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Is the Importance of Religion in Daily Life Related to Social Trust? Cross-Country and Cross-State Comparisons

Niclas Berggren
Christian Bjørnskov

IS THE IMPORTANCE OF RELIGION IN DAILY LIFE RELATED TO SOCIAL TRUST? CROSS-COUNTRY AND CROSS-STATE COMPARISONS*

NICLAS BERGGREN AND CHRISTIAN BJØRNSKOV

We look at the effect of religiosity on social trust, defined as the share of a population that thinks that people in general can be trusted. We make use of new data from the Gallup World Poll for 105 countries and 43 U.S. states, measuring religiosity by the share of the population that answers yes to the question “Is religion an important part of your daily life?” Our empirical results indicate a robust, negative and causal effect of religiosity, both internationally and within the U.S. The size of this effect increases with the degree of religious diversity.

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I. INTRODUCTION

Social trust refers to trust in people in general and is related to many desired economic and political outcomes, such as higher economic growth (Knack and Keefer 1997; Zak and Knack 2001; Berggren, Elinder and Jordahl 2008), higher education (Bjørnskov, 2009a; Papagapitos and Riley 2009), better governance (Bjørnskov forthcoming; Knack 2002), higher democratic stability (Uslaner 2003), smaller underground economies (D'Hernoncourt and Méon 2008), and higher rates of subjective wellbeing (Helliwell 2006). Consequently, a central question is why the populations in some countries and states are more trusting than in others.

This question has spurred a vibrant literature on social trust (e.g., Delhey and Newton 2005; Brown and Uslaner 2005; Berggren and Jordahl 2006). Many variables have been suggested as determinants, including income inequality, ethnic diversity, welfare state policies, legal quality, economic development, democracy, having a communist history, and hierarchical religions. However, only a few variables have turned out to be robustly associated with trust (Bjørnskov 2007; Nannestad 2008). The search for good explanations of the vast trust differences across countries and states continues, as does the debate between different schools of thought on what to look for.¹

Here, we expand the literature by providing a broad, international cross-country and an American cross-state analysis of *the effect on trust of religiosity*, by which is meant the fraction of a population that considers religion to be an important part of their daily life. Religion has until recently remained relatively unexplored in the trust literature and, indeed, in economics and political science overall (with some exceptions, such as: Iannaccone 1998; Wald, Silverman, and Fridy 2005; McCleary and Barro 2006; Wald and Wilcox 2006). This relative neglect is, in our

¹ See Hooghe and Stolle (2003) for a discussion of differences between different schools within the trust literature.

opinion, unfortunate, since there are reasons to believe that people's perceptions and behavior, both in the economic and political realms, are influenced by religiosity.

The results in the few studies that exist to date are mixed, depending on such things as the data, the sample, the measure of religion, the methodology and the type of religion. Against this background, one motivation for our study is our broad samples, which stand in contrast to the focus of most previous studies on one particular country or a small group of countries. We not only cover over 100 countries with very different religious beliefs and traditions but use the same measure for an analysis of the U.S. states, where one religion, Christianity, dominates. The second major motivation for our study is that our measure of religiosity complements the ones used in most previous studies, i.e., religious affiliation or participation. These measures may include a large number of nominal members for whom religion is not important in their daily life, and they are prone to miss religious people who are not members or participants.²

To illustrate the last point, in Table I, we cross-tabulate the answers to two questions of the U.S. General Social Survey, concerning church attendance and religiosity, defined through respondents' view of the bible.

Insert Table I about here

As can be seen, approximately 4 percent of respondents attend church regularly even though they define themselves as non-religious. Put differently, about 20 percent of those who define themselves as non-believers nonetheless take part in religious activity, making such activity a very

² McCleary and Barro (2006, p. 51) state: "Our general view is that believing relative to belonging (or attending) is the main channel through which religion matters for economic and other outcomes." This is in line with our way of motivating our measure of religiosity. A very similar problem is outlined by Halman and Draulans (2006) under the heading "belonging without believing and believing without belonging."

noisy indicator of the saliency of religion in society and everyday life. Respondents who attend church regularly trust others to a slightly higher degree than those who do not attend, a difference that could in principle reflect that trusters are more prone to take part in social activities (in the form of charity and volunteering) than non-trusters (see Uslaner 2002). However, non-believers are clearly more trusting than believers. This speaks in favor of using our measure: indeed, religiosity is different from religious participation and affiliation.³

In this paper, we therefore look at an arguably central although somewhat overlooked question in this literature: Does religiosity, in the sense of being important in daily life, promote or discourage trust? We first list a range of arguments suggesting a theoretically ambiguous answer to the question. However, a set of estimates using the standard measure of trust and the 2007 Gallup World Poll measure of religiosity shows that trust is *negatively* associated with religiosity. Instrumental variables (IV) estimates furthermore suggest that religiosity causes less trust. This IV approach can be considered as another contribution of this study to the literature, where the issue of causality has received scant attention thus far (Nannestad 2008). Lastly, we find that the negative effect of religiosity on trust emerges above a certain, quite low threshold level of religious fractionalization and that there is a monotonically negative relationship between fractionalization and the size of the negative effect.

³ An extended motivation for our choice of measure is given in the online Appendix, using Tables A.I and A.II.

II. HOW DOES RELIGIOSITY AFFECT TRUST? PREVIOUS RESULTS AND THEORETICAL ARGUMENTS

In this section, we first present a brief review of the existing literature and then consider theoretical grounds for why religiosity might be conducive to or detrimental for trust.

II.A. Previous Studies

Earlier empirical studies on the relationship between religion and trust can be divided into three groups. A first group consists of cross-country studies of the determinants of trust and has included measures of the share of the population belonging to hierarchical religions, by which is meant the Catholic Church, Islam, and Orthodox churches, or some other religions.⁴ The effect of hierarchical religions is generally found to be negative (La Porta et al. 1997; Zak and Knack 2001; Berggren and Jordahl 2006; Bjørnskov 2007); there are some signs of a positive effect of Protestantism (Uslaner 2002; Guiso, Sapienza, and Zingales 2003; Delhey and Newton 2005), although one study finds no statistically significant effect (Bjørnskov 2007). However, the latter study does identify a positive effect of Hinduism and Buddhism in some specifications. Lastly, looking at beliefs, McCleary and Barro (2006) find no statistically significant effect of belief in heaven, hell or an afterlife on trust.

A second group of studies are based on individual-level data. Among them, Alesina and La Ferrara (2002) find no statistically significant effect of religious affiliation on trust; likewise, Welch, Sikkink, and Loveland (2007) find no clear evidence of an association between religiosity,

⁴ Formally, Catholic or Orthodox Christianity are not religions but branches of the Christian religion, but for reasons of brevity, we sometimes refer to them as religions. The term “hierarchical” is standard usage, following Putnam (1993).

as measured by frequency of prayer, activity in religious congregations and beliefs in absolute morality and the "sinfulness of human nature", and trust. Welch et al. (2004) report that affiliation with Christian churches is related to lower trust, except for those who participate a lot and who report that religion is important, where a positive effect is found. Brañas-Garza, Rossi, and Zacliclever (2009) report that Catholic affiliation and observance is positively associated with trust among Latin Americans. In line with some cross-country studies, results in Traunmüller (2009a,b) suggest that church attendance among German Protestants is associated with higher levels of trust.

A third group of studies are also based on individual-level data but are experimental. Anderson and Mellor (2007) test whether religious affiliation and participation are associated with behavior in public goods and trust games and find that the former is unrelated to individual behavior and that the latter has some mild effects. In public goods games, voluntary contributions increased with religious participation, and in certain trust games, individuals with the highest participation rates were both less trusting and more trustworthy. Tan (2006) finds no effect of religion on other-regarding behavior in ultimatum and dictator games conducted in Germany. Tan and Vogel (2008) report that religious trustees are trusted more, especially by religious trusters. Johansson-Stenman, Mahmud, and Martinsson (2009) find, for rural Bangladesh, that Muslims and Hindus trust people of their own religion more than they trust others and that Muslims are relatively more distrustful of Hindus, thus suggesting a role for religious diversity.

II.B. Theoretical Arguments

Turning to the theoretical reasons to expect an association between religiosity and trust, Orbel et al. (1992) report that many seem to think that religion exerts a positive influence on trust: in particular, religious persons are thought to be more cooperative in a prisoners' dilemma experiment.

