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Serving two masters: The effect of state religion on fiscal capacity

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Abstract

In this paper, we examine the effect of having a state religion on fiscal capacity. Our analysis extends the legitimization argument, which postulates that state religion legitimizes the revenue-raising motives of the state. We estimate (i) a simple OLS model, and (ii) potential outcome models, to model the selection to observables, using both recent and historical data. Our empirical results suggest that countries with a state religion have lower levels of fiscal capacity. We then build a simple theoretical model, consistent with our empirical results, and show that countries with a state religion face lower incentives to invest in fiscal capacity as they are able to raise revenue through the legitimizing power of the church.

Keywords: Fiscal Capacity, State Religion

JEL Classification: Z12, H20, E62,

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“No man can serve two masters: for either he will hate the one and love the other; or else he will hold to the one and despise the other. You cannot serve God and mammon.” Matthew, 6:24, King James Version (2006).

1. Introduction

The role of religion on economic performance has been considered to be crucial since as early as 1905, according to the work of Weber (e.g., Landes 1999; Weber 2013). The issue of the church-state relationship, on the other hand, has received less attention in the economic literature. Yet, the state and the church are “two of the most powerful and longest lasting of human institutions” (Monsma and Soper 2008, p. 1). In many instances in the past, state leaders acted as representatives of God in order to gain support from their citizenry (see for example the Roman emperors or the Pharaohs in ancient Egypt). Thus, one should expect that the state-church relationship will affect the development of economic institutions. Here, our focus is on the ability of the state to raise revenue, which is typically called fiscal capacity (Besley and Persson 2011).

The literature, when examining the effect of state religion on revenues, has so far developed the so-called legitimization argument. According to this view, rulers are able to extract more revenues from the population when a state religion exists, as the church legitimizes the acts of the state (Auriol and Platteau 2017; Greif and Tadelis 2010; Vaubel 2017; Coşgel et al. 2018). As religious leaders have a greater influence on the population, they are able to incentivize individuals to respect the ruler, pay their tax obligations, and threaten to punish those who do not.¹ Moreover, as a corollary to the above argument, when the state faces increasing needs for revenues, it will turn to

¹ Following the logic of the legitimization effect, several authors have pointed out that a state-run religion discourages revolutions and allows a better assignment of property rights (Mann 1986; Greif 2006).

the legitimizing force of the state-run church to increase compliance or even increase tax rates without spurring discontent. If this rationale was correct then countries with a state religion would have less of an incentive to undertake other costly revenue-raising policies, such as investment in improving the fiscal system, i.e., they would invest less in fiscal capacity. Thus, according to this argument, in the long run, the legitimization effect would adversely affect fiscal institutions.

Our argument is motivated by several historical accounts. For example, in 1162 England, King Henry II appointed his friend Thomas Becket as Archbishop of Canterbury, in an attempt to gain control over the church and also consolidate the state's power. However, after Becket became archbishop, he did not behave according to Henry's wishes; instead, he came into conflict with Henry over ecclesiastical privileges and the church's rents, which Henry wanted to restrict. And even though the Becket controversy ended in 1170 with Becket being murdered by four King's knights, during the period of conflict with the church, Henry undertook a series of important fiscal and institutional reforms, which enhanced the state's revenue-raising ability (White 2000). While other events, like the war with France, may have affected the decision to invest in fiscal capacity,² one cannot rule out the effect of the conflict between the state and the church. If Henry had secured increased revenues through his control over the church, his incentives to invest in fiscal capacity would have been different.

The case of King Otto in Greece provides similar conclusions, but in a country with a state religion. To raise revenues, to repay early Greece's debt to France, King Otto proclaimed the autocephaly of the Greek Orthodox Church. This allowed him to declare all uninhabited monasteries as government property and, at the same time, tax all inhabited ones with a tax equal to 1/10 of their

² This is consistent with the standard view held in the literature (Besley and Persson 2013) that external conflicts have a strong positive impact on fiscal capacity.

total production (Mamoukas 1859). Fiscal reforms, however, were not implemented. In other words, the existence of state religion gave Otto the opportunity to use control over the church and its rents directly, instead of investing in fiscal capacity.

The present paper is related to a number of studies that examine the determinants of fiscal capacity (Thies 2004; Besley and Persson 2008, 2011; Cardenas 2010; Dincecco and Prado 2012). A common finding in this literature is that an external war increases fiscal capacity. As public defense is a public good that people value highly during wartime, the government follows the wishes of the citizenry and uses investment in fiscal capacity to finance it. In contrast, an internal war has the opposite effect. As the leader faces uncertainty over his tenure, he has no incentive to invest in fiscal capacity. Our argument, then, is related to the above studies as it considers the effect of a different type of competition, that of the church and the state.

As a first step, and motivated by the two historical examples above, we estimate the effect of having a state religion on fiscal capacity in a standard OLS model using data for 143 countries over the 2000–2015 period. The main dependent variables are the fiscal capacity measures, as computed in the relevant literature (e.g., Besley and Persson 2011). To determine the existence of state religion we use the data of Barrett et al. (2001).

Even though these findings support our main argument, i.e., having a state religion significantly reduces fiscal capacity, out of concern that endogeneity might bias our findings, we also employ our data in a potential outcome framework. Using an inverse probability weighting scheme, we examine the effect of having a state religion in 2000, on the average 2000–2015 fiscal capacity. The findings from this latter model are qualitatively similar to the results of the OLS model.

Then, to examine our hypothesis in a historical context, we extend our data over the period from 1900 to 2010 by employing a dynamic inverse probability model as in Acemoglu et al. (2019).³ Our findings suggest that if a state religion is established at time zero, this will have a negative effect on fiscal capacity 10–16 years later. This effect is estimated to be equivalent to a 1/3 standard deviation decrease in the fiscal capacity variables. Overall, all empirical models give support to the idea that there is an adverse effect on fiscal capacity from the existence of a state religion.

To put the empirical evidence in a theoretical context, we build a simple model of state and church competition. This model helps us provide a theoretical underpinning of the empirical relationship. Specifically, we examine i) a case where a state religion exists, and ii), a case where church and state behave independently. We model church as a rent maximizer, which tries to maximize the number of followers.⁴ Similarly, we assume that the state maximizes the rents from taxation. When we compare the fiscal capacity investment in these two cases, our model shows that there are two opposing effects: the first is the centralization effect, which comes up as all choices in the state religion case are made by one agent, i.e., the state. In contrast to this is the legitimization effect; the monopoly state uses the power of the church to increase its revenues instead of investing in fiscal capacity. This latter effect suggests that fiscal capacity is lower in the presence of a state

³ The historical data for fiscal capacity are taken from Mitchell (2007). To determine the existence of state religion, we build a novel variable, which is based on the work of Barrett et al. (2001). Since data from Barrett for the existence of state religion are only available for three years (i.e., 1900, 1970, and 2000) we extend this variable to a wider range of years, by examining the religious provisions in each state's constitution, as presented in the reports of the International Center for Law and Religious Studies (Martines and Durham 2015). On the downside, using a more extended time series dataset results in a drop of our cross-sectional sample to only 44 countries.

⁴ This is the view held by a vast literature (see for example Axarloglou et al. 2012; Barros and Garoupa 2002; Ekelund et al. 2008; Ferrero 2002; Iannaccone 1998).

religion. What the theoretical model then predicts is that if the legitimization effect is high, having a state religion will have an adverse effect on fiscal capacity.

The rest of the paper is structured as follows: In the following section, we present our data and empirical methodology. Section 3 provides the empirical results. In section 5 we build a simple theoretical model which is consistent with our empirical results, while section 6 concludes.

2. Data and Empirical Methodology

Our main dependent variable is fiscal capacity, as defined in Besley and Persson (2011), i.e., the administrative infrastructure required to impose a certain tax on a certain tax base. To this end, we use the standard Besley and Persson (2011) measures of fiscal capacity, which are available for a large sample of countries and for an extended number of years. These measures are constructed under the assumption that countries with low levels of fiscal capacity tend to rely more on indirect taxes (see also Rodrik 1995; Adam 2009). In contrast, high fiscal capacity countries collect more revenues by using the (less distortionary) direct taxes. The major advantage of these measures is that they can be computed both for more recent years and, hence, serve as our starting points and provide evidence of robustness of our main results, but they are also available for the 1900–2010 period, allowing us to examine the historical effect of abolishing state religion on fiscal capacity.

Following the above rationale, we use the data from the International Center for Tax and Development (ICTD/UNU-WIDER, 2018). This dataset meticulously combines data from several major international databases, as well as drawing on data compiled from all available International Monetary Fund (IMF) Article IV reports. To estimate long-run measures of fiscal capacity, which are not affected by short-run/annual variations in the revenue data, we compute the average of the variables for the period 2000–2015. Our main variables of interest are: i) total tax revenues as a share

of GDP (*Total Taxes*), and ii) income tax revenues as a percentage of the GDP (*Taxes on Income*). We also employ iii) the ratio of income tax revenues to indirect tax revenues (*Income/Indirect*), iv) the one minus trade tax revenues (*Trade Taxes*) as a share of total tax revenues, and v) the one minus indirect tax revenues as a share of total tax revenues (*Indirect Taxes*).⁵

Our main variable of interest is a dummy variable for the existence of a state religion in 2000, as taken from the *de facto* classification of Barrett et al. (2001). This definition of state religion incorporates those cases where the state either identifies itself with a certain religion, or proclaims itself as religious, or recognizes or favors a church or an official religion or a national church or an established church (for the complete definition see Barrett 1982, p. 96). Following Barro and McCleary (2005), we classify a country as having a state religion only when Barrett et al. (2001) classify a country as religious and further associate it with a particular religion.

Of course, one might argue that on the basis of this rather broad definition we cannot decide whether the state and the church are integrated or not. However, any general categorization may be equally problematic, especially when different religions have distinct organizational structures. Hence, instead of implementing our own criteria, we use the criteria employed in existing qualitative studies. Furthermore, we examine the robustness of our results under alternative definitions of the main variable. Thus, in the robustness tests we have also employed a state religion dummy variable constructed by Fox (2019). Moreover, since state religion appears to be present in countries with a single dominant religion, we have constructed a dummy variable for a state religion which takes a value of 1 when there is high religious concentration within the country.⁶ Even though we

⁵ We use the one minus trade and indirect tax revenues so as to have a measure of fiscal capacity. In this way, higher values of these variables imply higher levels of fiscal capacity and vice versa.

⁶ i.e., the Herfindahl index of all main religious groups is above 8,500.

acknowledge that both these definitions have similar drawbacks to our main measure, the fact that our results do not rely on the particular measure of state religion indicates that the underlying relationship does not depend on a particular definition of state religion.

