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ABSTRACT

Why do states become theocracies? Johnson and Koyama (2019) analyzed the transition from a conditional-toleration equilibrium, in which feeble state capacity allows distinct religious groups to co-exist under a system of religion-based identity rules, to a religious-toleration equilibrium, in which a strong state applies secular general rules without the need for religion as a legitimizing force. This implies that religious legitimacy and high state capacity are substitutes. We explore the alternative possibility that religious legitimacy and a strong state can be complements; that is, religion and high state capacity work together to extract resources from the citizenry. The result is an equilibrium of religious rather than secular general rules in which high state capacity and religion reinforce each other—a theocracy. An empirical analysis of the transition from premodern to modern theocracy, based on a unique dataset of religion and politics in world history, indicates that the adoption of general rules in the modern era differed systematically between societies in which strong state capacity was a complement rather than a substitute for religion.

JEL categories: D72, H11, H26, N43, Z12
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Introduction.

Why have some polities successfully established the kind of liberal institutions that enable economic growth? And why have many other states, in history and in the world today, proven unable to establish growth-generating institutions? This is among the most salient research questions in the social sciences. As Daron Acemoğlu (2003) famously put it, we should not expect a political Coase theorem. We should not expect social institutions to transform themselves automatically to seize opportunities for the creation of wealth. Many scholars conceptualize the problem in terms of the institutional equilibria in which polities can become trapped. The question then becomes: under what circumstances can states transition from one equilibrium to another – from a rent-seeking low-growth equilibrium, for example, to a more-open high-growth equilibrium? Or perhaps the reverse?

An example is Johnson and Koyama (2019), who focus on the institutions of religious toleration. In their account, states can enter into what they call a *conditional-toleration equilibrium.* When polities have a low *state capacity* – a low capacity to extract taxes and otherwise monitor and control their citizenry – religious identity groups are able to coexist tenuously, governed by distinct *identity rules.*[1] Weak state capacity and conditional tolerance reinforce one another. Alternatively, polities can sometimes achieve a *religious-liberty equilibrium*. Here distinct religious identities are able to coexist more robustly because all are subject to *general rules* that apply equally to all. In this account, high state capacity and genuine religious liberty are also mutually reinforcing. Johnson and Koyama consider in detail the problem of transitioning from the conditional-toleration equilibrium to the religious-liberty equilibrium in the context of Europe during the Reformation.

[1] The origins of the term "state capacity" go back to the works of sociologists and political scientists, such as Tilly et al (1975) and Mann (1985). See Johnson and Koyama (2017) for a recent review of this literature.

Johnson and Koyama's insights build upon a growing literature on state capacity, the relationship between state and religion, and the origins of religious freedom. Economists have recently emphasized the importance of state capacity for economic growth and the process through which modern states have acquired strong capacity for governance (Dincecco 2015, Johnson and Koyama 2019). In a parallel development, researchers have studied the history of the complicated relationship between state and religion and the continuing importance of legitimacy in affecting the state's involvement in religion in modern societies (Barro and McCleary 2005; Coşgel and Miceli 2009, 2018; Rubin 2017). Other important aspects of the state's role in the development of modern states have been the political origins of the rise of religious liberty (Gill 2008) and the transition from natural states with identity rules to modern states and general rules (North et al 2009).

We contribute to this literature by explicitly modeling the relationship among identity, state capacity, and the structure of rules. We consider not only the possibility that identity can be a substitute for state capacity – as when religious identification lowers the costs of tax collection – but also the possibility that identity and state capacity can be *complements*.[2] We show the possibility of equilibria in which strengthened identity (which we generalize beyond strictly religious identity) and increasing state capacity are mutually reinforcing. Conditional toleration and genuine religious (identity) toleration are both possible equilibria. But so is theocracy and its secular equivalents.

Identity and the State.

It has been conventional at least since Max Weber to conceptualize the state as a revenue-maximizing natural monopolist in the use of force, in effect a sedentary bandit (North 1981; Olson 1993). But even a unitary actor who effectively "owns" a territory must create a coalition. As Charles Tilly (1985) points out,

[2] The model of Skaperdas and Vaidya (2020) also finds complementarity between intensity of religious belief and state capacity, though in the context of external threats to the polity rather than in terms of its internal stability.

the ruler must engage in state-making, which involves not only the elimination of internal rivals but also the bribing of rivals to join forces with the ruler. The ruler must also engage in the protection of merchants and other clients – protection in both the negative and positive senses of the term – to generate rents for state-making and war-making. North, Wallis, and Weingast (2009) have argued for moving beyond the single-owner model of the state in favor of a model in which the a state is a coalition of actors. They call such a coalition a *natural state*. In a sense, however, we can see the natural state as a generalization of Weber: the revenue-maximizing owner is no longer an individual with a single unified objective but a coalition of players reflecting multiple private incentives. In this account, the participants in the coalition collude to generate rents. They do this in the first instance by limiting the internecine violence that would otherwise dissipate rents. As a means of holding the coalition together, the natural state also generates rents by limiting access to economic activity. In order to control access, it establishes *identity rules* that determine the rights and privileges of coalition members and outsiders. The natural state stands in contrast to *open-access orders*, like present-day liberal democracies, which (in principle at least) do not limit access and which operate according to general rules applicable independent of identity. The question North, Wallis, and Weingast consider is how polities have transitioned, and how they might transition, from the natural-state equilibrium to the open-access equilibrium.

Theocracy means a state governed or controlled by a religion. This can happen in two ways. In what we will call a *pre-modern theocracy*, one religion dominates the state; but that state is so institutionally weak that it cannot exert effective control over competing religions, sects, or heresies. As a consequence, a pre-modern theocracy must govern using identity rules – different rules for different groups. In what we call a *modern theocracy*, by contrast, the state is institutionally robust enough to impose consistent religion-based strictures on all members of the society. The rules of such a polity are thus general (not based on identity) even if they are not necessarily tolerant.

In the context of identity rules, "identity" is understood as a signal, an observable characteristic that allows the state to sort its denizens into categories that determine which rules, rights, and privileges apply to them. Signals of this type are what make identity rules effective. But, of course, in a wider context "identity" is a more complex, and often more fraught, concept. For one thing, as Akerlof and Kranton (2000, 2005) suggest, identity can also be a determinant of individual behavior. For example, how much effort a person exerts may depend on his or her own identity as well as on the identity of those with whom the person is interacting; both own-identity and the identity of others can shift the utility function. Clearly, religion is a major category of identity. For some purposes, one may want to emphasize the distinctive features of religion as an identity category, notably the threat of supernatural punishment that religion can bring to bear (Johnson and Krüger 2004). At the same time, of course, it is also clear that many secular identities possess motivational and other characteristics fundamentally similar to those of religion. In Akerlof and Kranton (2005), for example, a producer can elicit effort from a worker at a lower price if the worker identifies with the goals and culture of the organization – their example is the military – in much the same way that a ruler's cost of collecting taxes might be reduced if the taxpayers identify with the religion of the ruler.

The congruence between religions and secular identities is especially striking in the case of identities that require the same kinds of complex ideological investments often found in organized religion.[3] Totalitarian states driven by (for example) Marxism or National Socialism are arguably kinds of theocracies. Although we do not explore the generalized concept of identity in detail in this essay, we also do not restrict our meaning of "religion" or of "theocracy" solely to identities and political structures

[3] Joseph Schumpeter was far from alone in noticing that, for many, Marxism was a substitute for religion, having provided an outlet for "those extra-rational cravings which receding religion had left running about like masterless dogs" (Schumpeter 1950, p. 6). More controversial perhaps is the suggestion that present-day environmentalism possesses many of the characteristics of religion (Nelson 2010).

invoking the supernatural. A "religion" can be any complex ideological structure that regulates behavior through rules and incentives that are not ultimately backed by the threat of state-produced violence. Such rules and incentives can be internal (formative of one's conscience) or social (peer pressure or ostracism).[4] As an ideological structure, a "religion" in this wide understanding implicates identity in both senses of the term. To the extent that it results in publicly identifiable behavior, adherence to a socially recognized ideological framework provides a signal by which people can be sorted; at the same time, such adherence can supply personal meaning, perhaps the hope of an afterlife, and other utility-enhancing benefits. The utility-enhancing benefits of identity are in the end an important component of the "religious goods" that a complex ideological structure supplies, even if the social institutions associated with the "religion" may provide a variety of ordinary public and private goods as well.

