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The importance of faith: Tax morale and religiosity

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Abstract

The intention of this paper is to analyze religiosity as a factor that potentially affects tax morale. For this purpose, a multivariate analysis has been done with data from the World Values Survey 1995–1997, covering more than 30 countries at the individual level. Several variables, such as church attendance, religious education, active membership in a church or a religious organization, perceived religiosity, religious guidance and trust in the church have been analyzed. The results suggest that religiosity raises tax morale.

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As we see it, economists have avoided the study of religion, and other social scientists have failed to appreciate religion's rational/economic characteristics largely because the social sciences failed to approach religion as they did other phenomena. For many leading scholars, religion was not so much a phenomenon to be explained as it was an enemy to be overcome (Stark et al., 1996, p. 436).

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1. Introduction

Questions about tax compliance are as old as taxes themselves and will remain an area of discovery as long as taxes exist. There is almost no civilization that did not tax. Six thousand years ago, tax history started with records on clay cones in Sumer, with the inscription “There were the tax collectors” (Adams, 1993, p. 2).

While we have found quite a few studies analyzing tax compliance, until recently there has been little about tax morale. This survey focuses on tax morale and tax compliance and intends to outline alternative theories and empirical findings. Andreoni et al. (1998, p. 852) wrote, “adding moral and social dynamics to models of tax compliance is as yet a largely undeveloped area of research”.

Thus, this paper’s aim is to analyze tax morale. It is relevant to analyze tax morale, as studies in the 1990’s have shown that the puzzle of tax compliance is “why so many individuals *pay* their taxes”, not “why people *evade* taxes”. It has been noted that compliance cannot be explained entirely by the level of enforcement (Graetz and Wilde, 1985; Elffers, 1991). Countries set the levels of audit and penalty¹ so low that most individuals would evade taxes if they were rational because it is unlikely that cheaters will be caught and penalized. Nevertheless, a high degree of compliance is observed. Thus, researchers have started to analyze a variety of factors other than detection and punishment. Tax morale might be an important influencing factor for tax compliance and is therefore central to this new research focus. The framework of this paper is novel; there are not many studies that systematically search for factors that influence tax morale.

We analyze religiosity as a potential factor that affects tax morale, which we define as the intrinsic motivation to pay taxes. Religiosity has been analyzed using different measurements, such as church attendance, religious education, being an active member of a church or a religious organization, perceived religiosity, religious guidance and trust in the church, controlling for the specific religion of a person to check also whether some religions are more tax compliant than others. According to the author’s knowledge there are only two papers that examine religiosity’s effect on tax cheating (Tittle, 1980; Grasmick et al., 1991). Grasmick et al. used data collected from the annual Oklahoma City Survey in spring 1989 with a random sample of 330 adults. In our analysis we use the World Values Surveys (1995–1997). Compared to Grasmick et al., for example, our analysis has a higher sample size covering more than 30 countries, more measurements of religiosity, and more control variables. Since in some countries in our analysis corruption is quite high, it cannot be assumed that the obligation of paying taxes to the government is an accepted social norm. Thus, it is relevant to include a measurement of corruption in the analysis to check the robustness of results. Furthermore, we investigate whether trustworthiness, such as lying (“claiming government benefits to which someone is not entitled”), cheating (“avoiding a fare on public transport”) and

¹ According to Andreoni et al. (1998) the audit rate in the United States for individual tax return was 1.7 percent, the civil penalty for underpayment of taxes is calculated as 20 percent of the underpayment that results from wrongful conduct. However, in some countries, the information return and matching capabilities of the tax administration imply that the probability of being caught with tax evasion of wages and salaries is closer to 100 percent than to 2 percent (see Slemrod, 2003).

buying a stolen product (“buying something you knew was stolen”) also explain tax morale.

As most empirical research on tax compliance has generally been done with US data, there is a lack of research within countries outside the US. Thus, this paper contributes to expanding the focus, as it includes a great number of countries to get a general idea of the effect of religiosity on tax morale. The empirical findings indicate that religiosity has a significant positive effect on tax morale, even if other determinants, such as corruption, trustworthiness, demographic and economic factors are controlled for. Before starting with the empirical part (Section 3), Section 2 introduces into the economics of religiosity and argues that religiosity works as a constraint on individual behavior.

2. Religiosity as a constraint on individual behavior

2.1. Theoretical considerations

There are many behavioral norms, such as, for example, moral constraints, that are not formally laid down, but are crucially influenced by religious motivations. North (1981, p. 47) uses the term ideology to refer to a system of internalized constraints that influences individuals' behavior. He points out, “Their myopic vision has prevented neoclassical economists from seeing that even with a constant set of rules, detection procedures, and penalties there is immense variation in the degree to which individual behavior is constrained”.

Adam Smith (1976) in his *Theory of Moral Sentiments* analyzed religiosity from a rational point of view and noted that religiosity acts as a kind of internal moral enforcement mechanism (for a broad discussion see Anderson, 1988). Such an opinion is contrary to that one emerged in the 19th century and has been strongly present in the 20th century, for example, in the works of Freud (1927)² and Davis (1949) who see religion as non-rational or even irrational (see Stark et al., 1996). Religious behavior results from religious beliefs, which are shaped by benefit and cost considerations (see Hardin, 1997).

New research movements are in the line of Adam Smith and use the notion of rationality to address ethical capabilities of rational human behavior (see, e.g. van Staveren, 2001; Iannaccone, 1998). Religion can be seen as a moral commitment to acting in a determinate way. As Sen (1977, p. 329) states, commitment “drives a wedge between personal choice and personal welfare”. van Staveren argues that commitment to values shared within a community can provide an explanation for unselfish behavior, since the motive resides in the value itself. Sen (1992) brings an example in which a man stops to a fight, even if he gets hurt in doing so. Such a behavior can be judged as rational. Stopping the fight can be interpreted as an action motivated by his values, based on a commitment, for example, to a peaceful conflict resolution (see van Staveren).

Previous works that used the economic instruments in non-market areas were based on given preferences (see Becker, 1981). However, today many economists argue that individuals' preferences are not to be taken as given. Mueller (2001, p. 161), for example,

² Freud (p. 8) uses words, such as “neurosis”, “illusion”, “poison” to describe religion.

points out, “If preferences are truly exogenous, and all individual choices are attempts by rational actors to maximize their utilities, it is difficult to understand why individuals in northern Germany overwhelmingly choose to be Protestants, while southern Germans opt to be Roman Catholics; why Italy is overwhelmingly Roman Catholic, while neighboring Greece is overwhelmingly Greek Orthodox”. According to Mueller religious instructions are able to shape individual preferences so that a particular religion is favored. Networks of such people as family or colleagues can influence the decision making of a person. Someone invests in a set of positively valued social relations by conforming to the norms and the behavior of such a network. To act conformably and thus imitate the behavior can enforce the acceptance inside such a group (see [Smith et al., 1998](#)).

Hardin develops an economic theory of knowledge that focuses on the way people come to hold their beliefs. He demonstrates how belief might change. One way is a reduction of cognitive dissonance:

“Suppose I am in a community of people who believe x and who generally support those who seem to believe x and to shun those who do not. I might see it as in my interest now to profess belief x even though I do not actually believe it. I thereby enjoy the camaraderie of my group.

Now, as a result of my participation in the life of the group, I hear many things that actually support the belief that I merely pretend to have. After some, perhaps long-time, I may begin to have difficulty separating various things I seemingly know from the belief x , which begins to be reinforced by this growing body of related knowledge” (p. 266).

Thus, Hardin notes that preferences might change without leaving the area of rational choice. New knowledge is acquired because it is more comfortable when someone is accepted rather than excluded from the group’s various activities. People internalize the values of their communities and act in line with their ideology. [Higgs \(1987, p. 53\)](#) has reformulated the traditional utility function, including the identity with groups of like-minded people as an essential argument. From this point of view, there is no reason for human beings to be irreligious. He states: “By acting in concert with others who embrace the same ideology, they enjoy a solidarity essential to the maintenance of their identities”.