The starting point of our econometric analysis is a simple OLS model, in the spirit of Besley and Persson (2008, 2011). The dependent variable is the level of fiscal capacity captured by the five proxies of fiscal capacity discussed above as an average for the period 2000–2015, while the main independent variable is a dummy variable for the existence of a state religion in 2000. To correctly specify our model we use the same control variables as in Besley and Persson (2008, 2011), which are summarized in table 1.⁷

INSERT TABLE 1 HERE

Even though the simple cross section OLS model can be very helpful to uncover the relationship between state religion and fiscal capacity, it fails to take into account an inherent selection problem: the simple legitimization argument suggests that countries with a low level of fiscal capacity will choose to have a state religion as a way of increasing their revenues. Therefore, it might be the case that the legitimization effect is present but has no effect on the fiscal capacity. Similarly, countries with high levels of GDP per capita experience greater levels of fiscal capacity and following the secularization argument (Iannaccone 1991) they may opt to have an independent church. In other words, having a state religion is not randomly determined.

⁷ These are: i) the incidence of democracy (*Democracy up to 1975*), more democratic regimes are expected to have higher levels of investment in fiscal capacity (Besley and Persson 2007), ii) the incidence of parliamentary democracy (*Parliamentary democracy up to 1975*), as in parliamentary democracies the existence of party competition within government leads to more government spending (Persson and Tabellini 2004), iii) the incidence of war (*External Conflict up to 1975*), since wars induce governments to find more revenues to finance them (Dincecco and Prado 2012), iv) indicators of *Legal Origins*, since legal origins are correlated with the institutional environment of a country, hence they affect investments in tax systems (Besley and Persson 2008, 2011), and v) regional dummies to capture region-specific effects.

To solve the selection into treatment problem, we use a potential outcomes framework. As a first step we use the determinants of the existence of state religion in 2000, as in Barro and McCleary (2005), to estimate the propensity to have a state religion. These determinants are the share of the adherents of the main religion to the adherents of the secondary religion (*main/secondary religious shares*),⁸ (log of) population and (log of) population square,⁹ GDP per capita,¹⁰ two dummy variables, taking the value of 1 if the country was communist in 2000 and in 1985, respectively,¹¹ and an indicator for constraints on the chief executive variable (*Executive Constraints*).¹²

Then, we employ an inverse probability weighting model, to create pseudo-randomization, where the treatment, i.e., the existence of a state religion, is independent of the measured confounders. This method estimates the average difference in fiscal capacity between countries with and without a state religion, by placing higher weights on the outcome of countries that are less likely to have a state religion. And if the selection of treatment is properly modeled, then we are able to estimate the causal effect of having a state religion on fiscal capacity.¹³

⁸ Countries where more adherents are concentrated to one denomination are more likely to have state religions

⁹ As population increases, a state religion can survive more easily. However, after a threshold level of population further growth in population increases religion-adherence homogeneity, attracting more religious denominations and reducing the probability of having a state religion.

¹⁰ We expect decreases in religious participation as GDP increases (Iannaccone 1991; Opfinger 2011). On the other hand, richer nations may spend more money on religious activities, thus creating an ambiguous effect.

¹¹ Communist countries are less likely to establish state religions (Anderson 1994)

¹² The difference with the cross section OLS model and the cross section inverse probability model is that the latter, instead of modeling fiscal capacity, as the OLS does, it models the probability of having a state religion. This is an important issue, as the literature on fiscal capacity has been rather inconclusive on the determinants of fiscal capacity.

¹³ The inverse probability model has several advantages. First, as long as the selection to state religion is properly modeled, as in Barro and McCleary (2005), we do not need to have a proper model for fiscal capacity, which appears to be an issue of controversy among researchers. Second, we do not need to rely on the selection of a valid instrument, which by construction is difficult to find. For example, historical variables, might be inappropriate as fiscal capacity takes time to be created, and will thus affect fiscal capacity through other channels (besides state religion) as well. Similarly, variables that are related to religion are also correlated with cultural traits within the country, and thus affect fiscal capacity through other channels as

To find further evidence in favor of our main hypothesis, we next turn to historical data. Specifically, we extend our sample using the data of Mitchell (2007), which cover the 1900–2010 period and construct our two main variables as in the cross section model, (i) one minus the share of custom taxes to total taxes (*Custom Taxes*), and (ii) the share of direct taxes to total taxes (*Direct Taxes*) over the 1900–2010 period. We include all available data and our sample then contains a total of 44 countries.¹⁴

For the state religion variable, in our historical dataset, we also use the data of Barrett et al. (2001). Unfortunately, these data are only available for three specific years, i.e., 1900, 1970, and 2000. To determine the year in which there was a change in the status of the country (if any) from state religion to a secular state (or vice versa), we use the reports of the International Center for Law and Religious Studies (Martines and Durham 2015). This allows us to determine whether during the period from 1900 to 2000 there was a change in the provisions in each country’s constitution regarding the state-church relationships. Consequently, we are able to determine the exact year of the changes in the dummy variable provided by Barrett et al. (2001), when there was a change, or to determine if indeed there was no change in the associated country. For the 44 countries in our sample, there were 15 cases where state religion was disestablished and six cases where state religion was established.¹⁵

well. In the absence of instruments, a potential outcomes model might be the only solution to estimate a causal effect. Third, the robustness of the inverse probability weighting model can be evaluated through the application of a double robust model, which uses both the results of the inverse probability weighting model and the standard regression model, and for consistent requires only one of these models to be correctly specified. Finally, in practical terms, it allows for a direct comparison with the panel data dynamic model used, we also apply in our analysis.

¹⁴ The country sample for all cases is listed in the appendix.

¹⁵ Even though we are constrained by the unavailability of the data for fiscal capacity to only 44 countries, an additional advantage of using the inverse probability weighting model is that it is not affected by the low number of treatments, in contrast to other potential outcome models, such as the regression adjustment method or the propensity score matching.

The final panel dataset can then be estimated with a semi-parametric inverse probability weighting method as in Angrist et al. (2018), Acemoglu et al. (2019), and Adam and Tsarsitalidou (2019). This method allows us to model the counterfactual scenario, i.e., the path of fiscal capacity when there is no change in the constitutional status of the church. Following this analysis, any deviation from the counterfactual scenario is attributed to the treatment, i.e., change in the state-church relationship.

This method fits to our setting for several reasons: First, it does not rely on the choice of variables to model the path of fiscal capacity, which is modeled by using only the lagged values of the dependent variable and time effects. Second, it examines the effect over time, allowing us to uncover the changes in the outcome variable, i.e., fiscal capacity, for a number of years after a “random” treatment. Furthermore, by estimating changes in fiscal capacity, country fixed effects, which capture cultural, historical, and institutional aspects of fiscal capacity, are wiped out. Finally, the inverse probability weighting model does not require the number of treated units to be equal to the number of non-treated units. This is an important feature, as the number of treatments, i.e., countries that established and disestablished state religion, are six and 15, respectively. Therefore, we can estimate the Average Treatment Effect on the Treated (ATET) of state religion on fiscal capacity, for $t=-5,-4,..25$, with $t=0$ being the year when a state religion was established or disestablished.

Specifically, once we control for the time and country effects, lagged values of state religion and fiscal capacity dynamics, changes in *Fiscal Capacity* are random.¹⁶ Then, any difference in the fiscal capacity between observations/country-year pairs that have experienced state religion and that have not experienced state religion can be attributed to the effect of state religion. Using a probit

¹⁶ See also Angrist and Kuersteiner (2011) for the technical details.

model, we first estimate the propensity to (dis)establish a state religion at t conditional of not having (having) a state religion in $t-1$ using year effects and lags of *Fiscal Capacity* as control variables. Then, the effect of *State Religion* on the change in fiscal capacity is the weighted average of the changes in fiscal capacity, with weights given by the inverse of the propensity score, if the country establishes a state religion at time t , and minus the inverse of one minus the propensity score, if the country does not establish a state religion. In this manner, the effect of a state religion is a weighted average of the changes across observations. However, country-year pairs that, according to their pre-state religion dynamics, are expected to have a state religion, receive a lower weighting. In contrast, country-year pairs that do not experience adverse fiscal capacity dynamics prior to $t=0$ receive a higher weighting.¹⁷

The results of all three associated empirical methods are presented in the following section.

3. Results

As a first step, we estimate a simple cross-sectional OLS model. Each column in table 2 corresponds to a different measure of fiscal capacity. The main variable of interest is the dummy variable for the existence of state religion.

INSERT TABLE 2 HERE

Our findings suggest that the existence of a state religion has a negative effect on fiscal capacity. As we can see, the existence of a state religion reduces *Total Taxes* by 3.77 percent of GDP

¹⁷ To visually inspect whether the overlap assumption holds, in figures A1 and A2 in the Appendix, we present the smoothed, using a standard Epanechnikov kernel, densities of the estimated propensities between the two groups. As the reader can verify, there is considerable overlap among treated and control propensities. More importantly the control observations cover the support for all treated observations. This provides support for the required overlap assumption and gives suggestive evidence in favor of our empirical strategy. For more details about the assumptions used to estimate the inverse probability weighting model, see Imbens and Wooldridge (2009) and Angrist and Pischke (2009).

(about 1/2 of standard deviation). This result is statistically significant at the 1 percent level. Similarly, countries with a state religion have, on average, 1.25 percent lower *Income Taxes*, which is approximately 1/3 of standard deviation in the corresponding variable. The corresponding estimated coefficient is -18.23 percent and significant at the 10 percent level of statistical significance when we use as an dependent variable *Income/Indirect Taxes* (1/10 of standard deviation). On the other hand, we find that trade taxes are higher in countries with state religion, as the effect on the variable *Trade Taxes* is equal to -6.77 percent, which is roughly equivalent to a 1/3 standard deviation of the latter variable in our sample. A similar effect is predicted when we use the variable *Indirect Taxes*.

Regarding the other controls, we find that the effect of the external conflict has the expected sign, however, is statistically significant only when we proxy fiscal capacity only on columns (1) and (5). The effect of the existence of parliamentary democracy in 1975 is negative but not statistically significant in every column of table 1 except for column (1) where we use total taxes. On the other hand, the effect of democracy is positive and statistically significant, supporting the findings of the existing literature. Also, parliamentary democracy is positive and statistically significant in the first two columns but changes sign and loses significance in the last three. Finally, legal origins have a similar effect on fiscal capacity as in Besley and Persson (2008).

The econometric problem with the above analysis is that state religion is not randomly assigned across countries. As we argued in the previous section, fiscal capacity may affect the decision to adopt a state religion. For this reason, we use a potential outcomes framework to create randomization across countries. Thus, in table 3 we estimate an inverse probability weighting model. In each column of all these tables, the dependent variable is a different proxy of fiscal capacity, as in table 2.

