

How Institutions and Attitudes Shape Tax Compliance: a Cross-National Experiment and Survey

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Tax evasion is a problem everywhere, but it is a much bigger policy problem in some countries than it is in others. The Italian government estimates that it loses more than 27 percent of total tax revenue to evasion, whereas the Swedish government estimates their “tax gap” to be less than 9 percent. What explains this variation? We test for the importance of culturally based attitudes and institutionally structured rules for taxes and benefits through a unique set of cross-national experiments and attitudinal surveys done in multiple locations across Italy, the UK, the United States, and Sweden. Participants in each location were presented with identical conditions based on institutional variations (tax rates, redistribution regimes, benefits) and asked to complete a survey afterward concerning their attitudes toward a number of social and political issues. A mixed-model analysis of the 2,537 subjects in our study reveals consistent influence of institutional scenarios and three attitude scales measuring pro-redistributive ideology, fiscal responsibility, and perceived government competence. Country effects, however, are more mixed and inconsistent.

The ability of governments to collect revenues in an efficient and cost-effective manner is of central importance to how successfully they meet their policy goals. Because the affluent and democratic countries of North America and Western Europe generally possess tax systems sharing many of the same formal features (Alm and Torgler 2006), they might be expected to do similarly well in collecting

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taxes. Yet, as has been well noted in recent years, the actual compliance rate varies widely across these societies (Edlund 1999; Schneider and Enste 2013; Svallfors 1997; Torgler and Schneider 2007). Evasion rates tend to follow a geographic pattern, with high levels of compliance in Northern Europe and widespread underreporting in the countries farther south. For example, according to country-specific sources, the countries vary widely in the estimated gap between taxes owed and taxes paid, ranging from roughly 9 percent in Sweden and 6.5 percent in the UK to 16 percent in the United States and 27–30 percent in Italy.¹ The variation presents not only a public policy problem but also a scholarly puzzle: What explains the diversity in citizen responsiveness to tax laws?

While typically studied by economists and political scientists, taxation has a central role in the emerging field of fiscal sociology (Campbell 1993; Martin and Prasad 2014). In making the case for fiscal sociology, Martin, Mehrotra, and Prasad (2009, 1) argue that “Sociologists know that nearly every issue with which they are concerned—the obligations of the individual to society; the powers and legitimacy of the state; the allocation of public and private resources; the rise of bureaucratic administration; the reproduction of class, race, and gender inequalities—runs through the issue of taxation.” Of special importance is the social contract underlying taxation, or the formalized obligation citizens have to one another in paying taxes. As Putnam (2000, 347) argues, taxes are related to reciprocity and trust in society. Along with consent and compliance, however, this contract involves resistance, conflict, and perhaps even law-breaking (Simpson 2013), particularly when the state does not meet citizen expectations for the fair distribution of collective goods (Levi 1988). With tax compliance and evasion being central to the new fiscal sociology and sociological enterprise more generally, the field has the potential to help understand the tax shortfalls that have led to budget deficits, austerity, and social dislocation in Greece and other countries of the European Union, a topic that in the past decade has received enormous public attention (e.g., Daley 2010) and increasing scholarly attention (Artavanis, Morse, and Tsoutsoura 2015). Although the topic has received more attention in economics and political science, it fits well within a sociological approach.

Two broad explanations offer a starting point in understanding differences in tax compliance across countries, one based on national cultural characteristics related to the breadth of moral boundaries and the other on institutional structures related to formalized rules and procedures for collecting and disbursing taxes. While both culture and institutions matter in public life, the explanations face some limitations: They are hard to define, distinguish, and therefore test, they are not fully consistent—or perhaps even coherent—across a society, and they may work together dynamically to influence outcomes.

In this paper, we aim to move beyond broad conceptions of national culture and institutional structure in accounting for varied tax compliance by examining the more specific relationships with attitudes and rules for taxation (Manz, Sapienza, and Zingales 2006). We ask: How do multidimensional attitudes that are components of broad cultural values and formal rules for tax collection and distribution that are components of institutional structures influence national

variation in tax compliance both separately and in combination? We then develop several hypotheses concerning those influences, and use an innovative cross-national experimental design to test the hypotheses. Our theoretical contribution comes from 1) examining attitudes toward taxation, public spending, and tax compliance on the one hand and institutional rules and procedures on the other, and 2) translating broad arguments about culture and institutions into testable predictions about multidimensional attitudes and specific institutional characteristics. Our empirical contribution comes from a cross-national experimental design for gathering data to test the multiple hypotheses deduced from the theories.

Explaining National Differences in Tax Compliance

A long tradition has distinguished cultures based on how they draw the boundaries of moral behavior (Banfield 1967; Bergman 2009; Hofstede 2001; Tabellini 2010). Applied to taxes, this perspective would argue for example that cultural values of familism common in Southern European nations tend to promote codes of good conduct within circles of related persons (family or kin). Such boundaries tend to inhibit the expression of general prosocial concerns—like the contribution to the public good through the payment of taxes—outside a small network. In contrast, societies based on weak ties—like Northern European countries—are expected to promote good conduct outside as well as inside the family network boundaries and thus have citizens who are more willing to pay for the collective well-being (Coleman 1990; Phillip-Martinson 1991).

Others offer similar arguments. Lipset (1990) argues that the United States has been “unified by an allegiance to a common set of ideals, individualism, anti-statism, populism, and egalitarianism,” and he links individualist values in the United States to greater tax resistance relative to Canada. Putnam (2000) links low social capital and individualism within US states to low tax compliance, and Putnam (1993) links low social capital and lack of civic engagement in Italy to poor government performance. The moral tendencies toward tax payment may also be seen as part of civic culture, defined as acceptance of the authority of the state and a belief in participation in civic duties (Almond and Verba 1963). Still further, Landes (1998) argues for the primacy of cultural factors such as thrift, honesty, and tolerance—factors directly relevant to tax behavior—in explaining national differences in economic development.

To a large extent, however, the empirical research attempting to link culture to behavior has been problematic (Manz, Sapienza, and Zingales 2006). While it is easy to observe differences in behavior and attitudes between peoples, much variation and nuance exists within societies. Without attention to this variation, broad conceptions of culture can verge on overly generalized stereotypes such as righteous Swedes, rule-bending Italians, and individualistic Americans (Kashima 2000).

Empirically, cross-national experiments reveal the complexity of cultural influences (Andrighetto et al. 2016; Bigoni et al. 2016; Zhang et al. 2016) and

show relatively high compliance in the United States (Alm and Torgler 2006). The use of national culture to distinguish between countries implies coherency and consistency within large populations and ignores the enormous variation in views within countries (DiMaggio 1997; Morgan and Prasad 2009). As culture “is not a unified system that pushes action in a consistent direction” (Swidler 1986, 277), but instead consists of “a multiplicity of complex conceptual structures” (Geertz 1973, 10), its effective use as an explanation requires attention to diversity as well as similarity.

