Religious belief, religious participation, and social policy attitudes across countries

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September 29, 2005

Abstract. Survey evidence reveals substantial cross-national differences in the degree to which individual religious beliefs are associated with individual decisions to participate in religious services. This paper develops and tests arguments about the source of these differences: belief has a larger effect on participation decisions in countries that are economically and politically developed, that have high levels of religious pluralism, and that have low values of social networks in churches. These conditions that create a strong relationship between belief and participation also influence the degree to which participants in religious services are more conservative than others in society on social issues. The analysis therefore suggests specific circumstances under which religious individuals in a country are most able to act as a cohesive "interest group" on social policy issues.

I would like to thank Eduardo Leoni and Rebecca Weitz-Shapiro for research assistance, and to thank Peter Bearman and seminar participants at Ohio State and Columbia for helpful comments. An earlier version of this paper was presented at the 2005 Annual Meetings of the Midwest Political Science Association, Chicago, IL.

I. Introduction

Measured in any number of ways, countries across the world differ substantially in the "religiosity" of their citizens. In the last fifteen years, these differences have led to considerable debate about what explains them. As described in more detail below, the debate often pits two schools against each other. Scholars influenced by long-standing theories of secularization focus on how modernization influences the "demand" for religion. Scholars who reject the validity of secularization theories emphasize the effects of religious markets on the "supply" of religion.

In my view, efforts to pit "demand" versus "supply" arguments are often misguided because the demand and supply approaches are often about different dimensions of religiosity. Some focus on "religious belief," others on "religious participation." They make competing predictions only if one makes specific assumptions about how belief and participation are related, something that has not been done in the literature, and something that, I will argue, requires new arguments about social factors affecting individual incentives for religious participation.

The central goal of this paper is to focus on the relationship between religious belief and religious participation. Is it valid in empirical research to treat measures of belief and participation as interchangeable measures of religiosity? If not, what underlies differences across countries in the degree to which participation decisions are driven by belief rather than other factors? And how does the answer to this last question influence our understanding of how the social attitudes of religious participants differ from the social attitudes of others?

In answering these questions, I make three main arguments. First, drawing on cross-national survey evidence, I demonstrate empirically that countries differ substantially in the degree to which individual religious beliefs influence individual decisions to participate in religious services. In almost all countries, there are substantial proportions of "believers" who do not participate (by attending religious services), and substantial proportions of "participants" who do not believe. Importantly, these proportions differ substantially across countries.

Second, I argue that these cross-national differences in the relationship between "belief"

and "participation" are systematic. They are related primarily to (a) economic modernization, (b) legal structures that protect rights, (c) the incentives to attend services for "networking" as opposed to spiritual reasons, and, (less confidently) (d) religious pluralism. In short, in countries that are economically and politically developed, non-believers are much less likely to participate in religious services. This is particularly true if the "networking" benefits of attending services are low, and if the diversity of religions available to individuals is low. Development, along with "network" incentives and religious pluralism, therefore determine whether religious participants are a relatively heterogeneous part of the population, or whether they are more like a homogenous "interest group" with cohesive values.

Third, the factors in society that are associated with a tight link between religious belief and religious participation are also associated with strong differences between the social attitudes of religious participants and the social attitudes of others. In a nutshell, church attenders become markedly more conservative (on abortion policy in this paper) than the rest of society as society creates more rights and economic opportunities. This seems to be true both because non-believers stop attending religious services, and because religious participants react negatively to policies (like liberal abortion laws) that often go hand in hand with economically and politically modernized societies.

To make these arguments, the paper is organized as follows. Section II reviews the "demand" and "supply" arguments about religiosity, and contends that they in fact focus on different dimensions of the "religiosity" problem, making them difficult to juxtapose as competing arguments about the same thing. In so doing, I motivate the importance of understanding the relationship between belief and participation if one wishes to characterize the "religiosity" of societies. Section III uses data from the World Values Survey to characterize cross-national differences in the relationship between religious belief (measured in four different ways) and religious participation (measured as weekly church attendance). Section IV develops arguments about the factors underlying these cross-national differences, which I test in Sections

V and VI using a two-stage econometric model. Section VII then develops and tests arguments about how the findings from Section VI should influence the differences between the attitudes of church attenders and non-attenders on abortion policy.

II. Belief and participation in existing studies of religiosity

Scholars have spent considerable energy trying to understand differences over time and across countries in the religiosity of individuals. One school of thought emphasizes factors that influence the demand for religion. These "demand side" arguments have two distinct strands, each emerging from classic works in sociology, and each positing a relationship between modernization and secularization. The "Weberian" strand focuses on the idea that religious belief should diminish as modernization occurs (Weber 1904 and 1922; see also Berger 1967 and 1999, Lechner 1991, Martin 1978, and Wilson 1969). The argument rests on the idea that religion is a system of beliefs and practices that derive from the sacred or supernatural. Individuals do not like fear and uncertainty. In reaction to both, they seek systems of beliefs that can bring hope and impose order. Religion provides these systems of belief, reducing fear and uncertainty. As modernization occurs, fear diminishes (because material well-being improves), as does uncertainty (because scientific progress allows reason to replace superstition). Thus, modernization should create an inexorable march towards secularism.

The second strand of sociological arguments stems from Durkheim's classic work about the functional role of "churches"[1] in society (Durkheim 1912; see also Bruce 2002, Lechner 1991, Luckmann 1967, and Dobbeleare 1999). Before the rise of the modern state, churches played a central role in providing a range of basic services. Some of these were related to important social rituals like baptism, marriage, and funerals. Others were related to the provision of basic social services, like education, health care, welfare provision, and even housing. As the

[1] Durkheim wrote about "churches"; in this paper, I use the term "churches" loosely, referring to any place of religious worship.

modern state developed, specialized organizations and institutions -- both within the state and outside it – emerged to provide core social services. Development thus diminished the dependence of citizens on churches, decreasing their role in societies, as well as the participation of individuals within them.

In the last fifteen years, a third alternative to these two strands of sociological arguments has emphasized "supply side" factors affecting religiosity (e.g., Iannaccone 1990, 1991, Gill 1999, Stark 1992, Stark and Bainbridge 1985, Chaves and Cann 1992, Finke and Stark 1992, Stark and Iannaccone 1994). These arguments emphasize neither modernization nor secularization. Instead, they consider how characteristics of the "religious marketplace" influence the willingness of individuals to participate in churches. The perspective rests on two assumptions. The first is that religious participation, such as church attendance, imposes a variety of costs on individuals. The second is that in all societies or communities, there exist individuals who have religious beliefs. The key to understanding religious participation, then, is to understand whether individuals will pay the cost of religious participation given their beliefs.

Religious pluralism and the regulation of religious markets are the two central and related factors that are said to influence the quality of religious supply, and thus of individuals' willingness to pay the cost of participation given their beliefs. If religious markets are heavily regulated (such as occurs, for example, when there is an official state religion, or heavy subsidies for a particular religion), it will be more difficult for new churches to enter the religious marketplace. Moreover, competition for adherents among existing churches will be weak (much as monopolistic economic markets diminish competition for consumers). The consequence is a poor quality religious market with little participation in churches. By contrast, if there is strict separation of church and state, religious markets can flourish, a wide variety of churches can compete for adherents, more individuals will find churches that fit their needs, and thus more individuals will be active in their churches. Thus, the argument goes, regulation inhibits pluralism, thereby inhibiting religious participation. The United States is the classic example

invoked to illustrate the argument. The US has full separation of church and state, there is a tremendous diversity of churches, with strong competition for adherents in many communities, and the country's citizens go to church at a much higher rate than similarly developed countries with lower levels of religious pluralism.

It turns out that all three of these perspectives on religiosity rest on weak empirical foundations. In fact, each has recently been proclaimed dead, at least by some scholars. Regarding the "demand" theories from classical sociology, the modernization of the US has been accompanied, some argue, by a rise in religious activity (Finke and Stark, 1992; Warner, 1993). Survey data suggest that religiosity has been flat, not declining, in the US and most of Europe (Hadden 1987, Greeley 1989, Stark and Iannaccone 1994). Historical work argues that it would be difficult for religion to decline over time because in the past because it was not nearly as important as many believe (e.g., Duffy 1987, Brooke and Brooke 1984, Morris, 1993; Duffy, 1992; Sommerville, 1992; Bossy, 1985; and Obelkevich, 1979). And Barro and McCleary (2003) find no relationship between societal modernization (measured by GDP) and religiosity. Not all scholars are willing to declare secularization theory dead, however. Norris and Inglehart (2004) argue that levels of religiosity (at the societal level) do decline with wealth, security and equality. And Gill and Lundsgaarde (2004) find that increased welfare spending by a government leads to lower levels of religiosity.

