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Social Insurance, Commitment, and the Origin of Law: Interest Bans in Early Christianity

Social Insurance, Commitment, and the Origin of Law: Interest Bans in Early Christianity

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Abstract

Despite the historical importance of ideology-based, economically inhibitive laws, we know little about the economic factors underlying their origin. This paper accounts for the historical emergence of one such law: the Christian ban on taking interest—a doctrine that shaped the evolution of numerous financial contracts and related organizational forms. A game-theoretic analysis and historical evidence suggest that the Church's commitment to providing social insurance for its poorest constituents encouraged risky borrowing, which the Church attempted to limit by banning interest. The analysis highlights the applicability of the rational choice framework to seemingly irrational actions and laws, the role of nonmonetary sanctions in circumventing commitment problems, and the importance of economic forces vis-à-vis ideology.

1. Introduction

Rules governing the structure of legal institutions play a well-known role in economic performance (La Porta et al. 1998, 1999; Glaeser and Shleifer 2002; Djankov et al. 2003). Yet studies that analyze the economic effects of legal structures have difficulty explaining why certain economically inhibitive laws, particularly those that prohibit welfare-improving transactions, emerge in the first place. Such laws are often ideology based and are thus generally considered outside the scope of economic analysis, as ideology and the otherworldly are difficult to quantify within a rational choice framework.

However, a growing literature suggests that economic forces can play an important role in the formation and perpetuation of ideology-based institutions and laws (Iannaccone 1992; Berman 2000; Kuran 2005; Abramitzky 2008). Employing such a framework, this paper sheds light on the origin of welfare-inhibiting laws by analyzing the historical conditions under which one such law, the Christian ban on taking interest (usury) on loans, emerged.[1] I draw from the historical record to identify the circumstances underlying the emergence of the ban, which in turn motivate theoretical and historical analyses demonstrating that economic, not ideological, forces motivated this law.

Several economic models have recently been advanced to explain interest bans. A theme common to most of these models is that interest bans were socially optimal under the conditions of the premodern economy. Glaeser and Scheinkman (1998) argue that interest laws constitute a form of Pareto-improving social insurance in economies with missing contingent markets. When direct transfers and complete insurance are infeasible, artificially low interest rates help redistribute income from a state in which an individual is rich to one in which he is poor.[2] Reed and Bekar (2003) claim that the medieval Church's prohibition of interest prevented starvation by reducing the attractiveness of formal capital markets relative to the informal loan market and thus increased the likelihood that the poor would have sufficient funds to reach subsistence (through informal credit provided by the wealthy). Ekelund, Hébert, and Tollison (1989) present an argument based on the profit-maximizing behavior of the Church, hypothesizing that the interest ban was used by the Church to create a rent-extracting double standard that allowed it to lend at interest while borrowing freely.[3]

Yet this literature, with its focus on premodern social efficiency and rent seeking, fails to explain—or even note—a puzzling historical observation: prior to the fourth century, there was no interest prohibition in Christianity. Indeed, as I show in this paper, the Church banned interest only after it was able to provide social insurance for its constituents, a fact that undermines hypotheses explaining interest laws as a primitive means of providing social insurance (see especially Posner 1980; Glaeser and Scheinkman 1998). The historical emergence of the Christian ban thus presents an unexploited opportunity to understand the economic forces underlying the origin of interest laws.

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[1] Although the terms "interest" and "usury" have different meanings in their modern contexts, in premodern times they were largely synonymous and will thus be used interchangeably throughout the paper. For more, see Divine (1959, pp. 4–5) and Persky (2007).

[2] For a similar argument, see Nelson (1949), Posner (1980), and Brenner (1983), who argue that interest bans were utilized as a tribal means of promoting the spirit of brotherhood and kinship. These bans provided hunger insurance in primitive societies, with brotherhood and kinship being vital mechanisms for sustaining the reciprocal exchange necessary for a zero-interest equilibrium. For empirical examples from the development literature of this lending phenomenon among tribes, see Platteau and Abraham (1987), Fafchamps (1999), Fafchamps and Lund (2003), and Fafchamps and Gubert (2007).

[3] Others have emphasized the interest ban's role in the overall economy. For example, Tawney ([1926] 1954) and, to a lesser extent, Weber ([1905] 2002) trace the rise of the capitalist spirit to Protestantism (especially Calvinism) and the relaxation of the ban on interest.