A related approach to culture, based largely on economic studies of tax behavior, focuses on tax morale (Torgler 2007). Defined as non-pecuniary, intrinsic motivations for compliance, tax morale has been used to account for higher levels of tax compliance than expected on the basis of a rational response to the probability of detection and punishment for evasion (Calvet and Alm 2014; Cummings et al. 2009). Tax morale relates closely to social norms, moral and ethnic considerations, and attitudes toward the government (Torgler 2007) and is treated as a national characteristic related to tax evasion (Alm and Torgler 2006). However, it has been criticized for being overly broad, mixing diverse underlying influences on tax behavior into a single concept, and neglecting within-country differences (Torgler and Schneider 2007).

One way to help capture some of the complexity of cultural influences is to focus on issue-specific attitudes. One can define attitudes in general as evaluative expressions of favor and disfavor, and in this case as evaluative expressions toward government and taxes. Attitudes are components of culture (Geertz 1973) but allow for more specificity, individual variation, and agency in views. They may be seen as guided but not determined by cultural values or, as Swidler (1986, 273) argues, sources of habits, skills, and styles from which people can construct varied strategies of action in a society. As such, attitudes reflect diversity within nations as well as contrasts between nations. Citizens in Italy and Sweden with similar attitudes (e.g., strong support for government redistribution) may act alike and differ in behavior from fellow-citizens with opposing attitudes. At the same time, however, countries such as Sweden and Italy tend to have different packages of attitudes that help define some degree of national coherency in cultures. Recognizing both sources of variation extends broad conceptions of national culture. In this way, cultural influences remain important for tax compliance, but attention to the packages of attitudes that exist within a culture can give more meaning and precision to broad conceptions.

Neo-institutionalist theory has sometimes been presented in contrast to culturalist theory (Bergman 2009; Steinmo 1994; Steinmo and Watts 1995). A large literature shows that institutions prove critically important in accounting for differences in distributional goals of welfare states across high-income democracies (Blyth 2002; Farrell 2009; Korpi and Palme 1998; Swank 2001). With regard to taxes, institutional rules define the electoral and legislative processes, the structure of payments and benefits, the quality of government performance, and the responsiveness of the government to the public (Rothstein 1998). Institutions are typically defined as a complex set of formal rules through which public and elite preferences translate into policies and political behavior.

The key insight of the neo-institutionalist approach is that political institutions can create conditions that facilitate or attenuate voluntary compliance and trust in tax payments. Typically, citizens desire to follow laws in reporting income and paying their full share of taxes, with compliance generally being voluntary or quasi-voluntary (Levi 1988) and based on trust (Scholz and Lubell 1998). Strong institutions that perform well and are responsive to citizens create a positive climate for tax compliance. Strong institutions are even self-reinforcing in the sense that those with views predisposing them to evade taxes may nonetheless be compliant by modeling the cooperative behavior of the majority (Castles 1978; Rothstein 1998).

While plausible, the approach faces a problem in that institutions (like culture) are not unitary and often provide competing incentives and disincentives for specific behaviors. It can be difficult to translate general arguments about institutions into specifics. The formal rules of the game often used to define institutions can take on multiple meanings that are inconsistent, dependent on context, and constantly evolving (Mahoney and Thelen 2009; Thelen 2004). Indeed, critics of neo-institutionalism argue that countries can have similar institutional rules but differ widely in citizen behavior (McClosky 2016). To give more specificity to the theory, institutional arguments need to be more precise about the political and social incentives that influence citizen actions with regard to taxes.

Our approach posits that attitudes are a crucial and specific component of culture and that political and social incentives are a crucial and specific component of institutions. As culture and institutions affect one another, attitudes and institutional incentives may do so as well. More importantly, attitudes and institutional incentives should affect tax compliance, both independently and jointly.

Testing Institutional and Attitudinal Influences

One reason for the difficulties in specifying and testing cultural and institutional arguments is that the two influences are so intertwined at the national level that it is difficult to isolate one from the other (Alesina and Giuliano 2015). The problem for comparative analysts is that the outcome is in some sense overdetermined. Do Swedes, for example, trust their government and pay their taxes because the state is so efficient, or is it so efficient because Swedes are so trustworthy? Do Italians evade their taxes because of a culture of “amoral familism,” or do they evade so much of their tax burden because the state is inefficient and cannot accurately monitor and collect? To test whether institutions explain variation in behavior, we must hold national culture constant while allowing institutions to vary (Rothstein and Teorell 2012).

One way around this problem involves the use of an experimental design that can manipulate the determinants of tax behavior. Such a design allows for 1) varied institutional incentives or formal rules of the game that are structured to be independent of culture, 2) measurement of individual attitudinal dimensions that vary within as well as between countries, and 3) the separate and combined influences of both institutions and attitudes. The design gives more precise

meaning to institutions by measuring rules and incentives for tax compliance and to culture by measuring multiple attitudes toward the state and taxes.

First, to the extent that institutions are important, the responses of subjects in the same country will vary with institutional influences and more generally support neo-institutional arguments about the critical role of government structures for citizen behavior and public policies. We can draw from a neo-institutional theory of tax policy (Steinmo 1993) to identify institutional characteristics likely to be important for tax payments. The uses to which taxes are put, or the efficiency of government services provided in return for taxes, should affect tax behavior. The Scandinavian countries, for example, are widely seen as doing more for the public and generating greater acceptance of taxes than Southern European nations (Svallfors 2011). Tax rates should also affect compliance. Assuming similar returns to taxes paid, a comparison of costs and benefits by citizens would induce more evasion with higher taxes and more compliance with lower taxes. The fairness of tax rates and government benefits should further encourage tax compliance. The public should be more compliant with tax payments when progressive taxes define higher rates for higher income groups and progressive benefits offer more government help to those most in need. Still further, the uses to which the government puts taxes should affect compliance. When the public knows that taxes go to collectively important public safety organizations such as the police and firefighters and to clientele in clear need such as the elderly, the willingness to pay taxes should be higher. These characteristics of institutional structures vary across nations, but translating them into specific components that can be experimentally manipulated can give new insights into taxpayer behavior.

Second, a tax experiment can be easily supplemented with a survey that allows one to unpack the multiple attitudinal components that the general terms of culture and tax morale conflate. Most obviously, attitudes that encourage support for the government and tax system should encourage tax compliance, while other ideologies and attitudes should do the opposite. As Lozza et al. (2013) argue, those expressing stronger support for government redistribution relative to the free market should be more predisposed to comply with tax laws. In addition, attitudes toward the competence and efficiency of the government should, independent of ideologically based attitudes, affect compliance. Trust that the government uses taxes honestly and for the benefit of the public should increase compliance, while cynicism about the government and perceptions of government corruption should do the opposite.