Tests of the supply side arguments have also produced weak results. Chaves and Gorski's (2001) review of all available studies, for example, found that a huge proportion find no relationship between religious pluralism and religious participation. And tests of the institutional arguments (state regulation), rather than of the purported mechanism (religious pluralism), have also been mixed. Norris and Inglehart (2004), for example, argue (based on a simple correlation coefficient) that there is no relationship between religious regulation and religiosity. Barro and McCleary (2003) find that the existence of a state religion actually is associated with higher (rather than lower) levels of religiosity. And Gill and Lundsgaarde (2004) find no effect of

religious pluralism or religious regulation on church attendance.

In my view, the inconclusive duel between the modernization perspective and the religious economy perspective rests on the false premise that both sets of arguments are about the same thing. They are not. Instead, they are about different aspects of religiosity, some related to belief, others to participation. I summarize these differences in Figure 1. The horizontal axis depicts the strength of belief by individuals, and the vertical axis depicts the value to individuals of religious participation, such as church attendance. The Weberian idea about modernization and secularization is about movement along the horizontal axis. The basic argument is that if society modernizes between time *t-1* and time *t*, belief will decline, such as a move from B_{t-1} to B_t. The effect of this decline in belief on religious participation, however, is indeterminate. One might expect participation to also decline if the main reason for it is religious belief. But without a specific argument about the relationship between belief and participation, which is absent from the Weberian notion of secularization, we would not know what to expect about participation given a decline in belief.

Indeed, Durkheim's argument might lead us to expect no decline in church attendance. Recall that in Durkheim's approach to secularization, which focuses on this functional role of churches in society, religious belief is not the main reason for church attendance. If the state and other non-religious organizations supplant the functional role of the church between time *t-1* and time *t*, then church participation should decline, such as from A_{t-1} to A_t, independent of beliefs at time *t* and *t-1*. Consequently, a decline in belief would lead to a decline in participation only if beliefs decline in parallel with the functional role of churches. But this would be a coincidence, not a direct implication of either strand of sociological theory, because neither specifies how belief and participation should be related.

The "supply side" arguments, like the Durkheim-strand of modernization theory, are also about movement along the vertical, religious participation axis, though they come closer to linking participation and belief. The supply side theory posits that in any society, there exists

some positive level of belief, such as B_k. The probability that individuals participate, given this belief, depends on the quality of religious supply, and the cost of church attendance. If the religious market is sufficiently weak, then the value of church attendance is more likely to be less than the cost of church attendance, as depicted in the figure. If the religious market is relatively strong, then given this same level of belief, and the same cost of attendance, the individual will attend church. Thus, beliefs and participation are both integrated into the argument, which focuses on "participation given belief." But the argument implicitly assumes a particular relationship between belief and participation (participation is valued more as beliefs increase), and focuses on factors (like religious markets) that influence the value of church attendance at any given level of beliefs.

From the supply side perspective, however, the empirical relationship between the quality of religious markets and religious participation must depend on where one is on the "belief" axis. If Weber is right, for example, then at *t-1*, belief is at B_{t-1} and there will be no relationship between the quality of religious markets and religious participation. Even in the weak religious market, the value of religious participation is greater than the cost of attendance. The same is true at B_t: there should be no relationship between the quality of the religious market and religious participation because beliefs are so low that individuals will not participate independent of the quality of churches. Of course, whether it is valid to assume a strong positive relationship between belief and participation is an empirical question that is likely context-dependent.

The three perspectives, then, each focus on different aspects of religiosity, and thus are only comparable in their predictions if one makes specific assumptions about the relationship between religious belief and religious participation. But this relationship is not made explicit in any of these three perspectives, which is a problem given that, in principle, one could imagine many different relationships between religious belief and religious participation. Figure 2 depicts several quite plausible relationships. In societies where rights and religious freedoms are extremely low, such as perhaps China or the former Soviet Union, there may be political costs of

religious participation that make church attendance unattractive at any level of beliefs. In other societies there may be strong social or political incentives to attend church, independent of one's level of belief. This might be true in small rural towns where churches play central roles in organizing social interactions, or in explicitly religious regimes, such as Iran. Of course, there may be a strong positive relationship between one's beliefs and the value of church attendance. As I will argue below, this is particularly true in countries like Denmark, where there is a high level of economic development and legal protections.

In sum, the sociological and religious economy perspectives on religiosity are not explicit about the relationship between belief and participation. This absence of explicitness makes it difficult to compare the arguments in efforts to sort out the origins of cross-national differences in religiosity.

III. The connection between belief and participation across countries

Although there may be reasons to expect differences across countries in the strength of the relationship between religious belief and religious participation, do such differences actually exist? The evidence presented in this section suggests that the answer is a clear "yes." Drawing on data from the World Values Survey IV (WVS), I show that when we look across countries, there are stark differences in the proportion of religious "participants" who are "believers," and in the proportion of "believers" who are participants.

To measure "religious participation," I adopt the standard measure of self-reported weekly church attendance. The WVS asks respondents, "Apart from weddings, funerals and christenings, about how often do you attend religious services these days?" Respondents who state that they attend once a week or more are classified as "church attenders."

I consider four different measures of "religious belief." The first codes respondents as believers if they answer "yes" to the question: "Do you believe in hell?" The second codes respondents as believers if they answer "yes" to the question, "Do you believe in heaven?" The third codes respondents as believers if they answer "very" to the question, "How important is god

in your life?" The fourth, which I will label "very spiritual," is the most restrictive: it codes respondents as believers if they are believers on each of the above three measures.

The analysis does not include all countries in the WVS survey. In some countries, civil rights are so low that one has to worry about whether the responses to surveys could possibly reflect accurately the attitudes of those being surveyed. To increase confidence that this is not a severe problem, the analysis excludes countries with very low civil rights records (Freedom House scores of 6 or 7). Second, some patterns of survey responses to the religious question are highly suspicious in the WVS data, making one question the reliability of the survey. These suspicions are raised by the fact that there is *zero variance* in responses to "heaven" and "hell" questions in Algeria, Bangladesh, Jordan, Nigeria, South Korea, Pakistan, China, Venezuela, Egypt, Morocco, Israel, and Indonesia. The countries are therefore not included in the analysis. Finally, the concepts of "heaven" and "hell" are clearly different (if one could even say they exist) in countries dominated by Hinduism and Eastern religions, which are eliminated from the analysis for this reason. This study, then, focuses on the 52 countries that remain in the WVS after eliminating cases based on the above criteria. All are predominantly Christian, except for Turkey and Azerbaijan, which are Muslim.

Figure 3 shows the box plots of the country averages for each of the five variables in the analysis. The line in the center represents the median country, the top of each box represents the country in the 75^{th} percentile, the bottom of each box represents the country in 25^{th} percentile, and the top and bottom lines represent the countries with maximum and minimum values. In the median country, 20 percent of respondents attend services weekly, just over 40 percent of respondents believe in hell, around 60 percent believe in heaven, around 30 percent claim that god is very important, and around 20 percent are "very spiritual" (believe in heaven, hell, and that god is important). We also see extraordinary range across countries in these proportions, with church-attenders, for example, representing less than five percent of respondents in some countries, and more than 90 in others, and those believing in hell, to take a second example,

representing less than 10 percent in some countries and more than 90 in others.

To what extent do beliefs and church attendance go together? Figure 4 provides some evidence of the disconnect that can exist between the two. The figure shows the box plots of the country averages for the proportion of church-attenders who do not believe. The first box plot, for example, shows that the "average" country has about 25 percent of its church attenders who do not believe in hell. Importantly, there is huge variation across countries. In some countries, there are almost no church-attenders who do not also believe in hell. In other countries, almost 60 percent of church-attenders do not believe in hell. We see a similar variation across countries when we consider the "god important" question. The least cross-national variation exists on the "believe in heaven" question, which is due to the fact that so many more people believe in heaven than believe in hell (or that claim that god is important) (see figure 3).

A similar level of variation exists across countries in Figure 5, which shows the box plots for "believers" who do not participate. The first plot shows that the "average" country has about 60 percent of its "hell believers" who do not attend church weekly, with extraordinary variation across countries. Similar high averages, and differences across countries, exist for the "heaven," "god important," and "very spiritual" variables.

It is clear, then, that within every country, there are respondents who claim some form of "belief", but who do not participate, and others who claim a high level of church attendance, without claiming any belief. More importantly, we see substantial differences across countries in the proportion of respondents who have some form of disconnect between belief and participation. In the next section, I describe arguments about factors that should explain these cross-national differences in the relationship between belief and participation.

IV. What cross-national factors create a disconnect between belief and participation?

People attend church for a variety of reasons, the vast majority of which fall into two categories. The first encompasses what I call "spiritual" reasons. For some, "spiritual" is driven by fear,

such as fear of death. Consistent with the logic of Pascal's wager, these people may attend church because they view worship, prayer and/or the sacraments as important practices for gaining access to the most desirable afterlife possible. For others, "spiritual" is less about fear and more about a search for order and understanding about existence on earth, particularly, perhaps, on moral questions. The pace of scientific advance, of modernization, and of development hardly puts to rest difficult moral questions about right and wrong. Organized religion often provides guidance about, at the minimum, how to think about such issues, and, in many cases, about what the specific answers to difficult moral questions should be. For many individuals, this guidance is an indispensable "spiritual" reason to attend church. For others, spiritual may be quite simply about connecting with and worshipping god. Individuals may not fear death, or search for arguments about moral order. Instead, they may feel a strong connection to a deity, and view worship as one way of making this connection richer and more meaningful.