The analytical framework for our argument consists of a revenue-maximizing state and a population of citizens who derive utility from religious observance. In our formulation, religion is an ordinary private consumption good. As the anthropologist Pascal Boyer (2001) has argued, religious belief and practice arise to serve evolved cognitive needs that have to do with explanation and prediction of events. In his formulation, religion is at base transactional: individuals considered to be adept at providing religious services effectively sell those services in a way that is not fundamentally different from how ordinary goods and services are sold. This is so despite the fact that, in some traditions, literally paying religious functionaries for spiritual goods is discouraged or forbidden. (In Catholicism, it is the sin of simony.) Consumers of religious goods often lavish resources on providers through donations, and this implies a price. The donations are often received by institutions, not privately by individual providers, but this is not different from a transaction in which one pays a corporation for services rather than paying privately an

[4] They might also include violence – persecution – that is not supplied by the state.

employee of the corporation.[5] Throughout history, rituals have often called for standard donations that function not unlike piece rates. Some Brahman religious specialists evidently haggle over price for hours with their clients (Boyer 2001, p. 273).

This is not to deny that religion might also be conceptualized as providing a club good rather than (or – better – in addition to) a private good (Iannaccone 1992). Another important and arguably complementary account is that religion functions to solve problems of collective action and to generate intragroup trust (Norenzayan 2015). This is especially true of "big god" religions, in which a moralizing deity is able to monitor continually not only the behavior but even the thoughts of believers. From our perspective, however, explicitly modeling the club-good aspect of religion would add complexity without compensating gains in insight. We can think of the private desire to partake in club goods as part of the private consumption good that religion provides. Moreover, the "club" character of the good is an institutional rather than an intrinsic feature of religion – it is not a function of religion in small face-to-face societies, for example – and in the end it is precisely the institutional character of religion that we are attempting to model.

In order to think about when a religion in our sense will become part of the governing coalition – a theocracy – we will mean by the state a secular or non-ideological coalition in control of the means of violence. Such a state can take advantage of the existence of religion in two ways. First, by tolerating religious belief it can increase tax collection through religion's pacifying effect on the citizenry (as famously recognized by Marx); and, second, the state can look to religion to confer legitimacy on it, thereby lowering tax-collection costs. The latter effect is the route by which religious intolerance, or at least

[5] In the Middle Ages, the brevity of one's stay in purgatory depended on the prayers of others. Institutions like chantries and guilds monitored member contributions to prayer in order to reduce free riding in the production of the religious good (Richardson and McBride 2009).

religious favoritism, may emerge because different religions may view the state more favorably or less favorably. This is what potentially leads to discriminatory rules based on religious identity. Such a construct represents a kind of theocracy, but one that is non-exclusionary, because although rules are based on religious identity and favor one religion over others, it does not eradicate the disfavored religions, perhaps only because weak states do not have the capacity to do so. Effectively, religion becomes a substitute for state capacity – a substitute for greater military or bureaucratic effort to extract taxes. We will refer to this type of regime as a *pre-modern theocracy*.

As state capacity expands, however, religion may begin to play a diminished role in furthering the state's goals, being supplanted by secular institutions; this is the Johnson and Koyama (2019) story. But if religion and state capacity are complementary, the role of religion can become integral to the operation of the state even as state capacity expands. This gives rise to a different kind of theocracy that is exclusionary toward other religions — a *modern theocracy*.

To examine our arguments empirically, we focus on the transition from premodern to modern theocracy. We use a novel dataset comprising the religious and political histories of today's nations to construct an index of historical religious fragmentation, which we use as a proxy variable for the extent of premodern theocracy. Similarly, we use various indices of religious general laws in today's societies to serve as proxy measures for the extent of modern theocracy. We use cross-national data and regression analysis to estimate the relationship between historical religious fragmentation and modern theocratic rules, and the systematic variation in the adoption of such rules between societies in which state capacity *substitutes for* religious legitimacy and societies in which they are *complements*. The analysis includes several exogenous geographic characteristics of countries to mitigate concerns about the endogeneity of state capacity due to its relationship with religious legitimacy.

The results provide strong support for our hypotheses about the difference between societies in which religion and state capacity are substitutes and those in which they are complements. In the baseline scenario of modern states with relatively weak states, religious fragmentation in history generated theocratic general rules today, indicating a direct transition from premodern to modern theocracy as expected. For modern societies with strong states, consistent with Johnson and Koyama's (2019) argument regarding the rise of religious toleration in the modern period, our findings indicate that historical religious fragmentation has a negative differential effect on religious rules if state capacity substitutes for religion in supplying legitimacy. In societies in which religious legitimacy and state capacity are complements, however, the differential effect is positive, confirming our argument regarding two distinct ways of transitioning out of premodern theocracy.

Theoretical Framework and Examples.

Our setting involves a rent-seeking secular political coalition (which for simplicity we will refer to as the ruler) that seeks to maximize the amount of taxes obtainable from the population.[6] Citizens are assumed to derive utility from consumption of a composite good, x (the numéraire), and a religious good, q, as follows:

$$U = U(x, q). \qquad (1)$$

The citizen is endowed with wealth W, which is determined by existing resources, the prevailing production technology, and the distribution of legal rights or entitlements in society (more about which later). The citizen's budget constraint is

[6] The model is based on one first developed in Coşgel and Miceli (2009).

$$W = x + pq + T, \tag{2}$$

where p is the price of the religious good as determined by the religion "market" (Stark 2007, pp. 115-122), which may consist of a single provider or a group of competing providers, and T is the lump sum tax levied by the ruler. The ruler sets the maximum tax that citizens will tolerate as determined by their reservation utility level $\overline{U}$. Substituting (2) into (1) and setting $U=\overline{U}$ determines the *tax capacity* function, T, which is defined to be the maximum revenue the ruler can extract before triggering a popular revolt. It is implicitly defined by the equation

$$U(W - pq - T, q) = \overline{U}. \tag{3}$$

The structure of the religion market accordingly influences the citizen's tax capacity through its effect on realized utility. In particular, the better off citizens are, the more taxes they will tolerate before reaching their reservation utility. It follows that tax capacity will be maximized when the religion market is competitive because a competitive market maximizes the consumer surplus obtained from consumption of the religious good.[7] We will refer to this result as the "Marx effect" – because religion is the opiate of the masses (Coşgel and Miceli 2009). In the current context, the Marx effect increases citizens' ability to pay taxes, from which it follows that maximal religious toleration is most conducive to tax collection, all else equal.

The Marx effect, however, provides only one avenue by which religion can benefit the state. The other is through its effect on tax compliance. Taxes actually collected will generally fall short of the tax capacity of citizens because of collection costs, as citizens will resist the expropriation of their wealth by the state. We capture this by assuming that each dollar of taxes assessed is reduced by a fraction δ, which

[7] It follows directly from (3) that utility is maximized when $U_q/U_x=p$, which is the outcome that would arise in a competitive religion market. This in turn will maximize T.

results in *revenue collected* per citizen of $T(1-\delta)$. Religious leaders can lower collection costs by supplying legitimacy to the government, for example by declaring the sovereign divine or divinely inspired (Coşgel and Miceli, 2009; Johnson and Koyama, 2019). Religious legitimacy potentially increases overall revenue for any level of tax capacity. In contrast to the Marx effect, this factor will tend to work in the direction of having a single religious provider (*e.g.*, a single orthodox belief) because a unified structure maximizes the ability of religion to influence the citizenry. This effect is therefore a necessary condition for theocracy to emerge in our model. It is not sufficient, however, because if the teachings of the dominant religion are unfavorable to the state, they may arouse citizen resistance to taxation, thus lowering revenues. This two-pronged effect of religion on total revenues, through its effect on tax capacity and tax collection, will be the basis for our examination of the possible structures describing the relationship between religion and state.