Third, the influence of attitudes on behavior may be shaped by the institutional context (Hall and Lamont 2009; Steinmo 1993). We reason that attitudes are not formed in isolation from institutions. Rather, institutions may tilt the distribution and influence of attitudes in a positive or negative direction. The same attitudes may result in different behavior in different institutional contexts. Lozza et al. (2013) find that left-leaning taxpayers respond more positively to an institutional environment of voluntary compliance, while right-leaning taxpayers respond more to the coercive power of authorities. Zhang et al. (2016) suggest that an institutional context with unintelligibly complex rules and

indisputably corrupt government operations reinforces attitudes that favor tax evasion. In this sense, both institutions and attitudes may influence tax compliance in a co-evolving or endogenous relationship (Alesina and Giuliano 2015). Although attitudes and institutions are analytically separable, they can also work together. Specifically, we would expect pro-state attitudes to combine with strong political institutions to increase compliance. For example, a positive institutional environment (such as in Sweden) creates conditions where positive attitudes can make a real difference for public policy and hence translate into tax-compliant behavior. Elsewhere (such as in Italy), positive attitudes are not enough to overcome an institutional environment that encourages evasion. Where others evade taxes, even those with positive attitudes may reason that they should do the same.

Hypotheses

Following this logic for testing arguments about institutions, attitudes, and the combination of institutions and attitudes, we use behavioral tax payment experiments done in multiple countries for a large number of subjects. The strategy is to present subjects in the countries with identical choices under a common set of institutional rules (and with careful effort to minimize any differences due to the implementation of the experiment and language).

Cross-national studies involving experimental methods have become more widespread in the social sciences in recent years (Cummings et al. 2009; Gächter and Schulz 2016; Gërkhani and Schram 2006; Herrmann, Thöni, and Gächter 2008). Building on this work, we conducted two experiments at multiple universities in four countries at various points during the academic year from 2013 to 2015. The four countries selected for study—Italy, the United Kingdom, the United States, and Sweden—reflect diverse cultures, institutions, and rates of tax evasion but are similarly affluent, highly educated, and democratic. Much like previous comparative experimental studies of tax compliance (Gërkhani and Schram 2006), the experiments involved earning money, requiring subjects to report earnings from which taxes would be withdrawn, and calculating the existence and size of any gap between reported and actual earnings. The experiments varied the conditions for reporting along dimensions of redistribution of taxes, tax rates, and progressive taxation that reflect real-life institutional differences. A survey following the experiments asked numerous questions about political, economic, and social attitudes. Examining the influence of country, experimental conditions, and survey attitudes on reported income allows for tests of cultural, institutional, and attitudinal explanations of tax compliance.

The four countries differ in the effectiveness of the state and its ability to translate citizen preferences into policies and in citizen views of the government as efficient, fair, and responsive. The *Quality of Government Institute* (2016) has created a scale that combines components measuring corruption, rule of law, and bureaucratic quality. The scale scores Sweden highest (0.96), followed by the UK (0.85) and the United States (0.83) and then Italy (0.57). The differences are small relative to comparisons with low-income countries, but among

the high-income democracies, the score reflect important variation in the context of tax compliance.

Based on the cross-national experimental design and survey, several hypotheses follow about differences in tax compliance across individuals and countries. First, attitudes toward government and taxes will form multiple dimensions that affect tax compliance independent of national culture or country. Second, institutional rules and incentives will affect tax compliance independent of national culture or country. Third, institutional rules and incentives supportive of tax compliance will enhance the influence of attitudes on tax compliance.

Methods

Experimental Protocol

The experiments involved earning money through a real-effort task, requiring subjects to report earnings from which taxes would be withdrawn and calculating the existence and size of any gap between reported and actual earnings. They were conducted at universities in each of the study countries, and subjects came from electronic databases of individuals who had expressed interest in participating in behavioral experiments. The experimental sites included Bologna, Rome, and Milan in Italy; Oxford, London, Exeter, and Essex in Britain; Santa Cruz, California, Boulder, Colorado, Boone, North Carolina, Stony Brook, New York, and Honolulu, Hawaii, in the United States; and Stockholm and Gothenburg in Sweden. Great care was taken to ensure that the participant pools were similar in each experimental location, with all subjects recruited using ORSEE (Greiner 2004). The participant pools were composed mainly of undergraduate students, but also included a small portion of non-students and people who had already graduated (10.2 percent). Prior to beginning the experimental tasks, participants were given no information about the aims of the research project nor told that they were taking part in a larger study comparing decision-making across national groups.²

Each experiment consisted of several stages plus a post-experiment survey, and lasted 90 minutes on average. The protocol was implemented in exactly the same manner in each country. The wording of the instructions was translated (double-blind) to ensure consistent meanings of the words and phrases across the countries.³ Native speakers were used to moderate the experimental sessions, even matching the regional accent in the Italian case. These procedures were implemented to ensure that participants would not be subject to national (or group-level) reputational concerns when making their decisions. We also took great care to ensure that the experiment would simulate, as much as possible within a laboratory setting, the private decisions facing an individual taxpayer. Along these lines, we intentionally incorporated tax language in our protocols, using words such as “income,” “taxes,” and “audit” (Calvet and Alm 2014; Cummings et al. 2009). While the issue of framing effects in tax experiments is far from settled (Wartick, Madeo, and Vines 1999), we believe this design choice

offered an improvement over the use of neutrally framed compliance games in terms of the ability to stimulate taxpayer motivations.

Participants undertook all experimental tasks via computer, and the terminals were partitioned to ensure that participants could not communicate during the session, nor observe what others were doing. Each stage began with participants performing a five-minute clerical task in which they copied random strings of letters and numbers from a sheet of paper onto an electronic form. Participants were paid Experimental Currency Units (ECUs) for each line of text they correctly copied, and the ECUs were converted into real currency at the end of the experiment. The exchange rates were based on $2 \times$ the average hourly pay rates in each country. After the clerical task, participants were shown their earned income and asked to “report your income for tax purposes” under a variety of institutional scenarios (described below).

In addition, participants were told that they would face a 5 percent probability of being audited in each scenario; if they underreported their income and were audited, they would pay a fine equal to twice the tax that they had avoided. Importantly, the results of any audits were revealed only at the end of the experiment, to avoid the possibility that being audited in one round would affect behavior in subsequent rounds. Moreover, throughout the experiment, participants had no knowledge of other participants’ performance in the typing tasks or their tax-reporting decisions. This ensured that individual choices did not reflect reciprocity or conditional cooperation.

The key to the experiment came from manipulation of the fiscal rules relevant to different features of modern taxation systems. To elicit behavior under a range of institutional contexts, the stages altered 1) the amount that participants received in return for the taxes that they collectively paid, 2) the tax rates participants paid, 3) the progressivity of the taxation, 4) the recipient of taxes (government versus charity), 5) the progressivity of benefits, and 6) the government agency receiving the taxes. Specifically, Experiment 1 included nine scenarios and Experiment 2 included six scenarios. Of the total 15 scenarios, two were repeated across experiments and 13 were unique. The within-subject experimental design exposed each subject in Experiment 1 to all nine scenarios and each subject in Experiment 2 to all six scenarios.