Religious organizations provide moral constitutions for a society. Religion provides a certain level of enforcement to act in the lines of accepted rules and acts as a “supernatural police” ([Anderson and Tollison, 1992](#)).

Similar to habits, religiosity has the function to economize and simplify our actions.³ It makes our social life more predictable and provides a sense of security to counteract the anxiety associated with uncertainty ([Heiner, 1983](#)). Religiosity settles habits of thoughts common to all individuals. As a consequence, transaction and enforcement costs decrease. Twenty-five centuries ago, Confucius emphasized the importance of ritual in creating harmonious, predictable human behavior.

³ For a treatment of habits see [Twomey \(1999\)](#).

Religious behavior can be socially enforced with quasi-moral judgments and sanctions. Hull and Bold (1994) analyze the role of religious organizations in encouraging the production of social goods as moral behavior, which we can, for example, find in the Ten Commandments. The relative costs for religious inputs to produce social goods are quite low. The demand side is influenced by the culture's complexity. In complex communities, individuals are less able to recognize social costs of misbehavior, and the individual gain from proper behavior is lower than in a small society group. The authors state that religion has a comparative advantage in producing or encouraging social goods in large cultures of intermediate complexity where the central government is too weak to enforce property rights. Such a strategy attracts members, and this helps a church to prosper and survive. One church "institution" to promote compliance and to punish misbehavior is the after-life doctrine: "Heaven rewards desirable behavior and hell increases the expected cost of misbehavior, causing an increase in enforcement effectiveness" (Hull and Bold, 1994, p. 449).

Margolis (1997, p. 247) analyzed the question why morality and religiosity are tied together. Religiosity includes the belief about the right behavior. He argues that the right behavior has two components: "Right behavior in the sense of proper performance or rituals honoring what is sacred in the society and hence serving also to bind the society together; and right behavior in the secular sense of what is fair and just".

According to Hirschi and Stark (1969) religion might inhibit illegal behavior because religion is a sanctioning system that legitimizes and reinforces social values. Empirical studies have shown that states and counties with higher rates of religious memberships have significantly less violent and non-violent crime (see, e.g. Hull, 2000, Hull and Bold, 1989 and Lipford et al., 1993).

Grasmick et al. (p. 253) argue that there are agents other than the state to threaten violators. They argue that agents in the near surroundings restrict the possibility set or reduce crime's expected utility by informal and "interpersonal sanctions" (e.g. loss of respect). They state: "While embarrassment's most immediate consequence probably is physiological discomfort, more long-term consequences include loss of valued relationships, and perhaps restricted opportunities to achieve other valued goals". As a second factor Grasmick et al. mention feelings of shame or guilt. These sentiments may influence reporting behavior, reducing the perceived benefits of cheating. According to Lewis (1971), guilt arises when individuals realize that they have acted irresponsibly and in violation of a rule or social norm they have internalized. Since the obligation of paying taxes to the government is an accepted social norm, it makes sense that individuals who choose not to pay all of their taxes may feel guilty. Aitken and Bonneville (1980) found in a Taxpayer Opinion Survey that more than 50 percent of the respondents claimed that their consciences would be bothered "a lot" as a result of engaging in any of the following activities: (i) padding business activities, (ii) overstating medical expenses, (iii) understating income, (iv) not filing a return or (v) claiming an extra dependent. Grasmick and Bursick (1990) interviewed 355 individuals in another survey regarding their future inclination to perform various legal offences, including tax evasion. Their findings indicated that the anticipated guilt associated with committing tax evasion served as a much greater deterrent than the perceived threat of legal sanctions. Grasmick et al. point out that depression, anxiety and affected self-concept might have long-term consequences that could impede normal social functioning.

2.2. Measurement of religiosity

There are different measurements of religiosity. On the one hand side, we have variables that can be observed, such as frequency of church attendance, being an active member of a church or a religious organization or having been brought up religiously at home. On the other hand, there are beliefs that are not observable, such as being religious, trust in the church, and the importance of religion in a person's life or having an absolutely clear guidance on what is good and evil. Analyzing all these different factors helps create a picture of how religiosity affects tax morale (see Appendix [Table A1](#) for the derivation of the variables).⁴

The frequency of church attendance and the involvement in a church or a religious organization (active in church group) indicate that people spend time devoted to religion. Both involve ties to others, and religious activities might support the norms of a larger community (see [Tittle and Welch, 1983](#)). [Iannaccone \(2002, p. 209\)](#) points out that traditional research has neglected the aspect of time people devote to religion. "Attendance takes time, time that has an opportunity cost because it preempts other activities".

Similarly, being an active member in a church also takes time. However, with this variable we cannot measure the amounts of time spent. On the other hand, an *active* role in the community might produce a stronger interaction with others than simply attending *routinely* the church. [Higgs \(p. 42\)](#) points out that people join groups closely connected to the way they see themselves: "People crave the comfort of association with those they recognize as their 'own kind'". In general, someone's reputation will be affected and will create a greater likelihood of embarrassment by non-compliance if religiosity implies a strong interaction with "conventional significant others" (see [Grasmick et al.](#)).

Close to these variables are the degree of religiosity (religious) and the measure of how important people believe religion is in their life (importance of religion). Both variables do not measure the exact time spent for religious activities, but they try to capture the extent of individuals' internalized religious convictions (religious identity salience).

The variable religious education measures whether someone has acquired religious human capital as a child. [Smith et al. \(p. 29\)](#) point out that there is a positive link between religious education and the extent of adult religious practice and involvement. Education helps to internalize religious norms and rules, and thus reinforces religious socialization.

Religious guidance measures the obligation to follow particular rules that define what is good and evil. It coordinates behavior by enforcing rules, allowing the formation of more stable expectations about individuals' behavior.

The church as an institution is a producer and a distributor of ideologies. If individuals believe the church as an institution to be fair and worthy, the costs of participating in the church and internalizing religious norms decrease. As a consequence individuals might be more willing to follow certain norms. Trust in church might be strongly correlated with an individual's belief in the church's authority to enforce norms. Trust often goes in line with loyalty, which raises the cost of not participating.

⁴ The Appendix is available on the the Journal of Economic Behavior and Organization website.

3. Empirical findings

3.1. Model and variables

The data used are from the World Values Survey (WVS, 1995–1997). The WVS permits cross-country comparisons of people's tax morale in more than 40 societies around the world, representing about 70 percent of the World population, by representative national samples. The WVS has been broadly used by political scientists (see, e.g. Inglehart, 1997, 2000a) as well as economists, such as Knack and Keefer (1997), Slemrod (2003) and Torgler (2003). Weighted ordered probit models are estimated, as some groups might be over-sampled. A weighted variable helps us to correct the samples, and thus to reflect national distribution. The weighted ordered probit models help to analyze the ranking information of the scaled dependent variable tax morale. As in the ordered probit estimation, the equation has a non-linear form; only the sign of the coefficient can be directly interpreted, not its size. Calculating the marginal effects is therefore a method to find the quantitative effect a variable has on tax morale. The marginal effect indicates the change in the share of tax-payers (or the probability of) belonging to a specific tax morale level when the independent variable increases by one unit. In the weighted ordered probit estimation, only the marginal effects for the highest value "tax evasion is never justified" are shown. Thirty-two countries have been included in the estimations.⁵ Furthermore, in order to deal with the high number of observations (too-large sample size problem, see Kennedy, 1998), we adjusted the significance level downwards.

The general question to assess the level of tax morale in a society is

Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between: Cheating on tax if you have the chance (% "never justified" – code 1 from a 10-point scale, where 1 = never and 10 = always).

