Protestants and Catholics: Similar Work Ethic, Different Social Ethic

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Abstract

This article develops two hypotheses about economically-relevant values of Christian believers, according to which Protestants should work more and more effectively, as in the "work ethic" argument of Max Weber, or display a stronger "social ethic" that would lead them to monitor each other's conduct, support political and legal institutions and hold more homogeneous values. Tests using current survey data confirm substantial partial correlations and possible different "effects" in mutual social control, institutional performance and homogeneity of values but no difference in work ethics. Protestantism therefore seems conducive to capitalist economic development, not by the direct psychological route of the Weberian work ethic but rather by promoting an alternative social ethic that facilitates impersonal trade.

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This article compares the economically-relevant values of Catholics and Protestants based on predictions that stem from differences in the theology, church organization and social practice of the two religions. In particular, it argues that different behaviours and values between Catholicism and Protestantism fit in with differences in beliefs and in the enforcement mechanisms that have characterized these two religions since the Reformation. Catholicism relied on the theology of salvation by works and the role of the Church as intermediary and enforcement agent. Protestantism, on the other hand, relied on salvation by divine grace and enforcement through social interactions. Both differences affected a number of factors that impinge on individual success and how institutions and the economy work. In particular, while Protestantism favours the emergence of anonymous trade and thus markets, Catholicism is more conducive to developing personalized trade. From this line of reasoning two hypotheses—according to which the two religions produced different work and social ethics—and a number of specific predictions are drawn and then tested on data from the 1998 ISSP survey, which covers 32 countries, thus making it possible to account for country fixed effects and to purge the effects of religion from country-level unobserved heterogeneity.

Numerous empirical studies have been carried out on the economic effects of religion (Iannaccone, 1998). Within the sociology and economics of religion, most works focus on real variables, trying to explain the relationship between religious traits such as affiliation or participation and diverse measures of behaviour and achievement at the individual level. Connections have been found, among others, between religiosity and wages (Chiswick, 1983), school attendance (Freeman, 1986), health (Ellison, 1991), and criminal behaviour (Evans *et al.*, 1995). However, it is understandably hard to draw general conclusions from individual observations within a single country. Cross-country studies have also found connections between religious characteristics or country background and a variety of country-level economic characteristics, such as values assumed to be conducive to capitalist development, as well as historical or recent economic performance. Thus, La Porta *et al.* (1997) and Inglehart (1999) find that trust is lower in Catholic countries; Blum and Dudley (2001) estimate that wages increased more in Protestant European cities between 1500 and 1750; Stulz and Williamson (2003) argue that predominantly Catholic countries tend to offer less protection to lenders because of an alleged Catholic bias against usury; Barro and McCleary (2003, 2006) show that growth relates positively to beliefs and negatively to church attendance, suggesting that the effect of religion depends on efficiency in the production of belief; Inglehart and Norris (2004) confirm that the authority of established religions tends to decrease in wealthy countries. However, studies that use country measurements and averages within a cross-section of countries find it difficult to identify the effects of religion as it is mixed up with other institutional factors.

The methodology of this article is similar to that used by Glaeser and Glendon (1998), Sacerdote and Glaeser (2008), and Guiso, Sapienza and Zingales (2003) in relying on an international collection of survey data at the individual level and controlling for fixed country effects, as well as several personal characteristics. This within-country analysis, by controlling for most potential causes, comes closer to identifying the effects of religion. In fact, with the inclusion of country controls, the effect of religion might be underestimated to the extent that it has become embedded in national traits.

Overall, its findings provide little support for Weber's "work ethic" hypothesis, whereby Protestants tend to work more and more effectively than Catholics. They support, however, a "social ethic" hypothesis, as Protestant values shape individuals to be more active in mutual

social control, more supportive of institutions, less bound to close circles of family and friends and to hold more homogeneous values.

These results are in line with Glaeser and Glendon (1998) who, after modelling the incentives in Calvinist predestination, confirm empirically that Catholicism and Protestantism associate with different social interactions; and with Guiso, Sapienza and Zingales (2003), who also find that Catholicism and Protestantism offer pros and cons with respect to economic attitudes. The argument is partly similar to that of Becker and Woessmann (2009), who argue that Protestant regions grew faster because Protestant emphasis on reading the Bible led, as a side effect, to greater investment in literacy and human capital. My argument is also one of side effects but related to the development of a social ethic that favoured market transactions and market-enhancing institutions.[1]

The present work differs from, and complements, previous works in several important ways. First, some previous works supply heterogeneous empirical correlations between religion and economic performance or attitudes. As a consequence, their findings are hard to evaluate whereas the empirical tests in this article are developed from an analytical framework that allows a set of testable hypotheses to be drawn up, painting a more systematic and theoretical picture of the links between alleged causes and effects, which comes closer to examining cultural innovation instead of taking culture as given. Second, the effect of religion is estimated not only on values but also on personal outcomes such as working hours, education and personal success. Third, using data from the 1998 International Social Survey Programme (ISSP) surveys conducted in 1998 and 1999 in 32 countries allows estimation of the effects of religion when strong believers allegedly played a greater role in society.

The rest of the article is structured as follows. Section 1 develops a framework to analyze the economic impact of religions, based on a typology of enforcement systems, applies it to the changes introduced by the Protestant Reformation and defines on this basis two testable hypotheses according to which Protestantism favours a more productive work ethic or a stronger social ethic that leads Protestants to exert greater social control, support the rule of law more and hold more homogeneous values. Section 2 describes the ISSP data, the specific variables employed and the statistical regressions used to test the hypotheses. Section 3 presents and discusses the results, according to which Protestantism promotes values favourable to capitalist relations based on impersonal trade, with no perceptible impact on the work ethic. Section 4 concludes.

[1] Ekelund *et al.* (2006: 189-231) discuss other possible reasons, such as simpler churches and liturgies, and fewer holidays and pilgrimages, as to why the Protestant Reformation may have affected economic growth.

1. Analytical Framework

1.1. The Effect of Religion on Enforcement and Growth

In all societies, individual behaviour is constrained by norms and rules that humans define and enforce by different means. Religion is one of these means. To analyze the effects of Christian religions, I will distinguish three types of structures according to which party is responsible for enforcing the more or less implicit terms of exchange in a given interaction. Under "first party" enforcement, the obliged individuals evaluate their own conduct in relation to their own reading of a moral code, a code that includes many economically-relevant preferences, towards effort, thriftiness, and so on. In accordance with this evaluation, individuals sanction themselves with some psychological compensation, which in Christianity is related to the idea of "salvation" and eternal life in heaven. "Second party" enforcement is based on verification and sanction by the party suffering the consequences of breach. In addition to partners in a standard economic exchange, peers in groups are also second parties to the extent that they exert pressure on noncompliant members through diverse means, from shaming to ostracizing or even killing them. Lastly, under "third party" enforcement, more or less specialized agents, such as political rulers, judges and police forces, verify the behaviour of group members and punish those who do not follow the rules.

Religion obviously influences first party enforcement. For example, relative to the more individualistic pagan views prevalent at the time of the Roman empire, Christianity greatly reinforced first party enforcement by imposing on believers the then novel moral duty of helping their neighbours (Stark, 1996). In this Christian spirit, natural feelings of compassion, which Roman patricians were educated to suppress, were the cornerstone of Adam Smith's moral conception in his *Theory of Moral Sentiments* (1759). Less obviously, religion also affects the functioning of second and third party enforcement. In primitive societies, there is even little separation between religious and civil law. In more developed theocratic regimes, religious authorities also take over or dominate political rulers, and there is little or no separation between religious and civil law. Christianity followed a long and tortuous path along these lines. It started as a minority cult whose views conflicted with those that were politically correct at the time, but became the State religion in the last centuries of the Roman empire. During the late Middle Ages, and especially on the eve of the Reformation, the Church was not only the monopoly supplier of religious services but also the main provider of educational, legal, bureaucratic and welfare services; it commanded substantial military forces; the papal state constituted a political power in itself; and churchmen were the main political officials all across Europe (Cameron, 1991).