And indeed, there are arguments for a positive effect on trust, mainly based on the idea that religions generally encourage adherents to do well unto others. But there are also arguments for a negative effect, mainly based on the idea that religiosity may create divides between the religious and the non-religious. In the following, we take a closer look at possible arguments.

A positive effect. Religion seems able to influence behavior in various ways. For instance, Iannaccone (1998) surveys studies that document a relationship between religion and criminal activity, drug and alcohol consumption, physical and mental health, and incidence and stability of marriage patterns and argues for a causal effect; Berggren (1997) finds that religious involvement is negatively related to abortion rates, the rate of children born out of wedlock, divorce rates and rates of not paying bills on time; and Putnam (2000) finds signs of religiously active individuals being more involved in donations to charity and volunteering. Effects of these kinds could arise because of the religious teachings and because of the social interaction that religiosity often entails.

As for teachings, many religions urge their followers to adhere to an ethics of reciprocity and generosity toward others. In Judaism, through Hillel (“Do not do to others what would be hateful if done to you”), and in Christianity, through Luke 6:31 (“Do unto others as you would have them do unto you”), this is embedded in the Golden Rule. Likewise, in Islam, Mohammed’s farewell sermon includes the assertion “Hurt no one so that no one may hurt you.”⁵ Religion may, in this way, make use of or stimulate social or altruistic preferences (see Fehr and Fischbacher 2002; Levitt and List 2007). Furthermore, religions often prohibit socially destructive behavior, such as cheating or stealing. To the extent that people believe that religious persons adhere to these teachings, such persons are probably perceived as more trustworthy, which may in turn induce trust.

It is not only the case that religions urge their followers to follow these teachings – the teachings may be internalized, not least due to conscious efforts to influence children, but are in any

⁵ Similar commands or rules can be found in virtually all the major world religions – see Wattles (1996).

case generally enforced, which should make religious people seem even more trustworthy. Enforcement can be undertaken by other devotees or, at least in the minds of the religious, by some deity or cosmic system of justice. For example, many religious groups uphold strict behavioral codes and discipline and ostracize those who break them – for the logic of such rules, see Iannaccone (1992) – and people who behave badly may end up in hell or be reborn as some being with lower consciousness.

As for social interaction, Ruffle and Sosis (2007) argue that collective rituals serve a useful purpose in stimulating social cohesion and a more favorable attitude toward cooperation. This could also extend to the non-religious. Furthermore, Demerath (2003, p. 348) states that “at the micro level, religion can foster a sense of ‘social capital’ by giving its lay participants practice in, and encouragement for, participating in wider social and political, whether as mere voters or as intense activists.”⁶

To summarize, decency and honesty towards other people is taught by almost all religions, which may make the religious more trusting. Also, there are social stimulants and enforcement mechanisms that could render it credible that the religiously devout are more trustworthy, which could induce trust from the non-religious, in all, implying a positive religiosity-trust relationship.

A negative effect. Negative effects could come about in two different ways: by how religiosity affects the religious and by how religiosity affects the non-religious. First, religion may create a divide in society, if those who believe consider others wicked or at least ignorant of and less prone to adhere to important moral insights.⁷ After all, the non-believers are not subjected to the same

⁶ This type of effect rests on the assertion that social participation generates trust, a mechanism that is still debated (e.g., Putnam 2000; Claibourn and Mitchell 2000; Uslaner 2002).

⁷ Such rhetoric has, e.g., been used by the Moral Majority in the U.S. – see Conrad (1983). Some religious people may even hold that without religion, there is no firm, credible basis for moral rules, indeed, that morality may not even exist, which implies that the non-

moral teachings, to the same internalization mechanisms, to the same enforcement mechanisms (be it social or divine) or to the same social interaction. To the extent that the religious trust others, then, this could primarily be restricted to their own group, as noted by Uslaner (2002). Smith et al. (1998, ch. 4) develop a religious-identity theory and argue that in pluralist societies, religions tend to make use of distinction, engagement, conflict, and threat in relation to others. By defining themselves in relation to what they are *not*, pluralism induces the religious to develop a stronger sense of group boundaries. Through “sacred umbrellas” the religious can form strong bonds between themselves, while interacting with others, who are not part of these bonds. One can well envisage that social trust does not flourish under these umbrellas; to use Putnam’s (2000) terms, it may entail bonding rather than bridging social capital. Indeed, Guiso, Sapienza, and Zingales (2003, p. 249) find that religious people are more intolerant of people of different background than themselves, compared to the non-religious.⁸

The character in which a religion is organized and exercised could also play a role in reducing the trust levels of the religious. To the extent that religiosity takes place within a hierarchical religion, such as Islam, Catholicism or Orthodox Christianity, this may discourage trust. As Putnam (1003, pp. 107, 79) puts it, “[v]ertical bonds of authority are more characteristic of the Italian Church than horizontal bonds of fellowship”, and “trends in religious life reinforce rather than counterbalance the ominous plunge in social connectedness in the secular community.” Iannaccone (1998, p. 1483) notes that more fundamentalist churches often apply stricter behavioral codes and feel a need to monitor members, which may signal an underlying distrust within the family of believers. Everybody is seen as prone to “fall into sin.” And if enforcement within the group is

religious, although not necessarily immoral, are more likely to not follow the true moral teachings than those who believe in a divine law-maker – see Garcia and King (2008).

⁸ See also Emerson and Smith (2000) and Greer et al. (2005). In the most serious cases, religiously based distrust can form a basis for terrorism and warfare against perceived enemies. On religion and domestic conflict – see, e.g., Fox (2004).

carried out by some third-party entity, such as a group of leaders in a hierarchy or (as thought by the devout) a god, then people do not “need” to trust each other, further reinforcing a tendency for distrust. In line with this, Daniels and von der Ruhr (forthcoming) find that fundamentalist Protestants and Catholics trust others less than do individuals who do not claim a preference for a particular denomination.⁹

Religiosity could influence trust negatively in a second major way, through its effects on the non-religious, who may react to increased religiosity in a way that reduces social trust. The non-religious may consider the religious strange or different, and they may think that they behave well only so long as they expect to get social or divine rewards for doing so, i.e., that honest behavior is not rooted in moral so much as in self-interested motives.¹⁰ This is in line with the theoretical discussion in Alesina and La Ferrara (2002), in which people trust those who are “similar” to them (and to the non-religious, the religious may seem dissimilar) and where trust is lower in communities with religious heterogeneity.

Reverse causality and the Club and Welfare hypotheses. We also need to ask whether there could be a reverse causal relationship, i.e., one of trust increasing or reducing religiosity, or if other variables may be involved, perhaps jointly causing religiosity and trust. As for trust increasing religiosity, one could imagine the possibility of trusting people being more open to the messages of others. Since some religions try to recruit new followers, they could be more successful in a setting of high trust (although perhaps other teachings, including atheism, could be accepted as easily). As for an effect in the opposite direction, higher trust in one’s fellow human beings could reduce the felt need for religion. To some extent, trust in a non-religious setting could therefore substitute for

⁹ See also Seul (1999, p. 553) and Coreno (2002).

¹⁰ One attractive feature of this second way of explaining a negative effect of religiosity on trust is that this can reconcile the results of studies who find a positive association between religion and trust on the individual level with the results who find a negative association between religion and trust on the aggregate level.

some of the perceived benefits of joining a community of social care and of strict teachings that are enforced. Conversely, if individuals feel that other people cannot be trusted, religious beliefs may offer a refuge from an apparently immoral, unsafe and dangerous material world, as well as the comforts of rewards in an afterlife.

Building on this, there could be other variables involved – as expressed in the Club and Welfare hypotheses.¹¹ The former hypothesis states that *ethnic homogeneity* creates a “club” feeling of familiarity, community and safety. This is associated with high trust, as people tend to trust those who are similar to themselves, and low religiosity, as the community provides the social goods otherwise supplied by religion, indicating a negative relationship. The latter hypothesis states that *welfare-state spending* leads to both higher trust, since large welfare states tend to be universal and perceived as fair (Kumlin and Rothstein 2005), and lower religiosity (Buchanan 2005), since the welfare state and religion are substitutes in the exercise of care of people. The two hypotheses thus suggest that ethnic homogeneity and the size of the welfare state are underlying factors entailing both high trust and low religiosity and, hence, that religiosity does not exercise an original and causal effect on trust.