This paper exploits this dynamic, combining theoretical and historical analyses to provide a coherent explanation for the emergence of interest bans. Drawing from the historical context surrounding the Christian ban, I identify the salient features of the Church's economy, which include its provision of social insurance and a large wealth shock in the early fourth century. These features motivate a theoretical analysis, which draws from the Samaritan's dilemma literature the insight that commitment to providing social insurance encourages people to take excessive borrowing risks, since they know that they will not suffer the full consequences of default.[4] I argue that this commitment problem is mitigated when the insurer is too poor to insure everyone, as it can credibly punish opportunistic borrowing by insuring only nonopportunists. However, when the insurer is sufficiently wealthy, its preferences entail that commitment to punishment is not credible, and overborrowing ensues. In this case, the insurer must turn to other means (namely, banning interest) to overcome the commitment problem.[5]

To evaluate this conjecture, I model the strategic interactions between a social insurer (with an opportunity cost of funds) and numerous agents living near subsistence. The model confirms the intuition, providing both a comparative static result linking Church wealth and interest bans as well as an account of other historical evidence not assumed in the model. A historical analysis further supports the conjecture, suggesting that the Church faced a commitment problem after it incurred a wealth shock in the fourth century, and it banned interest in an attempt to limit the quantity of consumption loans.

2. Brief Historical Background

2.1. Church Wealth and Social Insurance Provision

Providing for the poor has always been an important part of the Christian ethic (see Matthew 19:21–26, 25:31–46; Mark 10:17–27; 2 Corinthians 9:6–7). Throughout the first few Christian centuries, a safety net against impoverishment was increasingly provided by the Church—especially in the cities, where most Christians lived in relative proximity to the local bishop (Brown 2002, p. 50).[6] By the third century, support of the poor had become an immense enterprise,

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[4] This aspect of the model is similar to that of Posner (1995), who suggests that interest restrictions arise in welfare states to limit the ability of the poor to take excessive credit risks, a form of differential credit rationing. However, Posner's model cannot account for numerous historical circumstances, including economies in which most borrowing is for consumption (like the early Church economy) and the economic conditions underlying the changes in Christian interest policy.

[5] Unlike premodern legal and political institutions, which generally enforced punishment of opportunistic behavior by imposing monetary sanctions, the Church enforced interest restrictions through otherworldly sanctions. Similar otherworldly sanctions are also central to Richardson's (2005) and Richardson and McBride's (2009) analyses of medieval English guilds.

[6] The Roman government provided its citizens doles of food since the days of the Republic, but it never targeted the poor. The doles did redistribute income to the lower classes, but the Roman government's charity was not directed at individuals because they were poor but because they were citizens (Jones 1964, pp. 696–98; Brown 2002).

with the Church of Rome alone maintaining 1,800 widows, orphans, and poor. Likewise, in the late fourth century, the Church of Antioch aided 3,000 widows, virgins, prisoners, pilgrims, and beggars (Goody 1983, p. 97; Cameron 1993, p. 126; Finn 2006, p. 63).

A common path to destitution was default on high-interest consumption loans. After default, Christian debtors frequently sought refuge in their local parish. This is evidenced by the numerous imperial dictates throughout the fourth and fifth centuries that attempted to curb the Church's right to provide sanctuary for debtors (Coleman-Norton 1966, pp. 447–79, 875–78). Historical evidence suggests that churches often paid the debts of such individuals, especially when they were on the verge of falling into debt peonage or slavery (Uhlhorn 1883, pp. 367, 384; Brown 2002). A primary opportunity cost of providing social insurance was that there were fewer funds available for constructing and decorating new basilicas (and thus attracting converts)—numerous early Christian passages reveal how easily funds were diverted away from charity (Finn 2006).

Prior to the fourth century, the Church was not a wealthy institution. Its constituency consisted primarily of individuals willing to take on great risk of persecution and social ostracism, a major reason that it was largely a religion of the middling classes. These dynamics changed in the early fourth century, when the Roman emperor Constantine accepted Christianity (in 312), bringing about a remarkable shift in wealth to the Church. While Constantine's motives for accepting Christianity likely had a hint of endogeneity with respect to the Church's fortunes, the salient feature of his acceptance was that it entailed an enormous, unexpected increase in Church wealth, arising directly from the imperial transfers he bestowed to the Church as well as from the pro-Christian legislation he enforced.