1.2. Comparative Analysis of Christian Moral Enforcements

In this context, the Protestant Reformation radically modified both the contents of moral rules and the enforcement mechanisms of moral and civil rules alike. The Reformation directly affected the three enforcement systems:

First, reformers altered the structure of beliefs on salvation, switching from Catholic salvation by works to salvation by divine grace alone. Following Max Weber's *The Protestant Ethic and the Spirit of Capitalism* (1904-1905), many writers have considered that this change in beliefs improves economic incentives, especially in the Calvinist version that emphasizes predestination but also in the common Protestant focus on ordinary labour and vocation. The argument goes that even though good works do not warrant salvation, they serve as a signal to the believer, who is therefore moved to constant self-examination, with increased moral awareness. Worldly success is also seen as a positive signal when coming from disciplined work and not resulting in excessive consumption. Reformers thus modified the contents of the moral code in some dimensions with two potentially crucial economic consequences: by giving a more positive moral meaning to worldly activities, they encouraged a work ethic that favoured effort; and, by frowning on excessive consumption, they encouraged savings. According to this argument, the consequences to be expected are that both the laity and the clergy will focus on productive activities and abandon unproductive ones. A sort of secular asceticism should develop, in which individuals comply with divine plans by punctually performing their earthly duties.

However, the degree of motivation provided by Protestant theology in Weber's interpretation is open to doubt for a variety of reasons. First, there is a psychological inconsistency in that Protestant believers are saved by God, with good works contributing nothing. Even 16th century reformers soon realized how difficult it was to "persuade their flocks to be religious, while also teaching that 'good works' of piety were worthless to earn salvation" (Cameron, 1991: 400). Second, Protestant believers could easily deceive themselves when relying on self-examination. In contrast, Catholic enforcement was grounded on confession of sins to a priest, which suffers greater agency costs but offers specialization advantages (Arruñada, 2009). Third, empirically, predestination may trigger very different responses, as shown by its role in Islam (Rodinson, 1974). Lastly, Catholicism may have been more hospitable to capitalism, at least originally (e.g., Dickens: 178-79; Berman, 1983: 337-39).

Second, the Reformation dismissed the role of the Church as an intermediary between God and believers, a role that made lay people passive religious subjects. In the Medieval Church, the Bible was interpreted and validated by the Church, and the laity was discouraged from reading it; theologists debated in closed academic circles, not allowing the laity to know about their controversies; and priests had the power to forgive sins in private sacramental confession, thereby ruling on believers' salvation. The reformers minimized this intermediary role of the Church by setting the Bible as the only source, even as the rule according to which to judge the Church; and correspondingly empowering the laity, encouraging them to read the Bible, and holding theological debates in the open.[2] They also abolished the old penitential system, eliminating the power of the Church to forgive sins. Most visibly, they eliminated barriers to entry by using the vernacular instead of Latin for liturgy and writing.

This broad empowerment of the laity came with corresponding duties: lay people had to know more and, especially, fill the vacuum left by the disappearance of private confession. These changes should make lay people abandon their previous passivity, becoming more vigilant of their neighbours' conduct and worrying more about how their own deeds will affect their

[2] See Becker and Woessmann (2009) on the consequences of Protestant emphasis on reading the Bible.

neighbours' opinions on them. Mutual social control thus avoided the obvious risk that self-examination might result in more lenient standards of conduct. These consequences were more explicit in stricter communities. For example, the Geneva of Calvin adopted many intrusive social controls, such as "family visitations," by which two elders regularly visited each home to discuss the spiritual health of each family. Another classic account of these practices in mutual control was also given by Weber in his description of American sects (1920).

Third, in contrast to the more independent Catholic Church, reformers were more supportive of political and legal institutions, often because they needed political support in their fight against Catholicism. The Medieval Church had been an international power that held very substantial wealth and limited the power of political rulers, frequently opposing them. Where the Reformation succeeded, most Church property was soon seized by political rulers, and the previous Church privileges were removed. Furthermore, lay rulers rapidly asserted their domination of religious affairs. Consequently, many Protestant churches rapidly became appendices of local or national rulers. Moreover, in contrast to the ambivalent support provided by the Catholic Church to political rulers and the nuanced advice the Church gave to the laity for dealing with rulers, reformed churches more flatly affirmed that believers had to obey their rulers, as Luther exhorted very early on (1523). Such concentration of political power may have and often did result in tyranny. However, in a similar fashion to self-control, it also tended to be restrained by more active mutual social control.

In addition, the changes introduced by the Reformation also made values more homogeneous among believers. This should lower the transaction costs of impersonal trade, the sort of trade between strangers that has been considered crucial in capitalist economic development at least since North and Thomas (1973), and by authors in different disciplines, such as Granovetter (1985) and Seabright (2004). The two religions provide markedly different setups in this regard:

Primarily, Catholic practice favours more diverse moral standards because of both the contents and its moral code and, mainly, its enforcement mechanisms. With respect to the code, its prioritization of the family encourages selective charity and reinforces in believers their natural tendency to favour their relatives and possibly friends over strangers. It therefore enhances the use of double standards. With respect to enforcement, both the theology of salvation by works and the practice of private confession of sins to a priest support heterogeneous standards. First, salvation by works involves an element of individual fine-tuning because works cannot be evaluated without considering the possibilities of each individual and moral standards are adjusted to specific circumstances. In fact, medieval theologists had minutely devised prescriptions for each case, developing the body of "casuistry" literature. Private confession also adjusted moral standards to each individual: priests were trained to adapt the moral code to the strength of the penitent, even negotiating penance with them. In addition, the theology of Purgatory made it possible for merits to be traded amongst believers and with the Church, which reinforced inequality (Arruñada, 2009). The sale of indulgences also caused greater moral disparity among believers (in addition to considerable rent-seeking, as emphasized by Ekelund *et al.* (1992, 1996, 2002, 2006).

Conversely, greater homogeneity in the moral standards of Protestantism derives from its emphasis on universal charity and its greater reliance on "external" sources for enforcement, both second parties and legal institutions. First, the Protestant ideal tends to place obligations to strangers on a par with those to family members (McCleary, 2007). Second, compared to the secret judgments of the confessional, reliance on external enforcement is likely to produce more

equal treatment, as modelled by Glaeser and Glendon (1998). Examples abound, starting with John Calvin's insistence on treating all believers equally, or the community responsibility system practiced by the American sects described by Weber (1920), which is somehow similar to the late medieval system analyzed by Greif (2002). In this extreme case, as individuals are liable for the debts of their colleagues, they will insist that they meet the standards of the group, both on admission and later on. Third, more generally, legal enforcement applies the same principle on a larger scale, by providing impartial enforcement of obligations without paying attention to who the parties are and, in particular, regardless of whether they are locals or outsiders.

Summing up, the analysis supports two distinctive hypotheses. The *work ethic* hypothesis predicts that Protestant believers work more and more effectively than Catholics. The *social ethic* hypothesis predicts that Protestants show greater concern for social interactions, in terms of at least social control, rule of law and homogeneity of values.

2. Data and Tests

2.1. Data

The tests will rely on several econometric models built with cross-section data from the 1998 religion module of the International Social Survey Programme (ISSP) Survey. The ISSP is a continuing program of cross-national collaboration on surveys covering topics of importance for research in the social sciences. The surveys were conducted in 1998 and 1999 (8 countries) in a total of 32 countries, most of them developed countries, with sample sizes between 804 and 2,488, and a total of 39,034 observations. After dropping observations with missing values in the independent variables, 19,246 observations on Protestants and Catholics remain, which are distributed across countries as summarized in Table 1. In each of these national surveys, the questionnaires of the religion module included at least 72 questions about the respondents' feelings (for instance, their happiness), values (tolerance of homosexuality, confidence on parliaments, trust in strangers and so on), religious beliefs (in heaven, in hell, etc.) and practice (church attendance), social habits (different volunteer activities), and opinions (government responsibilities), etc.; as well as a full set of demographic variables (sex, marital status, education, earnings, etc.). Detailed explanation of all variables is given in Table 6 in the Annex.