Summary. This theoretical discussion indicates that religiosity could stimulate or reduce trust – and that reverse causality, or causal effects from some other variables, could obtain. Clearly, the nature of the relationship must be settled empirically.

III. DATA AND EMPIRICAL STRATEGY

¹¹ We thank Laurence Iannaccone and Daniel Klein for formulating these ideas.

In order to estimate the association between religiosity and trust, we largely follow the methodology of the existing cross-country literature on the determinants of trust. First, we use the standard trust measure, which is the share of the population of a country or state which answers “yes” to the question “In general, do you think most people can be trusted or can’t you be too careful?” While the question may seem vague, a number of studies show that respondents perceive this question as a measure of trust in strangers or people in general and that it correlates well with other measures of non-enforceable but honest behavior (Knack and Keefer 1997; Bjørnskov 2007, 2008b). Nannestad (2008) also notes that surprisingly few respondents – typically below five percent – in surveys refrain from answering the question; hence, even though the question may *a priori* seem vague, most people seem able to provide an unequivocal answer. Furthermore, both in-depth interviews in Uslaner (2002), and the fact that the simple trust question predicts outcomes of trust experiments reasonably well when the stakes of properly anonymized games are of economic significance, suggest that the question measures trust in strangers, i.e., trust without specific information (Sapienza, Toldrà, and Zingales 2007; Ostrom et al. 2009; Thöni, Tyran, and Wengström 2009). This is also most clearly indicated by recent research showing that social trust picked up by the standard question and questions specifically directed at measuring trust in family and close friends are constructs that are *negatively* associated (Alesina and Guiliano forthcoming).

For the cross-country comparisons, we use the average of all available and credible observations in the five waves of the World Values Survey, supplemented by data from the LatinoBarómetro, the AfroBarometer, the Asian and East Asia Barometers, and the Danish Social Capital Project; all of these surveys have asked the same trust question in approximately representative samples.¹² In our cross-state US comparison, we instead use the trust data in Brown

¹² Following the literature, we do not consider the Iranian and Chinese World Values Survey data as credible, as the trust observations are outliers in most analyses (Uslaner 2002; Bjørnskov 2007). We also exclude the Canadian 2000 observation as other

and Uslaner (2005), which primarily rest on the 1990s waves of the General Social Survey, supplemented by data from the American National Election Studies, and surveys by the Pew Research Center; the combination of these surveys brings the number of respondents in 43 states up to workable numbers.¹³

To get an impression of the differences, the international trust scores range from a low of 3.4 in Cape Verde, with almost similar scores in Trinidad and Tobago and Rwanda, to a well-known high above 60 percent in the Nordic monarchies (Denmark, Norway and Sweden). The range across the 43 U.S. states covered in the sample is a low of 10.5 (Arkansas) to a high of 63 percent (New Hampshire). As such, although the American average is much higher, the cross-state data are not substantially less variable than the cross-country data.

Second, our data on religiosity derive from Gallup (2007), who asked respondents "Is religion an important part of your daily life?" Our measure is the share of the population that answered "yes" to this question. While religiosity can be measured in multiple ways, we consider this question to capture the *saliency* of religion in everyday life, as argued in the preceding section. Finally, while we only use one variable to measure religiosity, it is worth emphasizing that it not only has the benefit of being available at two levels (cross-country and cross-state), the validity of the question as a measure of religiosity and strength of beliefs has been previously corroborated (Halman and Draulans 2006).

Like the trust data, the religiosity variable also exhibits very large differences, both across the world and across the U.S. The least religious countries in the world, according to this question, are

surveys conducted in the same year showed unaltered trust levels since 1995, questioning the validity of the much smaller World Values Survey number.

¹³ A "workable" number usually means about 200-500 respondents in each state, although working with high-quality surveys may allow one to use somewhat smaller sample sizes and still get reasonably accurate estimates. This means that we automatically exclude Hawaii, Idaho, Maine, Nebraska, Nevada and New Mexico, as well as the District of Columbia.

Estonia, Sweden and Denmark with scores below 20 percent, while the most religious are Bangladesh, Indonesia and Egypt, the latter with a score of 100 percent. The mean in the present sample is 67 percent while, in comparison, the U.S. mean is 64 percent. The least religious U.S. state is Vermont, which at 42 percent is roughly on par with Spain and Switzerland that form an OECD average. The most religious state, Mississippi, in which 85 percent of the population answered yes, is placed along countries such as India, El Salvador and Malaysia. As such, the Gallup survey confirms that religion is, on average, substantially more important in the U.S. than in most countries belonging to the Western hemisphere (Inglehart and Baker 2000; McCleary and Barro 2006; Pew 2007).¹⁴

We follow the recent literature in our choice of control variables; all variables for both analyses are described, with descriptive statistics in Tables A.III and A.IV and sources and definitions in Table A.V of the online Appendix.¹⁵ In the cross-country analysis these variable include income inequality, controls for monarchies and postcommunist countries, a dummy for the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) and the shares of the population belonging to either Catholicism, Islam, or an “Eastern” religion (Buddhism and Hinduism). We add these affiliation data in order to ensure that our results in the following are due to differences in religiosity, and not to differences in religious composition.

In further analysis, we add a measure of religious diversity. The measure derives from Alesina et al. (2003) and is calculated as one minus the Herfindahl-Hirschman index of the composition of

¹⁴ Using the simple first-stage estimates in the following to predict religiosity suggest that, had U.S. religiosity followed the pattern common to the rest of the world, U.S. GDP per capita ought to have been only a third of what it actually is.

¹⁵ The relevant literature on cross-country determinants of trust includes Uslaner (2002), Delhey and Newton (2005), Berggren and Jordahl (2006), Bjørnskov (2007) and Jordahl (2009); the corresponding literature on cross-state determinants includes Robinson and Jackson (2001), Uslaner (2002), Brown and Uslaner (2005) and Bjørnskov (2009b). We in no way claim that this list is exhaustive, only that these studies use the largest and most comparable samples and address one or more of the problems outlined in Nannestad’s (2008) critical survey.

religious affiliation in the population.¹⁶ In other words, it is the probability that two members of a population, chosen at random, do not share the same religious affiliation. For the cross-country sample, we use the world religions to calculate this measure. The American data on religious affiliations provided by ARDA (2009) are more precise and distinguish between seven broad groups: Evangelical Protestants, Mainline Protestants, Orthodox Christians, Catholics, Mormons, other groups, and non-claimed individuals. Excluding non-claimants, we calculate the same measure of diversity for each of the U.S. states, based on this information. In section IV.C, we interact these diversity measures with religiosity in order to test whether the effect of religiosity varies with the degree of religious diversity.

In the cross-state analysis, we follow the previous literature by including income inequality, the share of African-Americans in the state population, and controls for a set of different birth cohorts to take care of baby-boomer and WWII generational effects. In addition, we include a synthetic measure intended to capture the well-documented generational persistence of trust (Uslaner 2008). This measure, which we take from Bjørnskov (2009b), is based on the implicit assumption that culturally transmitted trust may not have changed markedly since the major immigration waves in the 19th century. We take advantage of a question in the U.S. Census asking about respondents' family origins, i.e., which country the main part of their ancestors came from. The synthetic trust measure at the state level therefore is the weighted average of current trust in 100 countries identified in the U.S. Census (2008) as potential family origins; the weights are the shares of the state population identifying each of the countries as their family origin.¹⁷

¹⁶ More precisely, religious diversity is measured by $1 - \sum (x_i/x)^2$, where x_i =number of people in group i and x =total population.

¹⁷ Given the unlikely assumptions that people perfectly identified the origins of their family and that trust was entirely stable over time such that no other influences could be detected, this synthetic measure would perfectly predict state average trust levels. However, we note that this requires that trust is approximately stable across an entire century.

Most results in the following are obtained by a two-stage least squares estimator in order to allow for the possibility that trust could affect religiosity, as outlined in section II. We identify the causal effect by the use of instrumental variables that capture established correlates of religiosity. In the cross-country analysis, our instrumental variables are the logarithm to GDP per capita (measured in purchasing-power adjusted USD; baseline year is 2000) and a dummy for countries situated in North Africa or the Middle East, as this region is more religious than would be predicted by its GDP. The reason seems to be that oil and other resources constitute the main part of their production, which therefore does not reflect broader modernization trends. In the cross-state regressions, our instruments are the logarithm to gross state product per capita (measured in purchasing-power adjusted 2000 USD) and the state average voter turnout in presidential elections in the 1990s, which is known to correlate well with religiosity (Gerber, Gruber, and Hungermann 2008). While it could be argued that these instruments should correlate with the error terms of the regressions in the following, thus making them invalid, we throughout provide Hansen's J statistic to indicate that this is not the case.