The dependent variable tax morale is developed by recoding the 10 point scale into a four point scale, with the value 3 as never justifiable, and 0 as an aggregation of the last 7 scores. As the last 7 scores were not chosen often, the aggregation allows using ordered-probit models. The estimation equations regress the indices of tax morale on the further following variables⁶:

1. *Age*. Instead of using age as a continuous variable, four classes have been formed: 16–29, 30–49, 50–64, >65, with 16–29 as reference group. Tittle argues that older people are more sensitive to the threats of sanctions and over the years have acquired greater social stakes, such as material goods, status and a stronger dependency on the reactions from others, so that the potential costs of sanction increase. However, another

⁵ Germany (differentiating between West and East Germany), Spain, USA, Australia, Norway, Argentina, Finland, South Korea, Poland, Switzerland, Brazil, Chile, Belarus, India, Slovenia, Bulgaria, Lithuania, Latvia, Estonia, Ukraine, Russia, Peru, Venezuela, Uruguay, Moldova, Azerbaijan, Dominican Republic, Serbia, Montenegro, Macedonia and Bosnia. Some countries have been excluded (dependent and independent variables not included in the survey, other religion codings, low number of observations, e.g. Ghana).

⁶ For a variable description see Table A1 in the Appendix.

reason might be that many older people (>65) might have a different attitude towards tax compliance (higher tax morale) because they are often no longer subject to income tax.

The findings of the tax compliance studies show that the impact of age on compliance is still uncertain. Many studies have found that age increases the level of tax compliance (for survey studies see, e.g. Vogel, 1974, Aitken and Bonneville, 1980, Tittle, 1980, Westat, 1980a, Groenland and van Veldhoven, 1983 and Grasmick et al., 1991; for experimental results see Friedland et al., 1978; Kaplan and Reckers, 1985; Baldry, 1987). While there are not many studies that report a negative correlation between age and tax compliance, the results of quite a few studies imply no influence (for surveys see Spicer, 1974; Minor, 1978; Song and Yarbrough, 1978; Yankelovich, Skelly and White, 1984; Mason and Calvin, 1984; for experiments see Spicer and Becker, 1980; Jackson and Jones, 1985). According to the author's knowledge, only Clotfelter (1983) findings show that underreporting is significantly higher for younger taxpayers than for those at the age of 65 and older, which would imply a curvilinear relationship between age and tax compliance. To clarify the importance of the age variable, more empirical evidence is needed.

2. *Gender*. Social psychological research suggests that women are more compliant and less self-reliant than men (e.g. Tittle). Evidence from the tax compliance literature shows the tendency that men are less compliant than women (for survey studies see, e.g. Vogel, 1974; Minor, 1978; Aitken and Bonneville, 1980; Tittle, 1980; for experiments, Spicer and Becker, 1980; Spicer and Hero, 1985; Baldry, 1987). However, if social psychology argues that the difference is based on the traditional female role, today's female generation, which is more independent, would have a lower tax morale or tax compliance. Grasmick et al. find evidence that supports this argumentation. However, as the study was done many years ago, further evidence would help to clarify this result.

In the past decade, experimental research findings have shown that gender may influence aspects such as charitable giving, bargaining and household decision making (see Andreoni and Vesterlund, 2001; Eckel and Grossman, 2001). In public good games, the results are not clear. Some have found men to be more cooperative (see Brown-Kruse and Hummels, 1993), while others have found that women are more cooperative (Nowell and Tinkler, 1994). Using dictator games, Andreoni and Vesterlund (2001) observed individuals taking decisions with different budgets and interestingly found that in expensive giving-situations, women are more generous than men, and when the price of giving decreases, men start to give more than women.

3. *Marital status* (dummy variables: single, living together, married, divorced, separated, widowed, reference group: single). Marital status might influence legal or illegal behavior. Tittle (p. 111) states,

“A long tradition in sociology, extending back to Durkheim, postulates that proneness toward rule breaking varies inversely with the extent to which individuals are involved in social networks with constraining content”.

This would imply that married people are more compliant than others, especially compared to singles because they are more constrained by their social net-

work. Tittle found significant differences among the different marital statuses, with the greatest evidence for the singles, followed by the separated or divorced. However, controlling for age, the results show that the association between deviance and marital status was a reflection of age differences, as older persons are more likely to be married or widowed and age was a strong predictor concerning the deviance.

In the tax compliance literature we do not find many studies that systematically analyze marital status. Some studies have found that non-compliance is more common and of greater magnitude among married taxpayers (see Clotfelter, 1983; Feinstein, 1991). One reason could be that in the US, dual incomes are treated as one, being thus taxed in a higher bracket than two separate incomes (Hays, 2000). However, much remains to be done before we clearly understand the correlation between tax compliance or tax morale and marital status.

4. *Education* (continuous variable, 1 = low, 9 = high education). Education is related to taxpayer's knowledge about the tax law. Better educated taxpayers are supposed to know more about tax law and fiscal connections, and thus would be in a better position to assess the degree of compliance (see Lewis, 1982). They might be more aware of the government waste and benefits. However, it should be noticed that there might possibly be people with a lower education who have acquired a high knowledge about taxation (see Eriksen and Fallan, 1996). They could invest in such a specific knowledge because of lower opportunity costs of time. On the other hand, Vogel's (p. 500) survey findings indicate that less educated taxpayers had less access to tax compliance information, were less informed about relevant tax regulations, and needed assistance more often.

More educated people may be less compliant because they better understand the opportunities for evasion. Furthermore, fiscal knowledge may also positively influence the practice of avoidance (see Geeroms and Wilmots, 1985). Witte and Woodbury (1985) found that compliance is higher in established but growing areas that are populated largely by middle class, native-born whites. Areas with a better educated population and with a large share of students have low levels of compliance. Furthermore, areas with large proportions of poverty and unemployment have a low level of compliance for all groups.

Fiscal ignorance might be an important contributor to the development of negative feelings towards taxation. Lewis (1982) after reviewing the literature of the 1970's reports that more educated taxpayers have in general higher "sympathetic" fiscal preferences than those with a lower education. They are better aware of the benefits and services the state provides for the citizens from the revenues.

Generally, three aspects of education can be distinguished: (i) the degree of fiscal knowledge, (ii) the degree of knowledge involving evasion or avoidance opportunities and (iii) the knowledge involving the waste as well as the benefits and services that the state provides with the taxes. Thus, the effect of education is not clear at all. More empirical studies will help to give an idea of which effects are stronger and define the influence on tax morale and tax compliance.

5. *Economic class* (upper class, upper middle class, lower middle class, in the reference group: working class and lower class). We have not used the income variable because of

difficulties comparing this variable across different countries. Thus, we add a variable that measures the economic situation of an individual without producing biases for different nations. In general, the effects of income on tax morale are difficult to assess theoretically. Depending on risk preferences and the progression of the income tax schedules, income may increase or reduce tax morale. In countries with a progressive income tax rate, taxpayers with a higher income realize a higher dollar return by evading, but with possibly less economic utility. On the other hand, lower income taxpayers might have lower social “stakes” or restrictions but are less in the position to take these risks because of a high marginal utility loss (wealth reduction) if they are caught and penalized (Jackson and Milliron, 1986). The empirical findings are mixed. Clotfelter (1983) found that the coefficient on the after-tax income variable significantly reduces tax compliance (others, e.g. Witte and Woodbury, 1985; in survey studies Westat, 1980a, Groenland and van Veldhoven; and in experiments Friedland et al., 1978). On the other hand, Feinstein did not find a significant relationship between income and evasion, paying more attention to the positive dependent relationship between tax rate and income (for further studies that came to the same result, see, e.g. Spicer, 1974; Grasmick and Scott, 1982; Yankelovich, Skelly and White, 1984; and in experiments Spicer and Becker, 1980; Jackson and Jones, 1985). A positive relationship has been found by Mason and Calvin (1984) and Song and Yarbrough (1978). Researchers, such as Witte and Woodbury state that low and high-income taxpayers are relatively less compliant than the income groups in the middle. Jackson and Milliron (p. 133) argue that there are two main explanations for the differences in the empirical findings: (i) many early studies have used linear models, which might produce biased correlation coefficients if the relationship between income level and compliance is not linear but, for example, curvilinear and (ii) it might be that observed income level compliance variations are attributed to different income earned.