These surveys have been used in many other studies.[3] Using ISSP data instead of the World Values Survey reduces sample size and the number of countries and variables. It provides, however, a more detailed measurement of the intensity of beliefs, which allows me to estimate its impact and to distinguish the fixed effect of "belonging" to a religion from the variable effect of "believing" its doctrine more or less strongly.

[3] Full information on the ISSP surveys is available at http://www.issp.org (accessed January 13, 2009), including data and codebooks for the religion 1998 module and a list of the thousands of studies using the ISSP data.

Table 2 summarizes the empirical exercise, in which several tests are used in parallel for each of the predictions. These tests rely on several econometric models examining differences in values and actions between Protestants and Catholics. For simplicity, observations for members of other religions are dropped. In addition, for the Netherlands, data on individual earnings are estimated as the predicted values of an OLS regression of available individual earnings on family income, family size and education level. Family income is also assumed to be income by other family members in the 635 observations for which asserted family income is lower than individual earnings. Lastly, given that the surveys provide highly correlated questions for some issues, only one variable was used in such cases. When the variables are not so heavily correlated, indexes were constructed by using the first principal components of the variables are used (Table 7 to Table 11 in the Annex). Results do not materially change as a consequence of these imputations and simplifications.

2.2. Work Ethic

The work ethic hypothesis will be tested by examining how Protestants and Catholics compare in two indicators: (1) the number of weekly *Working hours*, used as a proxy for the willingness to exert effort; and (2) an index of personal *Success*, built as the first principal component of four variables (individual earnings standardized within each country, working as a supervisor, being self-employed and each respondent's subjective social class).

The predictions are that, within each country and controlling for demographic variables, Protestants should work more hours and achieve greater success than Catholics. The reason lies in both the emphasis of the Protestant moral code on asceticism and methodical work, and the greater motivation supposedly produced by its theology of salvation.

2.3. Social Ethic

Predictions of the social ethic hypothesis will be tested in three distinctive areas: social control, rule of law and homogeneous values.

2.3.1. Social Control

According to the social ethic hypothesis, Protestants should exert a greater effort in mutual social control than Catholics. This prediction will be examined in three ways: First, by directly testing if Catholics *Volunteer* less than Protestants. The assumption here is that respondents' volunteering is correlated to their willingness to informally monitor and sanction the behaviour of others. This assumption is plausible because mutual control is another form of unrewarded volunteering. In addition, some volunteer activities act as enforcement mechanisms themselves, because enjoying membership is conditional on complying with a certain pattern of behaviour. Volunteer work is gauged with an index built as the first principal component of four variables measuring volunteering in political, charitable, religious and other activities.

Second, by testing if greater levels of education affect differently for Protestants and Catholics how much confidence people have in the Church and religious organizations (*Trust*

Church). The hypothesis predicts that, whatever the effect of education, it will be smaller or even negative for Catholics, because most reformed churches relinquished some of their functions in moral enforcement, correspondingly empowering individuals and encouraging them to learn. Therefore, substitution between education and church enforcement was accomplished by Protestants centuries ago, while the Catholic Church has retained a more active role in moral enforcement. As a consequence, education should be a complement of religion for Protestants but a substitute for Catholics.

Lastly, by similarly testing if greater levels of education affect *Religious practice* differently for Catholics and Protestants, where *Religious practice* is an index built with four variables measuring prayer frequency, participation in church activities, self-description as a religious person and frequency of attendance at religious services. Considering the results in the literature (Iannaccone, 1998: 1470), greater education is expected to increase religious participation. However, the prediction concerns only differences between religions—in particular, it predicts that this effect will be significantly smaller for Catholics than for Protestants. The rationale is the same as for confidence in the Church.

2.3.2. Rule of Law

In terms of the rule of law, the social ethic hypothesis predicts that Protestants support political and legal institutions more than Catholics. It will be tested by examining how Protestants and Catholics compare with respect to three variables: First, their *Tolerance of tax fraud*. The fact that taxes are necessary for operating political and legal institutions upholds the notion that less tolerance of tax fraud is related to greater support of such institutions. In addition, the Catholic Church has been relatively lenient with respect to tax fraud, not considering it as a serious sin, perhaps as a remnant of the medieval times when it competed for tax money with civil rulers. Given the greater support historically given by Protestant churches to political rulers, it is predicted that within each country and also controlling for a full set of demographic variables, Catholics will be more tolerant of tax fraud.

Second, their willingness to *Cover up for friends*, measured through respondents' reactions to the hypothetical case in which they are riding in a car driven too fast by a close friend who hits a pedestrian, and this friend asks the respondent to tell the police that he was obeying the speed limit. The variable therefore measures individuals' unwillingness to voluntarily cooperate with the legal system and its representatives when this cooperation conflicts with friendship ties. It is assumed to indicate how much support respondents provide to third party enforcement. Also in this case, it is predicted that Catholics will be more willing to cover up for their friends.

Lastly, I will examine respondents' confidence in political and legal institutions, measured with the index *Trust institutions*, which combines confidence in the parliament, and the court and legal system. The logic behind these proxies is straightforward, as Parliament establishes the legal rules and courts enforce them. Our prediction is that Catholics will be less confident of their political and legal institutions.

2.3.3. Homogeneous Values

Lastly, the social ethic hypothesis predicts that Protestants hold more homogeneous values than Catholics. It will also be examined in three ways: First, the homogeneity of moral standards

within the Protestant and Catholic religion will be directly tested by comparing the residuals of the regressions on values between the two groups, expecting a higher variance among Catholics.

Second, homogeneity of values will be tested indirectly by examining how Protestants and Catholics compare with respect to a measure of interpersonal generalized trust, given by responses to the question, "Generally speaking, would you say that people can be trusted or that you can't be too careful in dealing with people?" (*Trust strangers*). This variable is often related to "social capital" (Putnam, 1993) and is thought to convey trust in strangers (Knack and Keefer, 1997). Its connection to homogeneity is clear if people trust strangers more in homogeneous societies, as argued by Alesina and LaFerrara (2000, 2002), an idea grounded both on social (Tajfel and Turner, 1979) and evolutionary psychology (Trivers, 1971). The prediction is that Catholics should trust strangers less than Protestants.

Complementarily, I will finally check the importance individuals give to their family, to examine the argument put forward by Putnam (1993), Fukuyama (1995) and others that there is substitution between the strength of family ties and formal institutions. Lacking direct measures, I will use as a proxy the difference in individuals' stated tolerance of heterosexual relations before and after marriage. The prediction is that this index of *Importance of family*, measured as the gap between tolerance of premarital sex and adultery, will be greater for Catholics.

2.4. Models

2.4.1. Main Model

To perform most of these tests, the following equations will be estimated:

$$
\begin{aligned}
Y_i = \; & \alpha_0 && + \alpha_{0c}\, Catholic \\
& + \beta_1\, Faith && + \beta_{1c}\, Catholic \times Faith \\
& + \beta_2\, Religious\ upbringing && + \beta_{2c}\, CatholicR \times Religious\ upbringing \\
& + \beta_3\, Education && + \beta_{3c}\, Catholic \times Education \\
& && + \Sigma_t\, (\beta_t\, Control_m \text{ variables}) \\
& && + \Sigma_r\, (\beta_r\, Country_n \text{ dummies}) \qquad (1)
\end{aligned}
$$

where each dependent variable, Y_i, represents a value or action, as stated by respondents to the survey, from their weekly working hours to their trust in strangers. Half of the dependent variables are expressed in terms of categories with a natural order. Ordered *probit* models are estimated in these cases, and ordinary least squares are used for the rest. The regressions of *Working hours* and *Positive working hours* are *tobit* and *probit* models. All equations were estimated using weight adjustments with robust (Huber-White) standard errors. Neither the choice of model nor the use of survey estimation materially affect the results.

Independent variables are as follows:

- *Catholic* is a binary variable that takes value one for respondents who state that they belong to the Catholic religion, zero otherwise. The default category is Protestant.