There are obviously other notions of spirituality, but the main point here is the obvious one that people often attend church because of their spiritual beliefs about god, and about larger, often metaphysical questions about life on earth, as well as life after. While the relevance of such reasons may be obvious, it is important to underline the contrast between these "spiritual" factors, and the second types of reasons for church attendance, which are related to what I call "earthly material" considerations.

The "earthly material" reasons may be as diverse as the "spiritual" reasons. Churches may provide direct benefits to individuals, such as meals, education, or jobs. These are the types of things that Durkheim emphasized in his description of the increasing functional irrelevance of churches as states modernize and create their own programs that fulfill functions previously filled by churches. Individuals may also attend church for social reasons. There may be social pressures to participate in services. And there may be social benefits, with churches providing opportunities for social interactions, as well as important networks of people who can help achieve goals in aspects of life having nothing to do with religion.

If "spiritual beliefs" and "earthly benefits" both influence decisions to attend church, in what type of societies will participation decisions me most closed related to beliefs? One answer concerns the relative importance of "earthly benefits." In societies where these are weak, a stronger link should exist between belief and practice, because there will be little reason to attend for purposes unrelated to faith. Therefore, to understand cross-national differences in the link between spiritual beliefs and church attendance, it is necessary to identify macro variables that influence "earthly material" incentives to attend church.

Following the general logic of Durkheim, one factor that should influence the material incentives for church attendance is national wealth. As countries develop economically, individuals have less material insecurity, and thus have less need to turn to churches for material needs. National wealth is also closely associated with the development of state social insurance programs, which supplant the role of the church in providing basic social services. We should expect, then, that as national wealth increases, earthly materials reasons for church attendance should decline, which should strengthen the relationship between belief and church attendance. In empirical tests, I will measure this using the log of GDP/capita.[2]

We also need to consider "network" reasons for church attendance. I have not found precise measures of the network value of church attendance that can be compared across 52 countries, but there exist two somewhat noisy variables that should be related to this concept. The first is "ex-communism." Though the role of religion varied across communist countries, it was generally the case that in these countries, religious worship – and the formation of churches – was discouraged. Because of this, churches did not become central social institutions in communities. Thus, when communism fell in places like eastern Europe, and worship became more accessible, the attraction of church attendance could hardly be attributed to the value of the social networks in churches. Thus, if churches are less valuable as social networks in ex-communist countries,

[2] The data are taken from the IMF's World Development Indicators, and measure GDP/capita by purchasing power parity using 1995 "international" dollars.

the link between religious belief and attendance should be higher in these countries.

The second "network" variable I consider is corruption. Societies where corruption is prevalent should also be societies where the personal connections that one obtains through social networks are most valuable. If the importance of networks and personal ties is high, church attendance should provide one potential avenue for establishing connections and social ties. Thus, in countries where corruption is relatively high, earthly material incentives to attend church should also be relatively high, diminishing the connection between belief and participation. I use the International Country Risk Guide's measures of corruption. It is based on a survey, and emphasizes

> the actual or potential corruption in the form of excessive patronage, nepotism, job reservations,' favor-for-favors', secret party funding, and suspiciously close ties between politics and business. (ICRG, A Business Guide to Political Risk for International Decisions, page 31).

I have recoded the variable so that it ranges from 1(least corruption) to 6 (most corruption).

Two other factors should help to explain cross-national differences in the relationship between religious belief and religious participation. The first stems directly from the "religious economy" arguments discussed above. If religious markets do not offer good choices to religious individuals, then individuals unhappy with the "religious offerings" are unlikely to attend church for spiritual reasons. If a spiritual Jew, for example, moves into a community with only Christian churches, s/he is unlikely to attend church services simply because s/he is faithful. An individual's propensity to attend given s/he believes should increase as the quality of religious markets increases.

I use two standard measures of the quality of religious supply. The first is whether there exists an official state church. Scholars have argued that when official state churches exist and are subsidized, this discourages the "entry" of other churches, and diminishes the incentives of existing state churches to provide high quality religious experiences. If the existence of a state church diminishes the quality of "religious supply", countries where there is a state church should

have a weaker link between belief and participation. Since the effect of state religion on religious vitality should take time to occur, I follow Barro and McCleary (2003) in creating a dummy variable that takes the value of 1 if a state religion existed in 1970. The measures are from Barrett et al, (2001).

The second measure is religious pluralism. If we assume there is a potential for a variety of religious beliefs in any society, as the religious economy arguments implicitly assume, then religious supply will be most conducive to worship when there is a variety of churches. That is, as the choice of religious worship possibilities increases, a greater proportion of believers should be able to find a church that they want to attend. Thus, the link between belief and participation should be greatest when religious pluralism is high. I measure religious pluralism using a standard fractionalization measure, with the data taken from Barrett et al (2001). The variable ranges from 0 to 1.

Finally, the link between belief and participation should be highest in situations where the political and legal system protect the rights of individuals. If there is coercion to worship, or coercion not to worship, there obviously will be a diminished link between belief and participation. That same coercion might also influence the behavior of religious institutions, thereby diminishing the quality of their supply. Thus, the link between religious belief and religious participation should be highest when the political and legal systems protects the rights of citizens and religious organizations. I measure the extent to which the legal system protects individual interests using the ICGR "Law and Order" variable. The variable has two components, one measuring the strength and impartiality of the legal system, the other measuring popular observance of the law. I code it so that it ranges from 0 (weakest law and order) to 6 (strongest law and order). This variable is highly correlated with the Freedom House measure of rights, but is not truncated in my sample because I did not use it to eliminate countries from the sample (as I did the Freedom House variable).

V. Estimating a two-stage model

The substantive goal is to understand whether the macro variables just described influence the effect of spiritual belief on religious participation. It is therefore necessary to estimate the effect of "religious belief" on attendance in each country, and the impact of the macro variables on these effects. There are a number of ways to estimate such models, and in this paper, I adopt a two-stage estimation framework. The first stage estimates a separate probit model in each country, where the dependent variable takes the value 1 if the individual is a weekly church-attender, and 0 otherwise. The independent variables include one of the "belief" variables, as well as other controls. The coefficients on the "belief" variable in the first stage regressions will vary by country, with belief exerting a stronger impact on church attendance in some countries than in others. In the second stage regression, there is one observation for each country, and the dependent variable is the county-specific belief coefficient from the first-stage regressions. The macro variables discussed above are the independent variables. The second stage regression estimates how the country-level variables, like GDP, influence the cross-national differences in the "belief" coefficients.

More explicitly, for each country, *k*, I estimate a probit model by maximum likelihood estimation. The independent variables include one of the measures of belief, as well as control variables, which include education, age, age^2, female, and a dummy variable for whether the individual lives in a big city (greater than 100,000 inhabitants). Formally, the first stage estimates

$$P(y=1|\,belief, education, age, female, citysize) = \Phi\left(\beta^k_{const} + \beta^k_{belief} + \beta^k_{educ} + \beta^k_{age} + \beta^k_{age^2} + \beta^k_{male} + \beta^k_{bigcity}\right)$$

The second stage then estimates an OLS model:

$$\beta^k_{belief} = \delta_{belief} + \gamma_{belief}\mathbf{z}^k + \mu^k_{const},$$

where **z** is the matrix of macro level independent variables. Since we want to understand the marginal effects of the macro level variables on the impact of belief on participation, γ_{belief} is the coefficient vector of substantive interest. However, we can also use the two-stage framework to

estimate a fully-interactive model that estimates the impact of the macro level variables on all other variables that influence church attendance. To this end, we can estimate $\beta_j^k = \delta_j + \gamma_j \mathbf{z}^k + \mu_j^k$ for each first-level independent variable, *j*, including the constant. Such a fully-interactive model would allow one to ask, for example, how does the probability of church attendance differ between "hell believers" and "non-hell believers" at different levels of national income. This is precisely the type of substantive question we seek to answer.