2.2. The Emergence of the Interest Ban

The pre-Constantine Church had very little to say on the issue of interest. Although dogma espousing the evils of lending at interest was known in the early Judeo-Christian tradition, there is no explicit prohibition of interest in the New Testament, and taking interest was not forbidden by the Church in the first 3 Christian centuries.[7] Widespread denunciation of interest commenced in the early fourth century, with a number of Church councils and synods declaring it a mortal sin. Local synods in Elvira (306), Arles (314), Carthage (345–48), Laodicea (372), Hippo (393), Arles (443), and Tarragona (516) all prohibited usurious lending by the clergy, although as a general rule it was prohibited to

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[7] A few of the early Church fathers spoke out against interest, but modern scholars generally agree that these scattered early references to the evils of interest do not imply that taking interest was forbidden in the first 3 Christian centuries (Dow 1922; Divine 1959; Frierson 1969). Moreover, the lack of anti-interest doctrine in this period cannot be attributed simply to the absence of a centralized Church. Numerous local synods met before the fourth century and would have been the primary forums to espouse anti-interest sentiments (as they were in the fourth century), but interest was not a topic that was widely discussed, if it was discussed at all (Hefele [1894] 1973).

all Christians as a moral duty (Hefele [1894] 1973; Maloney 1973).[8] The true watershed moment in the history of Christian anti-interest doctrine came in 325, when an anti-interest canon was included in the First Ecumenical Council at Nicaea. Unlike other smaller synods that applied only to particular regions, this council formulated creeds that were universally binding, thus establishing the sinfulness of taking interest throughout all of Christendom.

This brief historical sketch highlights two major aspects of the early Christian economy: the Church's commitment to providing social insurance and its dramatic increase in wealth under Constantine. During this period, the Church also banned interest. Can the ban be accounted for within this historical setting? In particular, is it possible that a social insurer (with an opportunity cost of funds) will find it optimal to prohibit interest only when it is sufficiently wealthy? The following section addresses these questions, employing a model that captures the salient economic features of this period in order to expose the causal relations underlying the emergence of the interest ban.

3. The Model: Church Wealth, Commitment Problems, and Interest Bans

3.1. Overview of the Results

As noted by Greif (2006), employing a model aimed at facilitating understanding of an economic relationship in a specific historical setting presents a methodological question. This is, namely, which assumptions are valid? Are any assumptions that do not contradict the historical record legitimate, or should only those based on specific historical evidence be employed? Along with Greif, the approach taken here is that the model should be based as much as possible on assumptions justified by historical evidence and, in turn, should account for phenomena under consideration while employing the fewest possible additional assumptions.

Before presenting the formal analysis, I informally discuss the basic argument and justify its assumptions. The model captures the strategic interactions between an infinitely lived social insurer (the Church) and numerous finitely lived agents in an overlapping-generations, subsistence economy. The Church's decisions affect its utility in each subsequent period, whereas agents' decisions are made over a 2-period horizon. Agents are endowed with below-subsistence income, and they can reach subsistence either by borrowing for consumption from an exogenous fund (supply is infinitely elastic—I assume that supply is large enough that each agent can borrow enough to reach its optima) or by receiving a transfer from the Church. If agents do not reach subsistence, they drop out of the economy (that is, there is perfect enforcement of loans, and on default agents

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[8] Elvira and Carthage explicitly extended the prohibition to laymen. Canons 10 and 13 of the Synod of Carthage of 345–48 state, "As the taking of any kind of usury is condemned in laymen, much more is it condemned in clergymen" (Hefele [1894] 1973, 2:186, 2:468).

are enslaved, are sent to prison, starve, or are relegated to debt peonage, and so forth). The Church derives utility from providing social insurance—maximizing the number of agents in the economy—and from consuming its exogenously endowed wealth. Its consumption includes funds spent on proselytization, although converts are not considered to be agents in the economy.[9]

This situation implies a commitment problem for the Church. Namely, in a subgame perfect Nash equilibrium,[10] its commitment to providing social insurance encourages agents to borrow more than is necessary to reach subsistence (to overborrow), since they know that the Church will provide them subsistence in the future. This is similar to moral hazard, except that agents' equilibrium actions arise from the Church's preferences, not from asymmetric information. Lenders are assumed to be complicit—supply is infinitely elastic—but since both parties are willing to take advantage of commitment problems, the model concentrates on borrowers, who face more perverse incentives than do lenders.

This problem can be mitigated when the Church is poor enough that it does not provide transfers to all agents. In this case, it can credibly withhold transfers from overborrowers, instead giving transfers only to those who do not overborrow. On the other hand, when the Church is sufficiently wealthy that it optimizes by providing transfers to all, its preferences entail that commitment to such punishment is not credible, and overborrowing ensues, with the Church paying off the agent's debt if a bad income realization occurs. In this case, the commitment problem is mitigated by another means—banning interest. I assume that an interest ban affects the demand for loans by discouraging a portion of agents from borrowing at interest.[11] The ban is effective because it limits (over-) borrowing, not because it helps smooth consumption (as in Glaeser and Scheinkman 1998).