In a set of additional robustness analyses, we split the cross-country sample in different ways. First, we present results that exclude observations with large residuals, observations in the top and bottom deciles of the trust distribution and, in an OLS regression, countries identified as outliers by Cook's D. Second, we present results for our religiosity variable when excluding deciles covering countries with low trust, high trust, low religiosity, high religiosity, Muslim, Catholic, Eastern religion, Orthodox, high incomes, low incomes and an unfree press. These tests, which we outline in more detail below, are made to ensure that results are not driven by countries with extreme data for our main variables.

IV. RESULTS

Before dealing with robustness and the causality issue, we start by exploring the bivariate correlations across the world and the U.S. states. That there is some association between religiosity and social trust is visible to the naked eye in both the cross-country sample in Figure I and the cross-state sample in Figure II. The simple correlations are $-.52$ in the former and $-.57$ in the latter.

Insert Figure I about here

Insert Figure II about here

The test of a bivariate relation yields a surprisingly precise estimate of trust. In the cross-country sample, only 11 countries are more than 1.5 standard deviations off a simple regression line: Mongolia and Trinidad and Tobago in a negative direction, while Canada, the Netherlands, Denmark, Finland, Norway and Sweden, Indonesia, Saudi Arabia and Thailand are substantially more trusting than the simple line suggests. Likewise, only six U.S. states are more than 1.5 standard deviations off the line: Alaska, Arkansas and Delaware in a negative direction, and Utah and both Dakotas in a positive direction. Given the strongly indicative associations in these figures, we proceed to regression results.

IV.A. Cross-Country Results

We start with the cross-country results, which we report in Table II. We first note that the effect of religiosity is negative and significant throughout. The bivariate estimate in column 1 is reduced somewhat when including a set of standard controls, but remains of approximately the same magnitude. We also note that the control variables exhibit the same results as in previous studies: income inequality is strongly significant and negative, Nordic countries are substantially more trusting than other countries, as are monarchies, while the populations in countries with a communist past are less trusting. Only the monarchy result fails once when we exclude the ten percent most trusting countries, among which monarchies are strongly overrepresented.

Insert Table II about here

The identifying assumption of our IV estimates is that economic development does not affect the variation of trust not captured by standard controls through other channels than religiosity. This may *a priori* seem like a quite restrictive assumption, yet we note that previous research tends to find the assumption plausible, and that its exclusion is practically unproblematic for our present purpose if measures of formal institutions (known to correlate with both GDP and trust) are only weakly correlated with religiosity (Murray 2006). We also note that all Hansen J statistics are insignificant; although the test associated with the simple bivariate association in column 1 is doubtful, this is due to variation picked up by control variables in the following columns. As such, we are far from rejecting the assumptions necessary for identifying causality.

Noting this, the results in Table II indicate that religiosity discourages trust, as measured at the national level. All other things being equal, the results suggest that moving from average

religiosity (67 percent) to a Nordic level (20 percent) would be associated with, on average, an increase in trust of roughly 8-10 percentage points. Moreover, the inclusion of religiosity entirely swallows any clear effects of religious denominations found in previous studies (Berggren and Jordahl 2006; Bjørnskov 2007); the religion indicators fail being jointly significant by a large margin and thus provide no additional information ($F = .89$). Interestingly, the clear negative effect of having large shares of the population adhere to Islam in particular seems to be an effect of Muslim populations being much more religious than most other religions. As such, Arab Muslims in particular come to reflect the hope often attributed to Muhammad: “An Arab is superior to a non-Arab in nothing but devotion” (quoted in Karsh 2007, p. 19).¹⁸

The main result proves to be robust to excluding outliers identified by two different methods in columns 3 and 6 – in the former by calculating residuals from 2SLS results, in the latter by Cook’s Distance in OLS results – and to excluding the top and bottom ten percent of the sample, and as such estimating the effects in a range relevant to most countries. In Table A.VI in the online Appendix, we experiment with another set of robustness tests, by excluding the top and bottom deciles of countries for trust, religiosity, economic development, predominant religion, and press freedom. While the size of our estimate of religiosity varies some, we note that it remains significant throughout.¹⁹

¹⁸ We note that these effects are not contingent on which religion people believe in. By calculating the leverage of each observation (DFBetas) on the point estimate of religiosity, it is possible to get a sense of whether countries with population majorities belonging to specific religions have more leverage. Doing so, we find no evidence to indicate that any one confessional religion has more leverage. Nevertheless, Buddhism, a religious philosophy more than a religion, has relatively less leverage.

¹⁹ In an additional set of robustness tests (not shown), we also ascertain that our results are robust to including alternative codings of the religious composition of the population, measures of institutional quality capturing legal quality or the extent of democracy, and the further country-group dummies (for the Middle East and North Africa, Sub-Saharan Africa and Latin America).

Given that Hansen's J statistic is never significant and very far from significance when excluding the most obvious outliers, we believe that the significant results can moreover be interpreted as a causal effect of religiosity on trust.

IV.B. Cross-State Results

However, one could still fear that international differences of religiosity simply capture other cultural features that are only spuriously correlated with the importance of religion in daily life. Another potential problem could arise if religiosity is primarily associated with trust in relatively poor countries, or if the negative effects do not pertain to Christian denominations. In order to make sure that these worries are unfounded, we therefore also estimate the importance in a cross-section of 43 U.S. states for which credible trust scores exist. This additional approach has a number of advantages.

First, the U.S. is a good laboratory for retesting cross-country findings, as the set-up of formal institutions and the overall political and popular culture is approximately the same across the country or, as a minimum, substantially less diverse than in cross-country samples. This alleviates the potential problems of omitted institutional and structural variables endemic to the cross-country literature. Likewise, the U.S. is to a very large extent dominated by Christianity, which allows us to sidestep the issue of more profound religious conflicts in society. It also provides a possibility to test whether the negative cross-country findings pertain to Christian religious affiliations, and not simply to other religions.

Second, in the U.S. sample, we have the opportunity to control for cultural differences determined by deep historical roots through creating a synthetic ancestral trust measure, following Bjørnskov (2009b). As outlined above, this measure is created as a weighted average of present-day

trust levels in 100 countries from which Americans state that their ancestors came and is therefore likely to pick up effects deeply rooted in stable cultures. We note here that if religiosity also includes a component that is approximately stable across generations, the inclusion of ancestral trust is likely to lead us to underestimate the effects of religiosity on trust across the U.S. states, as part of the effect of religiosity in a historical perspective would be included in the synthetic measure of ancestral trust. The estimates in the following can therefore be seen as a lower bound of a “true” long-run effect.²⁰

Our identifying assumptions behind the instrumental variables are similar to those in the cross-country analysis. In the cross-state analysis, we assume that GDP per capita and voter turnout in presidential elections do not affect trust through other channels than their association with religiosity. While both could in theoretically plausible ways be connected to trust, we note that Hansen’s J statistic is quite far from significance when including all control variables. The estimates are therefore not likely to overestimate the effects of religiosity.

Insert Table III about here

Table III reveals that the negative effect of religiosity on trust in the cross-country analysis remains negative when measured at the level of U.S. states. The IV estimates of columns 1-3 all display a negative association, as do the OLS estimates in columns 5-6, while the estimate in column 4, where the top and bottom deciles of the trust distribution are excluded, retains the negative sign but does not attain statistical significance. If one goes from the average level of religiosity (65 percent) to the lowest level (42 percent in Vermont), this entails an increased trust

²⁰ We have also included a synthetic ancestral religion measure, constructed according to the same logic, and find that its inclusion gives a larger estimate of religiosity, but a dubious Hansen test statistic. To be on the conservative side, we choose to report the specification without this measure.

level of about five to ten percentage points; put differently, a one standard deviation shock to religiosity seems to produce a change in trust levels of about one third of a standard deviation.

A notable feature of our analysis is that income inequality, which otherwise is one of the most robust determinants of trust to be found in the literature, is insignificant throughout in our cross-state analysis. One explanation might be that religiosity could be antecedent to inequality. The share of blacks is negatively related to trust throughout,²¹ while the cohort effects are generally significant, as is our synthetic ancestral trust variable: a higher degree of such trust increases trust by about the same amount, pointing at the possible importance of a cultural transmission of trust. The results are also robust to including dummies for Southern states and Coastal states.