One can use OLS in this sort of two-stage estimation framework if one adapts a suitable weighting matrix (Wooldridge, 2002, p.442-446). There are two types of errors that influence the selection of an appropriate weight. First, there are errors associated with the estimates of β_j^k in the first stage. We should weight most heavily those observations for which these estimates are most precise. Second, there is the residual variance associated with our estimate of the second-stage regression. As this residual variance increases relative to the errors associated with the estimates of β_j^k, less weight should be given to these first level errors in establishing an appropriate weight. To incorporate information about both types of error in establishing a weight, I use the weighting scheme described by Borjas and Sueyoshi (1994), who weight the second level regression by the matrix

$$\mathbf{\Omega} = \mathbf{V}_{\hat{\beta}^k} + \hat{\sigma}_\mu^2 \mathbf{I}_K ,$$

where the matrix, $\mathbf{V}_{\beta^k}$, reflects errors associated with our estimate of β^k, and $\hat{\sigma}_\mu^2$ is the estimated residual variance from the second stage model. Estimates of $\mathbf{V}_{\beta^k}$ is straightforward. Borjas and Sueyoshi argue that a good estimate of $\hat{\sigma}_\mu^2$ is given by

$$\hat{\sigma}_\mu^2 = \tilde{\sigma}^2 - \left(\sum_{k=1}^{K} \left(s.e.\left(\beta^k\right) \right)^2 \right) / \left(K - M \right),$$

where $\tilde{\sigma}^2 = \sum_{k=1}^{K} \tilde{\omega}_k^2 / \left(K - M \right)$, *K*, is the number of countries, M is the number of variables in the

second stage plus the intercept, and $\tilde{\omega}_k$ are the estimated residuals in the second stage.[3] Boras and Sueyoshi provide evidence from Monte Carlo experiments that this weighting strategy has good properties for this two-step estimator, even when the sample of second-level units is small. Their experiments also show that most obvious alternative, random effects probit, produces inferior results when the number of individuals per unit is large, as is the case with the WVS survey.

VI. Results from the two-stage model

It is impractical to show all of the results from the more than 50 country-level, first-stage regressions with four different measures of belief (yielding over two hundred regressions). But for all measure of belief, it is clear for these results that there is substantial variation across countries in the effect of the various measures of belief on church attendance. If we consider the "believe in hell" variable ($\beta^k_{believehell}$), for example, the coefficients range from .07 in Peru to 2.10 in Denmark. The mean of the coefficients is .94 with a standard deviation of .44. The US is slightly below the mean, with a coefficient of .86. With the exception of one country, $\beta^k_{believehell}$ is estimated very precisely, with only Peru (t=.94) having a t-statistic less than 2.3, and 45 countries having a t-statistic greater than 4. In regressions using other measures of belief (believe in heaven, god important, and very spiritual), similar variation exists in coefficients, and the estimates are also quite precise. While it is impossible to interpet the substantive relevance of these differences in coefficients without making further assumptions, the important point here is that the multivariate model confirms what was also clear in Figures 4 and 5, which is that the relationship between belief and practice varies substantially across countries.

We can use the coefficients and standard errors from these first stage regressions to estimate the second stage models, which analyze the relationships between the macro variables

[3] See Borjas and Sueyoshi for derivation of the estimator.

and the religion coefficients form the first stage (with appropriate weights, as noted above). These results are given in Table 1, which presents estimates from the second-stage regressions for the four different measures of belief. Column 1 provides the results from the second-stage regressions when "belief in hell" is the measure of belief included as an independent variable in the first stage. The model includes the six macro variables of substantive interest, as well as controls for the proportion of respondents for three of the four relevant religions in this sample of countries (Orthodox, Protestant, and Muslim). These religious variables measure the proportion of individuals in the country who claim to be of religion "x." The omitted category is Catholics. Thus, the results for a variable like "Protestants" describe how changes in the proportion of Protestants relative to Catholics influences the impact of belief on participation.

Three of the macro variables – (ln)GDP, corruption, and ex-communism -- are precisely estimated in Column 1, with effects in the expected direction. The proportion of Muslims is also highly significant, and suggest that the link between belief and attendance becomes stronger as the proportion of Muslims (relative to Catholics) increases. It is worth nothing that only two countries, Turkey and Azerbaijan, are predominantly Muslim.

Columns 2-4 provide the results for the other measures of belief. When "belief in heaven" is included as the "belief" variable in the first stage, the results are the same for gdp and ex-communism, but corruption is not near statistical significance. In addition, "law and order" and religious pluralism are more precisely estimated than in column 1, with p-values of around .10. Column 3 provides the results when "god is very important" is the first-stage belief variable. GDP, excommunism and religious pluralism are all significant in the expected direction. Finally, column 4 presents the results when "very religious," the most restrictive measure of belief, is used in the first-stage regressions. The model's overall fit is the best of any in Table 1, and the results are relatively precisely estimated and in the expected direction for gdp, excommunism, corruption and religious pluralism.

Thus, with the exception of "State Religion," each of the macro variables is statistically

significant and in the expected direction using at least one of the four measures of belief. This is particularly impressive given the high correlation between economic development, corruption, and "law and order," which inflates the standard errors of each of these variables, potentially masking relationships between these variables are the belief coefficients.[4] In Figure 6, for example, the bivariate relationship between "law and order" and β^k_{very} is quite strong -- increases in "law and order" are associated with increases in β^k_{very}. Column 5 and 6 of Table 1 drop the gdp variable from the columns 1 and 4 regressions. The results for "law and order", neither of which was significant before, are now highly significant and in the expected direction in both models, with only a slight decline in the overall fit of the model. Thus, while it is very difficult to disentangle the effects of economic and political development, both seem to be associated with a tighter relationship between belief and participation.

The results from Table 1 concern how changes in the macro variables influence the expected size of the first-level coefficients, information that is not particularly straightforward to interpret substantively. How large is the effect of these macro variables on the relationship between belief and church attendance? That is, what do the results indicate is the difference between the probability a "believer" will attend church and the probability a "non-believer" will attend church at different values of the macro level coefficients?

The second-level coefficients describe changes in the first-level probit coefficients on belief. Since the magnitude of these changes depends on the values of the other first and second-level independent variables, the answer to the "how large is the effect" question depends on "for whom" and "where." For example, to estimate the probability of church attendance by believers and non-believers in a particular country, one would make standard assumptions about the values of the "non-belief" control variables (age, gender, etc.), and apply a normal transformation to the

[4] The bivariate correlations of any two of these three variables range from .64 to .72.

regression results from that country's first-stage results for the two cases of "belief" equals 0 and "belief" equals 1. The comparison of these two resulting probabilities would describe how "belief" affects the difference in the probability of church attendance by believers and non-believers.

The central question here, though, is how does the difference in these probabilities change with changes in the macro variables. Consider GDP and the "very religious" measure of belief. In column 4 of Table 1, the coefficient on ln(GDP) is .25. Thus, the model estimates that a one-unit increase in ln(GDP) would increase each β^k_{very} by .25. The impact of this increases on the probability of church attendance depends, of course, on the values of the other macro variables, which also influence variation in β^k_{very}. Thus, one can draw substantive conclusions about probabilities only by making assumptions about the values of the other macro variables.

Figure 7 depicts the 95-percent confidence intervals for the probability of church attendance by believers and non-believers for different levels of GDP. The figure is based on the regression in Table 1, column 4, where "very religious" is the "belief" variable. The calculations in this figure are based on the assumption that the respondent is a 40-year old woman who lives in a big city, and that she has only a primary education. The calculations are also based on the assumption that the macro variables other than GDP take their median values. The key substantive question the figure allows us to address is how much does the difference in the probability of church attendance between believers and non-believers vary with GDP levels.

We can see in Figure 7 that in relatively poor societies, the probability of church attendance is essentially the same for both believers and non-believers (at around 60 percent). As GDP increases, however, the difference between believers and non-believers increases sharply. There is a small (and not statistically significant) decrease in the probability of church attendance among believers. Among non-believers, however, there is dramatic and statistically significant decline in attendance. The probability of church attendance by non-believers levels off at around

10 percent when GDP/capita approaches roughly 20,000 dollars, whereas the probability of weekly attendance for believers remains around .5.

It is obviously impossible in this paper to explore these effects for all different types of individuals, but it is useful to consider a couple of other examples to gain confidence that these effects of macro variables are robust across different types of individuals. Figure 9 presents the same calculations as Figure 8 for a well-educated woman (also 40 years old and living in a large city). The results are similar as those in Figure 8. In relatively poor country, the probability of church attendance is roughly the same for believers and non-believers, but these differences became strong as wealth increases, primarily because the non-believers become much less likely to attend church.

Figure 10 presents a similar figure for the corruption variable. The results suggests that at low levels of corruption, believers are much more likely than non-believers to attend services. As corruption increases, there is essentially no change in the probability of attendance by believers, but non-believers become more likely to attend services, and the error associated with predicting the attendance of non-believers becomes larger. Thus, the difference between church attendance by believers and non-believers decreases as corruption increases.

These examples illustrate that the results in Table 1 indicate a non-trivial substantive impact of the macro variables on the relationship between belief and participation. The Table 1 results suggest that as societal wealth, religious pluralism, and legal protections increase, the impact of belief on participation also increases. The results also indicate a tighter relationship between belief and participation in ex-communist countries, where the network value of churches is low. By contrast, in countries where personalistic ties and networks are particularly valuable (measured by corruption), there is less difference in church attendance by believers and non-believers because non- believers become more likely to attend services.