The assumption that an interest ban discourages borrowing at interest by some agents is central to this analysis. This may arise from an association with sin or social stigmas,[12] but most important, it entails the testable prediction that when a religious authority is facing commitment problems, an interest ban should coincide with increased efforts aimed at dissuading borrowing at interest. Indeed,

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[9] Including converts as agents does not change the qualitative results of the model. Moreover, there is no evidence that converts received zero-interest loans merely because they were Christian (Holman 2001).

[10] Employing subgame perfect Nash equilibrium as an equilibrium concept prevents crazy off-the-equilibrium-path transfer schemes and thus allows for the study of commitment issues, since threats must be credible. See Bates et al. (1998).

[11] The interest ban should also affect the supply of loans. In a previous incarnation of the model, which is available upon request, I assume that an interest ban also encourages a small, finite amount of funds to be lent at zero interest. I show that the results hold as long as this amount of funds is sufficiently small (or the interest rate or probability of a negative wealth shock is sufficiently small). Indeed, Holman (2001) argues that there is little evidence that the supply of zero-interest loans increased after the enactment of the ban.

[12] In an example from the medieval period, de Roover (1948, p. 113) notes that usurers set up their shops in a remote part of town, so that "after dark, . . . through the empty streets customers could find their way to the pawnshop, without being seen or recognized."

the model shows that laws against interest need not be perfectly effective in order to be optimal policy but that the Church is better off the more effective it is in limiting usurious borrowing.

3.2. Setup

Consider a complete-information, infinite-horizon, overlapping-generations economy in which all agents are identical and live 2 periods. In each period t there are N_t^y young agents and N_t^o old agents, where $N_t^y + N_t^o = N_t$. A young agent $i \in \{1, \ldots, N_t^y\}$ borrows $b^i \geqslant 0$ from an infinite and exogenous supply of funds (supply is infinitely elastic). The agent pays back the loan when he is old at an exogenous interest rate $r > 0$. Borrowing is solely for consumption, and strategies are not history dependent. The economy also contains an infinitely lived Church that derives utility from providing agents subsistence—it gives transfers to the young $\{T_{y,t}^j\}_{j=1}^{N_t^y}$ and to the old $\{T_{o,t}^i\}_{i=1}^{N_t^o}$ in each period before they borrow or repay their loans.

Young agents are endowed with income w_y, which is less than the subsistence level m. The endowment of old agents, w_o, is stochastic, with proportion $\mu \in (0, 1)$ old agents receiving income $w_o = w_o^L$ and proportion $1 - \mu$ receiving income $w_o = w_o^H$, where $0 < w_o^L < m < w_o^H$. This income realization is independent among agents, but there is no aggregate uncertainty; it is interpreted as the economywide probability of a negative income shock. If an agent does not at least consume or cannot repay his loan, he immediately leaves the economy.[13] If an old agent reaches subsistence, he is replaced by a young agent in the following period. Population size is therefore endogenous. I assume that an old agent endowed with income w_o^H is able to reach subsistence after repaying a loan taken to reach subsistence when young $[w_o^H - (1 + r)(m - w_y) \geqslant m]$. The progression of events for an agent in each period is summarized as follows:

1. receives endowment,
2. receives transfer,
3. borrows (if young), repays (if old),
4. consumes entire wealth, and
5. leaves the economy if consumption is below subsistence; otherwise, the young become old, and the old are replaced.

Each of the N_t agents are infinitely risk averse to leaving the economy.[14] A young agent's preferences are described by the following utility function:

$$U(c_t^i) + E_t[U(c_{t+1}^i)], \tag{1}$$

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[13] More detailed models in the literature have agents living many periods, with a number of opportunities to repay their loans (see Fafchamps and Gubert 2007). The 2-period simplification is justified if μ is thought of as the probability that an agent will never be able to repay his loan.

[14] If agents are less risk averse and willing to forgo some probability of remaining in the economy for additional wealth, there is greater incentive to overborrow, and the results are strengthened.

$$U(c_t^i) = \begin{cases} -K & c_t^i < m \\ u(c_t^i) & \text{if } c_t^i \geq m \end{cases}.$$

The term E_t is the expectation operator, c_t^i is the consumption of an agent i living in period t, and $u(\cdot)$ is a standard von Neumann–Morganstern utility function that has the properties $u' > 0$, $u'' < 0$, and $u(m) = 0$. The term K is a large, positive constant, where $K > \frac{1}{\mu} \lim_{c \to \infty} u(c)$ (which entails that agents are infinitely risk averse). No savings technology exists, and agents have no discount factor.