6. *Occupation status* (full time employed (reference group), part time employed, self-employed, unemployed, at home, student, retired, other). Does occupation status influence tax morale? Here, we should differentiate between tax morale and tax evasion. The standard argument is that self-employed taxpayers evade more taxes. Vogel’s survey in Sweden reports that self-employed taxpayers are more likely to think that large parts of taxes were used for meaningless purposes, that the government had made a great number of unnecessary social reforms, that they have had less benefit from government programs than the average taxpayer, and that the burden of taxes was too high and the exchange rate unfavorable. Lewis (1982) argues that self-employees have higher compliance costs and taxes become more visible. Furthermore, tax evasion might depend on the opportunity to evade or avoid taxes. Westat (1980b) shows that “white-collar” taxpayers have a higher non-compliant level overstating deductions, but “blue-collar” workers more often understate their income. However, all these arguments affect tax evasion and not necessarily tax morale. Thus, it is difficult to make a clear prediction about the influence of occupation status on tax morale.
7. *Financial satisfaction* (scale 1 = dissatisfied to 10 = satisfied). Financial dissatisfaction might negatively influence tax morale. Such dissatisfaction might create a sense of distress, especially when taxes have to be paid and there is a discrepancy between the

actual and the aspired financial situation.⁷ Thus, taxes might be perceived as a strong restriction, increasing the incentives to reduce tax honesty. As the income variable is integrated into the equation, we can analyze the “stress” component of the financial dissatisfaction. This argumentation is in line with the prospect theory, which argues that people evaluate utility gains and losses not according to an absolute change but relative to a reference point (see, e.g. Kahneman and Tversky, 1979; Tversky and Kahneman, 1992). Taxpayers might compare their wealth and earnings with other taxpayers (“references”) in their social environment (see Festinger, 1957).

8. *Risk aversion* dummy variable (1 = risk averse). Individual tax compliance decision could also be a function of risk attitudes. Prior survey studies rarely controlled for risk attitudes. Risk aversion reduces the incentive to act illegally. Furthermore, controlling for risk attitudes allows for better insights regarding the variables of age, gender or economic situation. It could be argued that the obtained difference between women and men or between different age groups is influenced by different risk attitudes functions. Hartog et al. (2002), for example, found in an empirical survey analysis that an increase in income reduces risk aversion.

3.2. Results

In the first estimations presented in Table 1 we analyze the different religiosity in separate estimations, controlling for the specific religion of an individual. We include the main religions around the world, such as Catholic, Protestant, Jewish, Hindu, Moslem, Buddhist or Orthodox in our analysis. The results indicate that there is a strong correlation between religiosity and tax morale. All coefficients are highly significant, with marginal effects between 1.8 and 9.3 percentage points. Strong effects can be observed for those people who had a religious education and for those people who are actively involved in a church or a religious organization. For example, being an active member of a church group increases the probability of stating that tax evasion is never justifiable by 8.5 percentage points. Looking at the religion, we observe the tendency that Catholics, Hindus, Buddhists and people with another religion have a higher tax morale than people without a religious denomination. On the other hand, Orthodox and Protestants have the tendency to a lower tax morale than the reference group, although the coefficient Protestant is not always significant. This result is in line with the study by Furnham (1983, p. 119) who found that a higher degree of protestant work ethic leads to more opposition to taxation. High protestant work ethic scorers believe more than low scorers that “we should say ‘good luck’ to people who avoid taxes; that taxes are an imposition, and that the taxes they pay are unreasonably high”. According to Furnham (p. 125), one reason might be that people with stronger protestant ethics “are naturally against certain aspects of taxation”, believing that success is based “purely upon effort, and that the poor and unemployed are to blame for their plight”. The negative coefficient of the variable Orthodox surprises. In history, the Orthodox Church had a close relationship with the state (see, e.g. Stan and Turcescu, 2000). Thus, offenses against the state were also religious offenses. However, individuals in

⁷ For the theory of aspiration, see Frank (1941), Simon (1955) and Siegel (1957).

Table 1
Tax morale and religiosity

Weighted ordered probit	Coefficient	Marginal												
(a) Demographic factors														
Age 30–49	0.127***	0.050	0.130***	0.051	0.126***	0.050	0.142***	0.056	0.117***	0.046	0.123***	0.048	0.128***	0.050
Age 50–64	0.280***	0.110	0.282***	0.111	0.282***	0.111	0.304***	0.120	0.269***	0.105	0.285***	0.112	0.285***	0.112
Age >65	0.410***	0.161	0.396***	0.156	0.406***	0.159	0.437***	0.172	0.389***	0.152	0.423***	0.166	0.402***	0.158
Woman	0.103***	0.041	0.115***	0.045	0.112***	0.044	0.111***	0.044	0.100***	0.039	0.121***	0.048	0.111***	0.043
Education	−0.025***	−0.010	−0.017***	−0.007	−0.025***	−0.010	−0.017***	−0.007	−0.029***	−0.011	−0.026***	−0.010	−0.023***	−0.009
(b) Marital status														
Married	0.044*	0.017	0.061***	0.024	0.048**	0.019	0.050**	0.020	0.069***	0.027	0.069***	0.027	0.043*	0.017
Living together	−0.087***	−0.034	−0.059	−0.023	−0.087***	−0.034	−0.077***	−0.030	−0.103***	−0.040	−0.087***	−0.034	−0.094***	−0.037
Divorced	−0.062	−0.024	−0.038	−0.015	−0.058	−0.023	−0.049	−0.019	−0.054	−0.021	−0.060	−0.024	−0.064	−0.025
Separated	0.025	0.010	0.043	0.017	0.021	0.008	0.042	0.016	0.012	0.005	0.024	0.009	0.009	0.003
Widowed	0.009	0.004	0.034	0.013	0.022	0.009	0.029	0.011	0.025	0.010	0.032	0.012	0.014	0.006
(c) Employment status														
Part time employed	0.068***	0.027	0.067**	0.026	0.075***	0.029	0.071***	0.028	0.075***	0.029	0.080***	0.032	0.080***	0.031
Self-employed	0.023	0.009	−0.007	−0.003	0.031	0.012	0.015	0.006	0.026	0.010	0.018	0.007	0.035	0.014
Unemployed	0.032	0.012	0.036	0.014	0.033	0.013	0.039	0.015	0.001	0.000	0.020	0.008	0.038	0.015
At home	0.134***	0.053	0.127***	0.050	0.135***	0.053	0.141***	0.055	0.095***	0.037	0.125***	0.049	0.141***	0.055
Student	0.058*	0.023	0.053	0.021	0.056	0.022	0.064*	0.025	0.058	0.023	0.050	0.020	0.069**	0.027
Retired	0.149***	0.059	0.150***	0.059	0.153***	0.060	0.159***	0.063	0.123***	0.048	0.133***	0.052	0.155***	0.061
Other	−0.002	−0.001	0.013	0.005	−0.004	−0.002	0.010	0.004	−0.017	−0.007	−0.001	−0.001	−0.003	−0.001
(d) Economic situation														
Financial satisfact	0.033***	0.013	0.032***	0.013	0.033***	0.013	0.034***	0.013	0.034***	0.013	0.036***	0.014	0.035***	0.014
Upper class	−0.180**	−0.071	−0.199***	−0.078	−0.189**	−0.074	−0.192***	−0.076	−0.196***	−0.077	−0.160***	−0.063	−0.176***	−0.069
Upper middle class	−0.050***	−0.019	−0.072***	−0.028	−0.052***	−0.020	−0.073***	−0.029	−0.031	−0.012	−0.045*	−0.018	−0.050**	−0.020
Lower middle class	−0.105***	−0.041	−0.113***	−0.045	−0.107***	−0.042	−0.125***	−0.049	−0.100***	−0.039	−0.111***	−0.044	−0.106***	−0.041
(e) Risk														
Risk averse	0.129***	0.051	0.111***	0.044	0.129***	0.051	0.117***	0.046	0.125***	0.049	0.108***	0.043	0.132***	0.052
(f) Religiosity														
Church Attendance	0.046***	0.018												
Religious education ^a			0.237***	0.093										
Active in church group					0.216***	0.085								
Religious ^a							0.085***	0.033						
Importance of religion									0.128***	0.050				
Religious guidance											0.113***	0.045		
Trust church													0.059***	0.023

