent with the Trust Paradigm, by using the mass media to reinforce tax compliance as the ethical form of behaviour, publicizing cheaters, emphasizing the link between payment of taxes and the receipt of government services, targeting certain groups (e.g. new firms or employees) in order to introduce from the start the notion that paying taxes is ‘the right thing to do’, enlisting other organizations to promote compliance, avoiding actions that lead individuals to think cheating is ‘okay’ (e.g. a tax amnesty), addressing perceived inequities in the ways people feel that they are treated and promoting a tax administrator – and a taxpayer – ‘code of ethics’. It is this third paradigm that is an essential but largely neglected strategy for improving compliance.

Future directions

- It is apparent that enormous amounts have been learned about what motivates tax compliance. However, it should also be apparent that much remains to be learned. One way to organize one's thinking about these unresolved issues is to group these questions according to the three tax administration paradigms.
- The Enforcement Paradigm has to date been the subject of most of the research efforts. Even so, a far from exhaustive list of unanswered issues includes the following types of questions. Do higher audit rates increase compliance, or do they destroy 'trust' in government and crowd out 'intrinsic motivation'? How long lasting are the effects of audits? How do less formal audits (e.g. information returns) affect compliance? Can more effective strategic audit selection methods be designed? How is information about enforcement disseminated among taxpayers, and how do taxpayers respond to this information? Does the specific way in which the tax agency communicates with taxpayers (e.g. letter, phone and email) affect compliance? What is the effect of an audit on the audited individual (e.g. the specific deterrent effect of an audit) versus its effect on non-audited individuals (e.g. the general deterrent effect)? How effective are higher financial penalty rates? Are non-financial penalties a deterrent? Does public disclosure act as a deterrent?
- On the Service Paradigm, there are also unresolved questions. For example, how does complexity affect individual compliance? Does the presence of taxpayer uncertainty about either taxable income or the various administrative parameters like the audit rate or the fine rate affect compliance? Does tax simplification contribute to more tax compliance? Can better tax agency services improve taxpayer compliance? What specific services can the tax agency provide? What is the role of tax preparers in individual tax compliance? Can improved government service provision of individual inducements (e.g. social insurance programmes, lotteries) and/or group payoffs (e.g. public programmes) improve compliance? Again, this list is far from exhaustive.
- Still, other and perhaps more difficult questions relate to the Trust Paradigm. How can the impact of greater 'trust' on tax compliance actually be measured? If there is in fact a demonstrable – and measurable – effect of trust on tax compliance, how can such trust be changed by deliberate policy actions? What is the role of a social norm (or its many related notions) in compliance? How can a social norm be affected by deliberately chosen government policies? What role do societal institutions (e.g. collective decision rules) play in this process? How can 'fairness' be defined? Does the perception of fairness lead to increased trust in government, with a subsequent improvement in compliance? Does an increase in inequality affect perceptions of fairness? How can political support for improved tax compliance be generated? What are the social dynamics of compliance, and how can these dynamics be affected by government policies?