The infinitely lived Church is endowed with finite and constant wealth W in each period, some of which it allocates to the agents in the form of transfers and the rest of which it consumes. It derives utility by keeping agents in the economy and consuming its posttransfer wealth.

In each period, the Church chooses an interest policy $p_t \in \{A, B\}$. If $p_t = A$, interest is allowed, whereas if $p_t = B$, interest is banned. In every period, a portion $\alpha \in (0, 1)$ agents are pious and do not borrow at interest when $p_t = B$. The Church knows α but cannot distinguish between pious and nonpious.[15] The Church breaks indifference by choosing $p_t = p_{t-1}$ and $p_0 = A$.

The Church chooses p_t and transfer schemes $_{t=0}^{\infty}\{T_{y,t}^k\}_{k=1}^{N_t^y}$ and $_{t=1}^{\infty}\{T_{o,t}^i\}_{i=1}^{N_t^o}$ to maximize the following utility function:[16]

$$V(U) = E_0 \sum_{\tau=0}^{\infty} \beta^\tau \left\{ \sum_{k=1}^{N_\tau} 1\left[U(c_\tau^k) \geq 0\right] + v(W - T_{y,\tau} - T_{o,\tau}) \right\}, \qquad (2)$$

where $T_{g,t} = \sum_{i=1}^{N_t^g} T_{g,t}^i$ for generation $g \in \{y, o\}$, $1\{U(c_t^k) \geq 0\}$ is an indicator function equaling one if $U(c_t^k) \geq 0$ and zero otherwise, and $v(\cdot)$ is a function with properties $v' > 0$, $v'' < 0$. The discount factor is β. I assume that $\beta \to 1$, since there is little reason to believe that an infinitely lived Church (or any other type of social insurer with a long horizon) would value current souls over future souls. I simplify the analysis by assuming an interior solution to the Church's optimization problem in each period.

There is no initial old generation. In period 0, only one generation of young exists, and an old and a young generation exist in every subsequent period. Denote the initial populations $N_0^y = N_1^y = N$ for some large values of N.

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[15] If the Church is able to monitor or detect some signal indicating which agents are pious, the qualitative results do not change; instead, the Church merely bans interest over a larger portion of the parameter set.

[16] The results are robust to a number of forms of utility. For example, if the Church's utility function maximizes the sum of an agent's utilities, $V(U) = E_0 \sum_{\tau=0}^{\infty} \beta^\tau [\sum_i U(c_\tau^i) + v(W - T_{y,\tau} - T_{o,\tau})]$, the qualitative results hold. The results largely hold for a Rawlsian utility function, $V(U) = E_0 \sum_{\tau=0}^{\infty} \beta^\tau [\min U(c_\tau^i) + v(W - T_{y,\tau} - T_{o,\tau})]$, although equilibria exist in which the Church gives no transfers.

3.3. Commitment Problems and Wealth

In this section, I study the players' behavior in order to derive a relationship between religious wealth (W) and interest bans. I do this by determining the Church's optimal transfer scheme when it bans interest and when it allows interest, treating each case separately, and by comparing the optima to derive a global optimum. The following propositions summarize the main results.[17]

Proposition 1. For every parameter set $P = \{\mu, \alpha, r, m, w_y, w_o^L, w_o^H, N, W\}$, there exists $W^\star$ such that, for any $W \leqslant W^\star$, interest is allowed in every period.

Proposition 1 states that when the Church's wealth is sufficiently small ($W \leqslant W^\star$), interest is allowed in equilibrium. With little wealth, the Church either cannot afford to provide transfers to every agent or it prefers to keep the funds for consumption (at small values of W, the marginal return to consumption is large). Thus, when $W \leqslant W^\star$, the Church can credibly commit to punishing agents who borrow more than is necessary to reach subsistence by not giving them transfers when they are old and instead either giving transfers to other agents or keeping the funds for consumption. The former punishment is credible because the Church does not give transfers to the entire population and is indifferent to which agents leave the economy, while the latter is credible because the Church's equilibrium transfer scheme equates its marginal return to consumption (MRC) and marginal return to keeping the last agent free (MRF).

This result is applicable to settings in which institutions capable of providing social insurance to most of the population do not exist. It is similar to Glaeser and Scheinkman's (1998) hypothesis that interest restrictions provide social insurance in economies with missing contingent markets, although the logic is different—while they stress the redistributive effects between agents, with the laws coming from a benevolent social planner, I stress the distributive effects from the social insurer (who is a self-interested party capable of enacting interest restrictions) to various agents.