Table 1 briefly describes the experiments, stages, and scenarios, and more detail can be found in [Andrighetto et al. \(2016\)](#) and [Zhang et al. \(2016\)](#).⁴ Note that in each round, before subjects were asked to report their incomes, they were given multiple specific examples demonstrating the rules in each scenario under a series of hypothetical decisions. They were also reminded of the 5 percent probability of being audited, as well as of the fine they would have to pay should the audit detect any underreporting. The scenarios were presented in the same order for all respondents, but checks for a subsample showed only modest influence of a changed order.⁵

Table 1. Summary of Experimental Treatments

Experiment 1 Stage 1
<i>Scenario 1.</i> Participants were told that the tax rate is 30 percent, with no mention of redistribution of tax revenues.
<i>Scenario 2.</i> The tax rate remained at 30 percent, but all tax revenues were placed in a general fund that was subsequently divided equally among all participants.
<i>Scenario 3.</i> The tax rate remained at 30 percent, but all tax revenues in the general fund were doubled and then redistributed equally to all participants.
Experiment 1 Stage 2
<i>Scenario 4.</i> A 10 percent tax rate, with tax revenues doubled and then redistributed.
<i>Scenario 5.</i> A 30 percent tax rate, with tax revenues doubled and then redistributed.
<i>Scenario 6.</i> A 50 percent tax rate, with tax revenues doubled and then redistributed.
Experiment 1 Stage 3
<i>Scenario 7.</i> A progressive system taxed the top 10 percent of earners (as defined by their self-reported income) at 50 percent, the bottom 10 percent of earners at 10 percent, and the middle 80 percent of earners at 30 percent, with tax revenues doubled and then redistributed.
<i>Scenario 8.</i> A marginal tax system taxed all subjects at 10 percent on the first 50 ECUs of reported income, at 30 percent on the next 50 ECUs, and at 50 percent on all reported income above 100 ECUs, with tax revenues doubled and then redistributed.
<i>Scenario 9.</i> A flat tax rate of 30 percent, with revenues doubled and then donated to charity.
Experiment 2 Stage 1 (scenarios 1 and 2 are repeated from Experiment 1)
<i>Scenario 10.</i> A tax rate of 30 percent going to a general fund, with the lowest 20 percent of earners receiving slightly more from the fund than those with average and above incomes.
Experiment 2 Stage 2
<i>Scenario 11.</i> A tax rate of 30 percent, with revenues going to the national government (Department of the Treasury).
<i>Scenario 12.</i> A tax rate of 30 percent, with revenues going to the Social Security Retirement System (National Pension Scheme).
<i>Scenario 13.</i> A tax rate of 30 percent, with revenues going to the local fire department.

Note: In each round, before subjects were asked to report their incomes, they were given multiple specific examples demonstrating the rules in each scenario under a series of hypothetical decisions. They were also reminded of the 5 percent probability of being audited, as well as of the fine they would have to pay should the audit detect any underreporting.

Measures and Models

The primary outcome measure equals the proportion of earnings reported in each scenario. The survey includes a wide variety of attitudinal items relating to views on politics, taxes, and the government (described below). In addition, the survey has information on sociodemographic characteristics: age, gender

(male = 1), employment (employed = 1 but for Experiment 1 only), religious importance (a standardized scale created from three items, $\alpha = 0.97$, but for Experiment 2 only), number of previous experiments (0 through 5 or more), total income earned (in ECUs), and self-rated willingness to take risks (1 = completely unwilling to 10 = completely willing). Dummy variables for country reflect cultural, institutional, and other contextual characteristics that similarly affect all citizens within a country, regardless of their individual attitudes and the specific experimental scenario.

Across the four countries, the sample from the first experiment includes 1,563 subjects and the sample from the second experiment includes 1,018 subjects. The general analysis strategy is to treat reporting as a single variable with unique values for each experimental scenario and person. Each person in Experiment 1 has nine cases, one for each scenario, and each person in Experiment 2 has six cases, one for each scenario. Pooling the experimental scenarios (level 1) and individuals (level 2) gives a maximum N of 14,067 ($1,563 \times 9$) for Experiment 1 and 6,108 ($1,018 \times 6$) for experiment 2. A small proportion of subjects are missing data on compliance, attitudes, or control variables (2.6 percent in Experiment 1 and 5.7 percent in Experiment 2), reducing the sample sizes to 13,701 and 5,759.

Given the differences in scenarios in the two experiments, we estimate models separately for each. The pooling of scenarios within subjects means that the statistical models must adjust for non-independence across cases. Estimation of random effects in linear mixed models with `xtmixed` in Stata adjusts for this clustering within individuals. With too few countries to reliably estimate another level of random effects, the two-level linear mixed models include fixed effects to adjust for clustering within countries plus robust standard errors. The intraclass correlation coefficient is 0.52 in Experiment 1 and 0.61 in Experiment 2, suggesting somewhat more similarity across scenarios for the same person (level 1) than across persons (level 2).

Results

Attitude Scales

The Experiment 1 survey contains 39 attitudinal items, while the Experiment 2 survey contains 46 attitudinal items. The survey items are similar, though not identical. The Experiment 1 survey asks about areas (e.g., the environment, health) needing more government spending, while the Experiment 2 survey asks about areas of responsibility of the government. The wording of several items changes as well (“Most people who cheat on their taxes do so because they feel that the government and politicians are corrupt” versus “It is justifiable not to pay taxes because the government and politicians are corrupt”). More importantly, the Experiment 2 survey includes a set of items on confidence and perceived prevalence of corruption in institutions (e.g., school, health) that the Experiment 1 survey does not.

To identify meaningful components of the numerous measures, the attitudinal items were included in orthogonal rotated principle components factor analyses. The factor analyses identified a large number of factors, but focusing on those with eigenvalues greater than two helps select factors that are defined by more than a few measures. The factors can be described by focusing on survey items with loadings greater than or equal to the absolute value of 0.40.

For the Experiment 1 and Experiment 2 survey items, the factor analyses produced three factors with large eigenvalues, meaningful sets of associated items, and reliable scales. Two of the three factors from each dataset are quite similar, while the fit between the third is less clear. Table 2 lists the items with high loadings for each experiment and factor.

1. *Pro-Redistribution Ideology*. This factor loads on 15 items in the Experiment 1 data and 14 items in the Experiment 2 data. High scores on the items reflect support for welfare state spending, government intervention, and redistribution of income through taxes. As shown by the relatively large factor loadings in the table, the items most strongly linked to the factor include support for more spending on unemployment (0.73), greater government responsibility for people's well-being (0.72), and greater income equality (0.69). Related to support for greater government redistribution are beliefs that people are not to blame for economic difficulties and deserve government help. Self-placement on a left-right scale of political views is a key component. Although the items differ across the two datasets, the sentiments reflected in the items are similar. The scale is similar to what [Alesina and Giuliano \(2011\)](#) refer to as preferences for redistribution.