INSERT TABLE 3 HERE

The upper panel indicates the estimated average treatment effects on the treated (ATET). On the bottom panel, we present the results from the first-stage probit model. For all proxies of fiscal capacity, the ATET is negative and statistically significant. In other words, countries with a state religion experience lower levels of fiscal capacity, a result that verifies the findings of the OLS model of table 2.

Interestingly, the estimated effects are quantitatively similar to those obtained with the OLS specification.

Regarding the control variables in the probit model, our results verify the existing findings of the literature. The effect of communism is negative and statistically significant for countries that were under a communist regime in 2000. Similarly, and in contrast to the secularization hypothesis, more developed countries appear to have a higher probability of adopting a state religion, supporting the idea that in developed countries people contribute more to religious denominations. Also, *population* and *population squared* and the ratio of the adherents of *main/secondary* religion have the expected signs. Finally, an increase in *Executive Constraints* leads to a lower probability of having a state religion. This is consistent with the view that more liberal political regimes are correlated with the absence of state religions.¹⁸ We should also note that the LR test of the probit model never rejects the underlying first-stage results. Moreover, the overidentification test for covariate balancing never

¹⁸ As a further robustness, in the appendix we present the results when we use alternative potential outcome models. Specifically, we present the results with a regression adjustment model, which models fiscal capacity with a linear regression model, and estimates the ATET as the difference in the predicted fiscal capacity between countries with and without state religion. We also present the results of a Doubly Robust model, which performs an Inverse Probability Weighting on the regression adjustment model. The benefit of this model is that it requires only one of the regression adjustment and the Inverse Probability Weighting models to be correctly specified. As the reader can easily verify, all three methods lead to the same results.

rejects the null, indicating that covariates are balanced, suggesting that the first-stage model is properly modeled.

In the following table, we examine the robustness of our main results. To save space and to focus on our main results, in this table we only present the ATET of state religion on fiscal capacity measures, as in the previous tables.¹⁹

INSERT TABLE 4 HERE

As a first test, in column (1) we introduce the religious shares of the four main faiths to make sure that they are not the types of religion that affect both the probability of having a state religion and the quality of fiscal institutions. For example, one may argue that state religion is most prevalent in Islamic countries. At the same time, in Islamic countries, there are forms of religious-specific taxes, e.g., the Zakat tax, which is a tax obligation for all Muslims with a certain criteria of wealth, computed as a fixed share of their agricultural output or of their other assets. The revenues of Zakat are used to finance governance, defense, etc. Kuran (2003, 2019). Our results verify that this is not the case: irrespective of the measure of fiscal capacity, our results remain unchanged after the inclusion of the religious shares in the first-stage probit regression.

In columns (2) and (3), we exclude the 5 percent richest and poorest countries, in terms of real GDP per capita, in our sample, respectively. This way, we make sure that our results are not driven by the high (*resp.* low) income countries, where fiscal capacity is high (*resp.* low). In all instances, our results remain intact.

One issue that is worth examining is the robustness of our results to the definition of a state religion. Even though the definition of Barrett et al. (2001) is quite broad we want to make sure that

¹⁹ The first-stage results are presented in the appendix.

our results are not driven by it. Hence, in columns (4) and (5) we extend the definition of a state religion to cases where even though there is no constitutional or legal provision to classify the country as having a state religion, there is a “monopoly” of a particular religion, in the sense that most adherents follow a particular denomination. To this end, we have computed the Herfindahl index of all main religions and assumed that when this index takes a value above 8,500, then the country is classified as having a state religion. In column (5), to compute the Herfindahl index we use the share of adherents excluding the non-religious group. As the reader can easily verify, our results do not change significantly even in this case.²⁰

In column (6) we present the results if we use an alternative measure of the existence of a state religion. Specifically, we use the data from the Religion and State database (Fox 2019). Following the coding of this dataset, we consider a country to have a state religion if there is a constitutional clause, a law, or the equivalent explicitly stating that a specific religion or specific religions are the official religions of that state. As the results in column (6) verify, our results are not driven by the choice of the state religion variable: in all cases, the results using this latter variable are qualitatively the same. Moreover, the estimated ATET is very close to the one estimated in our main specification.

Finally, in column (7) we perform an additional robustness test. As in many countries there is a dominant religion that might possess a decentralized status (i.e., Islam, Buddhism, Judaism, Hinduism), with no “genuine church” that the state might integrate with, we exclude from our sample the 10 percent of countries with the highest shares of these religions. Except for the two first measures of fiscal capacity, which now lose part of the statistical significance but remain correctly signed, the rest of the results are the same as in the previous columns.

²⁰ The Herfindahl index is computed for the year 2000, the same year that we use for the state religion variable.

Given the results of the cross section models, we proceed further into examining our hypothesis, using historical data. Even though we have data available for only 44 countries, the historical panel data model allows us to control for country and time fixed effects and examine the dynamics of the underlying relationship. After all, any changes in fiscal capacity will eventually take time to materialize. Thus, church-state separation is expected to affect fiscal capacity with a time lag. For these reasons, we employ a dynamic inverse probability weighting model.²¹

In table 5 we present the results using this analysis. For each of the outcome variables, i.e., variables *Custom Taxes* and *Direct Taxes*, we examine changes in the treatment that appear as either an establishment or disestablishment of a state religion.²²

INSERT TABLE 5 HERE

The common result in all four cases is that the effect of a change in the church-state relationship affects fiscal capacity with a significant time lag, i.e., after approximately 13 years. Furthermore, our results indicate that the establishment of a state-religion reduces both measures of fiscal capacity. This negative effect kicks in after approximately 18 years, when fiscal capacity is proxied by *Custom Taxes*, and 13 years, when *Direct Taxes* proxies fiscal capacity. In contrast, when there is a separation of church from the state, there is a positive effect, which is exhibited after 13 years, in the case on *Custom Taxes*, and after 22 years, when we use the variable *Direct Taxes*. Even though the effect on the two variables does not occur after the same number of years, these results

²¹ The Dynamic Inverse Probability Weighting model has the added advantage that it estimates a causal effect in a semi-parametric manner. The control variables are lagged values of the fiscal capacity measure. Furthermore, given the nature of our data, i.e., historical from 1900, it is difficult to find valid instruments so as to derive causal effects.

²² Standard errors are computed using 100 bootstraps.

provide support to the idea that any changes in fiscal capacity take time to occur, and hence can be considered a long-run effect.

4. Theoretical Model

In this section we provide a simple theoretical model, which links the existence of state religion with fiscal capacity. We assume that there is a continuum of agents. Each individual is endowed with one unit of available time and optimally chooses whether to engage in secular or religious activities. Secular individuals earn a wage rate, which for simplicity we normalize to 1. On the other hand, religious individuals derive utility from participating in church activities.

The church, on the other hand, maximizes rents derived from religious participation, by choosing the level of spiritual activities that increase the utility gain of being religious, α . The state has an initial fiscal capacity level, which allows a tax rate up to t_0 to be imposed on a secular individual's income. Following the existing literature, and to model the legitimization argument (Greif and Tadelis 2010; Vaubel 2017; Coşgel et al. 2018; Auriol and Platteau 2017), we assume that the initial tax rate, t_0 , is an increasing function of α only in the state-religion case. In other words, when there is a state religion, individuals will pay more taxes to the state for a given level of fiscal capacity. And the amount of these tax payments is an increasing function of the level of religiosity, α , within the economy (see Coşgel and Miceli 2009 for a similar formulation). This implies that $t_0 = t^* + sT(\alpha)$, where s is equal to 1 when there is a state religion, and zero otherwise, $T'(\alpha) > 0$ and $T''(\alpha) < 0$, and t^* is the initial fiscal capacity which is not related to the church's activities. The state then chooses whether to incur a cost φ to expand its fiscal capacity, in order to maximize its rents. As we assume that the state maximizes revenues, it will choose to exhaust all its fiscal capacity when setting the tax rate t .

We examine two distinct cases: (i) a monopoly-type state religion, where a single state-church entity maximizes joined rents, and (ii) the state and church choose their strategy separately in order to maximize their rents.

Individuals

Each individual makes a binary choice as to whether to use his time endowment in secular activities, i.e., work for a wage, which is normalized to unity, or in religious activities. This binary choice can be illustrated by a utility function of the following form:

$$U_i = \delta[(1 - (t_0 + t)) + V(g)] + (1 - \delta)[\alpha e_i + V(g)] \quad (1)$$

where $\delta = \{0,1\}$ is the choice variable and takes a value of 1 when the individual chooses to work and zero otherwise.²³ Parameter e_i , then, is a preference parameter, that is distributed uniformly in the $[0,1]$ range. A higher e_i implies higher utility gain from religious activities. Hence, the overall utility of a religious individual is determined by an idiosyncratic parameter, e_i , and the spiritual activities of the church α . An individual with a higher preference e_i , for the religious activities will also be more susceptible, for example, to the preaching of the church. Finally, $V(g)$ is the utility that individuals derive from the public good.

²³ Our model then assumes that “No man can serve two masters: for either he will hate the one and love the other; or else he will hold to the one and despise the other. You cannot serve God and mammon.” (Matthew, 6:24, King James Version 2006). Thus, even though individuals do not choose the amount of time to devote to secular and spiritual activities, at the aggregate level there is a secular/religious activity trade-off. This is a simplifying assumption. Alternatively, we could derive the same results had we assumed that we have homogeneous individuals who choose how much time to allocate to the two activities. With the latter interpretation, it is clear that time allocated to religious activities is untaxed, exactly as we have assumed in the above equation. Seror (2018), employs a similar assumption by arguing that clerics have an incentive to prohibit economic activities, in order to exert their control over the popular masses and consolidate their norms and thus acquire higher rents.

Welfare-maximizing individuals will then maximize utility by choosing either $\delta=1$ or $\delta = 0$. This is equivalent to comparing the two terms in (1). Then, an individual i will choose to be religious when:

$$e_i > \frac{1 - t_0 - t}{\alpha}$$

Consequently, we may define the individual that is indifferent between working and supporting the church as the one with:

$$\hat{e} = \frac{1 - t_0 - t}{\alpha} \quad (2)$$

According to the uniform distribution, the share of the working population is then \hat{e} , whereas $1 - \hat{e}$ corresponds to the share of the religious adherents.

Equation (2), thus implies that the share of working individuals is a negative function of fiscal capacity. As $t_0 + t$ increases, individuals substitute work with participation in religious activities. Similarly, an increase in α , which corresponds to more religious activities on behalf of the church, will increase the share of religious individuals.