The other key factor in our theoretical framework is state capacity, by which we mean the state's ability to monitor its citizens, to enforce their compliance with rules, and to mulct them effectively through purely secular means. Especially in the case of fragile or rudimentary states, state capacity will be tied to the level of military technology, which has always been an important means of forcibly extracting resources from citizens. In more sophisticated states, surveillance and coercion may come to depend on bureaucracies and other complex organizational structures as well, even if the power of those mechanisms derives ultimately from military force. We follow Johnson and Koyama (2013) by supposing that collection costs depend on both religious legitimacy and state capacity as follows:

$$\delta = \delta(\lambda, \rho), \tag{4}$$

where λ is an index of the ruler's legitimacy, ρ is an index of state capacity, and δ is decreasing in both arguments. The stronger is the state in terms of fiscal capacity, the less it will have to rely on religious legitimacy for tax compliance, based on the presumption that religious legitimacy and fiscal capacity are

substitutes in promoting tax compliance. This may be the usual situation, but it is also conceivable that the two factors are complements, which, as we will suggest below, is one possible explanation for the emergence of modern theocracy.

The final component of our framework is the nature of the rules the state promulgates to allocate resources and maintain social order. The rules governing a society dictate the access that its members have to rights and resources under the control of the state. Such rules thus represent an important input into the citizens' production of taxable wealth (tax capacity). As described above, we will distinguish broadly between identity rules and general rules, which, recall, differ according to whether the form or enforcement of the rules depends on the identity or status of citizens or applies equally to all citizens. In terms of the formal model, we capture this by writing the endowed wealth of a citizen as $W=W(\theta)$, where θ is a measure of the legal rights available to that citizen. We assume that $\partial W/\partial\theta>0$, or that greater legal rights translate into greater productivity. It then follows from (3) that a citizen's tax capacity is also increasing in θ, or $\partial T/\partial\theta>0$.

We will focus on identity rules that discriminate based on the religious affiliations of the citizens, though group-specific rules could also depend on other observable characteristics such as ethnicity. In contrast, general rules do not discriminate among groups based on differing beliefs. This latter situation could manifest itself in two ways. At one extreme is complete toleration of alternative religious views; that is, purely secular rules that do not depend in any way on religion. At the other extreme is the imposition of an orthodox religious belief that all citizens must adhere to.[8] When the rules of society are general because they enforce the dictates of a single religion or ideology universally prevailing (or imposed), we will refer to *religious general rules*. In terms of religious toleration, therefore, general rules sit at both ends of the

[8] This could include secular ideological "religions" like Marxism, which actually work to suppress the practice of traditional supernatural religion.

spectrum, allowing either complete tolerance or imposing complete intolerance. Identity rules fall somewhere in between, leading to Johnson and Koyama's concept of conditional toleration.

Using the preceding set-up, we now characterize what rules are likely to emerge in different environments, as reflected by the degree of fiscal capacity and the capacity of religion for conferring legitimacy. Increasing fiscal capacity, recall, is parameterized by an increase in ρ, reflecting the state's greater ability or resources for collecting taxes and for generally controlling the citizenry. As for religious legitimacy, we consider two situations: one in which there is a single group that possibly shares its religion with the ruler, and one in which there is a secondary religion that is different from the ruler's.[9] We further suppose, as seems reasonable, that when the ruler shares the religion of one of the groups, that group has a higher capacity (or willingness) to legitimize the ruler, whereas a secondary religion, when present, is less capable or willing to do so, and may even be a source of opposition to the state. Finally, we allow for the possibility that religion and state capacity can be substitutes or complements in lowering tax collection costs.

The ruler's problem is to maximize aggregate collectible revenue as given by

$$R = \alpha T(\theta)(1-\delta(\rho, \lambda_1)) + (1-\alpha)T(1-\theta)(1-\delta(\rho, \lambda_2)), \qquad (5)$$

where α is the fraction of group 1 in the population, and $1-\alpha$ is the fraction of group 2. In this formulation we have defined legal rules in such a way that θ is the "share" allocated to group 1. The first-order condition defining the optimal allocation of resources between the two groups is given by[10]

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[9] There could be multiple such religions; all that matters for our purposes is that the ruler shares the religion of some fraction of the population. Also, we do not assume that either is necessarily the minority in terms of numbers.

[10] The second-order condition for a maximum is satisfied given concavity of the T function.

$$\alpha T'(\theta)(1-\delta(\rho, \lambda_1)) - (1-\alpha)T'(1-\theta)(1-\delta(\rho, \lambda_2)) = 0, \quad (6)$$

which can be re-arranged to yield

$$\frac{T'(\theta)}{T'(1-\theta)} = \frac{(1-\alpha)(1-\delta_2)}{\alpha(1-\delta_1)}, \quad (7)$$

where $\delta_i \equiv \delta(\rho, \lambda_i)$. It follows that the optimal allocation of resources will depend on both the relative sizes of the two groups and the relative levels of legitimacy that they confer on the ruler (as captured by the λ_i's). Specifically, more resources will be allocated to the more populous group, and to the group that views the ruler as more legitimate (has the larger λ). We now consider two cases.

Case 1: $\lambda_1=\lambda_2$. This describes the situation where the two groups view the ruler identically (or, equivalently, when there is only one group). In this case, the δ_i's drop out of condition (7) and resources are allocated purely in proportion to the population shares. This is the case of general rules with complete religious toleration.

Case 2: $\lambda_1>\lambda_2$. In this case, group 1 views the ruler more favorably, perhaps because the ruler shares the same religion. As a result, holding the population shares fixed, resources are skewed toward that group in proportion as λ_1/λ_2 rises. This is the case of identity rules based on religious affiliation. Formally, holding λ_2 fixed, we have

$$\frac{\partial\theta}{\partial\lambda_1} = \frac{-\alpha T'(\theta)\left(\frac{\partial\delta_1}{\partial\lambda_1}\right)}{-[\alpha T''(\theta)(1-\delta_1)+(1-\alpha)T''(1-\theta)(1-\delta_2)]} > 0, \quad (8)$$

where the denominator is positive by the second-order condition. The sign of the overall expression therefore follows from the fact that $\partial\delta_i/\partial\lambda_i<0$, i=1,2. In the extreme case where λ_1/λ_2 becomes large, θ will approach one. This reflects complete suppression of group 2.

Now consider the impact of a parametric increase in fiscal capacity, focusing on the case where $\lambda_1>\lambda_2$. From (6), the comparative static reflecting the effect of an increase in ρ is given by

$$\frac{\partial\theta}{\partial\rho}=\frac{-\alpha T'(\theta)\left(\frac{\partial\delta_1}{\partial\rho}\right)+(1-\alpha)T'(1-\theta)\left(\frac{\partial\delta_2}{\partial\rho}\right)}{-\left[\alpha T''(\theta)(1-\delta_1)+(1-\alpha)T''(1-\theta)(1-\delta_2)\right]}. \tag{9}$$

The sign of the overall expression takes the sign of the numerator, which, using the first-order condition in (6), can be rewritten as

$$\alpha T'(\theta)(1-\delta_1)\left[-\frac{\partial\delta_1/\partial\rho}{1-\delta_1}+\frac{\partial\delta_2/\partial\rho}{1-\delta_2}\right]. \tag{10}$$

Generally, this is ambiguous in sign given that $\partial\delta_1/\partial\rho$ and $\partial\delta_2/\partial\rho$ are both negative. The sign of (9) therefore depends on whether an increase in fiscal capacity lowers δ_1 or δ_2 more in percentage terms.