(g) Religion														
Catholic	0.044**	0.017	0.049***	0.019	0.109***	0.043	0.116***	0.045	-0.066***	-0.026	0.090***	0.035	0.094***	0.037
Protestant	-0.050*	-0.020	-0.028	-0.011	-0.020	-0.008	-0.023	-0.009	-0.154***	-0.060	-0.061***	-0.024	-0.029	-0.011
Orthodox	-0.241***	-0.094	-0.186***	-0.073	-0.178***	-0.070	-0.204***	-0.080	-0.351***	-0.137	-0.220***	-0.086	-0.220***	-0.086
Jews	0.198	0.078	0.265	0.104	0.235	0.092	0.229	0.090	0.100	0.039	0.263	0.103	0.228	0.090
Muslim	0.011	0.004	0.039	0.015	0.103*	0.040	0.030	0.012	-0.138***	-0.054	0.038	0.015	0.072	0.028
Hindu	0.563***	0.221	0.609***	0.240	0.669***	0.263	0.680***	0.267	0.444***	0.173	0.777***	0.305	0.619***	0.243
Buddhist	0.231***	0.091	0.282	0.111	0.299***	0.117	0.239	0.094	0.132	0.051	0.227	0.089	0.315***	0.124
Other religion	0.239***	0.094	0.287***	0.113	0.271***	0.107	0.334	0.131	0.120***	0.047	0.295***	0.116	0.331***	0.130
Number of observations	34265		31251		34497		31660		35062		33000		33317	
Prob(LM-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Dependent variable: tax morale on a four point scale (0–3). In the reference group are age 16–29, man, single, full time employed, working class and lower class, not risk averse, not actively in a church group, not an absolutely guidance of what is good and evil, no religion denomination. Marginal effect (Marginal) = highest tax morale score (3).

^a South Korea is not included in these estimations.
 * Significance at $0.005 < p < 0.010$.
 ** Significance at $0.001 < p < 0.005$.
 *** Significance at $p < 0.001$.

post communist countries might have been influenced by anti-religious policies during the communist era.

In general, the results obtained from the variables Jews, Buddhist, Hindu and other religion should be treated with caution, as the number of observations is relatively low. Thus, they react more sensitively to a variation in the number of observations in the estimations.⁸ Furthermore, it should be noticed that in different countries individuals' exposure to the tax system is quite different. For example, the positive effect of the variable Hindu might be influenced by the fact that in India, for example, a great majority of citizens are not subject to income tax. The coefficient Muslim is mostly not significant. McGee (1998) reports that Muslims are not always obligated to pay all taxes. If the government engages in activities that are not legitimated, tax evasion might not be immoral (for a list of possible immoral state activities, see Yusuf, 1971). It would not be immoral for a Muslim not to pay indirect taxes, to avoid paying tariffs, to evade income taxes, or not to comply with a law that causes prices to rise. However, evading property taxes might be immoral (McGee). The result of the variable Buddhist is not surprising, taking into consideration the strong guiding principles based on moral and ethical values (see, e.g. Alexandrin, 1993; Mendis, 1998), that might have an impact on the obligation to pay taxes.

In general, the coefficients of the confession variables are not significant for all religions. This may indicate that it is not confession per se that increases tax morale and possibly inhibits illegal behavior, but religiosity.

Looking at the control variables we observe that a higher age is significantly correlated with a higher tax morale. Furthermore, women report a significantly higher tax morale than men. Married people have a higher tax morale and people living together a lower tax morale than singles. People who are employed part-time, at home or retired have a higher tax morale than people employed full-time. An increase in the financial satisfaction level by one unit increases the share of individuals arguing that tax evasion is never justifiable by around 1.3 percentage points. All economic classes higher than the reference group (lower and working class) have a lower tax morale, with the highest marginal effects for the upper class. Finally, risk averse people have a higher tax morale than the reference group.

3.3. Sensitivity analysis

To check the reliability of the effect of religiosity on tax morale, the perceived corruption has been included in additional equations.⁹ In countries where corruption is systemic and the government budget lacks transparency it *cannot* be assumed that the obligation of paying taxes is an accepted social norm. Friedman et al. (2000) show empirically that countries

⁸ The data used had the following distribution: Catholic (28.2 percent), Protestant (12.3 percent), Orthodox (17.4 percent), Jews (0.2 percent), Muslim (7 percent), Hindu (4 percent), Buddhist (1.7 percent) and other religious denomination (2.5 percent).

⁹ Aggregated (country) values of the perceived corruption are strongly correlated (-0.745 , significant at the 0.01 level) with the Transparency International Index of Corruption (CPI ranking 1996, the higher the value, the lower is the corruption).

with more corruption have a higher share of unofficial economy. Corruption generally undermines the tax morale of the citizens who become frustrated. Furthermore, there might be a crowding-out effect of morality among the tax administrators when there are a great number of corrupt colleagues. Taxpayers will feel cheated if they believe that corruption is widespread and their tax burden is not spent well. Corrupt bureaucracy will not award the services to the most efficient producers, but to the producer who offers the larger bribes. Thus, corruption reduces the efficiency of allocation and produces delays in transactions to acquire additional payments (see, e.g. Rose-Ackerman, 1997; Jain, 2001). Thus, paid taxes are not spent in line with taxpayers' preferences. Table 2 indicates that there is a significant negative correlation between tax morale and the perceived size of corruption. An increase in the corruption scale by one unit increases the share of subjects indicating the highest tax morale by around 1.8 percentage points. Thus, the results indicate that a higher degree of perceived corruption crowds out tax morale. If taxpayers notice that many public officials are corrupt and many others evade taxes, they might feel that their intrinsic motivation is not recognized or honored. Thus, taxpayers may decide that they can also be opportunistic. The moral costs of evading taxes decrease. The positive effects of religiosity on tax morale remain robust, with a small increase of the marginal effects for some variables.

In a next step, we are going to analyze whether the impact of religiosity depends on which religion the person adheres to. Thus, we are going to analyze whether active followers of some religions are more tax compliant than others. We choose the two main observable variables (church attendance and being an active member of a church group) and interact them with the different confessions. It can be supposed that the effect of a specific confession depends on the degree of religiosity. The results in Table 3 indicate that in *both* estimations the product terms of the variables Catholic, Protestant, Orthodox, contrary to the others, are statistically significant with a positive sign, so we may conclude that there is an interaction between these religions and the two measurements that we used for religiosity. The marginal effects are very large, especially for the variable Protestant. This result is insofar interesting since previously the variables Protestant and Orthodox were not statistically significant as single terms. Thus, the positive effect on tax morale in these two religions strongly depends on the extent to which someone is an active follower.

In a next step, we analyze to what extent religious beliefs (being religious and trust in the church as an institution) that are not observable and religious behavior (observable, measured with the same two previous variables) affect tax morale. Thus, we integrate both types of variables together in further estimations. The results in Table 3 indicate that both factors matter. Thus, religiosity affects tax morale as a social norm and as a way to establish a reputation for trustworthiness. However, it should be noticed that compared to Table 2, the marginal effects for the "behavioral" variables remain more stable than the "belief" variables.