VII. Church attendance and abortion attitudes

One implication of the findings in the previous section concerns the attitudes one might expect of

churchgoers on difficult moral issues. The findings suggest that under certain circumstances, church-going should be more associated with belief than under others. As a consequence, *under these same* circumstances, one might expect the attitudes of church goers on moral issues to be more homogenous, and more distinct, than under circumstances where church attenders represent a wider cross-section of society, with many attending religious services for reasons unrelated to belief. In this section, I develop and test this possibility using the abortion issue.

While there are clear cases where churches and church doctrine are socially progressive, it seems reasonable to assume – or at least to explore the idea – that in general, as the non-spiritual reasons for church attendance become less salient, the individuals who attend church for religious reasons will become more socially conservative relative to the rest of society. Many organized religions have as core doctrines a set of relatively conservative prescripts about right and wrong. Indeed, on the specific issue of abortion, organized religion has often played an aggressive role in preventing access by women (e.g., Htun 2003). Moreover, we might expect religious opposition to socially progressive policies on issues like abortion to be most intense when society moves in a direction that challenges the traditional order espoused by the church. Thus, as policies on issues like abortion become more progressive in a given country, we might expect "spiritual" church goers in that country to become more hardened in their attitudes against this policy.

We can test these ideas by using the World Values Survey question about abortion. This question asks respondents to state whether abortion "can always be justified, never be justified, or something in between." Responses can range from 1 (never justified) to 10 (always justified). In the countries used in this analysis, 39 percent of respondents respond "never justified," 16 percent have a response of 5, and no other response is given by more than 8 percent of respondents.

The test involves examining whether the macro variables in the previous section that are associated with "spiritually-based" church attendance are also associated with a divergence between the abortion attitudes of church-attenders and non-attenders. For example, as GDP

increases, belief plays a larger role in church attendance. Consequently, if churches typically espouse conservative rather than progressive doctrines on social policy, as GDP increases, the attitudes of church-attenders should become relatively more conservative than those of non-believers. Note, this expectation assumes that individuals do not automatically take their cues on moral issues from churches. The working assumption is that they do so only if they are believers.

Figure 11 provides a simple bivariate test of the GDP argument. The y-axis depicts the mean abortion attitudes of non-attenders *minus* the mean abortion attitudes of church-attenders. As values on this axis increase, the attitudes of church-attenders are increasingly more conservative than those of non-attenders. The maximum difference is 3.86 (in Denmark). The figure shows that as GDP increases, the attitudes of church-attenders become increasingly conservative relative to those of non-attenders.

The same logic should work for the other macro variables that influence the impact of belief on participation. The difference between the abortion attitudes of church-attenders and non-attenders should *increase*

- in ex-communists countries (where church networks are of minimal value, so belief plays a stronger role in attendance decisions);
- as religious pluralism increases (because strong religious markets create a stronger link between belief and attendance);
- as legal rights and protections increase (because such protections allow individuals to base participation decisions on beliefs).

By contrast, the difference between the abortion attitudes of church-attenders and non-attenders should *decrease*

- as corruption increases (because in corrupt systems where personal contacts are most valuable, individuals attend church in part for the value of networks);
- when there is an official state religion (because, in theory, though not in the

empirical results above, state religion decreases the link between belief and attendance).

In addition, if religious participation by believers is driven in part by a negative reaction to liberal trends in society, the differences between attenders and non-attenders should be greatest in systems where abortion policy is most liberal. I test this last idea using a dummy variable that takes the value 1 if a country allows "abortion on demand" (the most liberal form of abortion law).[5]

Table 2 presents an OLS test of these arguments. The unit of analysis is a country, and the dependent variable is the mean abortion attitudes of church-attenders *minus* the mean abortion attitudes of non-attenders (as in Figure 11). Column 1 includes all of the macro variables described above, along with the controls for religious proportions. The results are supportive of the arguments above for each of the variables except the "Law and Order" and the religious market variables. In countries with a liberal abortion law, for example, the difference between the attitudes of church attenders and non-attenders is .50 greater than in countries without a liberal abortion law, and the difference between the attitudes of attenders and non-attenders is .60 greater in excommunist countries than in other countries.

Columns 2 and 3 explore the robustness of the column 1 results to alternative specifications. In column 1, the religious market variables are no where near statistical significance. Column 2 therefore re-estimates the model without these variables. The overall fit of the model is unaffected, as are the results for the macro variables of interest. In columns 1 and 2, none of the religious proportions variables approach statistical significance, indicating that the proportion of Catholics (relative to the other three religions) is unrelated to the differences in abortion attitudes between church attenders and non-attenders. Column 3 re-estimates the model without the religious proportion variables. Again, the overall fit of the model is essentially the

[5] The data are published by the United Nations. See www.un.org/esa/population/publications/abt/fabttoc.htm

same, as are the results for the other variable. In this specification, however, the coefficient on "Law and Order" is significant and in the expected direction.

VIII. Conclusion

This paper has argued that across a wide range of countries, there is considerable variation in the association between religious belief and religious participation. There are believers who attend church, of course, but also believers who do not. And in some places, many attenders are not believers. By drawing on existing arguments about economic modernization and the organization of "religious economies," and by developing new arguments about networks and political development, I have argued that these cross-national differences in the relationship between belief and participation should be systematically related to certain macro factors that vary across countries. Using survey data and a two-stage estimation strategy, test results indicate that the association between belief and practice is highest in countries that are rich, have strong legal systems, are ex-communist, are not corrupt, and that have high levels of religious pluralism.

I have also argued that these same factors that tighten the association between belief and participation should also be associated with sharper differences on moral issues between religious participants and non-participants. When individuals attend religious services for reasons unrelated to faith, church attenders should represent a more general cross-section of the population than when individuals attend church primarily because of their faith. In testing this possibility using the abortion issue, I find that church attenders become relatively more conservative than non-attenders as GDP increases, corruption declines, and abortion policy becomes more liberal. I also find these differences to be sharper in countries that are excommunist.

These results together suggest a new issue to consider in studies of how religion shapes political and economic outcomes. Cross-national differences in "religiosity" might be associated with differences not only in individual attitudes or behavior, but also in differences in macro outputs, such as growth or corruption or welfare effort. To understand whether and how religion

affects such differences, it is important to characterize the relationship between belief and participation. One would expect, for example, that the role of churches in influencing social policy might be quite different if there is a tight relationship between belief and participation, as opposed to a weak one. In the first case, we might expect churches to be able to act like other organized interest groups with homogenous memberships, whereas in the second case, it cannot because the "base" is too diverse. Indeed, there may be a tradeoff between the proportion of the population that is church-going and the ability of churches to influence policy. If religious participation is widespread, religious participants are more or less a cross-section of society, and thus cannot really act like a special interest group. As the proportion gets smaller, churches should have more cohesive constituencies, and thus be more able to enter politics in a partisan matter. Whether, as a smaller "group," they can do so effectively depends, of course, on many factors that influence their ability to become pivotal on important issues. But it is at least worth contemplating whether secularization and a rise in the influences of religious organizations can occur simultaneously. This is a question we must leave for future research.

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Table 1. Second stage estimates of the relationship between religious belief and church attendance

	(1) Believe hell	(2) Believe heaven	(3) God Important	(4) Very spiritual	(5) Believe hell	(6) Very spiritual
GDP (ln)	0.16+ (0.09)	0.14+ (0.08)	0.22* (0.09)	0.25** (0.10)	--	--
Ex-communist	0.48** (0.13)	0.39** (0.11)	0.35** (0.13)	0.47** (0.14)	0.42** (0.13)	0.40** (0.14)
Corruption	-0.11* (0.05)	-0.04 (0.04)	-0.07 (0.06)	-0.13* (0.06)	-0.14** (0.05)	-0.18** (0.06)
State religion (1970)	-0.04 (0.14)	-0.01 (0.12)	-0.02 (0.15)	0.07 (0.16)	-0.05 (0.15)	0.07 (0.17)
Religious pluralism	0.18 (0.34)	0.47 (0.28)	0.70* (0.36)	0.84* (0.38)	0.09 (0.35)	0.70+ (0.40)
Law and Order	0.05 (0.05)	0.07+ (0.04)	0.05 (0.06)	0.07 (0.06)	0.09* (0.05)	0.14** (0.05)
Pct. Orthodox	-0.21 (0.24)	-0.34+ (0.19)	-0.14 (0.24)	-0.12 (0.25)	-0.22 (0.24)	-0.12 (0.27)
Pct. Protestants	0.07 (0.24)	-0.25 (0.21)	0.33 (0.26)	0.34 (0.27)	0.03 (0.25)	0.27 (0.28)
Pct. Muslims	1.14** (0.30)	1.08** (0.25)	0.25 (0.29)	0.69* (0.30)	1.03** (0.30)	0.52 (0.32)
Constant	-0.71** (0.89)	-0.73 (0.76)	-1.48 (0.92)	-1.69 (0.95)	0.76* (0.39)	0.60 (0.44)
N	51	51	51	51	52	51
Adj. R^2	.49	.51	.51	.63	.46	.58

Note: The dependent variable is the coefficient on the relevant "belief" variable in the first-stage regressions. Details about estimation on in the text. Standard errors are in parentheses. ** p-value<.01, *pvalue<.05, + pvalue<.10.