In the case where fiscal capacity and religious legitimacy are substitutes, an increase in ρ will lower δ_2 more than δ_1 given that $\lambda_1>\lambda_2$, in which case (9) will be negative. Thus, θ will fall, resulting in greater religious toleration (i.e., more equal treatment). On the other hand, if fiscal capacity and religious legitimacy are complements, then the reverse will be true. That is, an increase in ρ will cause θ to rise, resulting in more unequal treatment. In the limit, this could lead to complete suppression of group 2—what we are calling theocracy.

The possible outcomes are summarized in the matrix shown in Table 1. The vertical dimension shows the fiscal capacity of the state (either low or high), while the horizontal dimension depicts alternative possibilities for the legitimizing effect of religion. In the first column, there is a single religion, which the ruler possibly shares; in the second column(s), there are multiple religious groups, and one group holds a

more favorable view of the ruler. The four resulting boxes show the type of governing rules that we would predict to emerge in each case, along with the implications for religious toleration.

****Table 1 about here****

Consider first the top row, where the state is fiscally weak. When there is a single religious group, as in the left-hand column, there is no basis for religious discrimination. In this case, religion may or may not be a strong source of religious legitimacy, and even if the predominant religion is opposed to the state, the state lacks the capacity to suppress it. The best it can do, therefore, is to adopt a general rule of religious toleration *de facto* and hope to take advantage of the Marx effect of religion on tax capacity.

Next, the upper right box shows the case of a state with low fiscal capacity coupled with a citizenry comprising two (or more) religious groups. In this case, the ruler needs to rely primarily on religion for legitimacy, and that legitimacy is best supplied by the group that views the state more favorably. The best-case scenario is when the ruler shares the religion of one of the groups. In this setting, we would expect the state to impose identity rules that discriminate in favor of that religion. In particular, it would optimally structure laws so as to funnel more resources to that group, thereby maximizing its tax collection. The other religions would not be completely suppressed, but they would have less access to society's resources. In this outcome, there is discrimination based on religious identity, but different religions still co-exist. This is the conditional-toleration equilibrium of Johnson and Koyama, which we are calling a pre-modern form of theocracy.

Western Europe during the Middle Ages fell into these two boxes. After the fall of Rome, state capacity was almost non-existent (Ward-Perkins 2005). Although the Merovingian kings converted to what we would now think of as orthodox Catholicism (from Arian Christianity as well as from Roman and Germanic paganism), and although those kings did at times attempt to ally themselves with the Church, in

fact their ability to mobilize the resources of the countryside was almost nonexistent. Before 1150, neither the Church nor the state had the ability to persecute heretics, and "large-scale, state-sanctioned judicial killings of individuals for their beliefs were rare" (Johnson and Koyama 2013, p. 267). Even after 1150, Europe retained a – sometimes unstable – conditional toleration of the Jews.[11] This was not because there were general rules permitting religious freedom. Christians operated under identity rules that accorded them relatively more favorable access to state resources; but *de facto* Jews were often permitted to coexist, and to operate under their own distinct identity rules, because contemporary states had inadequate capacity either to suppress or to protect them.

Now consider the bottom row of the box. Here, the state is fiscally strong, and so does not need to rely on religion for legitimacy but instead can employ primarily secular means (police and military power) to raise revenue. In terms of the state's view of religion, the Marx effect is still present, and so the usual situation will be to allow maximal religious toleration so as to take fullest advantage of that effect. This will be the case as long as religion is not too antithetical to the state. In this circumstance, the state's best strategy is to enact non-religious general rules and to allow religious toleration. If, however, the predominant religion, or one of the secondary religions, is highly opposed to the state (to such an extent that it overwhelms the Marx effect), the state may find it advantageous to suppress it altogether. These outcomes are shown by the left-hand box (under "Single religious group") and the right-hand sub-box headed "Substitutes."

It is one of the central arguments of Johnson and Koyama (2019) that Europe after the Reformation eventually moved to an equilibrium in which (in principle at least) all religions would be tolerated and all citizens would be subject to the same secular general rules. There are other examples. The Roman Empire

[11] Increased state capacity after 1150 did go hand in hand with increased persecution of heretical Christian groups, however.

at its height was grudgingly tolerant of religion, despite occasional local persecutions of Christians and other sects. For the most part, temples were neither built nor subsidized by the state, even though it was custom, with essentially the force of law, that public officials would support temples and festivals out of their own pockets, as doing so was a prerequisite for advancement among the senatorial class. Although in general competing religions had to be safely assimilable, or limited to easily-marginalized foreigners, the Romans nonetheless ultimately permitted devotion to a wide variety of gods (Stark 2007, pp. 122-124). Roman life involved numerous identity distinctions, including those between free and slave; but even the poor and slaves founded their own temples. For the most part the early Empire granted citizenship widely and attempted to ensure that Roman law was administered uniformly around the Mediterranean, despite the very different religions and ethnicities the Empire encompassed. Arguably, the relative tolerance of multiple religions owed much to the strength of secular institutions during what was, by the standards of history, a period of economic flourishing (Temin 2006).

By the middle of the third century, however, Roman citizens, and then Roman emperors, began systematically to suppress Christianity on an empire-wide scale (Madigan 2015, p. 18), believing Christianity responsible for an ongoing crisis and the near collapse of the empire. If Kyle Harper (2017, pp. 131-144) is right, the crisis was driven in part by climate change and an Empire-wide pandemic that might have been related to the Ebola virus. At the same time, the rise of the powerful Sasanian dynasty in Persia handed the Romans serious military defeats and demanded an increase in the size and cost of the army at the frontiers (Heather 2005, pp. 62-66). Roman fiscal capacity was significantly eroded. A dizzying succession of short-lived emperors attempted to deal with the crisis by debasing the currency and extracting increased resources from the economy (Bartlett 1994). The crisis also initiated a wave of persecution of Christians across the Empire (Stark 2007, pp. 145-153). By the turn of the fourth century, the emperor Diocletian had succeeded in stabilizing the situation through heavy-handed intervention in the

economy, including taxes extracted in kind and an edict tying workers to the land. But, after a period of tolerance early in his reign, Diocletian also initiated persecution against Christians. Probably because community-oriented religions like Christianity were better able to provide "religious goods," especially to the lower classes, than were the cultic temple gods, Christianity actually thrived despite the persecution (Ehrman 2018, p. 135). The ultimate result was the kind of religious but relatively impotent state in the upper-right-hand box of Table 1. "The Roman state simply had no apparatus for empire-wide enforcement of the imperial will" (Ehrman 2018, p. 10).

Many have noted that, unlike Roman paganism with its multiple "small gods," Christianity was a "big god" religion With superior surveillance ability, the Christian god was thus far more useful to Constantine than the Roman pantheon – despite the fact that Christians at the time made up less than 10 per cent of the population of the western empire (Madigan 2015, p. 20). There is evidence that the invention of big gods is linked to increases in the division of labor and social complexity, which had rendered ineffectual older regimes of face-to-face monitoring in small groups (Whitehouse *et al*. 2019). Crucially, big-god religions are themselves complex: they require, or at any rate permit, greater institutional complexity in their deployment and administration, if for no other reason than that they could be applied uniformly to large population groups. The Medieval Church was in effect a large multinational firm (Ekelund, *et al*. 1996). This suggests that a complex religion and a complex state might even be complementary in the sense that greater state capacity incentivizes the ruler to increase its favoritism of co-religionists or groups that view it positively.

Which brings us to the sub-box labeled "Complements" in the right-hand column of Table 1. This shows the case in which religion and state capacity are complements in supplying legitimacy. Clearly, such complementarity is conducive to the emergence of theocracy—what we are calling modern theocracy, which proffers *religious general rules* that mandate one specific orthodox belief for all citizens. If the

imposition of religious general rules is accomplished in an environment with multiple religious groups, it will require the suppression of non-orthodox sects.