Finally, we check whether questions about trustworthiness explain tax morale as well as religiosity. This also helps to check the robustness of the correlation between religiosity and tax morale. Thus, the following variables have been integrated separately into different equations (see Tables 4–6): (1) claiming government benefits to which you are not entitled, (2) avoiding a fare on public transport and (3) buying something you knew was stolen. It can

Table 2
Tax morale and corruption

Weighted ordered probit	Coefficient						
(a) Demographic factors	Included						
(b) Marital status	Included						
(c) Employment status	Included						
(d) Economic situation	Included						
(e) Risk attitude	Included						
(f) Religiosity							
Behavior							
Church attendance	0.048*** (0.019)						
Religious education ^a		0.240*** (0.095)					
Active in church group			0.223*** (0.088)				
Attitude							
Religious ^a				0.087*** (0.034)			
Importance of religion					0.142*** (0.056)		
Religious guidance						0.113*** (0.045)	
Trust church							0.062*** (0.024)
(g) Religion							
Catholic	0.043* (0.017)	0.054*** (0.021)	0.111*** (0.044)	0.121*** (0.048)	−0.005 (−0.002)	0.172*** (0.068)	0.094*** (0.037)
Protestant	−0.078*** (−0.031)	−0.051* (−0.020)	−0.045 (−0.018)	−0.049 (−0.019)	−0.115*** (−0.045)	−0.006 (−0.002)	−0.057** (−0.022)
Orthodox	−0.249*** (−0.098)	−0.190*** (−0.075)	−0.183*** (−0.072)	−0.208*** (−0.082)	−0.300*** (−0.118)	−0.148*** (−0.058)	−0.230*** (−0.090)
Jews	0.098 (0.038)	0.172 (0.068)	0.137 (0.054)	0.131 (0.052)	0.063 (0.025)	0.246 (0.097)	0.163 (0.064)
Muslim	0.046 (0.018)	0.084 (0.033)	0.141 (0.055)	0.063 (0.025)	−0.050 (−0.020)	0.145*** (0.057)	0.113** (0.044)
Hindu	0.593*** (0.233)	0.647*** (0.255)	0.705*** (0.277)	0.718*** (0.283)	0.550*** (0.216)	0.891*** (0.351)	0.647*** (0.254)
Buddhist	0.236*** (0.093)	0.297 (0.117)	0.307*** (0.121)	0.249 (0.098)	0.218** (0.086)	0.312 (0.123)	0.321*** (0.126)
Other religion	0.247*** (0.097)	0.299 (0.118)	0.281*** (0.111)	0.348*** (0.137)	0.186*** (0.073)	0.382*** (0.151)	0.334*** (0.131)
(h) Corruption	−0.048*** (−0.019)	−0.046 (−0.018)	−0.045*** (−0.018)	−0.049 (−0.019)	−0.055*** (−0.022)	−0.045*** (−0.018)	−0.046 (−0.018)
Number of observations	31545	30133	31731	29107	31113	29293	30780
Prob(LM-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Dependent variable: tax morale on a four point scale (0–3). In the reference group are age 16–29, man, single, full time employed, working class and lower class, not risk averse, not actively in a church group, not an absolutely guidance of what is good and evil, no religion denomination. Marginal effects in parenthesis (highest tax morale score, 3).

^a South Korea is not included in these estimations.

* Significance at $0.005 < p < 0.010$.

** Significance at $0.001 < p < 0.005$.

*** Significance at $p < 0.001$.

Table 3
Religion and religiosity

Weighted ordered probit	Coefficient	Marginal										
Church attendance	-0.007	0.003			0.050***	0.020	0.040***	0.016				
Active in church group			-0.3E-03***	0.1E-03					0.213***	0.084	0.188***	0.074
Religious ^a					0.033**	0.013			0.070***	0.027		
Trust church							0.036***	0.014			0.047***	0.018
Religion												
Catholic	0.014	0.006	0.137***	0.054	0.046*	0.018	0.027	0.011	0.095***	0.037	0.073***	0.029
Protestant	-0.389***	-0.153	-0.091***	-0.036	-0.089***	-0.035	-0.098***	-0.038	-0.073***	-0.029	-0.078***	-0.031
Orthodox	-0.313***	-0.123	-0.174***	-0.068	-0.260***	-0.102	-0.276***	-0.108	-0.212***	-0.084	-0.230***	-0.091
Jews	-0.024	-0.0095	0.232	0.091	0.057	0.022	0.080	0.031	0.069	0.027	0.111	0.043
Muslim	0.025	0.0095	0.155***	0.061	-0.012	-0.004	0.041	0.016	0.060	0.024	0.110**	0.043
Hindu	0.722***	0.2835	0.879***	0.345	0.607***	0.239	0.553***	0.217	0.702***	0.2763	0.635***	0.249
Buddhist	0.556***	0.2186	0.073	0.029	0.189	0.074	0.246***	0.097	0.229	0.090	0.305***	0.119
Other religion	0.174	0.069	0.222	0.087	0.243***	0.096	0.241***	0.095	0.262***	0.103	0.261***	0.102
Interaction terms												
Cath. × Church A.	0.030**	0.012										
Prot. × Church A.	0.114***	0.045										
Orth. × Church A.	0.038***	0.015										
Jews. × Church A.	0.053	0.021										
Musl. × Church A.	0.027	0.011										
Hind. × Church A.	-0.0013	-0.001										
Budd. × Church A.	-0.065	-0.026										
O. rel. × Church A.	0.041	0.016										
Cath. × Church G.			0.149***	0.059								
Prote. × Church G.			0.475***	0.187								
Orth. × Church G.			0.223***	0.088								
Jews × Church G.			-0.0053	-0.002								
Musl. × Church G.			0.260	0.102								
Hindu. × Church G.			-0.595***	-0.234								
Budd. × Church G.			0.171	0.067								
O. rel. × Church G.			0.371***	0.146								
Prob(LM-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Dependent variable: tax morale on a four point scale (0–3). All other variables included, in the reference group are age 16–29, man, single, full time employed, working class and lower class, not risk averse, not actively in a church group, not an absolute guidance of what is good and evil, no religion denomination. Marginal effect (Marginal) = highest tax morale score (3).

^a South Korea is not included in the estimation.

* Significance at $0.005 < p < 0.010$.

** Significance at $0.001 < p < 0.005$.

*** Significance at $p < 0.001$.

Table 4
Tax morale and lying

Weighted ordered probit	Coefficient						
(a) Demographic factors	Included						
(b) Marital status	Included						
(c) Employment status	Included						
(d) Economic situation	Included						
(e) Risk attitude	Included						
(f) Religiosity							
Behavior							
Church attendance	0.059*** (0.023)						
Religious education ^a		0.246*** (0.097)					
Active in church group			0.231*** (0.091)				
Belief							
Religious				0.109** (0.043)			
Importance of religion					0.148*** (0.058)		
Religious ^a guidance						0.095*** (0.037)	
Trust church							0.074*** (0.029)
(g) Religion							
Catholic	0.105*** (0.042)	0.098*** (0.039)	0.193*** (0.076)	0.156*** (0.061)	0.072*** (0.028)	0.220*** (0.087)	0.168*** (0.066)
Protestant	-0.146*** (-0.058)	-0.128*** (-0.050)	-0.104*** (-0.041)	-0.136*** (-0.053)	-0.173*** (-0.068)	-0.078*** (-0.031)	-0.119*** (-0.047)
Orthodox	-0.146*** (-0.057)	-0.099*** (-0.039)	-0.065*** (-0.025)	-0.130*** (-0.051)	-0.183*** (-0.072)	-0.059** (-0.023)	-0.119*** (-0.047)
Jews	0.213 (0.084)	0.279 (0.110)	0.259 (0.102)	0.253 (0.099)	0.188 (0.074)	0.358 (0.141)	0.294 (0.116)
Muslim	0.093* (0.037)	0.109 (0.043)	0.205*** (0.081)	0.083 (0.033)	0.018 (0.007)	0.174*** (0.068)	0.165*** (0.065)
Hindu	0.535*** (0.210)	0.558*** (0.219)	0.670*** (0.263)	0.634*** (0.249)	0.513*** (0.202)	0.776*** (0.305)	0.609*** (0.239)
Buddhist	0.421 (0.165)	0.488 (0.192)	0.498 (0.196)	0.418 (0.164)	0.366 (0.144)	0.504 (0.198)	0.493 (0.193)
Other religion	0.219*** (0.086)	0.268*** (0.105)	0.275*** (0.108)	0.297*** (0.117)	0.178*** (0.070)	0.360*** (0.142)	0.323*** (0.127)
(h) Corruption	-0.041*** (-0.016)	-0.036*** (-0.014)	-0.037*** (-0.015)	-0.041*** (-0.016)	-0.048*** (-0.019)	-0.037*** (-0.015)	-0.035*** -0.015
(i) Trustworthiness							
Lying	0.410*** (0.161)	0.408*** (0.160)	0.408*** (0.160)	0.411*** (0.161)	0.409*** (0.161)	0.405*** (0.159)	0.407*** (0.160)
Number of observations	29629	29400	29784	28464	29230	28644	28895
Prob(LM-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Dependent variable: tax morale on a four point scale (0–3). All other variables included, in the reference group are age 16–29, man, single, full time employed, working class and lower class, not risk averse, not actively in a church group, not an absolutely guidance of what is good and evil, no religion denomination. Marginal effects in parenthesis (highest tax morale score, 3).