Table 2. Differences between abortion attitudes of weekly church-attenders and others

	(1)	(2)	(3)
Liberal abortion policy	0.50* (0.24)	0.45* (0.20)	0.37* (0.18)
GDP (ln)	0.53** (0.15)	0.57** (0.12)	0.58** (0.12)
Ex-communist	0.60** (0.21)	0.64** (0.20)	0.54** (0.20)
Corruption	-0.15+ (0.08)	-0.13+ (0.07)	-0.16** (0.06)
State religion (1970)	-0.07 (0.20)	--	--
Religious pluralism	-0.39 (0.59)	--	--
Law and Order	0.11 (0.09)	0.10 (0.09)	0.15* (0.07)
Pct. Orthodox	-0.57 (0.39)	-0.56 (0.38)	--
Pct. Protestants	0.37 (0.46)	0.38 (0.46)	--
Pct. Catholics	-0.46 (0.48)	-0.28 (0.41)	--
Constant	-3.64* (1.46)	-4.16** (1.10)	-4.29 (1.03)
N	52	52	52
Adj. R^2	.79	.79	.77

Note. The dependent variable is the mean abortion attitude of non-attenders minus the mean abortion attitude of attenders. Larger values of the dependent variable indicate that non-attenders are more liberal in their attitudes. Standard errors from the OLS estimates are given in parentheses.

Figure 1. Religious belief and participation in existing theories

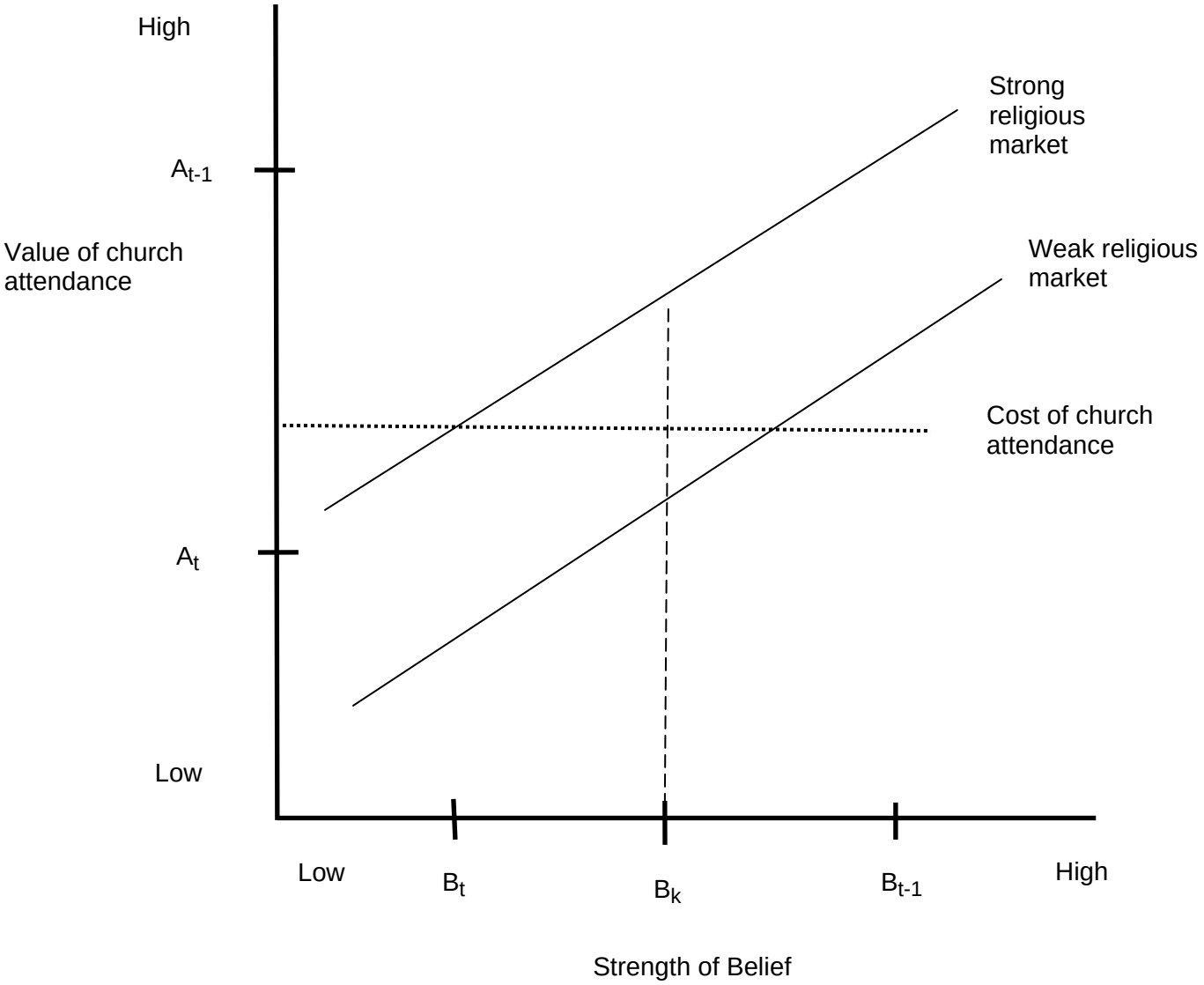


Figure 2. Different possible relationships between religious belief and church attendance

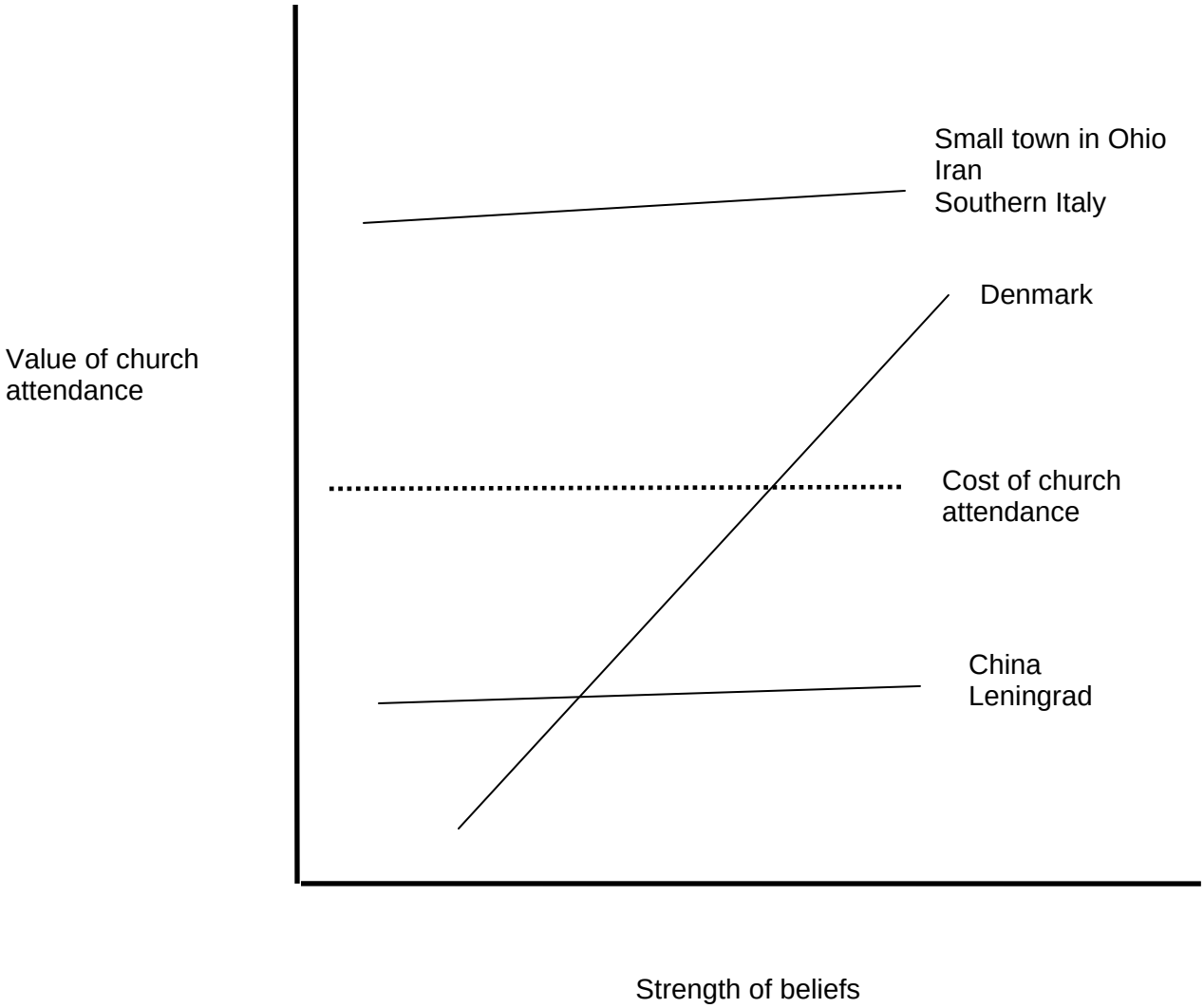


Figure 3. Religiosity across countries

(Country averages)