In the western Roman empire, lack of state capacity meant at best a pre-modern form of theocracy. Indeed, some view the rise in the west of a Church bureaucracy distinct from secular authority as reflecting the separation of Church and state, implicit in St. Augustine's *City of God*, a work of great influence in the west (O'Donnell 2015, p. 233). But when the emperor Constantine adopted Christianity, he also created a new imperial city in Byzantium, renamed Constantinople. It was designed as a Christian city, with Churches, including the Hagia Sophia, standing where in Rome there would have been pagan temples. Fortified both by its geography and by elaborate defensive works, the city controlled the sea lanes to Asia Minor, making much of the valuable eastern empire inaccessible to European invaders (Ward-Perkins 2005, p. 59). Thus protected, the eastern Roman empire would cohere until its ultimate defeat by the Ottoman Turks in the fifteenth century. The eastern empire would come far closer to a modern theocracy. Constantine attempted the "fusion of theology with Roman bureaucracy at its most controlling" by standardizing belief in the Nicene Creed (Holland 2019, p. 133). Constantine's biographer Eusebius would elaborate this goal into the ideal of Christian imperial theocracy. Although the eastern and western parts of the empire would diverge only slowly, and although religion would initially be contested even in the east, by the reign of Justinian an orthodox version of Christianity was in place. The mechanisms of theocracy were lubricated by a bilateral exchange of officials between the Church and the imperial bureaucracy. In the view of Sir Steven Runciman, the modern distinction between Church and state "would have been meaningless to the Byzantines" (Runciman 1977, p. 4).

There are other examples of complementarity between religion and state capacity, including modern-day states like Iran and Saudi Arabia. In both states, rulers depend heavily on religious ideology as the primary basis for political legitimacy. The law is based on religious principles, and imposes on

everyone, regardless of religious identity, the rules and regulations derived from the religion that provides political legitimacy. Inside Saudi Arabia, for example, the (Islamic) law applies to all people regardless of their religion. Similarly, according to Iran's constitution, "all…laws and regulations must be based on Islamic criteria."

In the end, somewhat ironically, the best examples of a modern theocracy might actually come from secular ideologies. Although secular totalitarianism began at least as early as the French Revolution, it found its most elaborate extension in the Communist regimes of the twentieth century.[12] Precisely because religion was the opiate of the masses, Marxism demanded that religion be extirpated in favor of Marxism's own complex and all-encompassing ideological matrix. But the substitution of Bolshevik doctrine for Orthodox Christianity (in the case of what became the Soviet Union) was also in large part an exercise in state-making. Belief in the doctrine lowered the costs of creating state capacity along largely new lines, while growing state capacity, in the form of the expanding Soviet bureaucracy, increased the state's ability to inculcate the doctrine. It is significant, however, that, during World War II, when the Soviet Union needed to extract – and ultimately did extract – an astounding level of resources from its population, Stalin was forced to back away from the anti-religion of Marxism and to reunite with the Orthodox Church, using for propaganda purposes such Christian figures as the medieval saint Alexander Nevsky, who had repulsed the Teutonic Knights in the thirteenth century (Werth 1964, p. 429).

Empirical Analysis.

For an empirical analysis of our arguments, we examine the factors affecting the adoption of governance rules described in Table 1. Leaving aside the hypothetical benchmark case of societies

[12] In the case of the French Revolution, it was Rousseau's "general will" of the people that replaced the will of God. And, like God's will, the general will demanded interpretation by a cadre of priests, in this case the Jacobins.

with a single religious group (left column in Table 1), we focus on the transition from identity rules to general rules as a result of the rise from low to high state capacity in the modern period (right column). We use contemporary religious rules as the outcome of interest and run regression analysis to determine systematic differences in the adoption of such rules between societies in which the rise in state capacity substituted versus complemented religious legitimacy. Although the analysis does not provide a clean test of the causal relationship between identity rules and general rules, it nevertheless illustrates our argument regarding the differential adoption of religious general rules between the two types of societies in the modern period.

To determine factors influencing the adoption of religious general rules, we use OLS to estimate the following equation:

$$RR_i = \beta_1 + \beta_2\, IR_i + \beta_3 S_i * IR_i + \beta_4\, C_i * IR_i + \boldsymbol{X}_i' \boldsymbol{\beta}_5 + u_i\,, \qquad (12)$$

where *RR* is an index of contemporary religious rules for country *i* , and *IR* is an index of identity rules in history. *S* and *C* are dummy variables that incorporate the two distinct ways in which countries with strong states differ based on the state's relationship with religion. These are two of the three overall categories that comprise the way countries differ in terms of the level of state capacity and the relationship between state and religion, as depicted in the right column of Table 1. To avoid multicollinearity, we drop the first case of countries with low state capacity as the reference category, so that *S* and *C* show the difference of interest among strong states. *S* is thus a dummy variable that equals 1 if strong state capacity substituted for religion in country *i*, and *C* is

a similar dummy variable to denote a strong state's complementary relationship with religion. *X'* is a vector of control variables.

To construct an index of religious general rules in each country, we use data from the Religion and State (RAS) dataset assembled by Jonathan Fox.[13] The most recent version (Round 3) of the RAS dataset covers the period between 1990 and 2014 and includes various measures of government religion policy for all countries with populations of 250,000 or more as well as a sampling of smaller states. Among the numerous variables available in the dataset, we use those that specifically refer to religious general rules. These are the 52 variables included in the religious support category that "refers to laws or government policies which legislate or otherwise support aspects of religion." Each of these is a dummy variable that equals one if a specific religious rule exists in a country. Although the RAS dataset provides panel data for these variables, we take the simple average of each variable over time to generate cross-sectional data, for consistency with the data type of the key explanatory variables and geographic controls used in our analysis.

*** Figure 1 about here*****

Figure 1 shows the geographic distribution of the index of religious general rules in the world during the period between 1990-2014, with darker shades corresponding to higher values of the index. This information indicates that religious rules have typically been more prevalent in the

[13] Available online at: http://www.thearda.com/ras/

Middle East and North Africa region than in other parts of the world. Such rules were also noticeably high in parts of Southeastern Asia, Central Africa, and Eastern Europe.

Regarding the measurement of identity rules (*IR*), we would ideally construct this index based on the extent of actual identity rules observed in each country's history. However, such a measure is not available. For a suitable alternative, we use a proxy variable for identity rules, namely religious fragmentation in history. Fragmentation has been a common feature of religion markets throughout history, though with significant variations in origin and extent across societies. Fragmented premodern societies, as Johnson and Koyama (2019) have shown, typically relied on identity rules to maintain order. We therefore believe that differences across societies in historical religious fragmentation would be a reasonable proxy for the extent of a country's experience with identity rules.

We construct the index of historical religious fragmentation in two stages. Using territories corresponding to today's nations as unit of analysis, we first define a dummy variable that marks whether the territory experienced substantial religious fragmentation each year. This variable is equal to one if a sufficiently large fraction of the population adhered to a secondary religion during that period. In the second stage we aggregate this information over time to calculate a weighted cumulative index of historical fragmentation. To implement the index, we use a unique dataset called Historical Polities Data (HPD), which includes historical information on the territories

occupied by today's nation states since the year 1000.[14] Appendix A provides further details regarding the formal construction and implementation of the index.

*** Figure 2 about here*****

Figure 2 shows the geographic distribution of historical religious fragmentation in the world. The darker shades in the figure correspond to higher values of the index, showing interesting patterns regarding the geographic distribution of religious fragmentation in history. Fragmentation was higher in parts of Western and Southeastern Asia and in parts of Central Africa and Eastern Europe.

To implement the dummy variables *S* and *C*, we group countries into three categories based on the level of state capacity and the relationship between religion and the state, as depicted in Table 1. The first group consists of countries with low state capacity, defined as those with total government revenue as percent of GDP (averaged during the period between 1990-2014) less than the world median.[15] Keeping these countries with low state capacity as the reference category, we divided the remaining countries with high capacity into two groups based on whether the strong state substitutes for or complements religion.