This result also underscores a drawback of the general assumption in the Samaritan's dilemma literature that there are relatively few (usually one) recipients of the altruist's charity (see Bernheim and Stark 1988; Lindbeck and Weibull 1988; Bruce and Waldman 1990, 1991; Coate 1995). I show that when there are numerous recipients and only a portion of them receive transfers, the altruist is able to credibly punish opportunistic behavior by directing transfers to agents who do not act opportunistically. This punishment mechanism entails that the altruist attains its first-best outcome, despite its commitment to providing a minimum level of welfare for recipients.

However, proposition 2 demonstrates that the Church cannot credibly commit to punishing agents when its wealth is sufficiently large ($W > W^\star$). Instead, the

[17] For proofs, see Jared Rubin, Appendix A (http://faculty.fullerton.edu/jrubin/Appendix-SocIns_Cmtmnt.pdf).

Church's commitment to providing social insurance for all agents encourages overborrowing, which in turn encourages the Church to ban interest.

Proposition 2.   If α is sufficiently large, the parameter space over which interest is banned in equilibrium is weakly increasing in W and α.

When W is large, the Church's MRC is small enough that the condition MRF = MRC is satisfied only when it transfers more than is necessary to keep every agent at subsistence. The Church's preferences entail that it cannot credibly commit to keeping the funds to purchase consumption (when all agents borrow solely to reach subsistence, MRF > MRC), nor can it discriminate among transfer recipients (it gives to the entire population). A problem similar to moral hazard ensues in which all agents borrow more than is necessary to reach subsistence.

When the extent of overborrowing is sufficiently great, the Church's best response is banning interest. At larger values of W, agents can overborrow more without (credibly) being punished, and thus banning interest is optimal over a large set of parameters—pious agents do not borrow, and the Church is able to credibly punish the nonpious at a lower total level of transfers.

Beyond these results, the model sheds new light on other aspects of interest bans. For one, an interest cap may be superior to an interest ban—indeed, secular interest restrictions generally are in the form of caps, not bans. Yet in religious environments in which legitimacy is based largely on the religious institution monopolizing eternal truths, an interest ban is more absolute than a cap. Consequently, most religious interest restrictions have been bans.[18] Moreover, it can also be shown that the qualitative results do not change when an interest ban increases the shadow price of loans—the parameter set over which interest is banned is smaller if a ban increases the shadow price, but the comparative statics of the model remain.

In sum, several predictions arise from this framework:

1. Interest restrictions should emerge when a Church's (a social insurer's) wealth is sufficiently large.
2. Doctrine aimed at increasing the number of believers who do not borrow at interest (the pious, or α) should coincide with an interest ban.
3. The Church should provide for all who ask for alms when interest is banned, whereas it should ration its charity when interest is allowed.
4. Actions and doctrine aimed at surmounting or recognizing a commitment problem should coincide with an interest ban.

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[18] See Noonan (2005) for a discussion of the importance and implications of precedent on the interpretation of religious doctrine. For more on absoluteness as a reason why the entire system of interest was banned in Islam, see Rahman (1964). The importance of precedent also helps explain why the Christians banned interest, for which precedent existed in the Hebrew Bible, instead of banning borrowing, for which no precedent existed.

4. The Christian Interest Ban in the Context of the Model

Although the literature focuses on the characteristics of economies in which interest is banned, it lacks an explanation that is consistent with the economic environment of the early Church (see especially Glaeser and Scheinkman 1998; Posner 1980; Brenner 1983; Reed and Bekar 2003). The theoretical analysis presented in Section 3 illuminates the possibility that the Christian interest ban emerged in response to a commitment problem the Church faced when it became wealthy in the fourth century. Indeed, the condemnation of interest coincided with the rapid expansion of Church wealth. While the model predicts this relationship, how do we know that the causal mechanisms driving the model's results were truly at work? Can this paper's central hypothesis—that Church authorities enacted an interest ban in response to a commitment problem associated with its provision of social insurance—be further substantiated?

4.1. Commitment Problems and Norms Discouraging Usurious Borrowing

Both borrowers and lenders had incentive to take advantage of the Church's commitment problems. However, at the beginning of the fourth century, the Church had little power to limit the supply of usurious loans, as the vast majority of the population was not Christian and was thus not subject to the Church's dictates. Indeed, an enactment by Constantine in 325 (the same year as Nicaea) legalized moderate interest, entailing that the Church had no power to enforce the laws through courts (Homer and Sylla 1991, p. 49). Under these circumstances, the model predicts that the Church will promote norms discouraging usurious borrowing—attempting to increase α—and appeal particularly to individuals borrowing beyond subsistence.