- *Faith* is an index measuring the intensity of respondents' faith. Simplicity plus the substantial collinearity among the three belief variables (in the afterlife, heaven and hell) advise using a composite index of belief intensity, built as the first principal component of the three variables.
- *Upbringing* measures the degree of religious indoctrination that respondents received during their childhood. This is taken directly from a survey question asking respondents how often they attended religious services when they were around 11 or 12 years old.
- *Education* measures the highest degree of education reached by respondents.
- *Interactive variables*, built as products of *Catholic* times *Faith*, *Upbringing* and *Education*, are introduced to test differences in the effects of faith, upbringing and education between the two religions. *CatholicR* is a dummy that takes value one for those raised as Catholics.
- Control variables were introduced for the sex of respondents, their age and age squared, and their marital status (through three dummies for widows, divorced and separated and single), as well as country dummies.

2.4.2. Fixed and Variable Effects of Religion

Model (1) distinguishes between fixed and variable "effects" of the two religions on values and behaviour. Fixed effects are related to membership or, more broadly, to "belonging" to a particular religious group, and do not vary across believers of a given faith. In our case, their coefficients (α_{0c}) estimate the difference between belonging to Catholicism and Protestantism, because observations for other religions have been dropped. Furthermore, given that *Faith*, *Upbringing* and *Education* have been standardized within the sample, these fixed effects measure attitudes for the average person in the whole sample of Catholics and Protestants (average not only in terms of the demographic controls but also in terms of *Faith*, *Religious upbringing* and *Education*). Their estimates are given in the first row of Table 4.

In addition to these fixed or belonging effects, the two religions provide different structures of beliefs and enforcement that are predicted to lead to different variable effects, meaning in our case that the intensity of belief, the degree of religious upbringing and the degree of education should affect values and actions for Protestants and Catholics differently. In the equations, we take Protestants as the omitted category, estimating Protestant variable effects with coefficients β_j, and the differential impact of Catholic *Faith*, *Upbringing* and *Education* with coefficients β_{jc}, with j = 1, 2, 3, respectively. Their estimates are given in the rows corresponding to the interactive variables in Panel A of Table 4. In the case of education, estimating variable effects is useful to test the social control hypothesis whereas, for faith and upbringing, estimated variable effects give us a glimpse into the effects that religion may have exerted in the past, when both the intensity of religious belief and the degree of religious indoctrination can be assumed to be greater then they are now in most societies.

Complementarily, the overall effect of "being Catholic" will be estimated with a simplified version of model (1) in which the variables *Faith*, *Upbringing*, *Education* and their interactions are excluded, such that the new coefficients of the *Catholic* variable estimate how average Catholics in the sample differ from average Protestants after controlling for demographic and

country effects but not for the intensity of their faith, upbringing and education. Estimates of these average effects are given in the first row of Panel B in Table 4.

3. Results

Table 3 presents summary statistics of the data used for the analysis. Most differences in means and standard deviations for Protestants and Catholics are consistent with the hypotheses. Table 4 presents the main results, obtained by estimating the effects of the two religions on a variety of values, conducts and facts. Catholicism is represented by a dummy binary variable, with Protestantism as the omitted category. Results for constants, control variables and country dummies are omitted but their use is supported by their statistically significant correlations with the dependent variables and the fact that most control variables show the expected signs. The Table contains two panels. Panel A shows the results for models in equation (1), with variable effects, while Panel B presents the average effects obtained with the simplified model.

3.1. The Work Ethic Hypothesis

Results hardly provide any support for the work ethics hypothesis. Despite the fact that on average Protestants work 8.5% more hours and show greater personal success, the significance of these differences disappears after controlling for demographic and country effects according to the non-significant coefficients of fixed effects in Table 4, both for the standard person in the sample (panel A) and for the standard member of each religion (panel B).

Results on working hours, a variable that measures working time at all jobs, but not time worked at home, are slightly ambiguous with respect to the differential effects of the intensity of religious belief and upbringing between Catholics and Protestants. As shown in panel A, for Catholics, stronger faith and religious upbringing are associated with fewer working hours (equation [1]). However, this result seems to be driven by the fact that the only working hours considered are those worked in jobs. Catholics are indeed less likely to report positive working hours (equation [2]). However, for those Catholics with positive working hours, belief intensity is associated with a greater number of working hours (equation [3]), a result driven fully by Catholic women. Overall, the results seem to reflect a difference between the two religions as to occupational patterns, which cannot be fully clarified without knowing how many hours the two types of respondents work outside their jobs. With the data available, the observed difference—which refers only to the effect of faith and upbringing—cannot be ascribed to a differential willingness to exert effort. It seems more likely to respond or at least be heavily influenced by different priorities in allocating time between the family and the outside world, an interpretation that fits in well with the greater importance that Catholics grant to the family (section 3.2.3).

Results for personal success are even clearer, with no significant differences being observed when controlling for demographic and country variables, neither in the fixed effect of belonging to a religion nor in the variable effects of religious belief intensity or upbringing.

3.2. The Social Ethic Hypothesis

3.2.1. Social Control

Results confirm the three social control predictions. First, average Catholics not only volunteer work significantly less than Protestants (on average, about .159 standard deviations) but volunteering increases with faith and upbringing less than half for Catholics than what it does for Protestants. Catholic values are thus more weakly linked to volunteering and therefore are allegedly less conducive to mutual control, to the extent that mutual control relies on volunteer enforcement work and many organizations based on volunteer work also act as enforcement devices by, for example, screening access to social networks.

Second, the data show an acute contrast in the relationship between education and confidence in churches and religious organizations: better-educated Protestants trust them more whereas better-educated Catholics trust them less (from a rate of .074 standard deviations of trust for each deviation in education for Protestants to -.090 deviations for Catholics). Catholics also show more confidence in their Church, and their confidence increases with their faith and religious upbringing. However, greater confidence can be interpreted in different ways.

Third, education has a similarly contrasting effect on religious practice because, even if in this case education has for Catholics a slightly positive instead of a negative effect, this attenuation probably is at least partly driven by the likely presence of a social element in the demand for religious practice, as argued by Sacerdote and Glaeser (2008).

These contrasting effects of education support the idea that for Protestants education complements religion whereas for Catholics education substitutes for religion. It therefore seems that the Catholic Church is less in tune with its more educated laity, possibly due to the greater role the Catholic Church plays as an enforcer, which conflicts more with educated laity.

3.2.2. Rule of Law

Results clearly confirm two of the three predictions according to which Protestants support political and legal institutions more than Catholics.

First, Catholics are significantly more tolerant of tax fraud than Protestants, in line with Guiso, Sapienza and Zingales (2003). Furthermore, even if strong Catholic beliefs are associated with less tolerance of tax fraud, this association is about a third weaker than among Protestants. The result therefore confirms that, as predicted, Catholic values are less supportive of those political and legal institutions that are financed with taxation.

Second, Catholics are also more willing to cover up for their delinquent friends in dealings with the police, and strong Catholic beliefs have a similarly positive but weaker effect. This result confirms that Catholic values elicit less cooperation from citizens in the functioning of legal institutions when they conflict with smaller social circles, such as the ones defined by friendship ties.

Third, no significant differences are observed between Protestants and Catholics with respect to their confidence in political and legal institutions, measured through the index of *Trust institutions*. Strong Catholic believers even show more confidence than strong Protestant believers, with Catholic faith showing almost twice the effect of Protestant faith, in line with

Guiso, Sapienza and Zingales (2003), who find Catholics trust both the Government and the legal system more than Protestants.

The results for this third proxy of institutional support might be reconciled with those for the two other proxies by considering that citizens' uncritical confidence in political and legal institutions does not improve the functioning of these institutions. According to this argument, by empowering individuals, Protestantism has ended up encouraging a relatively more sceptical view on institutions and not only on the institutionalized Church. Protestants are more willing to contribute to the public good by punishing tax fraud socially, denouncing misbehaviour even at the cost of losing friends and holding a sceptical view of institutions.

This interpretation emphasizes the empowerment of individuals which was used mainly to justify the social control hypothesis, and therefore reinforces the social control hypothesis to the detriment of the rule of law hypothesis, grounded on the direct political prescriptions of Protestant churches.