Church

We model church as a rent-maximizing agent who produces a religious good with a linear on the number of adherents and the production function. Its rents are described by:

$$R^c = 1 - \hat{e} - c\alpha = 1 - \frac{1 - t_0 - t}{\alpha} - c\alpha \quad (3)$$

From a microeconomic perspective, religious denominations act as typical secular firms employing specific strategies, such as barriers to entry, in order to keep their monopoly power (see, for example, Ferrero 2002). According to Iannaccone (1991), people make rational choices about

religious activities and religious suppliers respond to those choices.²⁴ Thus, in our setting an increase in α affects the rents of the church by increasing the number of adherents, at a linear unit cost c .

State

We assume a revenue-maximizing state, which collects taxes in order to finance the production of a fixed amount of public good g with a unit cost. At the same time, the state has the option to incur a costly investment in fiscal capacity t , at a linear cost φ per unit of fiscal capacity. Then, the rents of the state are given by

$$R^s = (t_0 + t)\hat{e} - \varphi t - g \quad (4)$$

When there is a state-run church, the state maximizes the joint church-state rents (equations 3 and 4), by choosing α , t . In contrast, when there is an independent church, each of the two agents maximizes its rents separately. We examine each case in turn.

State Religion

We assume that a state-church monopoly maximizes total rents:

$$R_{srel} = R^s + R^c = (t_0 + t)\frac{1 - t_0 - t}{\alpha} + 1 - \frac{1 - t_0 - t}{\alpha} - \alpha c - \varphi t - g \quad (5)$$

The joint maximization of (5) results in the optimal level of the two variables when there is a state religion, denoted as α_{srel} and t_{srel} :

$$\alpha_{srel} = T_{\alpha}^{-1}\left(\frac{4c - \varphi^2}{4\varphi}\right) \quad (6)$$

$$t_{srel} = 1 - t^* - T\left(T_{\alpha}^{-1}\left(\frac{4c - \varphi^2}{4\varphi}\right)\right) - \frac{\varphi}{2} T_{\alpha}^{-1}\left(\frac{4c - \varphi^2}{4\varphi}\right) \quad (7)$$

²⁴ See also, Ferrero (2014); Axaroglou et. al (2012).

Independent Church

In this case, we assume that the church and the state act independently and simultaneously.²⁵

Maximizing (3) and (4) with respect to α and t , yields:

$$\alpha_{comp} = \left[\frac{1 - t_0 - t}{c} \right]^{\frac{1}{2}} \quad (8)$$

$$t_{comp} = \frac{1 - \alpha\varphi}{2} - t^* \quad (9)$$

Solving equation (8) and (9) yields the solution for α and t in the competitive case:

$$\alpha_{comp} = \frac{\varphi + \sqrt{\varphi^2 + 8c}}{4c} \quad (10)$$

$$t_{comp} = \frac{1}{2} - \frac{\varphi}{8c} (\varphi + \sqrt{\varphi^2 + 8c}) - t^* \quad (11)$$

Comparison of state religion and competition

To determine whether state religion or competition, among church and state, result in higher fiscal capacity we compare equations (7) and (11). Thus, investment in fiscal capacity is lower under state religion as long as:

$$t_{srel} - t_{comp} = \frac{1}{2} - T \left(\frac{\varphi + \sqrt{\varphi^2 + 8c}}{4c} \right) - \frac{\varphi}{2} \left(T_{\alpha}^{-1} \left(\frac{4c - \varphi^2}{4\varphi} \right) - \frac{\varphi + \sqrt{\varphi^2 + 8c}}{4c} \right) < 0 \quad (12)$$

Equation (12) reveals that there are three effects. First, we have the effect of centralization, i.e., that the state chooses both the level of α and t . This effect corresponds to the term $1/2$ in equation (12) and is unambiguously positive. As in a simple monopoly, the state/church is choosing t , α by internalizing the effect of each policy instrument on the total rents. This results in a higher level of fiscal capacity in the state-religion case.

²⁵ Even though we understand that fiscal capacity investment is made before any other decision, giving the state a first mover's advantage will further complicate the analysis and will give an additional reason for a higher t in the competitive case.

The second term in the above equation represents the legitimization effect. The higher the religiosity, the higher the tax revenues are for the state. Hence, as investment in fiscal capacity is costly, the monopoly state has an incentive to invest in α , instead of t . Given that creating fiscal institutions is more costly than increasing religious activities, the monopoly state-religion chooses a higher α and lower t .

The final term in (12) is the difference in investment in the church's activities between the monopoly and the competitive case. Even though it can be positive or negative it depends, once again, on the importance of the legitimization effect. If it has a high effect on revenues, then the monopoly state-church will opt for a high α . Therefore, the term inside the brackets will tend to be positive, adding to the direct legitimization effect.

What the above equation reveals is that the overall effect is ambiguous. If there is no legitimization effect, i.e., $T(\alpha) = 0$, or this effect is rather small, investment in fiscal capacity will be higher with a state religion. Of course, the opposite holds if the legitimization effect is important, i.e., fiscal capacity investment will be higher when there is a separation between the church and the state.

Our empirical results of the previous section, hence, provide evidence of the latter effect. Therefore, they can be considered to be in accordance with the vast literature (e.g., Platteau 2008; Greif and Tadelis 2010; Vaubel 2017; Auriol and Platteau 2017; Coşgel et al. 2018) that emphasize the importance of the legitimization argument.

5. Conclusions

In this paper, we have tried to examine whether the relationship between the church and the state affects the decision to invest in fiscal capacity. Historically, the church has been an important agent within all countries and the state-church relationship has influenced the history and

development of almost all nations. This paper therefore contributes to the literature that examines the effect of the church on the fiscal system.

Our results extend and verify the so-called legitimization hypothesis, which states that when the state faces fiscal difficulties it uses the church to gain legitimization and increase its tax collection. Our argument goes one step further, by suggesting that in the long run this may turn out to be a strategy that hurts the development of state institutions. According to our empirical results and theoretical argument, poor tax collecting performance co-exists with a state religion. The absence of competition among the state and the church induces slack on behalf of the state, which is manifested with lower investment in fiscal capacity. In this respect, our results shed light on the role of church/religion on the development of fiscal institutions over time.

6. References

- Acemoglu, D., Naidu, S., Restrepo, P., & Robinson, J. A. (2019). Democracy does cause growth. *Journal of Political Economy*, 127(1), 47–100.
- Adam, A. (2009). Fiscal Reliance on Tariff Revenues: In Search of a Political Economy Explanation? *Review of Development Economics*, 13(4), 610–625.
- Adam, A., & Tsarsitalidou, S. (2018). Do sanctions lead to a decline in civil liberties? *Public Choice*.
- Anderson, J. (1994). *Religion, State and Politics in the Soviet Union and Successor States*. Cambridge ; New York: Cambridge University Press.
- Angrist, J. D., Jord, O., & Kuersteiner, G. M. (2018). Semiparametric Estimates of Monetary Policy Effects: String Theory Revisited. *Journal of Business & Economic Statistics*, 36(3), 1–17.

- Angrist, J. D., & Kuersteiner, G. M. (2011). Causal effects of monetary shocks: Semiparametric conditional independence tests with a multinomial propensity score. *Review of Economics and Statistics*, 93(3), 725–747.
- Angrist, J. D., & Pischke, J.-S. (2009). *Mostly harmless econometrics*. Princeton.
- Auriol, E., & Platteau, J.-P. (2017). Religious co-option in autocracy: A theory inspired by history. *Journal of Development Economics*, 127, 395–412.
- Axaroglou, K., Cabolis, C., & Chrissidis, N. (2012). *A Cartel that Lasts for Centuries: The Case of the Eastern Orthodox Church Indulgences* (DUTH Research Papers in Economics). Democritus University of Thrace, Department of Economics.
- Barrett, D. B., Kurian G., T., & Johnson T., M. (2001). *World Christian encyclopedia: A comparative survey of churches and religions in the modern world*. Oxford University Press.
- Barrett, David B. (1982). *World Christian Encyclopedia: A Comparative Study of Churches and Religions in the Modern World, AD 1900-2000*. Oxford University Press.
- Barro, R., & McCleary, R. (2005). *Which Countries Have State Religions?* The Quarterly Journal of Economics, 120(4), 1331–1370.
- Barros, P. P., & Garoupa, N. (2002). An Economic Theory of Church Strictness. *The Economic Journal*, 112(481), 559–576.
- Besley, T. J., & Persson, T. (2013). *Taxation and Development* (SSRN Scholarly Paper No. ID 2210278). Rochester, NY: Social Science Research Network.
- Besley, T., & Persson, T. (2007). *The origins of state capacity: Property rights, taxation, and politics*. National Bureau of Economic Research.
- Besley, T., & Persson, T. (2008). Wars and State Capacity. *Journal of the European Economic Association*, 6(2–3), 522–530.

- Besley, T., & Persson, T. (2011). *Pillars of Prosperity: The Political Economics of Development Clusters* (1 edition.). Princeton N.J.: Princeton University Press.
- Cardenas, M. (2010). State Capacity in Latin America. *Economía*, 10(2), 1–45.
- Coşgel, M., Histen, M., Miceli, T. J., & Yıldırım, S. (2018). State and religion over time. *Journal of Comparative Economics*, 46(1), 20–34.
- Cosgel, M., & Miceli, T. J. (2009). State and religion. *Journal of Comparative Economics*, 37(3), 402–416.
- Dincecco, M., & Prado, M. (2012). Warfare, fiscal capacity, and performance. *Journal of Economic Growth*, 17(3), 171–203.
- Ekelund, R. B., Hebert, R. F., & Tollison, R. D. (2008). *The Marketplace of Christianity* (Vol. 1). The MIT Press.
- Ferrero, M. (2002). Competition for Sainthood and the Millennial Church. *Kyklos*, 55(3), 335–360.
- Ferrero, M. (2014). Competition between Judaism and Christianity: Paul’s Galatians as Entry Deterrence. *Kyklos*, 67(2), 204–226.
- Fox, J. (2019). The correlates of religion and state: an introduction. *Religion, State and Society*, 47(1), 2–9.
- Greif, A. (2006). *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade*. Cambridge ; New York: Cambridge University Press.
- Greif, A., & Tadelis, S. (2010). A theory of moral persistence: Crypto-morality and political legitimacy. *Journal of Comparative Economics*, 38(3), 229–244.
- Iannaccone, L. R. (1991). The Consequences of Religious Market Structure: Adam Smith and the Economics of Religion. *Rationality and Society*, 3(2), 156–177.