We therefore note that the cross-state analysis broadly reproduces the findings from the cross-country analysis above: we consistently find that religiosity is negatively associated with trust. Furthermore, at both analytical levels, the size of the estimates is sufficient to warrant real attention.

IV.C. Do Effects Vary with Religious Diversity?

Thus far, we have not considered the role of religious fractionalization or diversity. As explicated in section II.B, there are theoretical reasons to expect a negative relationship between religiosity and trust to interact with the level of religious diversity. In a setting with many and different religious groups, higher religiosity plausibly entails more potential tension and distrust. This can stem from the attitudes of the religious towards other religious people, as well as towards the non-religious, and from the attitudes of the non-religious towards the religious.

²¹ While Gustavsson and Jordahl (2008) find that the share of foreign-born persons in Swedish counties is related to lower trust, the vast majority of the present black population is born in the U.S. While the strong negative association between trust and the size of the black population therefore cannot be due to nationality, it may still be caused by having an easily identifiable population that also identifies itself outside of a national identity.

Table IV illustrates the fruitfulness of exploring heterogeneity, i.e., of allowing the point estimate on religiosity to vary with religious diversity, a fractionalization measure from zero to one, which denotes the probability of two random people belonging to different religious groups. First, the difference between columns 1 and 2 (where the former just repeats results with the same sample) documents that religious diversity *per se* holds no explanatory power. However, including an interaction term in column 3 both boosts the explanatory power as well as providing clear evidence of a heterogeneous effect of religiosity, which is robust to excluding obvious outliers in column 4.²²

Insert Table IV about here

This relation is depicted in Figure III, including the conditional 95 percent confidence interval, which clearly shows that the effect of religiosity on trust increases with the degree of religious diversity in society. The level at which the effect turns negative is .22, or roughly the level in Argentina, Belgium or Denmark. The effect turns significant at a level of approximately .35, which is about the level of India, Israel or Chile. As such, 76 percent of the sample is above the cut-off, and 61 percent significantly so. As the distribution of the full sample of religious diversity in Alesina et al. (2003) is quite close to the one in our sample, the findings indicate that religiosity may be a problem for trust in between two-thirds and three-quarters of all countries in the world.

Insert Figure III about here

²² The interaction between religious diversity and religiosity appears as robust as other estimates

As noted, we also develop a measure of religious diversity across the American states similar to the one used in our cross-country analysis. This allows us to repeat the analysis in section IV.B, including an interaction term between U.S. religiosity and the diversity measure. It furthermore allows us to test whether diversity between religious affiliations that are more closely related than religions in the cross-country sample has similar effects.

The results reported in Table V to a large extent replicate the findings in the cross-country sample. While the estimated coefficients of the control variables are virtually unchanged and while diversity *per se* adds no explanatory power, the effect of religiosity appears clearly heterogeneous in religious diversity. This result is again robust to throwing out clear outlier observations. Like Figure III, Figure IV illustrates the heterogeneous relation, including the conditional 95 percent confidence interval. Although the estimate is never positive across the actual levels of diversity found in the US, religiosity fails statistical significance below a relatively low level around .35. This level is quite similar to the one found in the cross-country sample and approximately corresponds to religious diversity in states such as Michigan and Minnesota. As such, roughly three fourths of U.S. states have levels of religious fractionalization above this level. Furthermore, the figure illustrates that the association between religiosity and trust fails the 5 percent significance level at very high levels of diversity, yet it still passes the 10 percent level.

Insert Table V about here

Insert Figure IV about here

In summary, we find that religious diversity helps us to better pinpoint the relationship between religiosity and trust and to clarify that the tensions that are attributable to religious

fractionalization contribute to explaining why there is a negative effect in most countries and U.S. states.

IV.D. Testing the Club and Welfare Hypotheses

Lastly, in order to get a firmer grasp of the mechanism at work behind our results, we investigate if they hold up when controlling for the variables suggested by the Club and Welfare hypotheses, outlined in section II.B. More specifically, as shown in Table VI, we include a measure of ethnic diversity, which captures the extent to which a country or state is not a homogeneous club, and two measures of government welfare. In the cross-country sample, these are government expenditures as a share of GDP and total government transfer expenditure as a share of GDP, calculated as total revenue minus final consumption and military expenditures. For the cross-state sample, we use government final consumption per capita and government welfare consumption per capita.²³

Insert Table VI about here

As for the Club hypothesis, we find that ethnic diversity is *positively* related to trust and that religiosity (column 1) and the interaction between religiosity and religious diversity (column 4) retain their negative relation to trust in both samples. This suggests that religiosity exerts an independent effect on trust, given ethnic diversity. As for the Welfare hypothesis, we find that both variables (in columns 2, 3, 5, and 6) are negatively related to trust for both samples, but generally in a statistically insignificant way, whereas religiosity and the interaction between religiosity and

²³ We use expenditures per capita instead of as a share of GDP for the U.S. due to the substantial geographical mobility across the country, which makes comparisons of absolute welfare levels more relevant.

religious diversity retain their influence. While they appear insignificant in the table, one should note that the point estimates are evaluated at a religious diversity level of zero. Contrary to this, the effect of religiosity remains highly significant as evaluated by the delta method at the sample mean (Brambor, Clark, and Golder 2006). Looking at the effect size, the estimates of these main variables even increase when the additional welfare-state variables are added.²⁴ In all, we think the results indicate an independent and probably causal effect of religiosity on trust.

V. CONCLUSIONS

As trust has been shown to be important for the attainment of widely desired goals, such as economic growth, democratic stability and subjective well-being, the question of what stimulates trust constitutes a relevant research topic. We investigate the net effect of religiosity on trust, a topic that social scientists have recently begun to explore. Unlike the previous literature, we make use of a measure of religiosity that measures the share of a population for which (any) religion is important in their daily life, which we believe better captures “true” religiosity, excluding those members of religions and participants in religious events that are not believers and including those who are not members of established religion but who are nevertheless believers. We furthermore conduct our study on the basis of broader samples than before, in the form of a cross-country analysis covering more than 100 countries and a U.S. cross-state analysis.

Our results indicate that religiosity is *negatively* related to trust and that this result is robust to changing the sample in various ways. The use of instrumental variables suggest that the effect may

²⁴ Bjørnskov and Bergh (2009) also put in doubt the causal assumption in the Welfare hypothesis, that the welfare state creates trust. They rather find support for a reverse causal relationship.

be causal, and the results hold up when controlling for both ethnic diversity and welfare-state size, which have been proposed as underlying determinants of both trust and religiosity. The size of the estimates furthermore indicates importance. Going from an average degree of religiosity to the lowest degree at the cross-country level is related to an increase in trust by eight to ten percentage points. At the U.S. cross-state level, the marginal effect is, again, negative, but somewhat smaller. When deepening the analysis by interacting religiosity and the degree of religious fractionalization, we find that the effect turns negative above a low threshold level in both samples and that the relationship is monotonic.

On theoretical grounds, this result is not surprising, although there are also arguments for a possible positive relationship. The main reason to expect a negative effect, of the kind we have identified, is that religions may cause division and rift, both in that religious people may distrust those who do not share their beliefs and who are not subject to the same enforcement mechanisms as they are, and in that non-religious people may regard with suspicion those who take religiosity seriously. This seems to be the general case, in countries and states where there is moderate to high religious fractionalization.

A further question is if our results tell us something about whether some religions are more adverse to trust than others. While we in no way consider this an answer, the outliers which we identify by Cook's D provide a suggestion. These outliers are Indonesia, Japan, Mongolia and Thailand, two with substantially higher trust levels than would be predicted by our specification in Table II along with very high levels of religiosity (Indonesia and Thailand, +22 percent) and two with somewhat lower trust levels and relatively low levels of religiosity (Japan and Mongolia, -9 and -14 percent, respectively). These countries are also unified in having strongly Buddhist traditions, a religion without apparent secular meaning and a specific focus on peace and tolerance. Yet, whether Buddhism is different from other religions in this particular aspect is a question that

we cannot provide an answer to here. Likewise, we cannot control for whether people adhere to particularly radical versions of some religion. These matters are topics for future research.