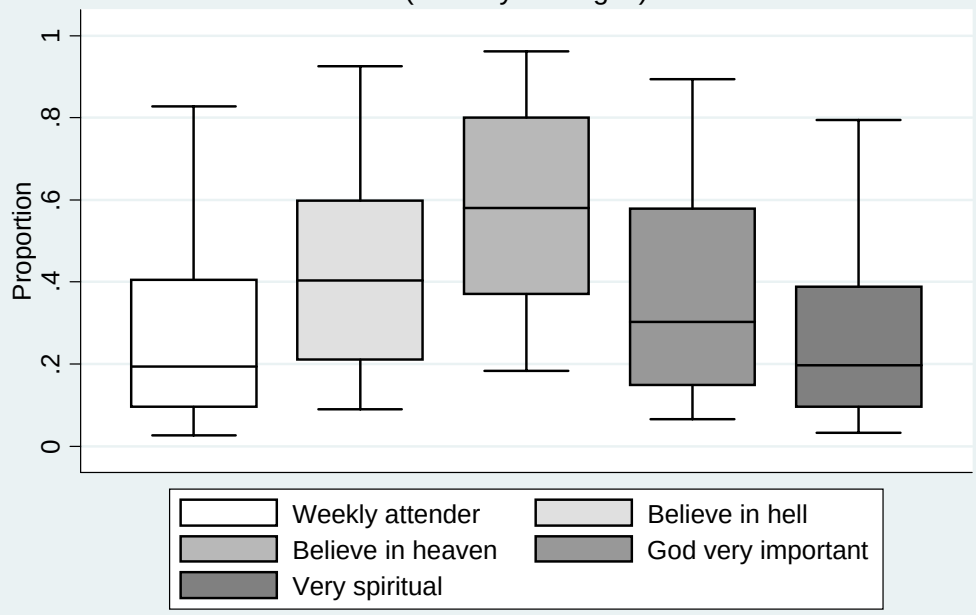


Figure 4. Proportion of weekly church-attenders who are non-believers

(Country averages)

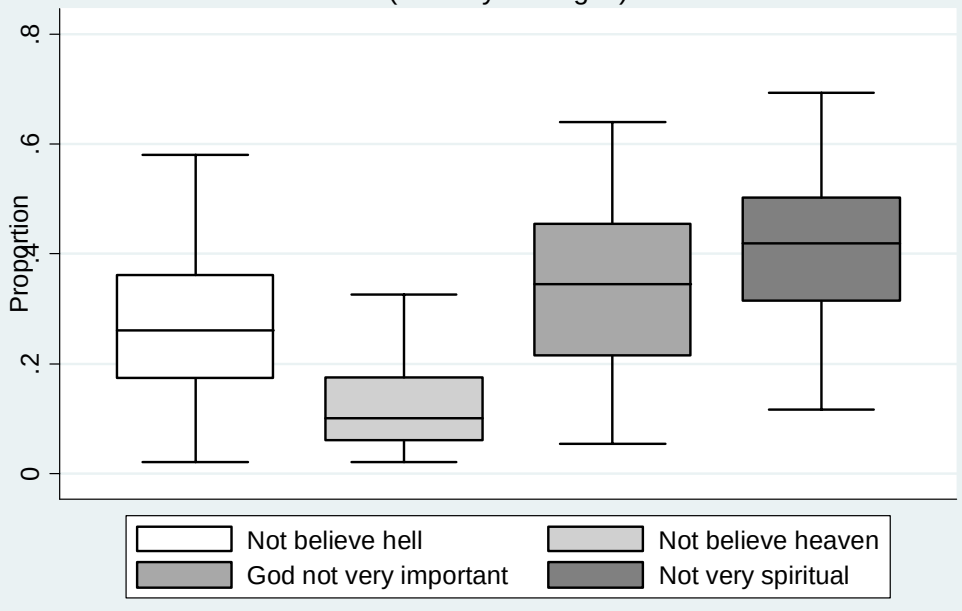


Figure 5. Proportion of believers who are non-attenders

(Country averages)