- Iannaccone, L. R. (1998). Introduction to the Economics of Religion. *Journal of Economic Literature*, 36(3), 1465–1495.
- ICTD/UNU-WIDER. (2018). Government Revenue Dataset.
- Imbens, G. W., & Wooldridge, J. M. (2009). Recent developments in the econometrics of program evaluation. *Journal of economic literature*, 47(1), 5–86.
- King James, B. (2006). *Holy Bible: King James Version, 1611 Edition* (400th Anniversary edition.). Peabody, Massachusetts: Hendrickson Publishers, Inc.
- Kuran, T. (2003). Islamic redistribution through zakat: Historical record and modern realities. *Poverty and charity in Middle Eastern contexts*, 275–293.
- Kuran, T. (2019). Zakat: Islam’s missed opportunity to limit predatory taxation. *Public Choice*.
- Landes, D. S. (1999). *The Wealth and Poverty of Nations: Why Some Are So Rich and Some So Poor* (unknown edition.). New York: W. W. Norton & Company.
- Mamoukas Andreas. (1859). *Ta monastiriaka*. En Athinai, Tupois D. Eirinidou.
- Mann, M. (1986). *The Sources of Social Power: The Rise of Classes and Nation-States, 1760 - 1914*. Cambridge University Press.
- Martines, T. J., & Durham, C. W. (2015). Religion and the Secular State. Interim National Reports. *International Center for Law and Religious Studies*.
- Mitchell, B. R. (2007). *International historical statistics 1750-2005*. Basingstoke, Palgrave Macmillan.
- Monsma, S. V., & Soper, J. C. (2008). *The Challenge of Pluralism: Church and State in Five Democracies* (2nd Edition edition.). Lanham, Md: Rowman & Littlefield Publishers.
- Opfinger, M. (2011). *Religious Market Theory vs. Secularization: The Role of Religious Diversity Revisited* (No. dp-475). Leibniz Universität Hannover, Wirtschaftswissenschaftliche Fakultät.

- Persson, T., & Tabellini, G. (2004). Constitutions and Economic Policy. *Journal of Economic Perspectives*, 18(1), 75–98.
- Platteau, J.-P. (2008). Religion, politics, and development: Lessons from the lands of Islam. *Journal of Economic Behavior & Organization*, 68(2), 329–351.
- Rodrik, D. (1995). Chapter 28 Political economy of trade policy. In *Handbook of International Economics* (Vol. 3, pp. 1457–1494). Elsevier. doi:10.1016/S1573-4404(05)80008-5
- Seror, A. (2018). A theory on the evolution of religious norms and economic prohibition. *Journal of Development Economics*, 134, 416–427.
- Thies, C. G. (2004). State Building, Interstate and Intrastate Rivalry: A Study of Post-Colonial Developing Country Extractive Efforts, 1975-2000. *International Studies Quarterly*, 48(1), 53–72.
- Vaubel, R. (2017). The making of state religion: Political economy and historical evidence. *Critical Research on Religion*, 5(1).
- Weber, M. (2013). *The Protestant Ethic and the Spirit of Capitalism* (Abridged edition edition.). Merchant Books.
- White, G. J. (2000). *Restoration and Reform, 1153-1165: Recovery from Civil War in England*. Cambridge, UK ; New York, USA: Cambridge University Press.

Tables and Appendices

Table 1: Data sources and definitions

Variable	Mean	St. Dev	Min	Max	Source	Definition
One minus custom taxes	0.80	0.20	0	1	Mitchell (2007)	Custom taxes over total taxes for 1750-2015 period.
Direct taxes	0.28	0,18	0	0,99	Mitchell (2007)	Income or Direct or taxes on Land Income and property for 1750-2015 period.
Total taxes	17	7.61	0.80	44.55	International Center for Tax and Development	Total Taxes excluding social contributions as percent of GDP (average 2000-2015).
Taxes on income	6.38	4.47	0.02	28.33	International Center for Tax and Development	Income taxes as percent of GDP (average 2000-2015 period).
Income/Indirect	84.93	219.37	1.67	2850	International Center for Tax and Development	Ratio of income taxes to indirect taxes (own calculations average 2000-2015 period).
Trade taxes	83.21	17.68	12.19	100	International Center for Tax and Development	Trade Taxes as percent of Total Taxes (average 2000-2015 period).
Indirect taxes	39.7	17.25	1.69	96.77	International Center for Tax and Development	Indirect Taxes as percent of Total Taxes (average 2000-2015 period).
State religion	0.44	0.50	0	1	Barret et. al. (2001) and Own Calculations	Dummy taking value 1 when state religion exists (1750-2015).
State religion in 1970	0.39	0.49	0	1	Religion Adherence Data, Barro 2003	Dummy taking value 1 if state religion existed in 2000.
State religion in 2000	0.39	0.49	0	1	Religion Adherence Data, Barro 2003	Dummy taking value 1 if state religion existed in 1970.
External conflict up to 1975	0.30	0.75	0	0.61	Correlates of War	Years up to 1975 that a country engaged in a war.
Democracy up to 1975	0.32	0.44	0	1	Polity IV Project	Proportion of years of Democracy up to 1975.
parliamentary democracy up to 1975	0.27	0.44	0	1	Polity IV Project	Proportion of years of Parliamentary Democracy up to 1975.
GDP per capita	8.272	1.17	5.43	10.31	Maddison	Log GDP per capita.
Population	15.49	2.20	9.24	21	World Bank Development Indicators	Log Population.
Population squared	244.75	65.93	85.38	441.31	World Bank Development Indicators	Log Population squared.
Executive constraints	4.98	1.93	1	7	Polity IV Project	Extent of institutionalized constraints on the decision-making powers of chief executives.
Main/Secondary religion shares	0.5	0.32	0	0.986	Religion Adherence Data, Barro 2003	Share of adherents of main religion to those of secondary religion.
Communist in 1985	0.25	0.43	0	1	Religion Adherence Data, Barro 2003	Dummy if a country was communist in 1985.
Communist in 2000	0.025	0.16	0	1	Religion Adherence Data, Barro 2003	Dummy if a country was communist in 2000.

Table 2: OLS Results

	(1)	(2)	(3)	(4)	(5)
	Total Taxes	Taxes on Income	Income/indirect	Trade Taxes	Indirect Taxes
State Religion	-3.770***	-1.254**	-18.226*	-6.772**	-8.366**
	(-3.268)	(-2.166)	(-1.721)	(-2.271)	(-2.388)
French	-1.679	-1.273**	-7.799	-1.778	4.952
Legal Origin	(-1.001)	(-2.008)	(-0.472)	(-0.435)	(1.160)
Socialist	2.559	-2.387**	-63.894***	-14.705*	3.261
Legal Origin	(0.630)	(-2.142)	(-3.058)	(-1.938)	(0.560)
German	-1.930	-1.806*	-8.658	1.278	-2.695
Legal Origin	(-0.906)	(-1.865)	(-0.321)	(0.220)	(-0.711)
Scandinavian	9.438***	5.330**	10.063	6.466	4.910
Legal Origin	(3.041)	(2.103)	(0.475)	(1.384)	(1.054)
External Conflict	10.258	-1.921	-75.313	-19.571	-9.505
up to 1975	(1.637)	(-0.679)	(-1.286)	(-1.301)	(-0.737)
Parliamentary Democracy	3.708**	1.715**	-10.318	-3.818	2.638
up to 1975	(2.582)	(2.023)	(-0.582)	(-1.014)	(0.587)
Democracy	1.406	1.487*	24.777*	6.596*	10.150**
up to 1975	(0.955)	(1.845)	(1.762)	(1.809)	(2.273)
Observations	143	136	135	141	140
R2	0.510	0.720	0.207	0.336	0.483
F	7.176042	16.70971	1.68537	3.435421	6.284952

Robust t-statistics in parenthesis. F-test denotes the significance of the model. All estimations include regional dummies and a constant term. (*p < 0.10; **p < 0.05; ***p < 0.01).

Table 3: Inverse Probability Weighting

	(1)	(2)	(3)	(4)	(5)
	Total Taxes	Taxes on Income	Income/Indirect	Trade Taxes	Indirect Taxes
	-2.444*	-1.493*	-27.231**	-7.288**	-8.060***
ATET	(-1.835)	(-1.863)	(-2.041)	(-2.317)	(-3.114)
1 st Stage Probit					
Communist	0.210	0.239	0.277	0.252	0.196
in 1985	(0.714)	(0.803)	(0.905)	(0.834)	(0.666)
Communist	-2.993***	-3.280***	-3.679***	-2.972***	-3.456***
in 2000	(-8.086)	(-8.659)	(-9.736)	(-7.836)	(-9.564)
GDP per capita	0.152	0.1117	0.107	0.143	0.142
	(1.293)	(0.971)	(0.883)	(1.207)	(1.203)
Population	5.406***	5.497***	5.402***	5.323***	4.863***
	(3.010)	(3.009)	(2.901)	(2.899)	(2.725)
Population	-0.165***	-0.168***	-0.164***	-0.162***	-0.149***
Squared	(-2.981)	(-2.983)	(-2.858)	(-2.855)	(-2.716)
Executive	-0.138**	-0.154**	-0.143**	-0.130*	-0.136**
Constraints	(-2.042)	(-2.220)	(-2.012)	(-1.878)	(-2.011)
Main/Secondary	2.806***	2.658***	2.637***	2.757***	2.783***
Religion Shares	(6.330)	(6.053)	(6.033)	(6.241)	(6.235)
Observations	146	139	137	143	142
Treated Observations	60	56	56	58	56
First-Stage Chi-square	66.14	60.37	58.71	62.30	63.47
1 st Stage pseudo R2	34.19	32.95	32.55	33.30	33.61
Overid test	1.97(0.98)	1.56(0.99)	2.02(0.97)	1.49(0.99)	2.05(0.97)

Notes: T-statistics in parentheses. ATET denotes the average treatment effect on the treated. Treated observations refer to the number of countries that receive the treatment (i.e., countries that are state religions). The first stage Chi-square and the pseudo R2 report the LR test and the pseudo R2 of the first stage probit regression. The overid test reports the chi-square overidentification test for covariate balance (p-values in the parentheses). A rejection of the null implies that covariates are not balanced. Additional tests and graphs are reported in the appendix. (* p<0.10, ** p<0.05, *** p<0.01)

Table 4: Inverse Probability Weighting, Robustness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ATET of State Religion on	Religion Shares	Excl. Richest	Excl. Poorest	State Religion I	State Religion II	State Religion Religion and State Database	Excluding Decentralized Religions
Total Taxes	-2.425** (-2.031)	-3.281*** (-2.627)	-2.444* (-1.768)	-1.850 (-1.439)	-2.348* (-1.771)	-3.871** (-2.489)	-0.372 (-0.244)
Income Taxes	-1.477* (-1.959)	-2.040*** (-2.811)	-1.475* (-1.787)	-1.198 (-1.571)	-1.372* (-1.758)	-2.483** (-2.517)	-0.664 (-0.704)
Income/Indirect	-24.099** (-1.966)	-32.247** (-2.314)	-24.579** (-1.961)	-33.885* (-1.827)	-27.417* (-1.908)	-49.454* (-1.850)	-20.343* (-1.658)
Trade Taxes	-7.530*** (-2.869)	-8.642*** (-3.308)	-8.668*** (-3.478)	-7.652*** (-2.936)	-7.652*** (-2.936)	-9.941** (-2.342)	-2.336* (-1.889)
Indirect Taxes	-7.435** (-2.395)	-8.646*** (-2.784)	-6.744** (-2.054)	-7.117** (-2.243)	-7.150** (-2.318)	-16.306*** (-3.692)	-6.194** (-2.134)