3.2.3. Homogeneous Values

Different versions of our two tests confirm that Protestants hold more homogeneous values than Catholics.

First, most standard deviations are significantly smaller for the Protestant sub-sample, both in the original data (Table 3) and, more revealingly, in the residuals of the regressions (Table 5). This greater homogeneity should reduce the exchange costs faced by members of the more homogeneous group, both within and outside the group, by easing coordination tasks. This effect on coordination would be enhanced by the fact that such homogeneity is present in all unobservable variables, while the only significant exceptions (personal success and volunteer work) are easy to observe and, therefore, are of lesser consequence for trade. This result is reaffirmed when comparing the standard deviations of residuals obtained in regressions of the unobservable on all observable variables (as done in Table 12 in the Annex).

Both religions may thus be suitable for supporting human interaction in different kinds of environment and transaction. In comparison with the more homogeneous Protestant ethic, the more diverse Catholic moral standards may increase transaction costs in impersonal trading but also make personal trade easier, by better adapting moral incentives to the diverse situations faced by believers. These well-adapted incentives and standards probably perform better than more general solutions in the self-control sphere. This is so because, when parties know each other, they can use additional information when transacting. This is more likely to happen in rural environments and, more generally, for friends and family-related interactions. With its relatively more homogeneous standards, Protestantism seems, however, better adapted for impersonal trading between anonymous parties, such as those in commerce, finance and industry, a conclusion in line with that of Blum and Dudley (2001).

Second, average Catholics trust strangers less, confirming the findings of Guiso, Sapienza and Zingales (2003) with individual data, the cross-country results of La Porta *et al.* (1997) and Inglehart (1999), and the prediction of Putnam (1993), even though no differences between Catholics and Protestants are observed with respect to how their intensity of religious beliefs or upbringing affect their trust in strangers. It also remains an open question to what extent this greater trust might result from greater homogeneity. However, whatever its origins, greater trust would have important economic consequences, given its role in conforming initial expectations

that are crucial in making cooperative strategies viable in repeated games, for instance when implementing a "tit for tat" strategy, and the correlation established between trust and economic growth (Knack and Keefer, 1997; Zak and Knack, 2001).

Third, Catholics not only give more importance than Protestants to family ties, but Catholic beliefs and upbringing are also positively related to the proxy of family importance, which is in line with the argument of Putnam (1993). This greater importance of the family tallies with the propensity shown by Catholics to take occupational choices that favour "production" within the family and might hinder the functioning of institutions, for example through nepotism. When adding the greater proclivity of Catholics to cover up for their friends and their lesser trust in strangers, the "social ethic" of Catholicism seems to favour personal exchange to the detriment of impersonal exchange.

3.3. Discussion

These results suffer several limitations. First of all, finding significant correlations does not necessarily imply causation. It is possible that hidden variables may be affecting both the religiosity and other values. The analysis attenuates this problem by relying on within-country variation and by estimating fixed and variable effects, as it can be assumed that the fixed effects are relatively more exogenous. In addition, as argued by Guiso, Sapienza and Zingales (2003, 2006), the significance of the religious upbringing variable supports the notion that causality runs from religion to values.

Second, the data are built from statements on values instead of observations on actual behaviour. Given the nature of some of the questions (for example, whether one tolerates tax fraud), one should expect some bias caused by a certain tendency to lie because of "political correctness". However, given that the analysis here focuses on differences between Catholics and Protestants, this bias should matter only to the extent that the proclivity to lying varies systematically between both religions.

Third, many of these tests use values to test hypotheses about actions. Some support for this approximation is given by empirical tests showing that, when responding on values, people tend to convey information on their own predispositions. For instance, self-reported trust has also been shown to be a good proxy of trustworthiness actions in an experimental setting (Glaeser *et al.*, 2000).

Fourth, given that these results have been obtained with current data, it could be claimed that the two theologies of salvation in Catholicism and Protestantism did provide different work ethics effects in the past but these differential effects have now disappeared. Such dilution of differences seems unlikely, however, when considering that social norms change slowly; therefore, current values may inform us on the effects of past values. As Glaeser and Glendon put it, "current social norms may still be the legacy of prior religious beliefs" (1998: 431). Moreover, if we take the differential effects of intense beliefs as a proxy for the differential effects that both religions may have had in a more religious past, the estimates lend more support to the social ethic than to the work ethic hypothesis. Even the differences observed in working hours seem to reflect occupational choices that are more consistent with the social ethic hypothesis.

Lastly, large sample size tends to cause statistical significance even with slight substantive effects. However, in this case, when evaluating substantive significance, it must be remembered that the effects of religions are underestimated because only within-country variation is considered. Much of the influence that religion has exerted throughout history has been through changes in the fabric of different societies. This effect is embodied here in the country dummy variables. This ensures that observed differences are not wrongly attributed to religion, but it also reduces the apparent explanatory power of religion. The overall consistency of results, both internal—between the battery of variables used in the paper—and external—with respect to those in the literature—, also rules out the possibility that they might be driven by mere chance, in the spirit of Meehl (1978).

4. Concluding Remarks

Overall, the article finds little support in survey data on currently held values for Weber's "work ethic" hypothesis in "The Protestant Ethic," by which Protestants would tend to work more and more efficiently than Catholics. It finds substantial support, however, for an alternative "social ethic" argument, as Protestant values are shown to shape a type of individual who exerts greater effort in mutual social control, supports institutions more and more critically, is less bound to close circles of family and friends and also holds more homogeneous values. In Weberian terms, the data are therefore more supportive of Weber's view in "The Protestant Sects," with its emphasis on mutual social control.

In line with these results, the economic contribution of the Protestant Reformation would have been connected not to the psychology of individuals regarding economic activity but to their empowerment as citizens vis-à-vis other citizens, the community and the State, affecting the relative effectiveness of alternative enforcement systems. The consequences for economic growth and the development of Capitalism would be related, first, to the greater effort that individuals are willing to exert in informal social enforcement; second, to the contribution that having more independent individuals makes to the design and functioning of political and legal institutions; and, lastly, to the greater homogeneity of values among individuals. All these features work in favour of anonymous markets, as they facilitate legal enforcement and reduce the cost of impersonal exchange.

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Table 1. Sample Description: Useful Observations Available for Each Country and Religion

Country	*Protestants* (1)		*Catholics* (2)		*Total* (3) = (1)+(2)	
Australia	553	48.47%	270	23.66%	823	4.28%
Germany (West)	330	42.80%	301	39.04%	631	3.28%
Germany (East)	187	24.44%	35	4.58%	222	1.15%
UK	253	42.81%	55	9.31%	308	1.60%
Northern Ireland	325	52.59%	232	37.54%	557	2.89%
USA	574	57.17%	272	27.09%	846	4.40%
Austria	40	5.15%	629	80.95%	669	3.48%
Hungary	168	17.45%	523	54.31%	691	3.59%
Italy	2	0.25%	714	89.81%	716	3.72%
Ireland	43	5.07%	763	89.98%	806	4.19%
Netherlands	264	18.12%	266	18.26%	530	2.75%
Norway	826	83.10%	5	0.50%	831	4.32%
Sweden	568	68.77%	7	0.85%	575	2.99%
Czechia	56	5.43%	475	46.07%	531	2.76%
Slovenia	14	1.80%	553	71.17%	567	2.95%
Poland	0	0.00%	724	92.82%	724	3.76%
Bulgaria	1	0.11%	14	1.55%	15	0.08%
Russia	14	1.32%	1	0.09%	15	0.08%
New Zealand	337	43.21%	117	15.00%	454	2.36%
Canada	158	27.38%	199	34.49%	357	1.85%
Philippines	91	8.20%	948	85.41%	1,039	5.40%
Israel	0	0.00%	2	0.18%	2	0.01%
Japan	20	2.71%	0	0.00%	20	0.10%
Spain	5	0.26%	1,640	83.97%	1,645	8.55%
Latvia	225	23.94%	200	21.28%	425	2.21%
Slovakia	149	13.48%	775	70.14%	924	4.80%
France	18	2.04%	405	45.87%	423	2.20%
Cyprus	0	0.00%	13	1.50%	13	0.07%
Portugal	0	0.00%	987	89.32%	987	5.13%
Chile	275	20.12%	1,020	74.62%	1,295	6.73%
Denmark	857	86.13%	1	0.10%	858	4.46%
Switzerland	332	38.74%	415	48.42%	747	3.88%
Total	6,685	21.92%	12,561	41.19%	19,246	100.00%