While we cannot say that religiosity always and everywhere causes reductions in trust, and while our findings do not imply that religiosity or religiously based traditions cannot have other, favorable effects (see Paldam 2001), it is quite clear that religiosity is not necessary for trust and that it, probably, has a detrimental effect, both internationally and in the US, especially when there is religious fractionalization.

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TABLE I

CROSS-TABULATIONS, CHURCH ATTENDANCE, AND RELIGIOSITY

	Attend	Don't	Trust (row)
Believe	44.2	36.5	36.5
Don't	3.6	13.8	43.6
Trust (column)	38.6	37.0	

The belief and attendance figures measure how large a share of respondents interpret the bible literally and attend church at least once a week, respectively. The trust figures measure the share who state that most people can be trusted.

TABLE II

CROSS-COUNTRY DETERMINANTS OF TRUST

	1	2	3	4	5	6
	2SLS			OLS		
			excl. obs. with residuals > 1.5 std dev.	excl. obs. in trust top and bottom deciles		excl. obs. with large Cook's D
Religiosity	-.35*** (.06)	-.21*** (.07)	-.19*** (.05)	-.17*** (.06)	-.16*** (.05)	-.23*** (.04)
Income inequality		-.26** (.11)	-.22*** (.08)	-.23*** (.08)	-.32*** (.093)	-.26*** (.09)
Nordic country		17.09*** (3.55)	20.85*** (3.13)	-	18.43*** (3.17)	17.85*** (3.10)
Monarchy		8.29** (3.36)	8.40*** (2.75)	1.45 (2.46)	9.06** (3.57)	6.89** (3.19)
Postcommunist		-9.01*** (2.62)	-5.83*** (1.88)	-8.60*** (2.45)	-7.94*** (2.50)	-7.96*** (2.35)
Catholics		-.03 (.02)	-.00 (.02)	-.02 (.02)	-.03 (.02)	-.022 (.02)
Muslims		-.02 (.04)	-.01 (.03)	-.00 (.03)	-.04 (.03)	-.02 (.03)
Eastern religion		.06 (.07)	.05 (.04)	.03 (.04)	.06 (.07)	.04 (.05)
Observations	104	101	90	81	102	98
Pseudo R ²	.26	.65	.78	.38	.65	.70
F statistic	30.04	120.59	126.58	14.31	128.66	159.30
RMSE	11.54	7.92	5.85	6.43	8.26	7.43
First stage F statistic	78.60	35.49	42.44	39.53		
First stage R ²	.46	.36	.49	.44		
Hansen J stat, p<	.16	.30	.55	.99		

Instrumental variables are the log to GDP per capita in 2000 and a dummy for North Africa and the Middle East. The outlier countries identified by Cook's D (residuals larger than 4/N) in column 6 are Indonesia, Japan, Mongolia and Thailand.

* Significant at 10 percent.

** Significant at 5 percent.

*** Significant at 1 percent.

TABLE III

CROSS-STATE DETERMINANTS OF TRUST

	1	2	3	4	5	6
	2SLS			OLS		
			excl. obs. with residuals > 1.5 std dev.	excl. obs. in trust top and bottom deciles		excl. obs. with large Cook's D
Religiosity	-.77*** (.17)	-.39** (.20)	-.45*** (.17)	-.25 (.24)	-.38*** (.13)	-.46*** (.13)
Income inequality		-13.97 (57.12)	-16.41 (56.07)	55.42 (48.86)	-16.03 (56.20)	-42.16 (51.50)
Black population		-.56** (.24)	-.53** (.25)	-.42** (.22)	-.57** (.24)	-.39* (.23)
Cohort <1916		-2.69** (1.19)	-2.36** (1.14)	-1.92* (1.09)	-2.68** (1.34)	-3.84*** (1.31)
Cohort 1916-30		.670** (.33)	.55* (.30)	.70** (.31)	.67* (.36)	.68** (.33)
Cohort 1931-45		1.53*** (.51)	1.43*** (.46)	1.47*** (.52)	1.54*** (.54)	.98 (.68)
Cohort 1945-60		.55 (.51)	.53 (.53)	-.15 (.52)	.56 (.57)	.25 (.63)
Synthetic ancestral trust		1.01*** (.18)	.99*** (.17)	1.15*** (.13)	1.01*** (.19)	1.12*** (.19)
Observations	43	43	39	35	43	41
Pseudo R ²	.32	.76	.83	.69	.76	.79
F statistic	19.43	16.34	31.08	15.25	17.17	23.68
RMSE	9.59	5.75	4.56	4.52	6.47	6.08
First stage F statistic	31.06	11.46	10.55	10.68		
First stage R ²	.60	.51	.50	.49		
Hansen J stat, p<	.01	.86	.23	.74		

Instrumental variables are the log to GDP per capita in 2000 and the average voter turnout in presidential elections in the 1990s. The outlier states identified by Cook's D (residuals larger than $4/N$) in column 6 are Delaware and Florida.

* Significant at 10 percent.

** Significant at 5 percent.

*** Significant at 1 percent.

TABLE IV

CROSS-COUNTRY DETERMINANTS OF TRUST, ALLOWING FOR RELIGIOUS DIVERSITY

	1	2	3	4
	No diversity	No interaction	With interaction	excl. obs. with large Cook's D
Religiosity	-.16*** (.05)	-.15*** (.05)	.14 (.09)	.12* (.07)
Religious diversity		2.80 (4.68)	51.38*** (10.66)	55.31*** (9.81)
Religiosity * diversity			-.64*** (.14)	-.67*** (.12)
Income inequality	-.31*** (.09)	-.32*** (.09)	-.25*** (.08)	-.22*** (.07)
Nordic country	18.57*** (3.18)	19.62*** (3.47)	31.50*** (3.39)	31.83*** (3.01)
Monarchy	9.09** (3.58)	9.31*** (3.50)	5.81** (2.94)	5.25** (2.46)
Postcommunist	-8.37*** (2.50)	-8.25*** (2.45)	-7.49*** (2.22)	-7.71*** (2.07)
Catholics	-.28 (.24)	-.21 (.28)	-.17 (.26)	-.16 (.23)
Muslims	-.20 (.36)	-.15 (.37)	-.20 (.36)	.19 (.28)
Eastern religion	.62 (.71)	.66 (.71)	.78 (.65)	.22 (.90)
Observations	102	102	102	95
Pseudo R square	.64	.64	.69	.75
F statistic	126.00	109.58	132.51	135.77
RMSE	8.29	8.32	7.82	6.83

The outlier countries identified by Cook's D (residuals larger than 4/N) in column 4 are Indonesia, Ireland, Japan, Morocco, Taiwan, Thailand, Trinidad and Tobago and Turkey.

* Significant at 10 percent.

** Significant at 5 percent.

*** Significant at 1 percent.

TABLE V

CROSS-STATE DETERMINANTS OF TRUST, ALLOWING FOR RELIGIOUS DIVERSITY

	1	2	3	4
	No diversity	No interaction	With interaction	excl. obs. with large Cook's D
Religiosity	-.39** (.20)	-.38*** (.14)	.08 (.52)	.36 (.46)
Religious diversity		.73 (12.77)	.71 (.73)	1.15* (.66)
Religiosity * diversity			-1.06 (1.13)	-1.87* (.99)
Income inequality	-13.97 (57.12)	-14.59 (55.59)	27.89 (58.81)	4.73 (54.08)
Black population	-.56** (.24)	-.57** (.25)	-.50* (.26)	-.39* (.23)
Cohort <1916	-2.69** (1.19)	-2.69 (1.39)	-2.67* (1.42)	-3.38** (1.36)
Cohort 1916-30	.67** (.33)	.68* (.36)	.53 (.36)	.72** (.31)
Cohort 1931-45	1.53*** (.51)	1.54*** (.55)	1.39** (.55)	1.34** (.59)
Cohort 1945-60	.55 (.51)	.55 (.62)	.29 (.66)	.11 (.67)
Synthetic ancestral trust	1.01*** (.18)	1.02*** (.26)	1.17*** (.31)	1.17*** (.25)
Observations	43	43	43	39
Pseudo R ²	.76	.76	.76	.83
F statistic	16.34	14.79	14.64	5.72
RMSE	5.75	6.56	6.59	24.34

Interaction effects in column 3 are evaluated at a diversity level of zero; full results are illustrated in Figure IV. The four outlier states identified by Cook's D (residuals larger than $4/N$) in column 4 are Delaware, Massachusetts, Florida and Utah.