In fact, in the mid-fourth century, two extremely influential bishops, Basil of Caesarea (330–79) and Ambrose of Milan (339–97), attempted in their antiusury tracts to dissuade the poor from borrowing at interest. While both did take the traditional Christian stance of interest as a lender's sin, their shift in emphasis to the borrower's role in usurious transactions is largely unique to this period. That two extremely important figures—who resided in opposite ends of the empire—shared similar sentiments concerning poor borrowers in this period is indeed telling.

Basil railed against usury while attempting to dissuade the poor from borrowing in numerous instances:

"Drink water out of thy own cistern," that is, examine your own resources, do not go to the springs belonging to others but from your own streams gather for yourself the consolations of life. . . . Borrowing is the beginning of falsity; an opportunity for ingratitude, for senseless pride, for perjury. (Basil 1963, pp. 184–85)

No one treats wounds with another wound, nor cures an ill with another ill, nor corrects poverty by means of interest. Are you rich? Do not borrow. Are you poor? Do not borrow.

If you are prospering, you have no need of a loan; if you have nothing, you will not repay the loan. (Basil 1963, p. 186)

How many men, after building castles in the air, have as their only benefit, a loss beyond measure? "But many," he says, "grow rich from loans." But more, I think, fasten themselves to halters. You see those who have become rich, but you do not count those who have been strangled, who, not enduring the shame incurred by their begging, preferred death through strangling to a shameful life. (Maloney 1973, p. 248)

Basil is clearly concerned with poor individuals who borrow beyond their means for momentary pleasures: the "consolations of life," "senseless pride," and "castles in the air." Indeed, Maloney (1973, pp. 247–48) interprets Basil as "describ[ing borrowers'] temporary elation over their new prosperity—their fancy clothes, rich meals and flattering friends."

Ambrose more forcefully pled with the poor not to borrow in his antiusury tract *De Tobia*, suggesting that temporary poverty is more desirable than the momentary gratification available through borrowing: "Better had it been at the beginning to lessen your outlay and to lighten the necessity of debt by bearing the straits of your fortune, than that, rich for the moment, you should afterward be stripped of another's and your own" (Zucker 1933, p. 39).

In these sermons, Basil and Ambrose were appealing not to those below subsistence but to those on the margin. The consequences they espouse for the borrower are not the concerns of an individual looking to survive another day but of one who, on the edge of subsistence, takes on a loan for temporary pleasures. These are precisely the types of individuals whom the model predicts the Church should want to dissuade from borrowing.

Beyond these pleas from Basil and Ambrose, there is additional evidence that after the interest ban was enacted, a greater number of well-off Christians asked the Church for alms while using their wealth for other material comforts, thus implicitly taking advantage of the Church's commitment problem. John Chrysostom (347–407) warned against giving charity to widows who would otherwise be able to fend for themselves, and Ambrose complained about those who sought alms while in good health, taking what was available from those who had no other means of support (Finn 2006, pp. 70–72). Similarly, Jerome's (340–420) treatise "On Ezekiel" chastised the giving of alms to those not truly in need: "Alms are to be given not to the sated but to the hungry, and bread is to be given not to those who are belching with fullness, but to those who are pained by emptiness. . . . [Bread] is not by any means to be given to those who have devoured and drunk, and who are full and who, once they have been fattened, are resistant to us" (Jerome 1964, pp. 238–39).[19]

This problem was especially acute among the order of widows, leading Ambrosiaster (late fourth century) to plead, "If any believing man or woman has [relatives] who are widows, let that person assist them; let the Church not be

[19] I am greatly indebted to Courtney Roby for providing this translation.

burdened by providing for them, so that it may come to the aid of real widows" (Ramsey 1982, p. 232). Likewise, at a synod at Nimes in 396, Church leaders enacted legislation discouraging giving charity to those who were living well from Church offerings under false pretenses (Ramsey 1982). Ambrose summarized this newly popular sentiment: "[T]hey often speak they are overwhelmed with debts, try whether they speak the truth; they say they have been plundered, try whether this is the case; in one word, find out whom you are relieving" (Uhlhorn 1883, p. 270). All of these dictates indicate that the post-Constantine Church was increasingly dealing with individuals who took advantage of the Church's commitment to providing social insurance. As the model predicts, such commitment problems exist when W is sufficiently large, with the Church providing for those who would otherwise not need alms. Combined with the admonitions of Basil and Ambrose regarding borrowing, these sources support the hypothesis that one way that poor Christians took advantage of the Church's commitment problem that stemmed from its provision of social insurance was by over-borrowing.