Table 2. Summary of Predictions and Results

Hypotheses		*Variables and tests*	*Proxies used*	*Catholics show more (+) or less (-) of the corresponding indicator*	
				Predictions	*Results*
Work ethic: *Catholics work less and less effectively than Protestants*	Work effort	Willingness to work and work effort	*Working hours*	-	n. s.
			Positive working hours	-	n. s.
			Working hours of those working	-	n. s.
	Earthly achievements	Earthly achievements	*Success index*	-	n. s.
Social ethic: *Catholics show less concern for social interactions than Protestants*	Social control: *Catholics exert less effort in mutual social control than Protestants*	Willingness to exert effort in social enforcement	Involvement in volunteering activities (*Volunteer index*)	-	-
		Different impact of education for Catholics and Protestants	Relationship between *Education* and*:*		
			- *Trust Church*	-	-
			- *Religious practice*	-	-
	Rule of law: *Catholics support political and legal institutions less than Protestants*	Willingness to support political institutions	*Tolerance of tax fraud*	+	+
		Willingness to cooperate with the law	*Cover up for friends*	+	+
		Confidence in political and legal institutions	*Trust institutions*	-	n. s.
	Homogeneous values: *Catholics hold less homogeneous values than Protestants*	Homogeneity of values, level of trust and importance of the family between Protestants and Catholics	Standard deviation of regression residuals	+	+
			Trust strangers	-	-
			Importance of family	+	+

Table 3. Summary Statistics

Variable	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*
Catholics and Protestants:					
Working hours	17,640	22.335	22.783	0.000	96.000
Positive working hours	19,246	0.583	0.493	0.000	1.000
Working hours of those working	9,614	40.981	13.721	1.000	96.000
Success index	12,893	0.000	1.000	-1.743	13.297
Volunteer index	18,521	0.000	1.000	-0.642	5.038
Trust Church	18,654	3.224	1.097	1.000	5.000
Religious practice index	18,553	0.000	1.000	-2.099	2.247
Tolerance of tax fraud	18,666	2.005	0.909	1.000	4.000
Cover up for friends	16,469	1.871	0.867	1.000	4.000
Trust institutions	18,046	0.000	1.000	-2.037	2.523
Trust strangers	18,869	2.319	0.794	1.000	4.000
Importance of family	18,158	1,503	1,209	-3.000	3.000
Catholic	19,246	0.653	0.476	0.000	1.000
Faith	19,246	0.000	1.000	-1.742	1.261
Religious upbringing	19,246	0.000	1.000	-2.155	1.205
Education	19,246	0.000	1.000	-2.376	1.794
Women	19,246	0.557	0.497	0.000	1.000
Age	19,246	0.000	1.000	-1.752	2.820
Age squared	19,246	0.000	1.000	-1.286	3.877
Widowed	19,246	0.093	0.291	0.000	1.000
Divorced & separated	19,246	0.065	0.247	0.000	1.000
Single	19,246	0.215	0.411	0.000	1.000
Protestants:					
Working hours	5,803	23.691	21.790	0.000	96.000
Positive working hours	6,685	0.658	0.474	0.000	1.000
Working hours of those working	3,520	39.057	13.510	1.000	96.000
Success index	3,876	0.165	1.042	-1.743	5.325
Volunteer index	6,254	0.142	1.067	-0.642	5.038
Trust Church	6,408	3.114	1.049	1.000	5.000
Religious practice index	6,348	-0.243	1.084	-2.099	2.247
Tolerance of tax fraud	6,504	1.952	0.852	1.000	4.000
Cover up for friends	5,708	1.852	0.767	1.000	4.000
Trust institutions	6,360	0.109	0.954	-2.037	2.523
Trust strangers	6,535	2.532	0.759	1.000	4.000
Importance of family	6,392	1.643	1.169	-3.000	3.000
Catholic	6,685	0.000	0.000	0.000	0.000
Faith	6,685	-0.181	1.033	-1.742	1.261
Religious upbringing	6,685	-0.498	1.070	-2.155	1.205
Education	6,685	0.171	0.946	-2.376	1.794
Women	6,685	0.552	0.497	0.000	1.000
Age	6,685	0.055	1.000	-1.752	2.820
Age squared	6,685	0.053	1.016	-1.286	3.877
Widowed	6,685	0.091	0.288	0.000	1.000
Divorced & separated	6,685	0.082	0.275	0.000	1.000
Single	6,685	0.211	0.408	0.000	1.000
Catholics:					
Working hours	11,837	21.670	23.227	0.000	96.000
Positive working hours	12,561	0.543	0.498	0.000	1.000
Working hours of those working	6,094	42.093	13.720	2.000	96.000
Success index	9,017	-0.071	0.973	-1.743	13.297
Volunteer index	12,267	-0.072	0.956	-0.642	5.038
Trust Church	12,246	3.282	1.117	1.000	5.000
Religious practice index	12,205	0.126	0.929	-2.099	2.247
Tolerance of tax fraud	12,162	2.033	0.937	1.000	4.000
Cover up for friends	10,761	1.881	0.916	1.000	4.000
Trust institutions	11,686	-0.060	1.019	-2.037	2.523
Trust strangers	12,334	2.206	0.789	1.000	4.000
Importance of family	11,766	1.426	1.224	-3.000	3.000
Catholic	12,561	1.000	0.000	1.000	1.000
Faith	12,561	0.096	0.969	-1.742	1.261
Religious upbringing	12,561	0.265	0.849	-2.155	1.205
Education	12,561	-0.091	1.016	-2.376	1.794
Women	12,561	0.559	0.496	0.000	1.000
Age	12,561	-0.029	0.999	-1.752	2.820
Age squared	12,561	-0.028	0.990	-1.286	3.877
Widowed	12,561	0.094	0.292	0.000	1.000
Divorced & separated	12,561	0.056	0.230	0.000	1.000
Single	12,561	0.217	0.412	0.000	1.000

Table 4. Religious Determinants of Economic Values (Omitted Category: Protestants)