2. *Fiscal Responsibility*. This factor reflects more in the way of normative beliefs than political views. Items loading highly include agreement with statements that it is not justifiable to cheat on taxes, cheat on government benefits, or not pay taxes for any variety of reasons. Another item reflects views of cheating on taxes as a serious crime. High scores indicate intrinsic motivations for compliance. There is substantial overlap across the two datasets, although the Experiment 1 data include 8 items versus 6 items in the Experiment 2 data. The scale is similar to what [Herrmann, Thöni, and Gächter \(2008\)](#) refer to as the norm of civic cooperation.

3. *Belief in Government Competence*. Given the types of questions used on the two surveys, the 10 items loading on the Experiment 1 factor differ from the nine items loading on the Experiment 2 factor. Despite some underlying similarities, the two sets of items differ in important ways. High scores on the Experiment 2 items of confidence and lack of corruption in government institutions indicate positive views of the competence of the government. The Experiment 1 items more indirectly reflect belief in government competence. They tap views that problems in the government and tax system—complexity, high tax rates, corruption of politicians, support for lazy people, inefficiency, and lack of taxpayer control—are not so serious as to cause people to cheat on taxes. The Experiment 1 attitudes are positive in the sense that existing problems in the government and tax systems are not seen as justifying tax evasion. Still,

Table 2. Factor Loadings and Items for Three Scales in Experiment 1 (left) and Experiment 2 (right)

Pro-redistribution ideology	Pro-redistribution ideology
0.73 More government unemployment spending	0.74 Disagree: Welfare benefits teach people to be lazy
0.72 Government should take more responsibility	0.69 Poverty due to unfairness
0.69 Incomes should be more equal	0.67 Disagree: Those unwilling to work abuse welfare
0.66 Self-placement on the left of the political scale	0.67 Benefits for poor people are too low
0.62 Taxes are too low for those with high income	0.67 Government should take more responsibility
0.60 More government health spending	0.66 Self-placement on the left of the political scale
0.57 More government culture spending	0.60 People who want jobs can't find one
0.57 More government environment spending	0.60 Cutting benefits would damage people's lives
0.57 Competition is harmful	0.56 Free markets are harmful
0.54 Increase government ownership	0.52 Government should reduce income differences
0.53 More a person earns, the higher taxes should be	0.50 Government should provide decent living for unemployed
0.49 More government pension spending	0.50 Government should provide housing if can't afford
0.48 More government education spending	0.48 More a person earns, the higher taxes should be
0.45 Better life comes from luck and connections	0.42 It is right to pay taxes to help the most vulnerable
0.40 It is right to pay taxes to help the most vulnerable	
Fiscal responsibility	Fiscal responsibility
0.68 Paying taxes is a fundamental duty of citizenship	0.66 Never justifiable to cheat on taxes
0.62 Never justifiable to cheat on taxes	0.63 Should pay taxes even if government officials corrupt
0.60 Paying taxes funds useful and important services	0.62 Should pay taxes even if government wastes money
0.59 Should pay taxes even if they are unfair	0.62 Not paying taxes is one of the worst crimes
0.58 Disagree: It is right not to pay taxes if they are unfair	0.56 Never justifiable to cheat on claiming benefits

(Continued)

Table 2. continued

Fiscal responsibility	Fiscal responsibility
0.52 Should pay taxes to help the most vulnerable	0.53 Paying taxes funds useful and important services
0.52 Not paying taxes is one of the worst crimes	
0.47 Never justifiable to cheat on claiming benefits	
Belief in government competence 1	Belief in government competence 2
0.66 Disagree: Pay if had some control over spending	0.69 Corruption not prevalent in public hospitals
0.62 Disagree: Cheat because politicians are corrupt	0.67 Corruption not prevalent in national government
0.58 Disagree: Pay if government worked more efficiently	0.64 Confidence in national government
0.56 High taxes don't force individuals to evade taxes	0.63 Corruption not prevalent in police force
0.56 Disagree: Cheat because the tax rates are too high	0.60 Corruption not prevalent in fire department
0.49 Disagree: Spend tax money where taxes are collected	0.60 Confidence in fire department
0.48 Tax money not used to support lazy people	0.58 Confidence in city government
0.47 Taxes are too low on middle income groups	0.52 Confidence in social security
0.46 Disagree: People afraid of making a mistake in taxes	0.48 Corruption not prevalent in public school system
0.42 Disagree: Cheat because tax system is too complex	

they do not signify the same degree of confidence in government competence as the stronger statements of the Experiment 2 items.

Checks on Convergent Validity

We created scales for the three factors in each experiment by summing the items listed in table 2 (after standardizing the items to have comparable units).⁶ If the attitude scales make sense, they should correlate in expected ways with other measures available from the two surveys. To check, we regress the six scales (three for each dataset) on dummy variables for country, age, gender (male = 1), employment (yes = 1) for the Experiment 1 data, and religiosity for the Experiment 2 data. Table 3 presents the regression coefficients and *t*-values. For the most part, the attitude scales appear valid in that they differ across countries

Table 3. Regression Coefficients and *t*-Values for Predictors of Attitude Scales (Experiment 1 on left, Experiment 2 on right)

Pro-redistributive ideology			Pro-redistributive ideology		
Sweden (ref.)	b	t	Sweden (ref.)	b	t
Italy	-0.123	-1.57	Italy	-0.156	-1.55
UK	-0.565	-7.52***	UK	-0.208	-1.77
US	-0.296	-4.14***	US	-0.243	-2.41*
Age	0.014	4.03***	Age	0.010	1.93
Male = 1	-0.165	-3.30***	Male = 1	-0.337	-5.36***
Employed = 1	-0.201	-3.84***	Religious	-0.092	-2.85***
Constant	0.098		Constant	0.097	
N	1,539		N	998	
Fiscal responsibility			Fiscal responsibility		
Sweden (ref.)	b	t	Sweden (ref.)	b	t
Italy	-0.008	-0.10	Italy	0.461	4.61***
UK	-0.276	-3.61***	UK	0.056	0.48
US	-0.334	-4.59***	US	-0.028	-0.28
Age	-0.001	-0.02	Age	0.007	1.27
Male = 1	-0.139	-2.74**	Male = 1	-0.220	-3.53***
Employed = 1	-0.158	-2.96**	Religious	0.106	3.31***
Constant	0.317		Constant	-0.171	
N	1,539		N	998	
Belief in government competence 1			Belief in government competence 2		
Sweden (ref.)	b	t	Sweden (ref.)	b	t
Italy	-0.847	-11.16***	Italy	-1.401	-15.19***
UK	-0.444	-6.10***	UK	-0.704	-6.55***
US	-0.736	-10.65***	US	-0.681	-7.42***
Age	0.012	3.62***	Age	-0.003	-0.70
Male = 1	0.134	2.72**	Male = 1	0.100	1.74
Employed = 1	-0.086	-1.69	Religious	0.063	2.14*
Constant	0.218		Constant	0.790	
N	1,539		N	998	

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

and social groups in expected ways, but they also reflect variation within countries and social groups.