S is thus a dummy variable that takes the value of one if a strong state substitutes for religion, and *C* likewise equals one if the strong state is in a complementary relationship with

[14] For a detailed description of the construction of this dataset, see Coşgel (2016). Given the ambitious scope and broad temporal and geographic coverage of the dataset, the final product naturally includes various imperfections caused by the difficulty of gathering and interpreting the required information.

[15] The source of this data is IMF's World Revenue Longitudinal Data set.

religion. Ideally, we would make this determination based on a direct measure of the elasticity of substitution/complementarity between state and religion, which is not available. For a proxy measure that approximates whether strong state capacity was a complement rather than a substitute for religion, we used one of the variables included in the RAS dataset called "Official Support," which "measures the formal relationship between religion and the state." This variable was coded on a scale between 0 and 13, with higher values corresponding to increasingly higher levels of support and complementarity between religion and state. To construct *S* and *C* from this information, we considered it as evidence of a substitute relationship if a strong state's attitude varied between "hostility" and "supportive," and evidence of a complementary relationship if the formal relationship varied between "cooperation" and "religious state".[16] We confirm the robustness of our results to alternative definitions of *S* and *C*, as seen in Appendix C.

In addition to key variables of interest, we include various other variables in our analysis to control for their possible influence on the presence of religious general rules. The control variables included in the analysis are the absolute latitude and elevation of a territory, its size, roughness of terrain, temperature, island status, precipitation, fraction of arable land, and suitability for agriculture. Appendix B reports the summary statistics of control variables.

****Table 2 about here****

[16] Numerically, *S*=1 if a country has strong state (i.e., per capita GDP greater than world median) and the value of the "Official Support" variable in the RAS dataset is between 1 and 5, and *C*=1 if the state has strong capacity and "Official Support" is between 6 and 13. We test for the sensitivity of our results to alternative definitions of these variables, as seen in Appendix C.

Table 2 shows the results of OLS analysis of influences on the adoption of religious general rules in contemporary societies in three different models that correspond to various combinations of key variables of interest and control variables. Although the size and significance of the key coefficients of interest change somewhat, the upshot is the same. The results clearly support our hypotheses regarding the basic transition between premodern to modern theocracy and the difference between societies in which strong state substitutes for religion and those in which they are complements.

The coefficient of "Historical religious fragmentation" is consistently positive across the three models and significant at conventional levels. Its magnitude remains stable around 0.09. Since both indices have been normalized to vary between 0 and 1, this indicates a 9 percent rise in religious general rules corresponding to the difference between a religiously homogenous society throughout the period and one that has been continually fragmented. In the second and third models, the coefficient of this variable shows the effect on religious rules for states with low state capacity (S=C=0). The coefficient is positive in both models, indicating a direct path-dependent process from historical identity rules to contemporary religious general rules, with important implications regarding the continual importance of religious legitimacy in these societies due to low state capacity.

The interaction terms in the second and third models show how in high-capacity societies the differential effect of religious fragmentation varies between countries in which the strong state complements versus substitutes for religion. The coefficient of "Strong state substitutes for religion * Historical religious fragmentation" is negative and highly significant, confirming the central

argument of Johnson and Koyama (2019). This contrasts sharply, however, with the positive and significant coefficient of "Strong state complements religion * Historical religious fragmentation," which supports our contention that religious general rules are distinctly more prevalent in societies in which strong state complements religion. Figure 3 shows the partial regression plots of the relationship between the two interaction terms of interest and religious general rules in the third model, after controlling for historical religious fragmentation and other regressors.

****Figure 3 about here****

The magnitudes of the coefficients of interaction terms shed further light on the extent of religious rules observed in contemporary societies with strong state capacity. In societies in which the strong state substitutes for religion, the negative differential effect is far greater than the effect of historical fragmentation alone, so that the net effect is negative with a high magnitude, about -0.10 in the full model. Overall, this shows how the substitution of high state capacity for religious legitimacy in certain modern societies has eliminated their reliance on religion for rules. By contrast, in societies in which the strong state complements religion, the differential effect doubles the effect of religious fragmentation alone, so that the total effect becomes about 0.17, a huge increase.

We performed various tests to check for the robustness of our baseline results to alternative specifications, as reported in Appendix C. To see if the results simply show the difference between the New World and the Old World (W. Hemisphere and Oceania), we first restrict the sample of the full model with full controls to the Old World. In addition, we include continent dummies to see if controlling for systematic differences across continents will alter our results. Finally, we

change the definitions of *C* and *S* by using different values of the "Official Support" variable in the RAS dataset. Starting with the baseline definition of *C*=1 corresponding the values of "Official Support" between 6 and 13, we first expand the range of a complementary relationship to be between 5 and 13 (column 4), and then restrict it to be between 7 and 13 (column 5). The results of robustness tests indicate that our results are robust to alternative specifications of the sample, model, and key variables of interest.

Conclusion.

Why do states become theocracies? Johnson and Koyama (2019) have analyzed the transition from a conditional-toleration equilibrium, in which feeble state capacity demands that distinct religious groups co-exist under a system of religion-based identity rules, to a religious-toleration equilibrium, in which a strong state applies secular general rules because it has little need for religion as a legitimizing force. This implies that religious legitimacy and state capacity are substitutes. Using a simple model, we explore the alternative possibility that religious legitimacy and state capacity can be complements: religious legitimacy and state capacity work together to increase the ability of the state to extract resources from the citizenry. The result in this case can also be an equilibrium of general rules – but religious rather than secular general rules. When state capacity and religion reinforce one another, identity distinctions may disappear because everyone is a member of the same religion and thus everyone follows the rules of that religion. In other words, a theocracy. We confront our model with a unique data set of world polities and religion

since the year 1000. Our empirical analysis indicates that religious general rules do tend to be more prevalent in societies in which religion complements the state.

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Table 1.

<table>
<tr><td></td><td>Single religious group</td><td colspan="2">Multiple religious groups</td></tr>
<tr><td>Low state capacity</td><td rowspan="3">No basis for religious identity rules/
Religious toleration</td><td colspan="2">Religious identity rules/
Conditional religious toleration</td></tr>
<tr><td rowspan="2">High state capacity</td><td>Substitutes</td><td>Complements</td></tr>
<tr><td>Non-religious general rules/
Religious toleration</td><td>Religious general rules/
Theocracy</td></tr>
</table>