	Hypotheses with corresponding dependent variables (units in parentheses)—estimated equations in columns											
	Work ethic hypothesis				*Social ethic hypothesis*							
					Social control			*Rule of law*			*Homogeneous values*	
	1	2	3	4	5	6	7	8	9	10	11	12
	Working hours (hours per week)	*Working hours > 0* (positive reported working hours)	*Working hours of workers* (hours per week of those with positive working hours)	*Success* (standard deviation of index)	*Volunteer* (standard deviation of index)	*Trust Church* (responses on a 1-5 scale)	*Religious practice* (standard deviation of index)	*Tolerance of tax fraud* (responses on a 1-4 scale)	*Cover up for friends* (responses on a 1-4 scale)	*Trust institutions* (standard deviation of index)	*Trust strangers* (responses on a 1-4 scale)	*Family importance* (differences in responses on a -3 to +3 scale)
Panel A: Differences between Catholics and Protestants (regressions with variable effects):												
Catholic	-0.438	-0.014	0.033	-0.012	-0.190***	0.016	-0.034*	0.117***	0.087***	-0.012	-0.061**	0.111***
	(0.791)	(0.035)	(0.445)	(0.027)	(0.023)	(0.026)	(0.018)	(0.026)	(0.027)	(0.022)	(0.025)	(0.026)
Faith	0.837*	0.067***	-0.445*	-0.006	0.207***	0.391***	0.580***	-0.096***	-0.099***	0.057***	0.025	-0.230***
	(0.456)	(0.023)	(0.256)	(0.016)	(0.015)	(0.016)	(0.012)	(0.015)	(0.016)	(0.013)	(0.015)	(0.016)
Religious upbringing	0.129	-0.004	0.035	-0.013	0.132***	0.155***	0.248***	-0.071***	-0.057***	0.045***	0.022	-0.069***
	(0.451)	(0.022)	(0.248)	(0.016)	(0.013)	(0.016)	(0.011)	(0.015)	(0.015)	(0.013)	(0.016)	(0.016)
Education	4.044***	0.219***	0.746***	0.445***	0.145***	0.074***	0.108***	-0.098***	0.026*	0.134***	0.165***	-0.075***
	(0.436)	(0.023)	(0.245)	(0.016)	(0.015)	(0.014)	(0.010)	(0.015)	(0.015)	(0.013)	(0.015)	(0.015)
Catholic × *Faith*	-2.153***	-0.131***	0.649**	-0.000	-0.103***	0.048**	-0.167***	0.036*	0.037*	0.048***	0.021	0.121***
	(0.571)	(0.027)	(0.316)	(0.018)	(0.017)	(0.019)	(0.014)	(0.020)	(0.021)	(0.017)	(0.019)	(0.020)
CatholicR × *Religious upbringing*	-1.651***	-0.040	-0.374	0.008	-0.054***	0.055***	0.048***	0.024	-0.006	0.011	0.009	0.060***
	(0.591)	(0.028)	(0.320)	(0.019)	(0.016)	(0.021)	(0.014)	(0.020)	(0.021)	(0.018)	(0.020)	(0.021)
Catholic × *Education*	0.067	-0.035	-0.821***	-0.024	-0.018	-0.164***	-0.091***	0.072***	0.014	-0.082***	-0.009	0.104***
	(0.553)	(0.028)	(0.312)	(0.019)	(0.017)	(0.018)	(0.012)	(0.018)	(0.019)	(0.016)	(0.018)	(0.018)
Observations	17640	18233	9614	12893	18521	18654	18553	18666	16469	18046	18869	18158
F		80.20	38.97	121.01	49.44	204.23	564.95	28.40	28.85	70.78	61.70	70.13
Panel B: Average differences between Catholics and Protestants (regressions without variable effects):												
Catholic	-0.723	-0.030	-0.192	-0.031	-0.159***	0.094***	0.078***	0.101***	0.067**	0.007	-0.047*	0.110***
	(0.762)	(0.035)	(0.428)	(0.029)	(0.024)	(0.024)	(0.022)	(0.025)	(0.027)	(0.021)	(0.025)	(0.025)
Observations	17640	18233	9614	12893	18521	18654	18553	18666	16469	18046	18869	18158
F		89.80	45.37	70.08	39.08	304.39	174.11	30.07	30.32	72.57	63.66	78.27

Source of data: ISSP (1998). Notes: All models (in columns) estimated with constants and demographic and country controls, whose coefficients are not reported in the Table. Equation 1, tobit; equation 2, probit; equations 3, 4, 5, 7 and 10, OLS; all others, ordered probit; survey estimation in all cases. *,**,*** Significant at 10, 5 and 1%. Robust standard errors in parentheses.

Table 5. Comparison of Residual Heterogeneity between Catholics and Protestants
(Standard Deviations of OLS Regression Errors)

Variable	*Protestants*	*Catholics*	*Difference*	*Difference (in %)*
Working hours	17.362	19.486	-2.124***	-12.23%
Positive working hours	0.373	0.412	-0.039***	-10.41%
Working hours of those working	20.079	21.781	-1.701***	-8.47%
Success index	0.875	0.819	0.056***	6.35%
Volunteer	0.976	0.904	0.071***	7.32%
Trust Church	0.929	0.966	-0.037***	-4.01%
Religious practice	0.712	0.690	0.022	3.11%
Tolerance of tax fraud	0.822	0.901	-0.079***	-9.69%
Cover up for friends	0.734	0.881	-0.147***	-20.09%
Trust institutions	0.891	0.941	-0.050***	-5.59%
Trust strangers	0.701	0.747	-0.046***	-6.62%
Importance of family	1.048	1.124	-0.076***	-7,20%

Source of data: ISSP (1998).
Notes: Calculated from residuals in OLS regressions with the same independent variables as in Panel A of Table 4.
, * Significant at 5 and 1%, using the Levene (1960) robust test for equality of variances.

5. Annex

Table 6. Description of Variables

Variable name	*Original name in ISSP 1998*	*Survey question (US version when there are variations)*	*Data transformations and meaning of variables*
Dependent variables:			
Working hours	*v213rhoursworkedweekly*	Hours worked weekly (How many hours did you work last week, how many hours do you usually work a week, at all jobs?)	Observations omitted if hours = 0 Hours worked / week
Success	Index	Built with the scores of first principal component from variables v211, v214, v215 (*Earnings*) and v219 (details in next rows and Annex)	Standardized
	v211rselfemployedi	In your (main) job are you an employee or self-employed?	Binary
	v214rsupervisei	In your main job, do you supervise anyone or are you directly responsible for the work of other people?	*Idem.*
	v215rearningsi	Respondent's earnings (from all jobs in 1997 before taxes or other deductions in $)	Standardized within each country
	v219rsubjectivesocialclass	Subjective social class (If you were asked to use one of four names for your social class, which would you say you belong to: the lower, the working, the middle, or the upper class?)	Binary
Volunteer	Index	Built with the scores of first principal component from variables v32 to v35 (details in next rows and Annex)	Standardized
	v32volunteerworkpoliticalactivit	During the last 12 months did you do volunteer work in any of the following areas: Political activities (helping political parties, political movements, election campaigns, etc.)	Amount of work
	v33volunteerworkcharitableactivi	*Idem*: Charitable activities (helping the sick, elderly, poor, etc.)	*Idem.*
	v34volunteerworkreligiousactivit	*Idem*: Religious and church-related activities (helping churches and religious groups)	*Idem.*
	v35anyotherkindofvolunteerwork	*Idem*: Any other kind of voluntary activities	*Idem.*
Religious practice	Index	Built with the scores of first principal component from variables v58, v59, v60 and v218 (details in next rows and Annex)	Standardized
	v58abouthowoftendoyoupray	About how often do you pray?	Frequency
	v59howoftentakepartinchurchactiv	How often do you take part in the activities or organizations of a church or a place of worship, other than attending services?	Frequency
	v60rdescribeselfasreligious	Would you describe yourself as extremely religious / very religious / somewhat religious / neither religious nor non-religious / somewhat non-religious / very non-religious / extremely non-religious?	Recoded for the variable to increase with religiosity
	v218rreligiousserviceshowoften	Church attendance: How often do you attend religious services?	Frequency of attendance
Trust Church	*v22confidenceinchurches+religorg?*	Confidence in: Churches and religious organizations	Recoded for the variable to increase with confidence
Tolerance of tax fraud	*v16taxpayernotreportincomelesstax*	Do you feel it is wrong or not wrong if a taxpayer does not report all of his or her income in order to pay less income taxes?	Recoded for the variable to increase with tolerance
Cover up for friends	*v63rsdecisioninthissituation*	Suppose you were riding in a car driven by a close friend. You know he is going too fast. He hits a pedestrian. He asks you to tell the police that he was obeying the speed limit… (b) What would you do in this situation? (Possible answers: Definitely / Probably tell the police that your friend was / was not going faster than the speed limit)	Stated cover up