For pro-redistribution ideology, Sweden fits expectations in having the highest adjusted mean scores and exhibiting the most support for redistribution in the Experiment 1 data. Italy also scores highly on pro-redistributive ideology, as

would be expected; it has a lower mean than Sweden, but the means do not differ significantly across the two countries. The UK and the United States, in contrast, have significantly lower adjusted mean scores and levels of support than Sweden and Italy. The Experiment 2 data show the same pattern, but only the United States differs significantly from Sweden. Also according to the results, older persons have more positive attitudes about redistribution, while men and employed and religious persons have less positive attitudes.

For fiscal responsibility, Italy has the highest mean and the UK and the United States have the lowest. Sweden is similar to Italy in Experiment 1 but lower than Italy in Experiment 2. According to the measures, Italians have the strongest sense of duty to pay taxes, despite high levels of actual evasion. Otherwise, males and employed persons express a weaker sense of fiscal responsibility, while religious persons express a stronger sense of fiscal responsibility.

For belief in government competence, Sweden shows clear and significantly higher levels than all three other countries. Consistent with objective ratings of the quality of government, citizen perceptions of government competence in Sweden contrast with citizen perceptions in the other countries. The particularly low score for Italy on this scale fits popular conceptions of governing in the country and may counter the strong sense of fiscal responsibility shown in the previous scale. There is mixed evidence that older persons, men, and religious persons have a better view of government competence. However, differences across the two scales make it hard to generalize.

Reported Earnings Models

Table 4 presents coefficients for the predictors of the proportion of earnings reported or compliance. The two models, one for each experiment, organize the predictors into groups based on country, controls, attitudes, and institutional scenarios. The first columns include background measures of country and controls, the second columns add the attitudinal measures, and the third columns add the scenarios. Note that, given the nature of the design in which all participants complete every scenario, the scenarios are nearly uncorrelated with the other predictors.

Country

The coefficients for country show the average differences across countries when controlling for individual sociodemographic characteristics. We interpret these country effects as reflecting the influence of cultural and institutional characteristics that similarly affect all subjects within the same country. The country differences are generally not consistent across experiments, particularly for Italy and the United States—the two countries with cultural traits seen by some as hostile to the government and taxes. In Experiment 1, the UK has significantly lower reporting than Sweden, but Italy and the United States do not. Additional calculations further show lower compliance in the UK than the United States. In Experiment 2, however, Italy, the UK, and the United States have significantly lower reporting than Sweden. In sum, subjects in the United States and Italy do

Table 4. Basic Mixed Model Estimates for Predictors of Proportion of Earnings Reported (unstandardized coefficient with random intercepts for subjects plus robust standard errors)

Predictors	Experiment 1			Experiment 2		
	b	b	b	b	b	b
Country^a						
Italy	-0.029	-0.037	-0.037	-0.550***	-0.502***	-0.508***
UK	-0.115***	-0.091***	-0.091***	-0.523***	-0.480***	-0.487***
US	0.014	0.028	0.028	-0.519***	-0.472***	-0.478***
Controls						
Age	0.003***	0.003**	0.003**	0.001	0.000	0.000
Male	-0.156***	-0.146***	-0.146***	-0.205***	-0.194***	-0.194***
Employed	-0.013	-0.001	-0.001			
Religious				0.030***	0.027**	0.027*
Past experiment	-0.091***	-0.087***	-0.087***	-0.106***	-0.104***	-0.103***
Earnings	-0.003***	-0.003***	-0.003***	-0.004***	-0.004***	-0.004***
Self-rated risk	-0.029***	-0.025***	-0.025***	-0.029***	-0.024***	-0.024***
Attitude scales						
Pro-redistributive ideology		0.036***	0.036***		0.025*	0.025*
Fiscal responsibility		0.044***	0.044***		0.040***	0.040***
Belief in gov. competence		-0.015	-0.015		0.030**	0.030**
Scenarios^b						
Equal Redistribution			0.097***			0.089***
Double and equal redistribution			0.226***			
Rate = 0.10			0.190***			

(Continued)

Table 4. continued

Predictors	Experiment 1			Experiment 2		
Rate = 0.30				0.129***		
Rate = 0.50				0.068***		
Progressive tax				0.097***		
Marginal tax				0.103***		
Charity				0.267***		
Progressive redistribution						0.113***
National						0.030*
Fire						0.126***
Pension						0.076***
Intercept	0.996	0.953	0.831	1.501	1.438	1.372
Intercept variance	0.076	0.073	0.074	0.090	0.086	0.087
<i>N</i> total <i>N</i> subjects	13,701	13,701	13,701	5,759	5,759	5,759
<i>N</i> subjects	1,524	1,524	1,524	997	997	997

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ ^aSweden reference.^bTax-only reference.

not exhibit a consistent pattern of underreporting, though subjects in the UK appear to comply less than subjects in Sweden.

Controls

The sociodemographic and experimental controls affect reporting much as might be expected. Older persons and religious persons comply more, while males, those with past experimental experience, higher earners in the experiment, and self-rated risk-tolerant persons comply less. The findings that average compliance is lower among men and younger participants are consistent with previous research (Lewis et al. 2009).

Attitudes

The results in table 4 generally support the first hypothesis that multiple attitudinal dimensions affect tax compliance independent of national culture or country. The coefficients indicate that people with a stronger pro-redistributive ideology and a stronger sense of fiscal responsibility reported, on average, a higher proportion of earnings in table 4. Belief in government competence has clear positive effects when measured by questions about confidence and corruption in Experiment 2, but not with the less well-defined scale in Experiment 1. A one-standard-deviation change in the scales produces changes ranging from 0.025 to 0.044, which are modest relative to the standard deviation of 0.433 in the outcome.

Attitudes explain a small part of the country differences. In Experiment 1, the difference between the UK and Italy declines by from 0.086 to 0.054 with the attitudinal controls added, but the difference between the United States and Sweden changes little. In Experiment 2, the coefficients for all three countries are modestly smaller with the controls. The attitudinal measures help account for cross-national differences but are far from the determining factor.