Table 2

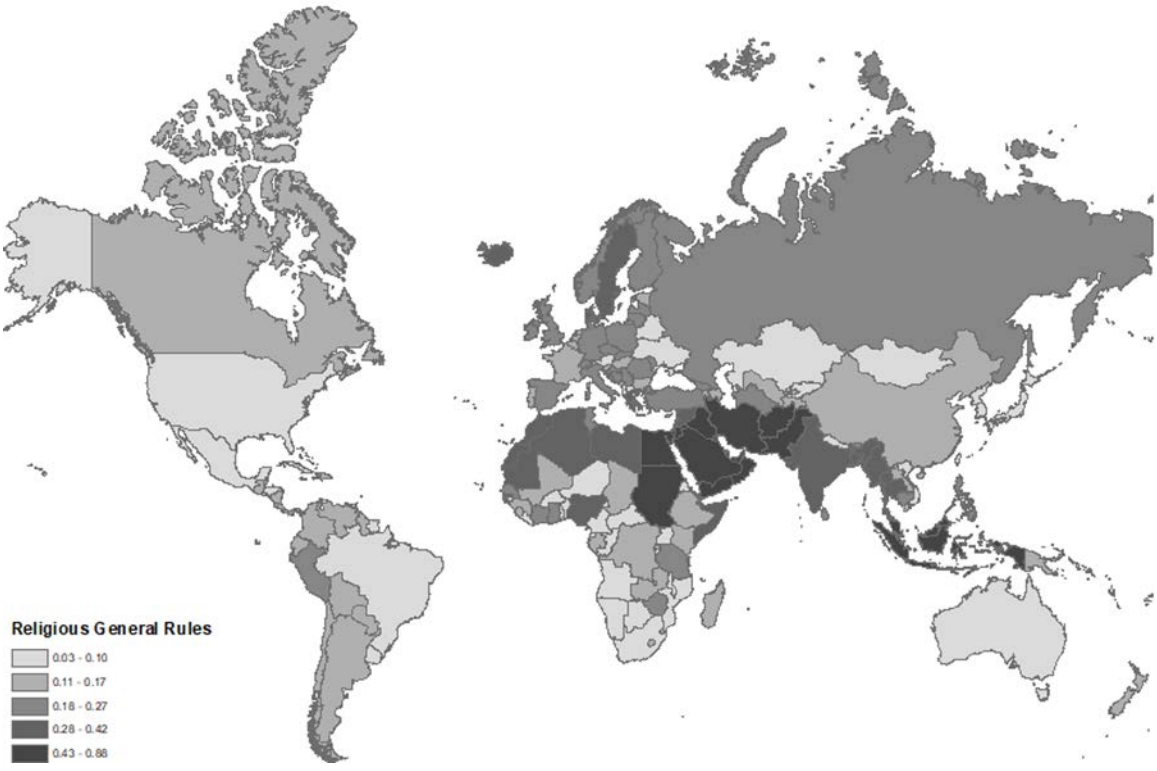
OLS Estimates of Influences on Religious General Rules

	(1)	(2)	(3)
Historical religious fragmentation	0.0914**	0.0860*	0.0852*
	(0.0393)	(0.0457)	(0.0486)
Strong state substitutes for religion * Historical religious fragmentation		-0.198***	-0.187***
		(0.0426)	(0.0506)
Strong state complements religion * Historical religious fragmentation		0.136**	0.0899*
		(0.0593)	(0.0518)
Total land area (1m sq m)			-0.00652*
			(0.00369)
Percentage of arable land			0.000508
			(0.000808)
Mean agricultural suitability			-0.168***
			(0.0471)
Mean elevation			-0.0412
			(0.0274)
Temperature			0.00178
			(0.00127)
Precipitation			-0.000524*
			(0.000268)
Terrain roughness			0.0491
			(0.0901)
Island			-0.00721
			(0.0346)
Constant	0.163***	0.172***	0.272***
	(0.0178)	(0.0174)	(0.0336)
Observations	162	162	162
R^2	0.040	0.163	0.310

Notes: The dependent variable is an index of religious general rules, 1990-2014. The omitted category is "Weak state * Historical religious fragmentation." Standard errors in parentheses are clustered on the country level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure 1

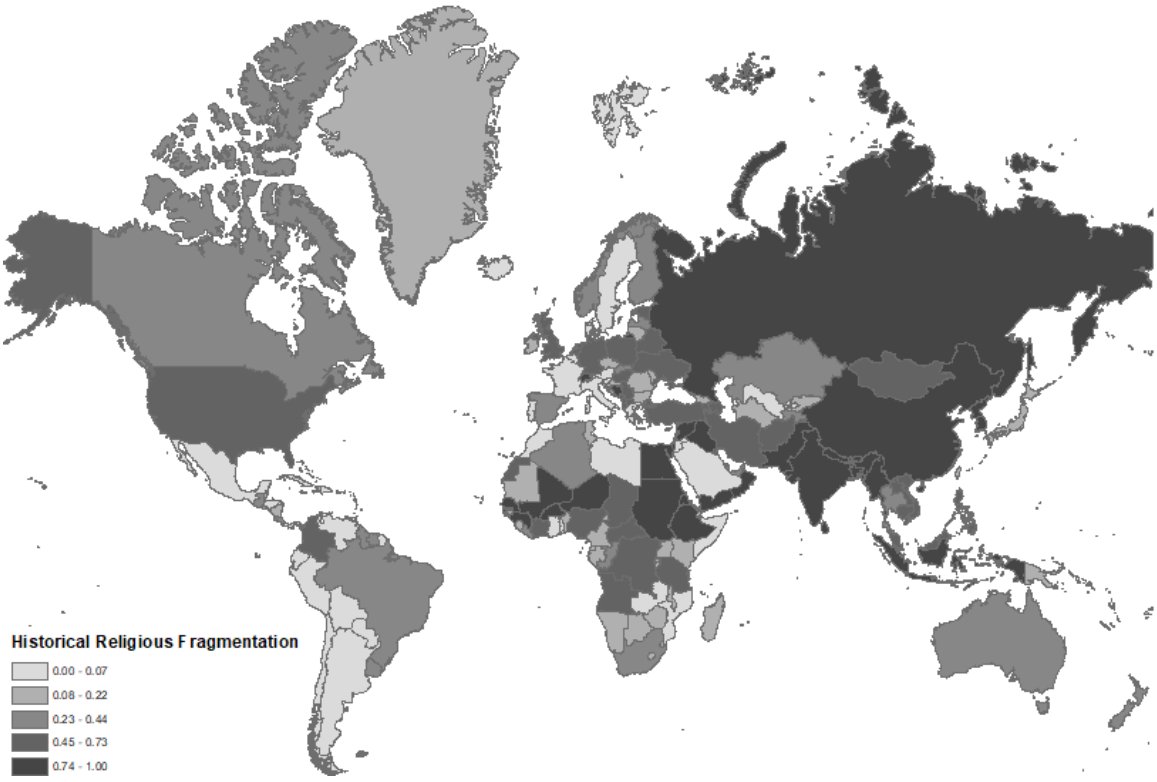
Religious General Rules



The shades refer to the fraction of religious general rules adopted by a country during the period between 1990 and 2014.

Figure 2

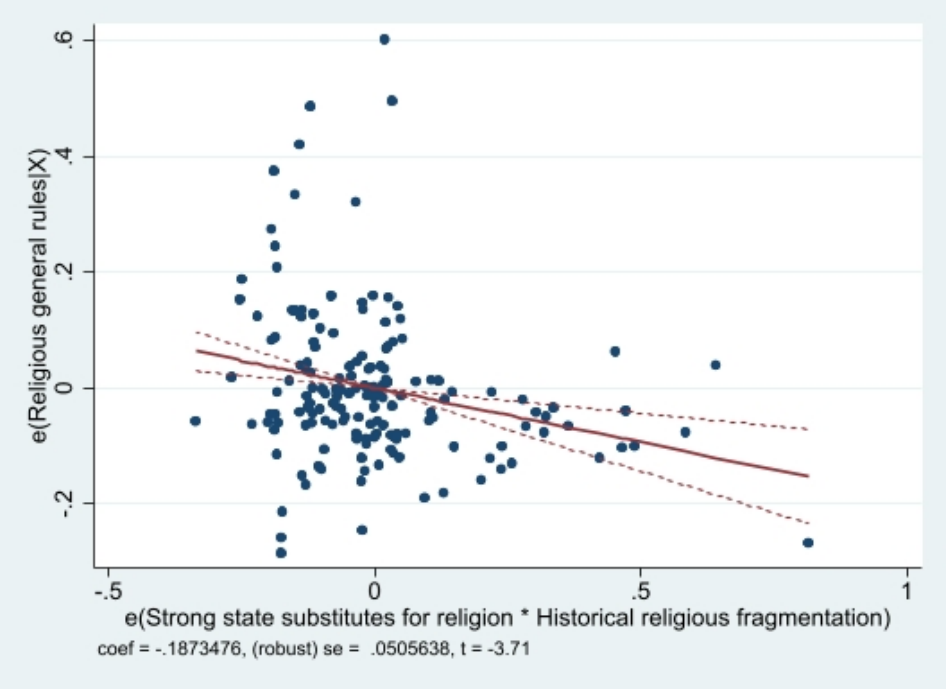
Identity Rules Measured by Religious Fragmentation in History