Variable name	*Original name in ISSP 1998*	*Survey question (US version when there are variations)*	*Data transformations and meaning of variables*
Trust institutions	Index	Built with the scores of first principal component from variables v20 and v23 (details in next rows and Annex)	Standardized
	v20howmuchconfidenceinparliament?	How much confidence do you have in respondent's country's Parliament? (use national legislature, e.g. U.S. Congress)	Recoded for the variable to increase with confidence
	v23confidenceincourts&legalsystem?	*Idem* in courts and the legal system?	*Idem.*
Trust strangers	*v19trustinpeopleorcantbetoocareful*	Generally speaking, would you say that people can be trusted or that you can't be too careful in dealing with people? (Possible answers: People can almost always / usually be trusted, You usually / always can't be too careful in dealing with people)	Recoded for the variable to increase with the level of trust
Importance of family	Index	Built as difference between individual tolerance of premarital sex and adultery (details in next rows)	
	v7sexualrelationsbeforemarriage?	Do you think it is wrong or not wrong if a man and a woman have sexual relations before marriage?	Tolerance
	v8sexualrelationswothersthanspouse	Do you think it is wrong or not wrong for a married person having sexual relations with someone other than his or her husband or wife?	Tolerance
Independent variables:			
Catholic	*v217rreligiousdenomination*	Religious denomination: Which religious group do you belong to? (What is your religious preference? Do you regard yourself as belonging to any particular religion?)	Binary variable: = 1, if Catholic, = 0, otherwise.. Greek Catholics considered as Catholic
CatholicR	*v53religionrespondentwasraisedin*	What religion, if any, were you raised in? Was it Protestant, Catholic, Jewish, some other religion, or no religion?	Binary variable: = 1, if raised as Catholic; = 0, otherwise. Greek Catholics considered as Catholic
Faith	Index	Built with the scores of first principal component from variables v39 to v41 (details in next rows and Annex)	Standardized
	v39rbelieveinlifeafterdeath	Do you believe in life after death?	Recoded for the variable to increase with the strength of belief. Australian data recoded for homogeneity.
	v40rbelieveinheaven	Do you believe in heaven?	*Idem.*
	v41rbelieveinhell	Do you believe in hell?	*Idem.*
Upbringing	*v57rage1112yrshowoftenattendchur*	How often did you attend religious services when you were around 11 or 12?	Frequency of attendance, standardized
Education	*v205reducationiicategories*	Education II: Categories (What is the highest degree?)	Standardized
Control variables:			
Women	*v200rsex*	Sex of respondent	Recoded: 1, if female; 0, male
Age	*v201rage*	Age of respondent	Years of age, standardized
Age Squared	*v201rage*	Age of respondent	Years of age, squared and standardized
Widowed	*v202rmaritalstatus*	Marital status: widowed	Binary variable
Divorced & Separated	*v202rmaritalstatus*	Marital status: divorced or separated	*Idem.*
Single	*v202rmaritalstatus*	Marital status: never married, not married, single ("living as married" computed as married)	*Idem.*

Note: Additional information on the ISSP survey and codebook available at http://www.issp.org/ (accessed January 13, 2009).

Table 7. Principal Component Analysis Used to Build the *Success* Index

Component	*Eigenvalue*	*Difference*	*Proportion*	*Cumulative*
1	1.59942	0.58595	0.3999	0.3999
3	0.77298	0.15885	0.1932	0.8465
4	0.61413	.	0.1535	1.0000

	Eigenvectors			
Variable	*1*	*2*	*3*	*4*
v215rearningsi	0.61486	-0.00768	-0.28992	-0.73337
v211rselfemployedi	0.23739	0.86632	0.43917	0.01634
v214rsupervisei	0.60110	0.04004	-0.42895	0.67312
v219rsubjectivesocialclass	0.45197	-0.49782	0.73422	0.09389

Variable	*Scoring Coefficients* 1
v215rearningsi	0.61486
v211rselfemployedi	0.23739
v214rsupervisei	0.60110
v219rsubjectivesocialclass	0.45197

Table 8. Principal Component Analysis Used to Build the *Volunteer* Index

Component	*Eigenvalue*	*Difference*	*Proportion*	*Cumulative*
1	1.83282	0.95133	0.4582	0.4582
2	0.88149	0.14555	0.2204	0.6786
3	0.73593	0.18617	0.1840	0.8626
4	0.54976	.	0.1374	1.0000

	Eigenvectors			
Variable	*1*	*2*	*3*	*4*
v32volunteerworkpoliticalactivit	0.35444	0.93141	-0.08257	0.00486
v33volunteerworkcharitableactivi	0.57638	-0.23154	-0.18256	-0.76213
v34volunteerworkreligiousactivit	0.54374	-0.25569	-0.51417	0.61205
v35anyotherkindofvolunteerwork	0.49650	-0.11611	0.83396	0.21100

Variable	*Scoring Coefficients* *1*
v32volunteerworkpoliticalactivit	0.35444
v33volunteerworkcharitableactivi	0.57638
v34volunteerworkreligiousactivit	0.54374
v35anyotherkindofvolunteerwork	0.49650

Table 9. Principal Component Analysis Used to Build the *Trust* institutions Index

Component	*Eigenvalue*	*Difference*	*Proportion*	*Cumulative*
1	1.44945	0.89890	0.7247	0.7247
2	0.55055	.	0.2753	1.0000

	Eigenvectors	
Variable	*1*	*2*
v20howmuchconfidenceinparliament	0.70711	0.70711
v23confidenceincourtslegalsystem	0.70711	-0.70711

	Scoring Coefficients
Variable	*1*
v20howmuchconfidenceinparliament	0.70711
v23confidenceincourtslegalsystem	0.70711

Table 10. Principal Component Analysis Used to Build the *Religious practice* Index

Component	*Eigenvalue*	*Difference*	*Proportion*	*Cumulative*
1	2.53704	1.86219	0.6343	0.6343
2	0.67485	0.23244	0.1687	0.8030
3	0.44242	0.09673	0.1106	0.9136
4	0.34569	.	0.0864	1.0000

	Eigenvectors			
Variable	*1*	*2*	*3*	*4*
v58abouthowoftendoyoupray	0.52696	-0.32697	-0.33115	0.71116
v59howoftentakepartinchurchactiv	0.43722	0.83146	0.28472	0.19089
v60rdescribeselfasreligious	0.49695	-0.44558	0.70291	-0.24579
v218rreligiousserviceshowoften	0.53310	0.05665	-0.56142	-0.63040

Variable	*Scoring Coefficients* *1*
v58abouthowoftendoyoupray	0.52696
v59howoftentakepartinchurchactiv	0.43722
v60rdescribeselfasreligious	0.49695
v218rreligiousserviceshowoften	0.53310

Table 11. Principal Component Analysis Used to Build the *Faith* Index

Component	*Eigenvalue*	*Difference*	*Proportion*	*Cumulative*
1	2.38206	1.97387	0.7940	0.7940
2	0.40820	0.19846	0.1361	0.9301
3	0.20974	.	0.0699	1.0000

	Eigenvectors		
Variable	*1*	*2*	*3*
v39rbelieveinlifeafterdeath	0.55420	0.78745	0.26980
v40rbelieveinheaven	0.60133	-0.15464	-0.78389
v41rbelieveinhell	0.57555	-0.59667	0.55922

Variable	*Scoring Coefficients* *1*
v39rbelieveinlifeafterdeath	0.55420
v40rbelieveinheaven	0.60133
v41rbelieveinhell	0.57555

Table 12. Comparison of Residual Heterogeneity between Catholics and Protestants
(Standard Deviations of OLS Regression Errors in Unobservable Variables)

Variable	*Protestants*	*Catholics*	*Difference*	*Difference (in %)*
Trust Church	0.916	0.944	-0.028***	-3.02%
Tolerance of tax fraud	0.838	0.901	-0.063***	-7.48%
Cover up for friends	0.726	0.874	-0.148***	-20.44%
Trust institutions	0.891	0.940	-0.049***	-5.48%
Trust strangers	0.692	0.742	-0.050***	-7.27%
Importance of family	1.004	1.122	-0.118***	-11.78%
Faith	0.698	0.783	-0.085***	-12.25%
Religious upbringing	0.814	0.740	0.074***	9.07%

Source of data: ISSP (1998). Notes: Calculated from residuals of regressions of unobservable variables (*Trust Church*, *Tolerance of tax fraud*, *Cover up for friends*, *Trust institutions*, *Trust strangers*, *Faith* and *Religious upbringing*) on observable variables (demographic and country controls plus *Catholic*, *Education*, *Catholic* * *Education*, *Working hours*, *Positive working hours*, *Earnings*, *Volunteer* and *Religious practice*).
*** Significant at 5 and 1%, using the Levene (1960) robust test for equality of variances.