Note: The table presents the ATET of State Religion on the respective measure of fiscal capacity in each row. The first stage results probit are computed using the same variables in the Table 3, except in column (1) where we also include the shares of adherents of the main religions as moderators. t-statistics in parenthesis. (* p<0.1, ** p<0.05, *** p<0.01)

Table 5: Dynamic Inverse Probability Weighting

	(1) -5 to 0 years	(2) 1 to 4 years	(3) 5 to 8 years	(4) 9 to 12 years	(5) 13 to 17 years	(6) 18 to 21 years	(7) 22 to 26 years	(8) 27 to 31 years
ATET on One minus Custom Taxes								
Establishment of State Religion	-0.017 (1.01)	0.013 (0.92)	0.007 (0.38)	-0.010 (-0.066)	-0.026 (-1.23)	-0.047** (-1.96)	-0.050* (-1.92)	-0.06* (-1.76)
Disestablishment of State Religion	0.001 (0.05)	0.005 (1.01)	0.026 (0.83)	0.062 (1.55)	0.063** (2.17)	0.020 (0.47)	-0.012 (0.27)	-0.032 (0.72)
ATET on Direct Taxes								
Establishment of State Religion	-0.006 (-0.42)	0.001 (0.05)	-0.015 (-0.53)	-0.059 (-1.51)	-0.108*** (-2.57)	-0.0141 (-0.20)	-0.122* (-1.93)	-0.158* (-1.90)
Disestablishment of State Religion	0.010 (0.83)	0.013 (0.81)	0.087 (1.10)	0.004 (0.09)	-0.003 (-0.09)	0.026 (1.13)	0.044* (1.69)	0.078** (2.29)

Notes: Coefficients show the average treatment effects on the treated (ATET). We present the ATET, using the inverse probability weighting and procedure, to compute the counterfactual. T-statistics obtained using 100 bootstraps are presented in the parentheses. All results are for 44 countries, 6 treatments when we estimate the effect of the establishment of state religion and 15 treatments when we estimate the disestablishment of a state religion, on fiscal capacity. (* p<0.10, ** p<0.05, *** p<0.01)

Table A1: Regression Adjustment

	(1)	(2)	(3)	(4)	(5)
	Total Taxes	Taxes on Income	Income/Indirect	Trade Taxes	Indirect Taxes
ATET	-3.003***	-1.081*	26.257	-3.954*	-5.135**
	(-3.048)	(-1.827)	(0.617)	(-1.733)	(-2.199)
	Regression Untreated				
English	-0.328	-1.463*	-6.720	-0.297	3.209**
Legal Origin	(-0.471)	(-1.789)	(-0.889)	(-0.178)	(2.260)
Socialist	2.037	-0.459	9.771	-0.572	-8.958***
Legal Origin	(1.268)	(-0.409)	(0.463)	(-0.105)	(-2.687)
French	3.965	-0.641	-33.781	-8.472	4.541
Legal Origin	(1.226)	(-0.641)	(-1.428)	(-1.158)	(0.820)
External Conflict	1.425	-2.669	-32.659	-5.636	5.297
up to 1975	(0.253)	(-0.864)	(-0.403)	(-0.362)	(0.391)
Parliamentary Democracy	3.444**	0.891	-21.453	-4.375	1.133
up to 1975	(2.432)	(1.034)	(-1.205)	(-1.184)	(0.265)
Democracy	0.120	1.824**	35.707**	10.085***	14.268***
up to 1975	(0.077)	(2.088)	(2.161)	(2.598)	(3.148)
	Regression Treated				
English	-10.006**	-10.563***	-104.592	-26.328***	-4.606
Legal Origin	(-2.418)	(-2.842)	(-0.933)	(-2.777)	(-0.530)
Socialist	-17.326***	-21.976***	-1312.439*	-76.898***	-20.581**
Legal Origin	(-2.806)	(-3.108)	(-1.654)	(-3.966)	(-2.029)
French	-11.329***	-9.682***	-186.254	-15.416**	4.701
Legal Origin	(-3.358)	(-2.638)	(-1.345)	(-2.249)	(1.066)
External Conflict	6.927	5.254	-143.873	29.387	16.239
up to 1975	(0.866)	(1.489)	(-0.386)	(1.594)	(1.075)
Parliamentary Democracy	3.886	1.621	-330.466	-7.013	-2.884
up to 1975	(1.519)	(0.665)	(-1.317)	(-0.818)	(-0.331)
Democracy up 1975	0.140	-0.547	-58.000	7.088	14.206**
up to 1975	(0.085)	(-0.523)	(-1.020)	(1.279)	(2.474)
Observations	179	171	169	175	174
Treated Observations	70	65	65	68	67

See notes in table 3.

Table A2: Doubly Robust

	(1)	(2)	(3)	(4)	(5)
	Total Taxes	Taxes on Income	Income/Indirect	Trade Taxes	Indirect Taxes
ATET	-1.691*	-1.940***	-25.454***	-7.492***	-8.578***
	(-1.768)	(-2.958)	(-3.084)	(-2.892)	(-3.706)
Regression Untreated					
English	3.926	-0.057	-2.116	-4.606	-3.375
Legal Origin	(-1.631)	(-0.030)	(-0.111)	(-1.270)	(-1.000)
Socialist	-11.541***	-4.928***	-24.585	11.199**	3.863
Legal Origin	(-4.751)	(-2.917)	(-1.626)	(2.286)	(0.446)
French	-2.793	0.281	18.504	-0.370	1.740
Legal Origin	(-1.287)	(0.162)	(1.196)	(-0.118)	(0.535)
External Conflict	1.543	-6.476**	-107.691***	-17.505***	-5.568
up to 1975	(0.345)	(-2.223)	(-3.610)	(-3.031)	(-0.613)
Parliamentary Democracy	4.468**	-3.295*	-78.381**	-21.873***	16.629***
up to 1975	(2.092)	(-1.943)	(-2.620)	(-3.041)	(2.970)
Democracy	-0.217	0.462	-23.834	-6.605	-1.521
up to 1975	(-0.099)	(0.380)	(-1.118)	(-1.345)	(-0.256)
Regression Treated					
English	-14.000**	-13.710***	-90.828***	-33.288***	3.595
Legal Origin	(-2.338)	(-2.734)	(-2.592)	(-2.905)	(0.424)
Socialist	-14.243	-16.912***	-174.569***	-70.964***	0.234
Legal Origin	(-1.620)	(-2.794)	(-2.709)	(-3.280)	(0.018)
French	-12.571**	-11.539***	-57.436*	-29.595**	14.510
Legal Origin	(-2.129)	(-2.304)	(-1.616)	(-2.243)	(1.560)
External Conflict	13.750	8.987**	85.177*	46.777**	9.580
up to 1975	(1.253)	(2.037)	(1.777)	(2.514)	(0.472)
Parliamentary Democracy	6.132	4.136	28.519	-5.129	11.901
up to 1975	(1.177)	(1.530)	(1.028)	(-0.380)	(0.998)
Democracy	1.289	-0.051	3.449	2.295	10.539*
up to 1975	(0.653)	(-0.043)	(0.269)	(0.396)	(1.659)
Probit Model					
Communist	0.210	0.239	0.277	0.252	0.196
in 1985	(0.713)	(0.803)	(0.905)	(0.834)	(0.666)
Communist	-3.613***	-3.722***	-3.614***	-3.701***	-3.103***
in 2000	(-10.091)	(-10.017)	(-9.538)	(-10.145)	(-8.434)
GDP	0.152	0.117	0.107	0.143	0.142
per capita	(1.293)	(0.971)	(0.883)	(1.207)	(1.203)
Population	5.406***	5.490***	5.402***	5.323***	4.863***
	(3.009)	(3.009)	(2.901)	(2.898)	(2.725)
Population	-0.165***	-0.168***	-0.164***	-0.162***	-0.149***
Squared	(-2.981)	(-2.893)	(-2.858)	(-2.855)	(-2.716)
Executive	-0.138**	-0.154**	-0.143**	-0.130*	-0.136**
Constraints	(-2.042)	(-2.220)	(-2.012)	(-1.878)	(-2.011)
Main/Secondary	2.806***	2.658***	2.637***	2.757***	2.783***
Religion Shares	(6.330)	(6.053)	(6.033)	(6.241)	(6.235)
Observations	146	139	137	143	142
number of treated countries	60	56	56	58	57