* Significant at 10 percent.

** Significant at 5 percent.

*** Significant at 1 percent.

TABLE VI

CROSS-COUNTRY AND CROSS-STATE DETERMINANTS OF TRUST, CONTROLLING FOR THE CLUB AND WELFARE HYPOTHESES

	1	2	3	4	5	6
<i>Cross-country sample</i>						
	Ethnic diversity	Government size	Welfare consumption	Ethnic diversity	Government size	Welfare consumption
Additional variable	6.14 (4.39)	-.10 (.10)	-.04 (.11)	8.09* (4.59)	-.11 (.10)	-.06 (.11)
Religiosity	-.19*** (.05)	-.16*** (.05)	-.16*** (.06)	.13 (.08)	.15* (.09)	.15* (8.82)
Religious diversity	-	-	-	53.62*** (11.26)	51.78*** (10.76)	54.54*** (11.64)
Religiosity * diversity	-	-	-	-.70*** (.16)	-.64*** (.15)	-.67*** (.15)
Observations	103	103	96	101	102	95
Pseudo R ²	.65	.65	.64	.70	.69	.69
F statistic	115.23	111.49	96.17	93.71	123.96	99.33
RMSE	8.25	8.27	8.44	7.75	7.83	7.96
<i>Cross-state sample</i>						
Additional variable	.06 (.13)	-.00 (.00)	-.00 (.01)	.029 (.13)	-.00* (.00)	-.07 (.06)
Religiosity	-.39*** (.14)	-.57*** (.18)	-.41*** (.14)	.06 (.51)	-.10 (.53)	.21 (.55)
Religious diversity	-	-	-	.68 (.71)	.80 (.69)	1.07 (.89)
Religiosity * diversity	-	-	-	-1.02 (1.10)	-1.17 (1.08)	-1.55 (1.30)
Observations	Observations	43	43	43	43	43
Pseudo R ²	Pseudo R square	.76	.77	.76	.78	.77
F statistic	F statistic	14.85	16.98	14.91	14.99	13.67

RMSE	RMSE	6.55	6.44	6.51	6.54	6.56
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OLS. In all these regressions, the control variables used in Tables V and VI have been employed.

* Significant at 10 percent.