Institutional Scenario

The models in table 4 use the tax-only scenario as the reference, which serves as a useful comparison for evaluating the influence of the other scenarios. The mean earnings reported for the reference category, the tax-only scenario, equal 50.6 percent and 53.3 percent in the two experiments. Experiment 1 includes coefficients for eight scenarios, and Experiment 2 includes coefficients for one overlapping scenario and four unique scenarios. In general, the results support the second hypothesis in demonstrating the importance of institutional conditions and incentives for reporting: Redistribution increases reporting, higher tax rates reduce reporting, progressive taxation has mixed influence relative to a flat tax, and funds going to charity, the fire department, and pensions increase reporting.⁷

In Experiment 1, equal per capita redistribution of collective revenues increases compliance by 0.097, but doubling the amount before redistributing increases compliance by notably more, 0.226. The compliance returns to redistribution suggest the benefits of a fiscally responsive government. For tax

rate, an increase from 10 percent to 30 percent reduces compliance by 0.061 (0.190 versus 0.129, $p < 0.001$) and from 30 percent to 50 percent also reduces compliance by 0.061 (0.129 versus 0.068, $p < 0.001$). The effect of redistribution is thus proportionally smaller at higher tax rates. The two progressive taxation conditions (with an average 30 percent rate) have similar positive effects (0.097 and 0.103) relative to the tax-only condition. However, when compared to compliance under the flat tax rate of 30 percent, the two progressive conditions lead to significantly lower compliance (0.129 versus 0.097, $p < 0.002$, and 0.129 versus 0.103, $p < 0.016$). For charity, compliance increases by 0.267 ($p < 0.001$) compared to the tax-only condition and by 0.137 (0.267 versus 0.129, $p < 0.001$) compared to the flat tax rate of 30 percent. The benefits to compliance are greater when charities rather than the government do the redistribution.

In Experiment 2, equal redistribution increases reporting by 0.089, much as in Experiment 1. Progressive redistribution increases reporting by slightly more than equal redistribution (0.113 versus 0.089, $p < 0.074$), which contrasts with the result in Experiment 1. Directing funds to the fire department, relative to directing funds to the national government, increases the proportion reported by 0.096 (0.126 versus 0.030, $p < 0.001$). The same comparison for old-age social security shows a 0.046 increase in compliance (0.076 versus 0.030, $p < 0.001$).

This point shows also in some additional comparisons across countries when institutional factors are held constant. The UK ranks second highest of the four countries in terms of actual compliance but lowest in compliance in Experiment 1; the United States ranks third of the four countries in actual compliance but toward the top in Experiment 1; and Italy ranks last in actual compliance but better than the UK in Experiment 1. These discrepancies suggest the importance of institutional factors, which are controlled in our experiment but vary widely across countries in real life.

Institutional Differences in the Effects of Attitudes on Reporting

A third hypothesis focuses on how institutional context shapes the influence of attitudes on reporting. It suggests that institutions and attitudes supportive of tax compliance will combine in ways that facilitate the influence of one another and raise compliance to particularly high levels. Table 5 presents selective results for Experiment 1 and two of the three attitude scales. The table lists product terms of each scenario times the pro-redistributive ideology and belief in government competence scales. The interaction terms show some significant coefficients that are in the direction predicted by the interaction hypothesis. For example, the association of positive attitudes toward redistribution and tax compliance is stronger for the scenario of redistributing tax payments. To illustrate, the predicted probability of compliance for subjects at the low end of the redistribution scale (i.e., the 10th percentile) equals 0.436 for scenario 1 (no redistribution) and 0.496 for scenario 2 (redistribution). Among those with anti-redistributive ideologies, the equal redistribution tax policy raises compliance by only 0.06 relative to the tax-only policy. In contrast, at the high end of the redistribution scale (i.e., the 90th percentile), the two scenarios differ more substantially. The

Table 5. Interaction Mixed-Model Estimates for Predictors of Proportion of Earnings Reported (random intercepts for subjects plus robust standard errors)

Predictors	Scenario x Pro-redistributive ideology		Scenario x Belief in government competence	
	b	t	b	t
Scenarios^a				
Equal redistribution	0.049	2.89**	0.034	1.85
Double and equal redistribution	0.012	0.71	0.043	2.39*
Rate = 0.10	-0.016	-0.94	0.027	1.49
Rate = 0.30	0.010	0.58	0.046	2.52*
Rate = 0.50	0.016	0.93	0.036	1.99*
Progressive tax	0.024	1.43	0.045	2.48*
Marginal tax	0.012	0.72	0.051	2.78**
Charity	0.003	0.15	0.067	3.69**
Attitude scales				
Pro-redistributive ideology	0.092	5.20***		
Belief in government competence			-0.029	-1.48
Intercept	0.081		0.081	
Intercept variance	0.089		0.093	
Slope variance	0.001		0.001	
N total N subjects	13,701	1,524	13,701	1,524

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

^aTax-only reference.

predicted probability of compliance equals 0.575 for scenario 1 and 0.709 for scenario 2. The difference of 0.134 is more than twice the difference for those with anti-redistributive attitudes. Among those with very positive attitudes toward redistribution, the institutional condition with equal redistribution raises tax compliance substantially. In short, tax compliance is higher for those strongly supporting redistribution, but compliance is particularly high when the scenario involves redistribution.

In addition, the association of positive attitudes toward government competence and tax compliance is stronger for the scenarios involving redistribution, higher tax rates, progressive tax rates, marginal tax rates, and payments to charity. These results suggest that attitudes do more to increase compliance when institutional rules and incentives are also favorable. To illustrate, we can compare those with low and high scores on the government competence scale (again, at the 10th and 90th percentiles). We can then examine compliance with the 10 percent tax rate and the 30 percent tax rate. An increase in the tax rates reduces

compliance by 0.085 for those with negative attitudes toward government competence but reduces compliance by 0.041 (or half as much) for those with positive attitudes toward government competence. In other words, those suspicious of government competence object more to higher rates and show lower compliance at higher rates than those supportive of the government.

However, while suggestive, the results provide only limited evidence for the hypothesis. Because between-subject variance in the slopes for attitudes is small (listed in table 5 as slope variance), the interaction effects may not be reliable and warrant caution in interpretation. Also, there is little evidence of interactions for fiscal responsibility or Experiment 2. Still, in shaping the influence of attitudes, institutions may have importance beyond their direct influence on tax compliance.

Conclusion

In this study, we have attempted to disentangle multiple influences with cross-national experiments that use experimental conditions to measure institutional structures and financial incentives and use accompanying survey items to measure attitudes. The approach, while not without limitations, is innovative in focusing on tax-related behavior that is central to fiscal sociology and in examining determinants that are typically difficult to disentangle. Despite much debate over the relative roles of culture and institutions in political and economic behavior, studies seldom have been able to isolate the influence of one from the other. The experimental approach offers one less than perfect but still insightful way to do so.