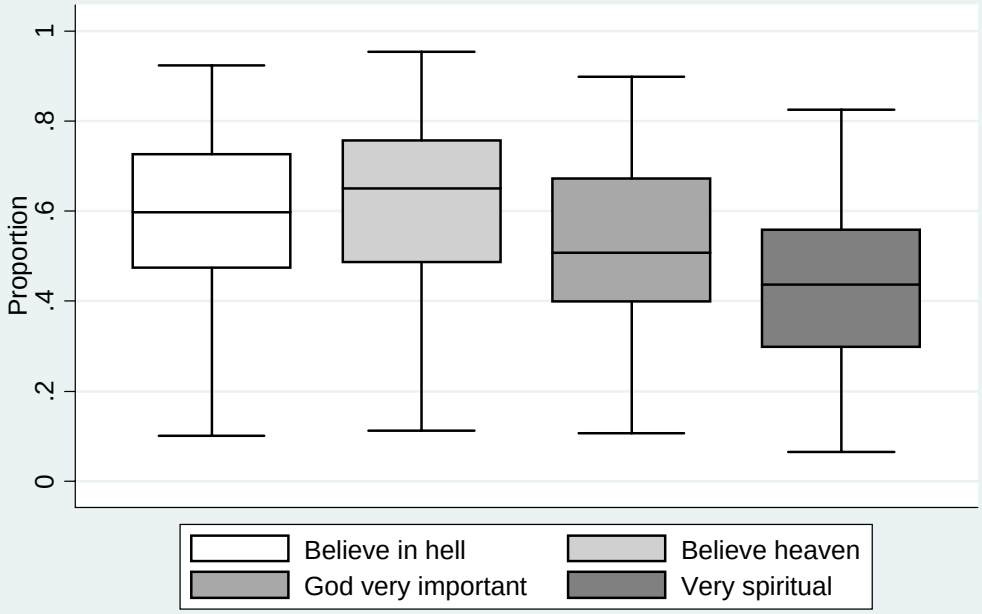


Figure 6. Law/order and the impact of belief on practice

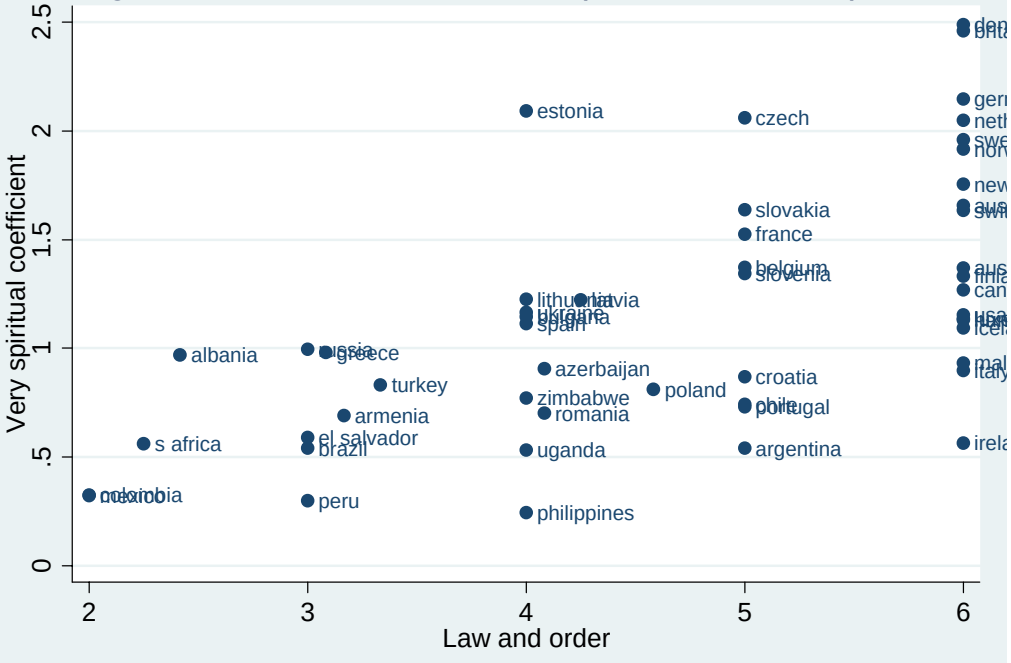


Figure 7. GDP, belief and participation

Less educated female

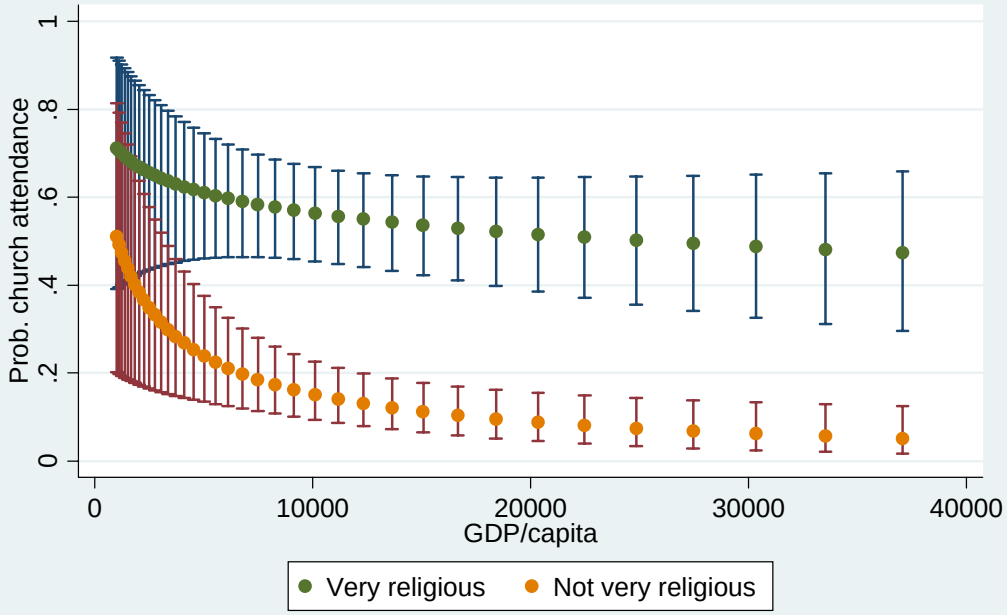


Figure 8. GDP, belief and participation

Highly educated female

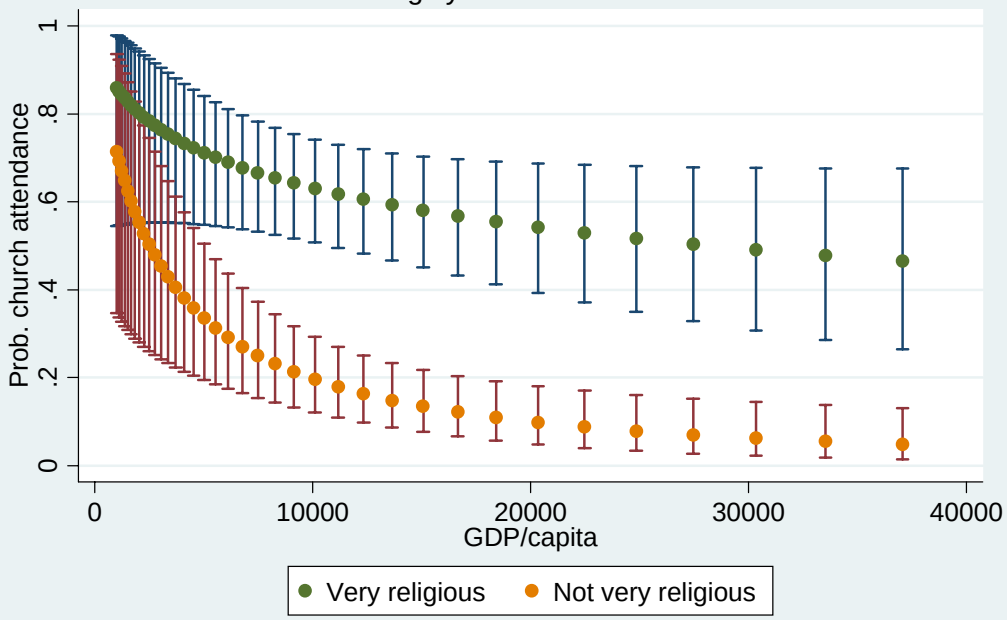


Figure 9. Corruption, belief and participation

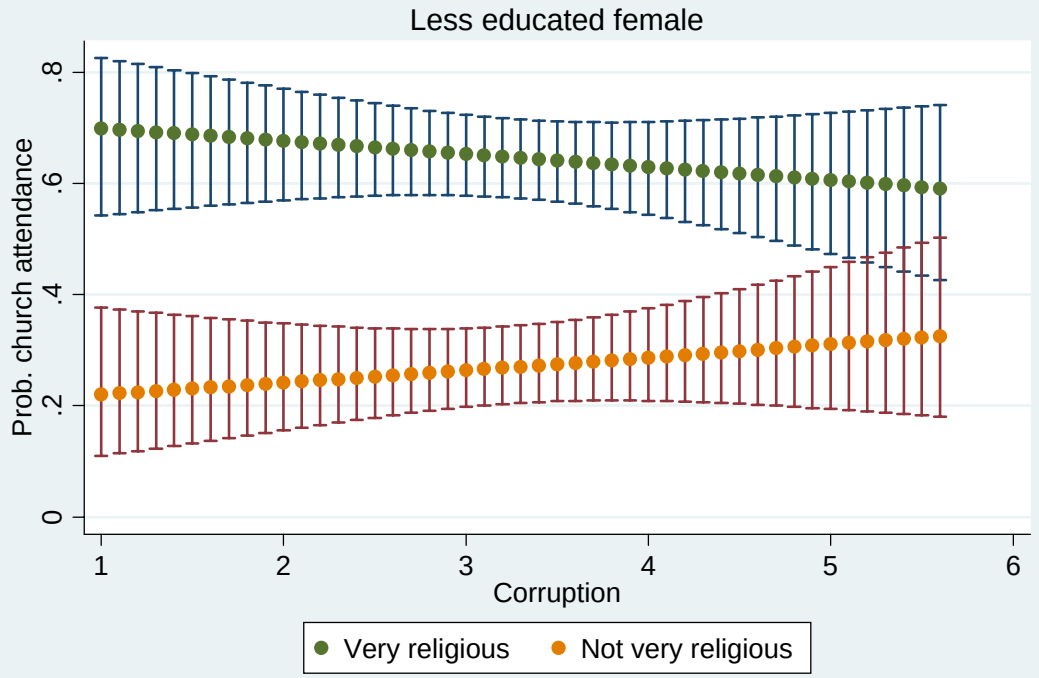
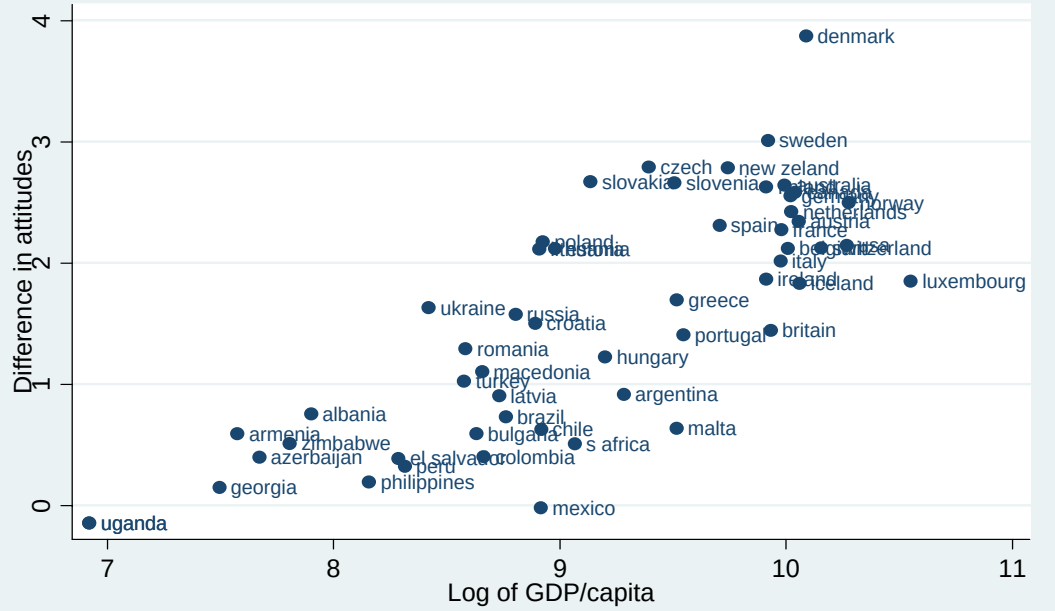


Figure 10. Differences in abortion attitudes of church attenders and non-attenders



Note: Attenders have increasingly conservative attitudes relative to non-attenders as values on y-axis increase.