** Significant at 5 percent.

*** Significant at 1 percent.

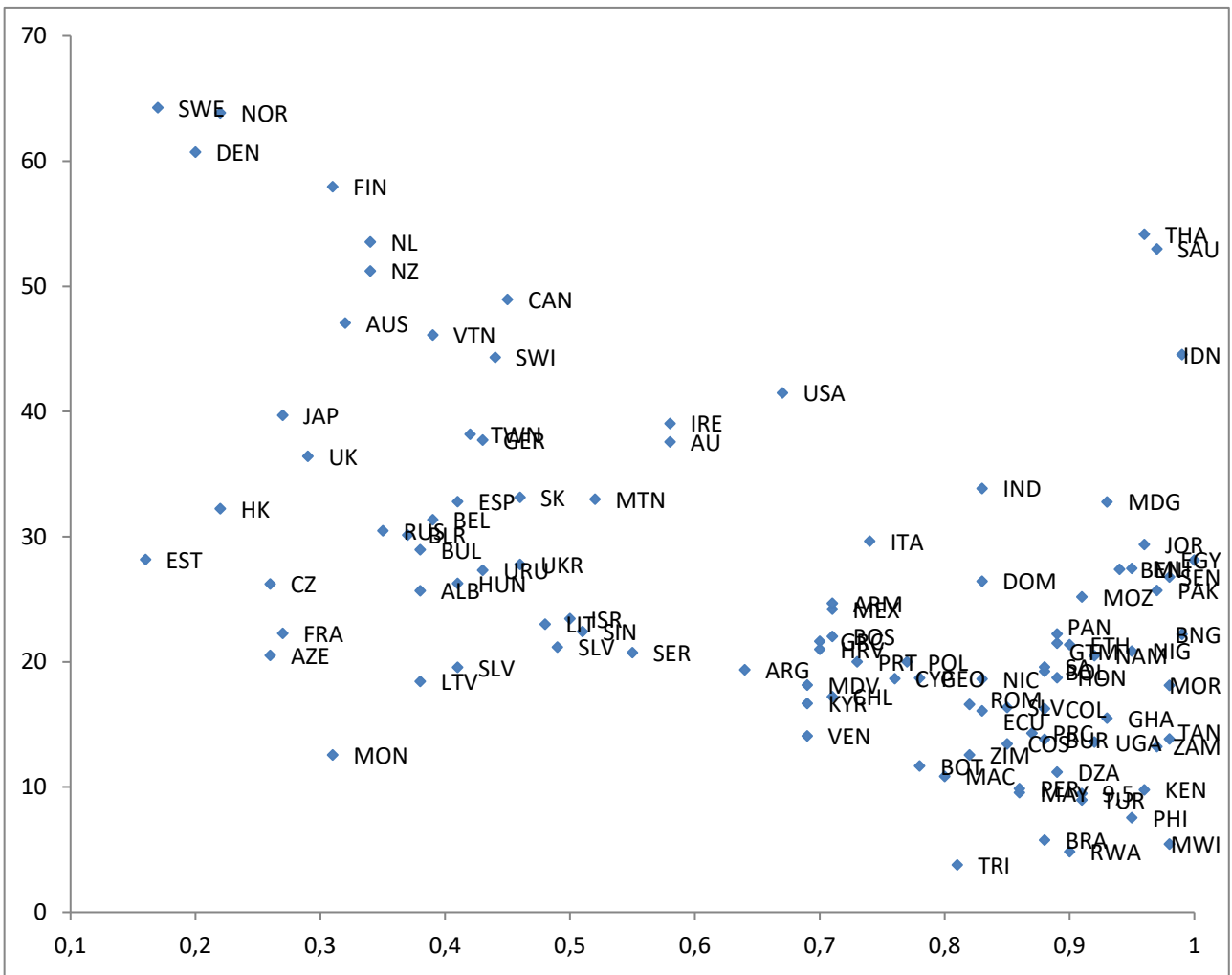


FIGURE I

Trust and Religiosity across Countries

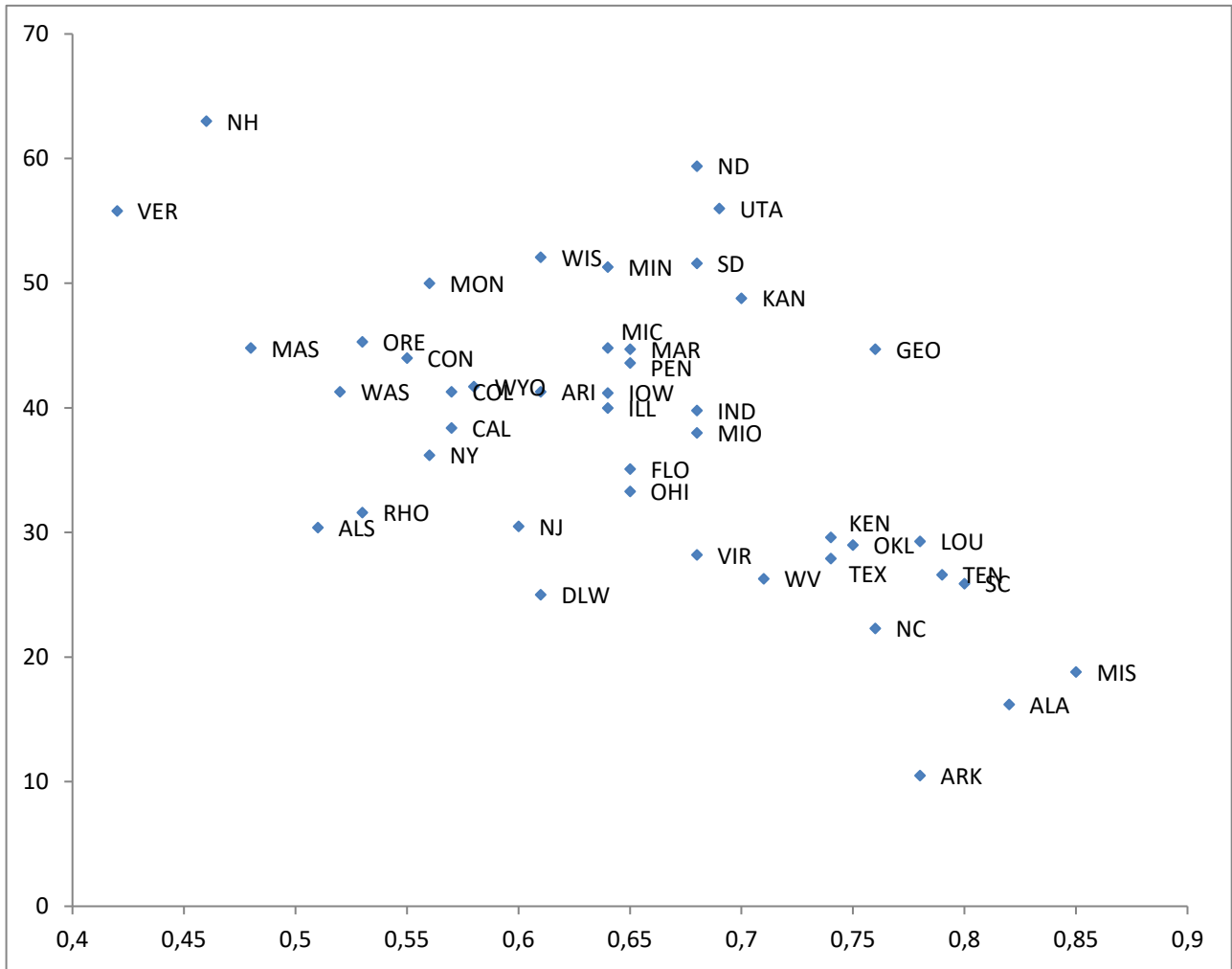


FIGURE II

Trust and Religiosity across U.S. States

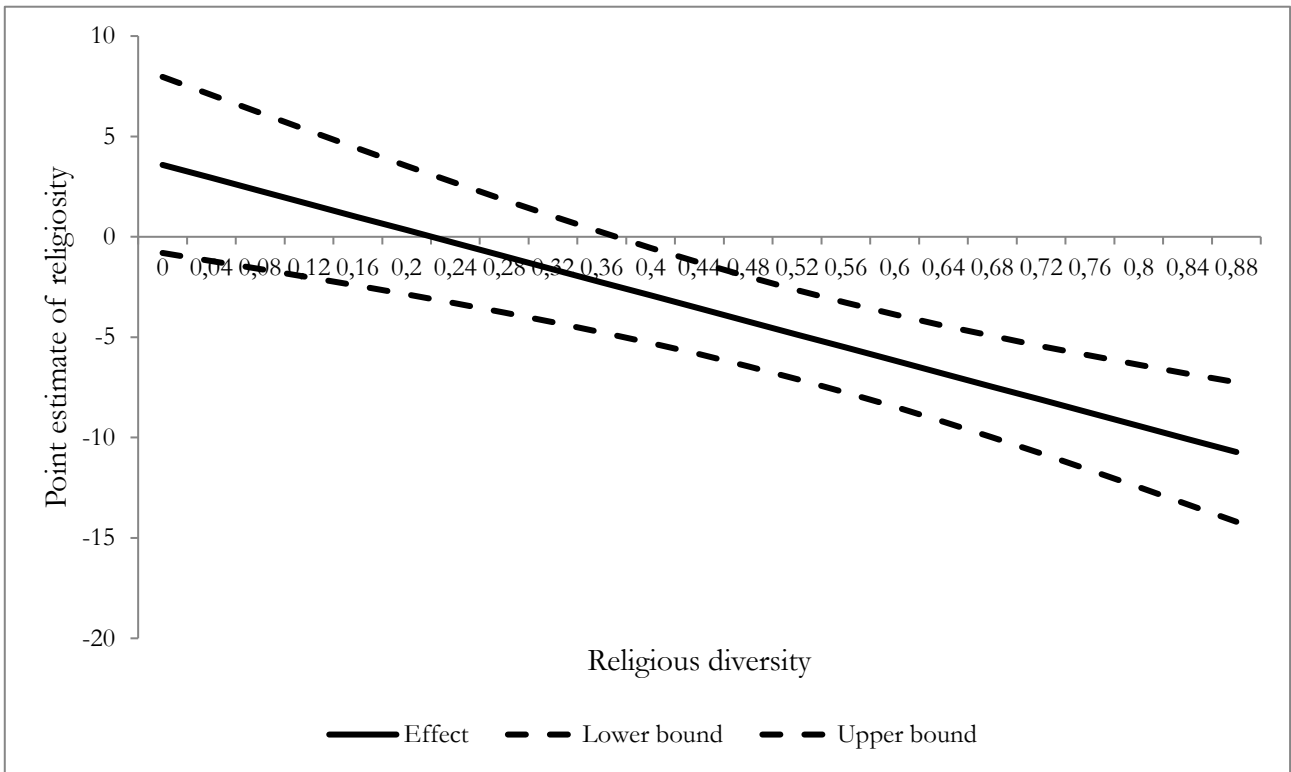


FIGURE III

Effects of Religiosity with Religious Diversity, Cross-Country Sample

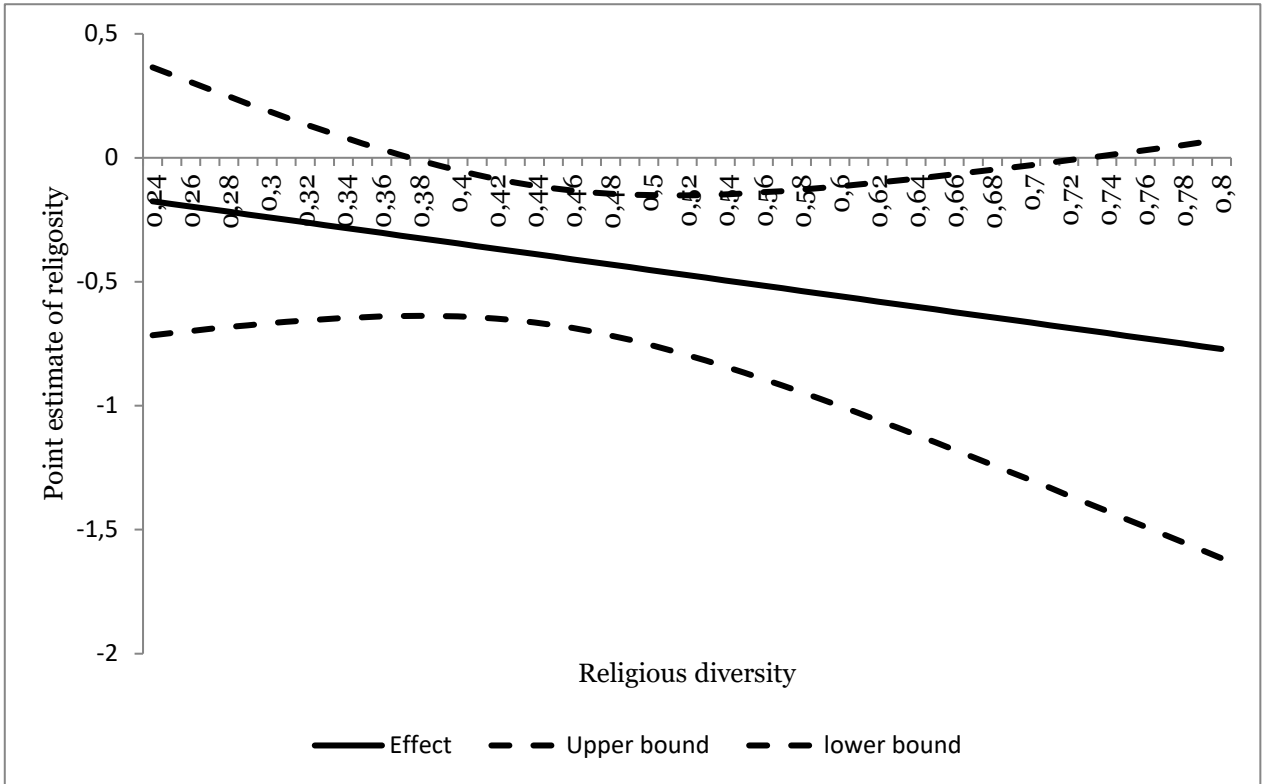


FIGURE IV

Effects of Religiosity with Religious Diversity, Cross-State Sample