Figure A1: Overlap plots, cross section

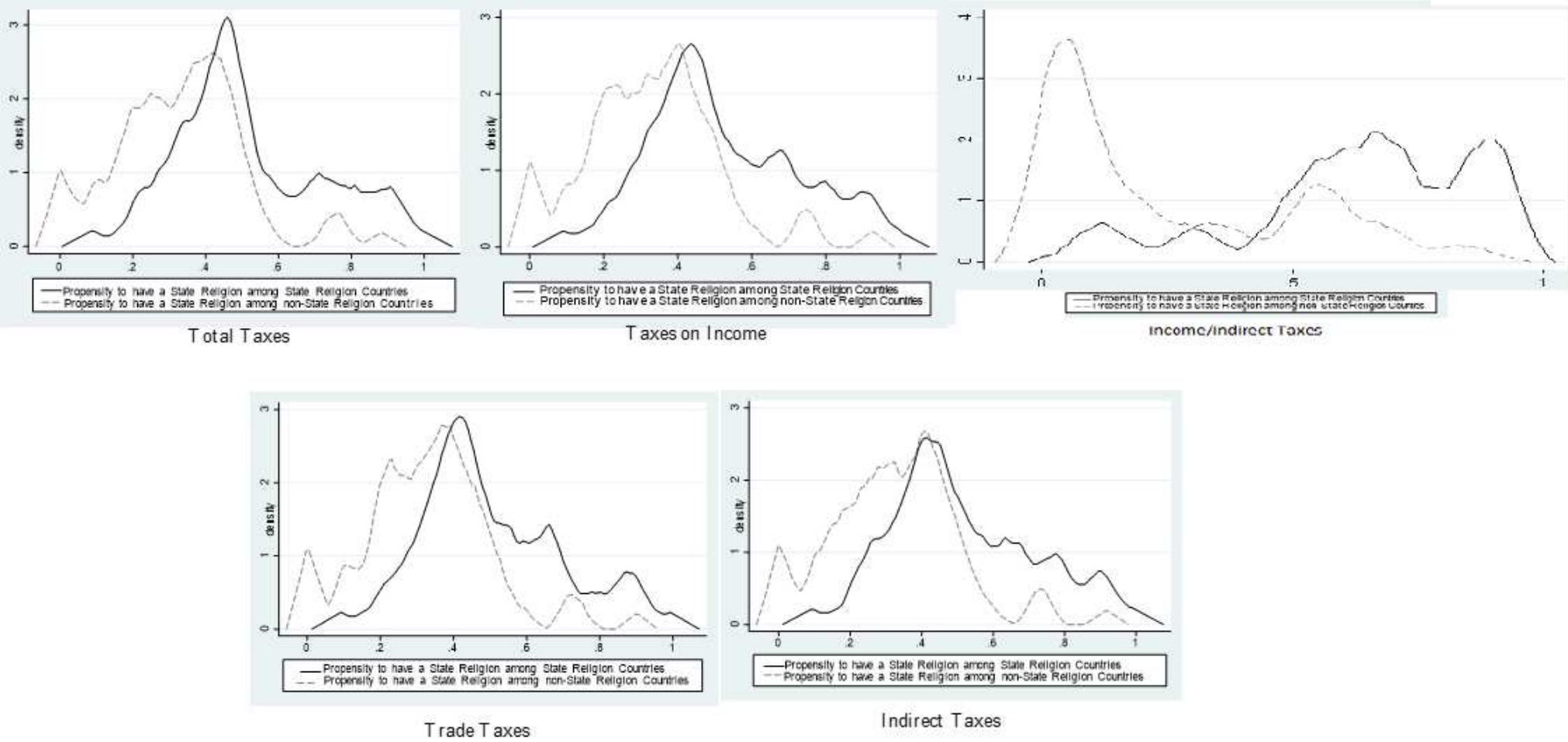
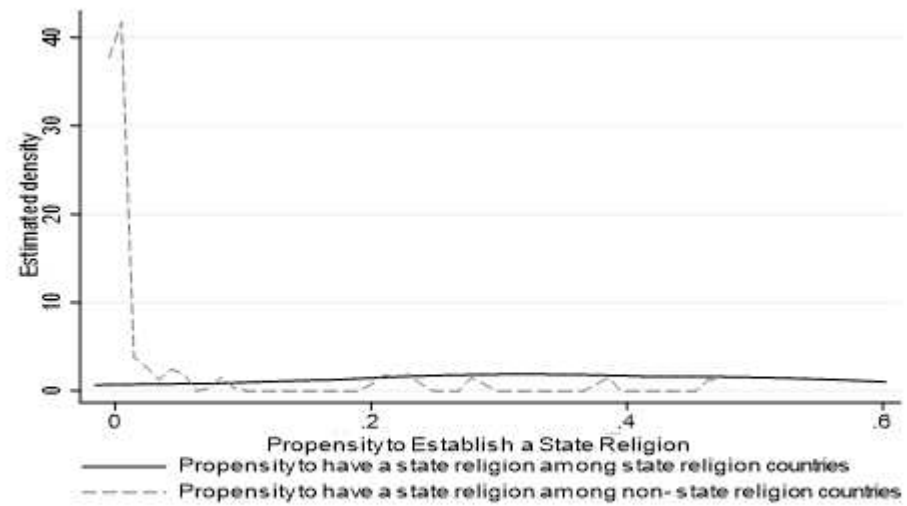
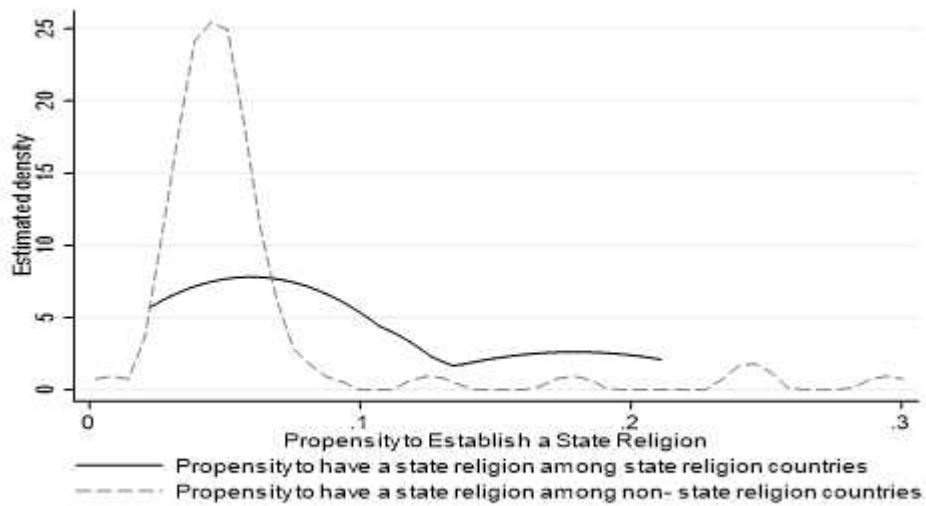
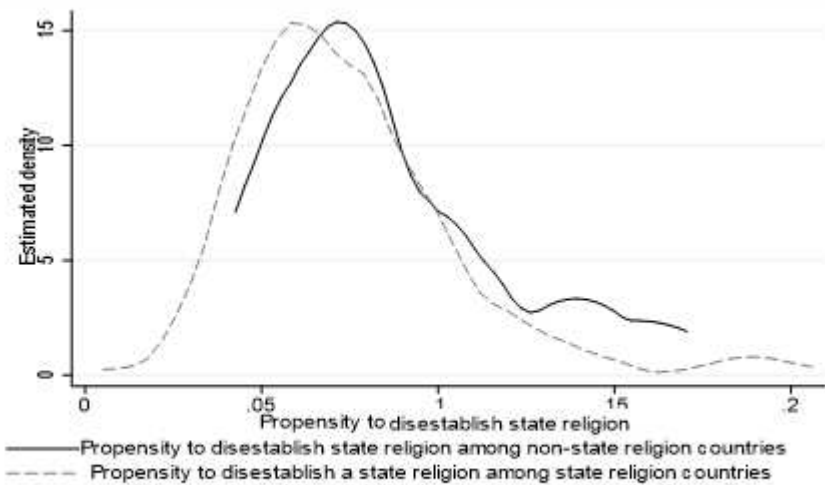


Figure A2: Overlap plots, panel data

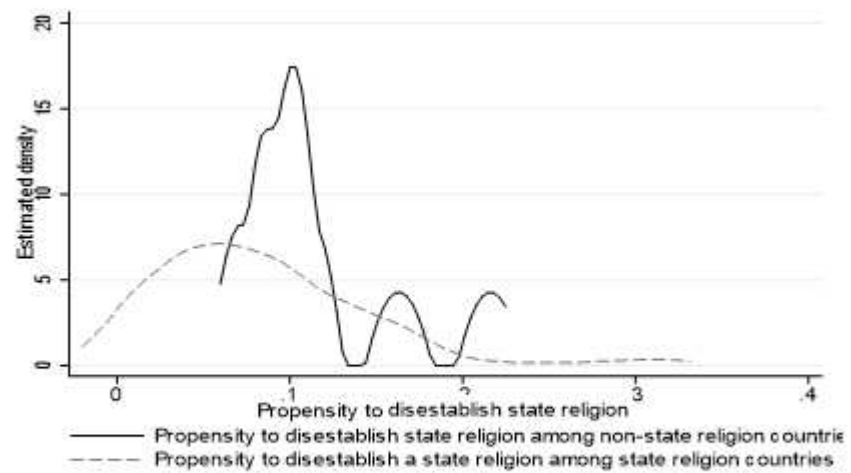


State religion establishment- Trade Taxes



State religion separation- Trade Taxes

State religion establishment- Direct Taxes



State religion separation- Direct Taxes

TABLE A3: Full results for Table 5

Total Taxes	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Religion Shares	Excl. Richest	Excl. Poorest	State Religion I	State Religion II	State Religion and State Database	Excluding Decentralized Religions
ATET	-2.425** (-2.031)	-3.281*** (-2.627)	-2.444* (-1.768)	-1.850 (-1.439)	-2.348* (-1.771)	-3.871** (-2.489)	-0.372 (-0.244)
1 st Stage Probit							
Communist	-3.087***	-3.010***	-2.977***	-2.867***	-2.891***	-2.592***	-3.043*** (-7.089)
in 2000	(-6.832)	(-8.036)	(-8.034)	(-7.795)	(-7.871)	(-5.120)	
Communist	0.281	0.185	0.163	0.145	0.168	-0.437	0.248
in 1985	(0.951)	(0.627)	(0.547)	(0.487)	(0.564)	(-1.235)	(0.759)
GDP per capita	0.163 (1.334)	0.178 (1.406)	0.091 (0.737)	0.071 (0.585)	0.095 (0.797)	0.235 (1.612)	-0.070 (-0.830)
Population	5.515*** (3.079)	5.409*** (2.957)	5.736*** (3.151)	3.205** (2.119)	3.989** (2.449)	3.403 (1.566)	2.591*** (4.726)
Population Squared	-0.168*** (-3.052)	-0.165*** (-2.922)	-0.175*** (-3.121)	-0.099** (-2.138)	-0.122** (-2.444)	-0.098 (-1.487)	0.137 (0.887)
Executive Constraints	-0.104 (-1.256)	-0.149** (-2.165)	-0.125* (-1.850)	-0.106 (-1.553)	-0.101 (-1.505)	-0.316*** (-3.529)	6.434*** (2.934)
Main/Secondary Religion Shares	2.971*** (4.815)	2.606*** (5.686)	2.853*** (6.368)	3.138*** (6.891)	3.047*** (6.74)	3.035*** (4.279)	-0.198*** (-2.932)
Muslim	-0.104 (-0.113)						
Christian	-1.02 (-0.605)						
Protestant	-0.1 (-0.097)						
Observations	146	139	137	143	142	130	105