^a South Korea is not included in these estimations.

* Significance at $0.005 < p < 0.010$.

** Significance at $0.001 < p < 0.005$.

*** Significance at $p < 0.001$.

Table 5
Tax morale and buying a stolen product

Weighted ordered probit	Coefficient						
(a) Demographic factors	Included						
(b) Marital status	Included						
(c) Employment status	Included						
(d) Economic situation	Included						
(e) Risk	Included						
(f) Religiosity							
Behavior							
Church attendance	0.040*** (0.016)						
Religious education ^a		0.224*** (0.088)					
Active in church group			0.224*** (0.088)				
Belief							
Religious				0.050*** (0.020)			
Importance of religion					0.109*** (0.043)		
Religious ^a guidance						0.075*** (0.030)	
Trust church							0.040*** (0.016)
(g) Religion							
Catholic	0.020 (0.008)	0.021 (0.008)	0.069*** (0.027)	0.105*** (0.041)	-0.009 (-0.004)	0.134*** (0.053)	0.070*** (0.028)
Protestant	-0.132*** (-0.052)	-0.116*** (-0.046)	-0.112*** (-0.044)	-0.102*** (-0.040)	-0.157*** (-0.062)	-0.072*** (-0.029)	-0.108*** (-0.042)
Orthodox	-0.222*** (-0.087)	-0.168*** (-0.066)	-0.170*** (-0.067)	-0.169*** (-0.067)	-0.255*** (-0.100)	-0.128*** (-0.051)	-0.200*** (-0.079)
Jews	0.012 (0.005)	0.073 (0.029)	0.032 (0.013)	0.056 (0.022)	-0.004 (-0.002)	0.161 (0.063)	0.067 (0.026)
Muslim	0.025 (0.010)	0.060 (0.024)	0.106** (0.042)	0.067 (0.026)	-0.037*** (-0.015)	0.129*** (0.051)	0.091 (0.036)
Hindu	0.603*** (0.237)	0.645*** (0.254)	0.688*** (0.270)	0.727*** (0.286)	0.579*** (0.227)	0.851*** (0.336)	0.651*** (0.256)
Buddhist	0.286*** (0.112)	0.196 (0.077)	0.342*** (0.135)	0.176 (0.069)	0.280 (0.110)	0.216 (0.085)	0.348*** (0.137)
Other religion	0.173*** (0.068)	0.206 (0.081)	0.186*** (0.073)	0.275*** (0.108)	0.140*** (0.055)	0.288*** (0.114)	0.250*** (0.098)
(h) Corruption	-0.051*** (-0.020)	-0.051*** (-0.020)	-0.050*** (-0.020)	-0.053*** (-0.021)	-0.057*** (-0.022)	-0.051*** (-0.020)	-0.049*** (-0.019)
(i) Trustworthiness							
Buying a stolen product	0.505*** (0.198)	0.509*** (0.200)	0.505*** (0.198)	0.508*** (0.200)	0.500*** (0.196)	0.505*** (0.199)	0.503*** (0.197)
Number of observations	31312	29905	31496	28898	30894	29082	30562
Prob(LM-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Dependent variable: tax morale on a four point scale (0–3). All other variables included, in the reference group are age 16–29, man, single, full time employed, working class and lower class, not risk averse, not actively in a church group, not an absolutely guidance of what is good and evil, no religion denomination. Marginal effects in parenthesis (highest tax morale score, 3).

^a South Korea is not included in these estimations.

*Significance at $0.005 < p < 0.010$.

** Significance at $0.001 < p < 0.005$.

*** Significance at $p < 0.001$.

Table 6
Tax morale and cheating

Weighted ordered probit	Coefficient						
(a) Demographic factors	Included						
(b) Marital status	Included						
(c) Employment status	Included						
(d) Economic situation	Included						
(e) Risk	Included						
(f) Religiosity							
Behavior							
Church attendance	0.038*** (0.015)						
Religious education ^a		0.159*** (0.063)					
Active in church group			0.190*** (0.074)				
Belief							
Religious ^a				0.068*** (0.027)			
Importance of religion					0.114*** (0.044)		
Religious guidance						0.077*** (0.030)	
Trust church							0.065*** (0.025)
(g) Religion							
Catholic	-0.009 (-0.004)	0.025 (0.010)	0.040* (0.016)	0.063*** (0.025)	-0.005** (-0.020)	0.101*** (0.040)	0.017 (0.007)
Protestant	-0.177*** (-0.069)	-0.157*** (-0.062)	-0.153*** (-0.060)	-0.164*** (-0.064)	-0.206*** (-0.080)	-0.126*** (-0.050)	-0.170*** (-0.067)
Orthodox	-0.133*** (-0.052)	-0.069*** (-0.027)	-0.083*** (-0.033)	-0.090*** (-0.036)	-0.177*** (-0.069)	-0.043 (-0.017)	-0.133*** (-0.052)
Jews	0.104 (0.041)	0.190 (0.075)	0.137 (0.054)	0.153 (0.060)	-0.074 (-0.029)	0.250 (0.098)	0.146 (0.057)
Muslim	-0.080 (-0.031)	-0.018 (-0.007)	-0.002 (-0.001)	-0.042 (-0.017)	-0.144*** (-0.057)	0.074 (0.007)	-0.040 (-0.016)
Hindu	0.269*** (0.105)	0.348*** (0.137)	0.353*** (0.138)	0.395*** (0.155)	0.235** (0.92)	0.530*** (0.208)	0.283*** (0.111)
Buddhist	0.443*** (0.173)	0.332 (0.131)	0.503*** (0.197)	0.281 (0.110)	0.427*** (0.167)	0.344 (0.135)	0.512*** (0.200)
Other religion	0.170*** (0.067)	0.231*** (0.091)	0.190*** (0.074)	0.262 (0.103)	0.125** (0.049)	0.285*** (0.112)	0.221*** (0.086)
(h) Corruption	-0.029*** (-0.012)	-0.029*** (-0.012)	-0.028*** (-0.011)	-0.032*** (-0.013)	-0.036*** (-0.014)	-0.029 (-0.012)	-0.029 (-0.011)
(i) Trustworthiness							
Cheating	0.511*** (0.200)	0.514*** (0.202)	0.511*** (0.200)	0.516*** (0.203)	0.506*** (0.198)	0.513*** (0.202)	0.511*** (0.200)
Number of observations	31299	29892	31482	28886	30876	29071	30556
Prob(LM-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Dependent variable: tax morale on a four point scale (0–3). All other variables included, in the reference group are age 16–29, man, single, full time employed, working class and lower class, not risk averse, not actively in a church group, not an absolutely guidance of what is good and evil, no religion denomination. Marginal effects in parenthesis (highest tax morale score, 3).

^a South Korea is not included in these estimations.

* Significance at $0.005 < p < 0.010$.

** Significance at $0.001 < p < 0.005$.

*** Significance at $p < 0.001$.

be expected that a high intrinsic motivation to pay taxes is correlated with a moral obligation not to lie or to cheat. Thus, it is not surprising that the results indicate that trustworthiness has a strong impact on tax morale. The marginal effects vary between 15.9 (lying) and 20.3 (cheating) percentage points. However, the significant positive correlation between tax morale and religiosity and the quantitative effects measured by the marginal effects remain quite robust. Based on these results it might be interesting to analyze whether the impact of religiosity works through its impact on trustworthiness or whether there is an independent effect. Therefore, we have built interaction terms between religiosity and trustworthiness. The results are presented in the Tables A2 to A4 in the Appendix. In most of the estimations the coefficient of the product is significant. However, in many estimations the marginal effects are relatively small, which indicates that religiosity does not only work through its impact on trustworthiness, but has also an independent effect.