The strength of the experimental approach comes from the ability to manipulate conditions in ways that separate institutional incentives from other potential influences of tax behavior. Because all subjects, regardless of country, attitudes, or demographic characteristics, respond to the same set of scenarios, the varied institutional incentives used in the scenarios are independent of other influences. Because the variance explained by attitudes does not overlap with the variance explained by the scenarios, we are able to show that both attitudes and institutional rules affect compliance in predictable ways. In real life, Swedes face different institutional incentives than Italians, Americans, or the English. But in the experiment, all subjects respond to common conditions. This ability of the experiment to demonstrate the influence of both cultural attitudes obtained from the survey and institutional incentives represents an important insight that has not been available from the literature.

The results stemming from the experimental design first show what may seem an obvious point: “institutional rules matter.” People respond to the institutional incentives they face in meaningful and plausible ways. Participants in all countries decreased compliance as tax rates increased and increased compliance as the redistributive quotient increased. Directing funds to highly valued uses, such as for the fire department or pensions rather than the general government, also increased compliance.

Second, our subjects' attitudes grouped along three basic dimensions in all four countries: 1) pro-redistributive ideology, 2) fiscal responsibility, and 3) belief in government competence. Each of these three attitudinal dimensions proved to be significant predictors of an individual's tax compliance behavior independent of country. Single concepts such as "national culture" or "tax morale" fail to adequately distinguish the diversity of these attitudinal influences. In Italy, for example, a strong sense of fiscal responsibility and a moderately high pro-redistributive ideology actually favor reporting, but these attitudes are counterbalanced by very low perceived government competence. For the UK and the United States, the opposite pattern emerges: Subjects in these countries score low relative to Italy on pro-redistributive ideology and fiscal responsibility but higher on perceived government competence. Culture remains important but takes on more precise meaning when measured in terms of multi-dimensional attitudes.

Third, this analysis suggests that institutional rules and individual attitudes may reinforce one another. Isolating the separate influence of institutions and attitudes in some ways may be artificial, and tests for their combined influence may be more realistic. The tests suggest that combining redistributive institutional conditions and positive attitudes makes for particularly high compliance. It is important to understand that not all Swedes, for example, score high in pro-redistributive ideology or believe that government is competent. However, a larger share of Swedes hold these views than Americans or Italians (Esping-Andersen 1990; Svallfors 1997, 2011). In the UK, United States, and Italy, where institutional conditions are less supportive of tax compliance (Ferrera 2014; Gilens 1999), individual beliefs in redistribution and high levels of trust are important for tax compliance, but these countries do not have the synergistic effect of positive institutions and attitudes that Sweden does.

Fourth, with country differences treated as aggregate influences after adjusting for experimental condition, socio-demographic background, and attitudes, some telling findings emerge. When presented with the same fiscal rules and material incentives in the experiments, the Italian and American subjects appear more compliant, while UK subjects appear less compliant. The findings for the United States match previous studies (Alm and Torgler 2006) but are less consistent with arguments emphasizing individualistic values. The United States ranks lower than Sweden and the UK based on tax compliance figures reported by the countries but ranks as more compliant in our study when institutional conditions are held constant. Italy ranks lowest according to published rates of tax compliance but is more compliant than the UK in our study. We find that country differences remain even when controlling for attitudes and institutional rules, but that the differences do not align with common conceptions. While we cannot dismiss the importance of national cultural influences, they do not appear dominant in understanding tax compliance. Our approach of translating broad cultural influences into more specific attitudes and translating broad institutional structures into more specific rules and procedures gives insights not available from the country differences alone.

In recognizing the limitations of cross-national experimental studies, we offer our conclusions with some qualification. First, the reliance of the experiments on students limits generalizability of the results. However, it should be noted that the participants in our study were very similar (though not identical) in all four countries. Even so, many students do not yet pay taxes, and future research needs to study workers and persons at older ages (Alm, Bloomquist, and McKee 2015). Second, the behavior of subjects in the lab may differ from behavior outside the lab, and the experimental scenarios can only approximate the institutional structures and incentives that citizens face in reporting income. Those having participated in many experiments, in particular, appear to act differently in responding to tax conditions, and the meaning of participating in an experiment may differ across countries. Alm, Bloomquist, and McKee (2015) find that “the behavioral patterns of subjects in the laboratory conform to those of individuals making a similar decision in naturally occurring settings. . . [and] the behavioral responses of students are largely the same as those of nonstudents in identical experiments.” Still, even with the extensive efforts to make the experiments identical across countries, the limits in external validity are likely exacerbated in making cross-national comparisons. Still further, we can’t know from the data if the implementation of Swedish-type tax institutions in Italy would change behavior in the real world. Our results suggest that they would—a tax system in which Italians received greater returns on their taxes should increase compliance. Again, however, this reasoning involves more speculation than fact. Third, we focused on individual compliance, while corporations are also an important component of national tax compliance.

Despite these limitations, unique insights come from having subjects in multiple countries respond to the same experimental conditions. Without such an approach, isolating institutional and cultural influences remains exceedingly difficult. Our results favoring institutional and attitudinal influences, while far from definitive, contribute to debates over the sources of country differences in public policies. As part of a multi-method approach to understanding tax compliance, cross-national experimental studies can do much to help understand national and individual patterns of tax compliance and welfare state efficacy.

Notes

1. Measuring and comparing the tax gap across countries is difficult in part due to different methodologies and different assumptions regarding what should be counted as tax evasion. Estimates by different national authorities cannot be directly compared, but our figures suggest significant variation across countries.
2. Had subjects known their behavior would be compared to behavior in other countries, it may well have biased the outcomes.
3. The exact scripts for the experiments are available at the EUI Data Depository, under “Willing to Pay,” <http://euiresdata.eui.eu/xmlui/handle/123456789/24>.
4. We made scenarios 3 and 5 the same in order to check for consistency. As the results will show, compliance is lower in scenario 5, perhaps because subjects had begun to learn the strategy that maximizes their individual payoff. But the general similarity

of results in the two scenarios is encouraging and demonstrates some consistency across countries and sessions.

5. We conducted the experiment with consistent ordering to maintain reliability across locations. However, to check for ordering effects, we also ran a set of experiments in Italy with random ordering of treatments. We found that changing the ordering of the treatments affected the baseline levels of compliance, as different starting points offered different “anchors” for the rest of the experiment. Despite the different levels of compliance, however, the differences between treatment scenarios changed little.
6. The scales all have alpha reliabilities >0.70 . Perhaps more importantly, if reliabilities for the factor scales differ across countries, the varied degree of random error rather than the actual views of the subjects might lead to country differences in relationships with compliance. To check, we examined Cronbach’s alpha for each factor, experiment, and country. These results are available on request and show that the country reliabilities differ little.
7. It is possible that, as the purpose of the research becomes transparent to participants in later rounds and they seek to maximize their earnings, compliance would fall regardless of the specific experiment scenario. Yet, the later rounds generally show higher rather than lower compliance. We note that these transparency effects may lead to conservative tests of differences between early and later conditions.

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