Income Taxes	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Religion Shares	Excl. Richest	Excl. Poorest	State Religion I	State Religion II	State Religion Religion and State Database	Excluding Decentralized Religions
ATET	-1.477* (-1.959)	-2.040*** (-2.811)	-1.475* (-1.787)	-1.198 (-1.571)	-1.372* (-1.758)	-2.483** (-2.517)	-0.664 (-0.704)
1 st Stage Probit							
Communist in 2000	-3.324*** (-7.384)	-3.337*** (-8.659)	-3.268*** (-8.614)	-3.425*** (-9.446)	-3.453*** (-9.518)	-0.46 (-1.296)	-3.656*** (-8.591)
Communist in 1985	0.286 (0.961)	0.203 (0.686)	0.183 (0.61)	0.17 (0.569)	0.192 (0.643)	-2.380*** (-4.615)	0.259 (0.790)
GDP per capita	0.129 (1.051)	0.151 (1.17)	0.046 (0.362)	0.033 (0.269)	0.059 (0.481)	0.24 (1.643)	-0.098 (-1.147)
Population	5.515*** (3.079)	5.409*** (2.957)	5.736*** (3.151)	3.205** (2.119)	3.989** (2.449)	3.503 (1.619)	2.465*** (4.493)
Population Squared	-0.168*** (-3.052)	-0.165*** (-2.922)	-0.175*** (-3.121)	-0.099** (-2.138)	-0.122** (-2.444)	-0.1 (-1.535)	0.112 (0.720)
Executive Constraints	-0.104 (-1.256)	-0.149** (-2.165)	-0.125* (-1.850)	-0.106 (-1.553)	-0.101 (-1.505)	-0.314*** (-3.452)	6.795*** (2.985)
Main/Secondary	2.971***	2.606***	2.853***	3.138***	3.047***	3.151***	-0.210***
Religion Shares Muslim	(4.815) -0.104 (-0.113)	(5.686)	(6.368)	(6.891)	(6.74)	(4.317)	(-2.984)
Christian	-1.020 (-0.605)						
Protestant	-0.100 (-0.097)						
Observations	139	132	135	139	139	129	99

Indirect Taxes	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Religion Shares	Excl. Richest	Excl. Poorest	State Religion I	State Religion II	State Religion Religion and Database	State Excluding Decentralized Religions
ATET	-7.435** (-2.395)	-8.646*** (-2.784)	-6.744** (-2.054)	-7.435** (-2.395)	-8.646*** (-2.784)	-16.306*** (-3.692)	-6.194** (-2.134)
1 st Stage Probit							
Communist in 1985	-3.041*** (-6.474)	-3.130*** (-8.242)	-3.032*** (-8.039)	-3.031*** (-7.995)	-3.054*** (-8.063)	-0.46 (-1.296)	-2.940*** (-6.715)
Communist in 2000	0.327 (1.081)	0.23 (0.763)	0.202 (0.663)	0.187 (0.614)	0.211 (0.693)	-2.477*** (-4.815)	0.272 (0.822)
GDP per capita	0.151 (1.233)	0.167 (1.317)	0.08 (0.641)	0.064 (0.529)	0.086 (0.719)	0.24 (1.643)	-0.073 (-0.871)
Population	5.448*** (2.985)	5.293*** (2.829)	5.684*** (3.042)	3.098** (2.06)	3.886** (2.387)	3.503 (1.619)	2.523*** (4.599)
Population Squared	-0.166*** (-2.943)	-0.161*** (-2.780)	-0.173*** (-2.997)	-0.095** (-2.067)	-0.118** (-2.369)	-0.1 (-1.535)	0.142 (0.930)
Executive	-0.095	-0.141**	-0.116*	-0.1	-0.093	-0.314***	6.260***
Constraints	(-1.138)	(-2.004)	(-1.667)	(-1.431)	(-1.355)	(-3.452)	(2.733)
Main/Secondary	2.954***	2.556***	2.806***	3.094***	3.003***	3.151***	-0.193***
Religion Shares	(4.772)	(5.59)	(6.28)	(6.812)	(6.656)	(4.317)	(-2.713)
Muslim	-0.157 (-0.169)						
Christian	-1.152 (-0.684)						
Protestant	-0.119 (-0.117)						
Observations	143	135	139	143	143	129	103

Trade Taxes	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Religion Shares	Excl. Richest	Excl. Poorest	State Religion I	State Religion II	State Religion and State Database	Excluding Decentralized Religions
ATET	-7.530*** (-2.869)	-8.642*** (-3.308)	-8.668*** (-3.478)	-7.652*** (-2.395)	-7.652*** (-2.395)	-9.941** (-2.342)	-2.336* (-1.889)
1 st Stage Probit							
Communist in 2000	-3.402*** (-7.472)	-3.264*** (-8.843)	-2.979*** (-8.033)	-3.330*** (-9.238)	-3.330*** (-9.238)	-2.581*** (-5.030)	-2.987*** (-6.802)
Communist in 1985	0.274 (0.929)	0.173 (0.589)	0.147 (0.495)	0.148 (0.497)	0.148 (0.497)	-0.460 (-1.296)	0.240 (0.734)
GDP per capita	0.154 (1.264)	0.167 (1.315)	0.08 (0.641)	0.082 (0.683)	0.082 (0.683)	0.24 (1.643)	-0.062 (-0.719)
Population	4.970*** (2.799)	4.874*** (2.675)	5.174*** (2.865)	3.415** (2.165)	3.415** (2.165)	3.503 (1.619)	2.494*** (4.526)
Population Squared	-0.153*** (-2.794)	-0.149*** (-2.659)	-0.158*** (-2.854)	-0.105** (-2.184)	-0.105** (-2.184)	-0.1 (-1.535)	0.138 (0.903)
Executive Constraints	-0.099 (-1.200)	-0.147** (-2.131)	-0.124* (-1.821)	-0.101 (-1.487)	-0.101 (-1.487)	-0.314*** (-3.452)	6.434*** (2.946)
Main/Secondary Religion Shares	2.929*** (4.805)	2.583*** (5.577)	2.834*** (6.269)	3.046*** (6.662)	3.046*** (6.662)	3.151*** (4.317)	-0.198*** (-2.940)
Muslim	-0.037 (-0.041)						
Christian	-0.999 (-0.602)						
Protestant	-0.047 (-0.046)						
Observations	142	134	138	142	142	129	103

Income/Indirect	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Religion Shares	Excl. Richest	Excl. Poorest	State Religion I	State Religion II	State Religion and State Database	Excluding Decentralized Religions
ATET	-24.099** (-1.966)	-32.247** (-2.314)	-24.579** (-1.961)	-33.885* (-1.827)	-32.247** (-2.314)	-49.454* (-1.850)	-20.343* (-1.658)
1 st Stage Probit							
Communist in 2000	-3.849*** (-8.295)	-3.851*** (-10.104)	-3.658*** (-9.675)	-3.543*** (-9.415)	-3.564*** (-9.476)	-0.46 (-1.296)	-3.445*** (-7.919)
Communist in 1985	0.322 (1.05)	0.244 (0.799)	0.218 (0.706)	0.209 (0.681)	0.233 (0.759)	-2.579*** (-5.027)	0.275 (0.823)
GDP per capita	0.116 (0.935)	0.141 (1.082)	0.034 (0.263)	0.027 (0.215)	0.05 (0.403)	0.24 (1.643)	-0.098 (-1.152)
Population	5.536*** (2.953)	5.441*** (2.86)	5.830*** (3.06)	3.160** (2.078)	3.944** (2.391)	3.503 (1.619)	2.457*** (4.490)
Population Squared	-0.169*** (-2.912)	-0.165*** (-2.814)	-0.177*** (-3.015)	-0.097** (-2.084)	-0.120** (-2.372)	-0.1 (-1.535)	0.113 (0.728)
Executive Constraints	-0.113 (-1.321)	-0.154** (-2.106)	-0.129* (-1.807)	-0.112 (-1.560)	-0.104 (-1.481)	-0.314*** (-3.452)	6.538*** (2.765)
Main/Secondary Religion Shares	2.800*** (4.531)	2.454*** (5.411)	2.691*** (6.058)	2.980*** (6.634)	2.889*** (6.476)	3.151*** (4.317)	-0.201*** (-2.747)
Muslim	-0.158 (-0.173)						
Christian	-0.983 (-0.597)						
Protestant	-0.219 (-0.203)						
Observations	137	130	133	137	137	129	103

Table A4: Country List, cross section model

Afghanistan*	Guatemala*	Pakistan*
Albania	Guinea	Panama*
Angola	Guinea-Bissau	Papua New Guinea
Argentina*	Guyana	Paraguay*
Australia	Haiti*	Peru*
Austria	Honduras*	Philippines
Bahamas*	Hungary	Poland
Bahrain*	Iceland*	Portugal*
Bangladesh*	India	Qatar*
Barbados	Indonesia	Romania
Belgium	Iran*	Rwanda
Benin	Iraq*	Sao Tome and Principe
Bhutan*	Ireland	Saudi Arabia*
Bolivia*	Israel*	Senegal
Botswana	Italy*	Seychelles
Brazil	Jamaica	Sierra Leone
Bulgaria*	Japan	Singapore
Burkina Faso	Jordan*	Solomon Islands
Burundi	Kenya	Somalia*
Cambodia*	Kiribati	South Africa
Cameroon	Korea, South	Spain*
Canada	Kuwait*	Sri Lanka*
Cape Verde	Laos	St Lucia
Central African Rep..	Lebanon	Sudan*
Chad	Lesotho	Suriname
Chile	Liberia*	Swaziland
China	Libya*	Sweden
Colombia*	Luxembourg*	Switzerland
Congo	Madagascar	Syria
Congo, Democratic R..	Malawi	Tanzania
Costa Rica*	Malaysia *	Thailand*
Cote d'Ivoire	Maldives*	Togo
Cuba	Mali	Tonga*
Cyprus	Malta*	Trinidad and Tobago
Denmark*	Mauritania*	Tunisia*
Djibouti	Mauritius	Turkey
Dominica	Mexico	Uganda
Dominican Republic*	Mongolia	United Arab Emirates*
Ecuador	Morocco*	United Kingdom*
Egypt*	Mozambique	United States
El Salvador*	Myanmar	Uruguay
Equatorial Guinea	Nepal*	Venezuela*
Fiji	Netherlands	Vietnam
Finland*	New Zealand	Zambia
France	Nicaragua	Zimbabwe
Gambia	Niger	
Ghana	Nigeria	
Greece*	Norway*	
Grenada	Oman*	

* Denote countries with a state religion

Table A5: Country List, panel model

Country	Year of Establishment	Year of Disestablishment
Argentina*		
Australia		
Austria		1919
Belgium		
Brazil		
Bulgaria	1895	
Canada		
Chile		
Colombia		1992
Czechoslovakia		
Denmark*		
France		1906
Germany		
Greece*		
Hungary		
India		
Indonesia*		
Iran	1979	
Ireland		1973
Italy*		
Japan		1946
Korea		1948
Mexico		
Netherlands		
New Zealand		
Norway		
Pakistan	1957	1945
Peru*		
Phillippines		
Poland*		
Portugal	1940	1911
Romania		1947
Russia		1922
Serbia		1920
South Africa		
Spain	1869	1979
Sweden	2000	1881
Switzerland		
Thailand*		
Turkey		1928
UK*		
Uruguay		1918
USA		
Venezuela*		

*Denote countries with a state religion for the entire time period