4. Conclusions

The basic contribution of this paper is to analyze religiosity as a factor that potentially affects tax morale. With data from the World Values Survey 1995–1997, strong evidence has been adducted that religiosity factors exert a systematic influence on tax morale. This effect tends to persist even after controlling for factors as corruption, trustworthiness, age, economic situation, education, gender, marital status and employment status.

The empirical findings support the relevance of incorporating non-economic factors into the analysis of tax compliance. Tax morale and tax compliance are not just a function of opportunity to evade taxes, tax rates, and probability of detection. It might therefore be fruitful to work with models that systematically integrate ideas borrowed from other social sciences. An extension of the economic model of man integrating factors as religiosity opens a new working instrument without losing simplicity and robustness. Iannaccone (p. 1492) points out,

“The economics of religion will eventually bury two myths, that of *homo economicus* as a cold creature with neither need nor capacity for piety, and that of *homo religiosus* as a benighted throwback to pre-rational times”.

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Appendix A. Appendix

Tables A1–A4.

Table A1
Derivation of some variables

Variable	Derivation
Tax morale (dependent variable)	Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between: (...) Cheating on tax if you have the chance (3 = never and 0 = always)
Church attendance	Apart from weddings, funerals and christenings, about how often do you attend religious services these days? More than once a week, once a week, once a month, only on special holy days, once a year, less often, never practically never. (7 = more than once a week to 1 = never, practically never)
Church participation	Now I am going to read off a list of voluntary organizations; for each one, could you tell me whether you are an active member or not: Church or religious organization (dummy variable)
Religious education	Were you brought up religiously at home (dummy variable)? 1. Yes 0. No
Religious	Independently of whether you go to church or not, would you say you are 1. A convinced atheist 2. Not a religious person 3. A religious person
Importance of religion	Please say, for each of the following, how important it is in your life. Would you say... Religion (1 = not at all important, 4 = very important)
Religious guidance	Here is a statements which people sometimes make when discussing good and evil. There are absolutely clear guidelines about what is good and evil. These always apply to everyone, whatever the circumstances (dummy variable)
Trust church	I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? The churches (4 = a great deal, 1 = not very much)
Education	What is the highest educational level that you have attained? 1. No formal education 2. Incomplete primary school 3. Completed primary school 4. Incomplete secondary school: technical/vocational type 5. Complete secondary school: technical/vocational type 6. Incomplete secondary: university-preparatory type 7. Complete secondary: university-preparatory type 8. Some university-level education, without degree 9. University-level education, with degree
Financial satisfaction	How satisfied are you with the financial situation of your household? (scale 1 = dissatisfied to 10 = satisfied)

Table A1 (Continued)

Variable	Derivation
Risk averse	<p>Now I would like to ask you something about the things which would seem to you personally, most important if you were looking a job. Here are some of the things many people take into account in relation to their work. Regardless of whether you're actually looking for a job, which one would you, personally, place first if you were looking for a job?</p> <ol style="list-style-type: none"> 1. A good income so that you do not have any worries about money 2. A safe job with no risk of closing down or unemployment 3. Working with people you like 4. Doing an important job which gives you a feeling of accomplishment <p>And what would be your second choice?</p> <p>A dummy variable was built with the value 1, if someone has chosen 2 as first or as second choice.</p>
Economic class	<p>People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the:</p> <ol style="list-style-type: none"> 1. Upper class 2. Upper middle class 3. Lower middle class 4. Working class 5. Lower class
Lying	<p>Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between: (. . .) Claiming government benefits to which you are not entitled (3 = never and 0 = always)</p>
Cheating	<p>Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between: (. . .) Avoiding a fare on public transport (3 = never and 0 = always)</p>
Buying a stolen product	<p>Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between: (. . .) Buying something you knew was stolen (3 = never and 0 = always)</p>

Source: Inglehart (2000b).

Table A2
Tax morale and trustworthiness (lying)

Weighted ordered probit	Coefficient						
Behavior							
Church attendance	0.055*** (0.022)						
Religious education ^a		0.215*** (0.085)					
Active in church group			0.158*** (0.062)				
Belief							
Religious ^a				0.115*** (0.045)			
Importance of religion					0.100*** (0.039)		
Religious guidance						0.015 (0.006)	
Trust church							0.037*** (0.015)
Trustworthiness							
Lying	0.403*** (0.158)	0.399*** (0.157)	0.403*** (0.159)	0.419*** (0.164)	0.345*** (0.135)	0.391*** (0.154)	0.358*** (0.141)
Reldenom × lying	0.002 (0.001)	0.015 (0.006)	0.036* (0.014)	−0.003 (−0.001)	0.024*** (0.009)	0.039*** (0.016)	0.018*** (0.007)
Number of observations	29629	29400	29784	28464	29230	28644	28895
Prob(LM-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Dependent variable: tax morale on a four point scale (0–3). All other variables included, in the reference group are age 16–29, man, single, full time employed, working class and lower class, not risk averse, not actively in a church group, not an absolutely guidance of what is good and evil, no religion denomination. Marginal effects in parenthesis (highest tax morale score, 3).

^a South Korea is not included in these estimations.

* Significance at $0.005 < p < 0.010$.

*** Significance at $p < 0.001$.

Table A3
Tax morale and trustworthiness (buying a stolen product)

Weighted ordered probit	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Behavior							
Church attendance	-0.010 (-0.004)						
Religious education ^a		0.012 (0.005)					
Active in church group			-0.090 (-0.035)				
Belief							
Religious ^a				-0.036 (-0.014)			
Importance of religion					0.006 (0.002)		
Religious guidance						-0.078 (-0.031)	
Trust church							-0.046* (-0.018)
Trustworthiness							
Buying a stolen product	0.442*** (0.174)	0.461 (0.181)	0.491*** (0.193)	0.416*** (0.164)	0.393*** (0.154)	0.484*** (0.191)	0.414*** (0.163)
Religiosity × buying a stolen product	0.020*** (0.008)	0.087 (0.034)	0.127*** (0.050)	0.036*** (0.014)	0.042*** (0.017)	0.062*** (0.024)	0.035*** (0.014)
Number of observations	31312	29905	31496	28898	30894	29082	30562
Prob(LM-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Dependent variable: tax morale on a four point scale (0–3). All other variables included, in the reference group are age 16–29, man, single, full time employed, working class and lower class, not risk averse, not actively in a church group, not an absolutely guidance of what is good and evil, no religion denomination. Marginal effects in parenthesis (highest tax morale score, 3).

^a South Korea is not included in these estimations.

* Significance at $0.005 < p < 0.010$.

*** Significance at $p < 0.001$.

Table A4
Tax morale and trustworthiness (cheating)

Weighted ordered probit	Coefficient						
Behavior							
Church attendance	0.015*** (0.006)						
Religious education ^a		0.099*** (0.039)					
Active in church group			0.080** (0.031)				
Belief							
Religious ^a				0.045 (0.018)			
Importance of religion					0.083*** (0.032)		
Religious guidance						-0.027 (-0.009)	
Trust church							-0.025*** (-0.001)
Trustworthiness							
Cheating	0.469*** (0.184)	0.495*** (0.194)	0.504*** (0.197)	0.481*** (0.189)	0.460*** (0.180)	0.493*** (0.194)	0.452*** (0.177)
Religiosity × cheating	0.013*** (0.005)	0.035*** (0.014)	0.060*** (0.023)	0.014 (0.005)	0.018*** (0.007)	0.054*** (0.022)	0.022*** (0.009)
Number of observations	31299	29892	31482	28886	30876	29071	30556
Prob(LM-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Dependent variable: tax morale on a four point scale (0–3). All other variables included, in the reference group are age 16–29, man, single, full time employed, working class and lower class, not risk averse, not actively in a church group, not an absolutely clear guidance of what is good and evil, no religion denomination.

Marginal effects in parenthesis (highest tax morale score, 3).

^a South Korea is not included in these estimations.

** Significance at $0.001 < p < 0.005$.

*** Significance at $p < 0.001$.

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