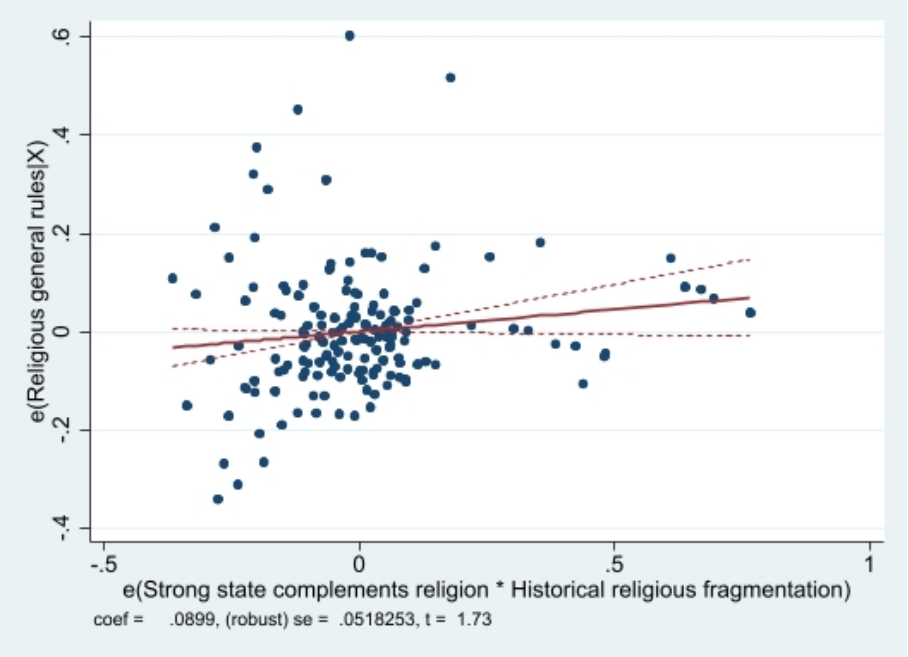


The shades refer to the fraction of years with religious fragmentation in a country's history since the year 1000.

Figure 3

Strong state and Religious Rules





Appendix A

Construction and Implementation of the Index of Historical Fragmentation

The index of historical religious fragmentation has been constructed in two stages. The first stage involves a dummy variable that marks for each year whether a territory corresponding to today's nations experienced substantial religious fragmentation. This variable is equal to one if a sufficiently large fraction of the population adhered to a secondary religion during that period. The second stage aggregates this information over time to calculate a weighted cumulative index of historical fragmentation.

To be more formal, let f^t denote the dummy variable defined above that marks the presence of religious fragmentation in the population in period *t*. Consider a time span of *K* periods. We define the corresponding index of historical religious fragmentation as follows:

$$HF = \frac{1}{\pi}\sum_{t=1}^{K}(1+\phi)^{t-K} f^t \ , \qquad (11)$$

where π is a normalization parameter such that $\pi = \sum_{t=1}^{K}(1+\phi)^{t-K}$. We consider the effect of time through ϕ, a discount rate, such that $\phi \geq 0$. If ϕ =0, *HF* puts equal weight on all historical periods, while $\phi > 0$ emphasizes the more recent periods. The resulting indices range from 0 to 1.

We implement the index through a unique dataset called Historical Polities Data (HPD) that includes information on the territories occupied by today's nation states since the year 1000.[17]

[17] For a detailed description of the construction of this dataset, see Coşgel (2016). Given the ambitious scope and broad temporal and geographic coverage of the dataset, the final product naturally includes various imperfections caused by the difficulty of gathering and interpreting the required information.

Combing through a wide variety of sources, a team of research assistants gathered information on the basic characteristics of these territories during this time period, including the main and substantial secondary religions of the population. In cases of conflicting information about a particular variable, we looked for consistency by giving priority to sources with comprehensive coverage, such as *Encyclopædia Britannica*, the "Country Studies" collection of the Library of Congress, and the book series *Cambridge Histories Online*. Rather than restrict the dataset to territories of certain size, duration, or type, we included all territories for which we could find complete information.

For each territory and year, the HPD identifies the main religion as the one that had the highest percentage of adherents. The benchmark to determine whether other substantial religious groups existed is whether the secondary religion's population share exceeded ten percent, if this information was available. For recent centuries, estimates of population shares of religious groups can be found in Brown and James (2015), which in some cases goes back to the 1700s. For earlier centuries, we used non-quantitative information from our sources to identify the main religion and to determine whether a substantial secondary religion existed.

We categorized religions into groups to facilitate systematic analysis. For indigenous religions, we recorded as much specific information as available regarding differences within a territory, but we coded them under a single category to maintain a consistent standard across territories. We did not differentiate, for example, among the varieties of Chinese folk religions or among the branches of Hinduism that have developed in India over the centuries. In the same vein, we used the coding standards of recent data on historical religious populations by treating

broad categories of sects in Islam (Sunni, Shia, Kharijite) and Christianity (Catholic, Orthodox, Protestant) as distinct religions, but we did not further differentiate among the subcategories of these groups.[18]

Finally, we used the procedure outlined above to calculate the index of historical religious fragmentation for analysis. The Appendix B includes a descriptive summary of the index corresponding to parameter values of K=1990 and ϕ = 0.001.

[18] Any categorization of religions is inherently problematic due to the difficulties of comparison and standardization across different traditions. Rather than introduce bias by implementing our own criteria, we simply used the broad categories commonly used in recent quantitative studies.

Appendix B

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Religious general rules	162	0.20	0.16	0.03	0.88
Historical religious fragmentation	162	0.39	0.34	0	1
Strong state substitutes for religion	162	0.24	0.43	0	1
Strong state complements religion	162	0.27	0.44	0	1
Strong state substitutes for religion * Historical religious fragmentation	162	0.09	0.21	0	1
Strong state complements religion * Historical religious fragmentation	162	0.08	0.23	0	1
Total land area (1m sq m)	162	0.78	1.99	0.001	16.38
Percentage of arable land	162	14.78	13.78	0.04	62.10
Mean agricultural suitability	162	0.42	0.27	0	0.97
Mean elevation	162	0.54	0.49	0.005	2.67
Temperature	162	18.56	8.38	-7.93	28.64
Precipitation	162	92.42	65.13	2.91	284.00
Terrain roughness	162	0.20	0.18	0.01	1.24
Island	162	0.16	0.37	0	1

Appendix C

Robustness Checks

	(1) Baseline	(2) Sample: Old World	(3) Includes continent FE	(4) Range of *C* expanded	(5) Range of *C* restricted
Historical religious fragmentation	0.0852*	0.0771	0.00300	0.0880*	0.0828*
	(0.0486)	(0.0557)	(0.0508)	(0.0486)	(0.0473)
Strong state substitutes for religion * Historical religious fragmentation	-0.187***	-0.180***	-0.153***	-0.189***	-0.189***
	(0.0506)	(0.0589)	(0.0486)	(0.0511)	(0.0474)
Strong state complements religion * Historical religious fragmentation	0.0899*	0.0865	0.0529	0.0852*	0.108**
	(0.0518)	(0.0554)	(0.0463)	(0.0511)	(0.0531)
Continent FE	No	No	Yes	No	No
Observations	162	128	162	162	162
R^2	0.310	0.282	0.502	0.307	0.314

Notes: The dependent variable is an index of religious general rules, 1990-2014. The omitted category is "Weak state * Historical religious fragmentation." Column (1) is the baseline shown in Table 2. In column (2), observations are restricted to countries in the Old World (Asia, Africa, Europe). Column (3) includes continent fixed effects. Columns (4) and (5) show estimates corresponding to recoded values of the "Strong state complements religion" variable based on expanded (between 5-13) and restricted (between 7-13) ranges of the values of the "Official Support" variable in the RAS dataset. Standard errors in parentheses are clustered on the country level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.