The urgency with which the Church made appeals against borrowing was exacerbated by other factors associated with Constantine's conversion and the interest ban. The rapid expansion of the Christian population (see Stark 1996) likely entailed a lower average commitment by believers (decreasing α) and increased monitoring costs (as the Church changed from a small, close-knit community to large, monolithic institution).[20] Yet it is not clear that monitoring—even at high cost—was feasible anyway. As Saint Gregory Nazianzen conceded, "[I]t is much better for the sake of those who are deserving, to give to the undeserving, than by fearing to give to the undeserving, to deprive the deserving of the benefit" (Uhlhorn 1883, p. 270). Even if the deserving poor could have been distinguished from the undeserving poor, commitment problems still would have arisen because of the Church's objective of social insurance provision. Thus, given the consequences of rapid Christian growth (lower values of α), banning interest while encouraging believers to be pious types (and not borrow), rather than monitoring for pious types, was the Church's most effective means of providing social insurance for its constituency.[21]

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[20] The model does not allow for the population to increase. However, the Church's wealth per agent (W/N_t) almost certainly increased in the early fourth century. Not only did the wealthy give more to the Church, but they are not part of the population of concern in the model since they do not borrow for consumption. In this light, the model's results hold if the Church's increase in wealth is viewed on a per-constituent basis.

[21] In theory, the Church could have delegated power of decision to an independent third party who was not committed to providing social insurance. However, the Roman government was the only institution capable of such an undertaking, and the government's commitment to a free loan market entailed that it was unlikely to punish an individual for borrowing despite the Church's wishes. Likewise, the Church could have built a reputation that it would punish overborrowing in the future. However, building such a reputation would have been incompatible with established doctrine stressing the importance of assisting the poor in their time of need, and there is no historical evidence that the Church employed this tactic.

4.2. Amount of Church Aid

Prior to Constantine, Christian charity was an inward-looking activity, including only believers. There was no institutionalized charity, and transfers were aimed at specific individuals, particularly those who showed acute devotion to the Church (Uhlhorn 1883). For example, the letters of Cyprian, bishop of Carthage from 248 to 258, noted that only the poor who stood firm in times of persecution and those who remained loyal to the bishop in times of crisis were to receive support (Brown 2002, pp. 24–25). These actions are consistent with the model's prediction that only a specific portion of the economy receives transfers when $W \leqslant W^*$.

The scope of Christian charity was enlarged dramatically after Constantine. In this period, churches established massive poor rolls, and institutions such as the *xenodocheion* (poorhouse-cum-hospital) emerged (Brown 2002). The ubiquitousness of Church aid was made clear by the sole non-Christian, post-Constantine emperor, Julian (361–63), who decried, "It is a disgrace that . . . the impious [Christians] feed our people in addition to their own, whereas ours manifestly lack assistance from us" (Jones 1964, p. 971). By the turn of the fifth century, even non-Christians took it for granted that the Church was willing to provide support for the entire community (Ramsey 1982).[22] Although such charity was not provided comprehensively everywhere, particularly in the countryside, the bishops in the cities and towns—especially Constantinople, Antioch, Alexandria, Rome, and Carthage—used their newfound wealth to build a comprehensive "safety net of protection" for those in danger of impoverishment (Brown 2002, p. 50). Indeed, it was this urban environment that fostered the antiusury rhetoric of thinkers such as Basil, Ambrose, Jerome, Augustine, and Gregory Nazianzen. The scope of the post-Constantine Church's charity is consistent with the model's prediction that when $W > W^*$, commitment problems (and interest bans) arise where the Church can extend of charity to all.

5. Conclusion

This paper combines theory and history to explain the emergence of a seemingly irrational law within a rational choice framework. It is motivated by historical phenomena that are employed in a game-theoretic model that sheds light on the conditions under which interest bans emerge. The model suggests that a commitment to social insurance provision encourages overborrowing because agents do not suffer the full consequences of default. When the insurer is sufficiently poor, it can credibly mitigate this commitment problem by threatening to punish overborrowers. However, punishment for overborrowing is not cred-

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[22] It is possible that the Church extended charity to non-Christians in order to attract converts or to justify imperial bequests (Brown 2002). Regardless of its motives, however, the commitment problems highlighted in the model still remain.

ible when the insurer is wealthy, and it must turn to other means (namely, banning interest) to overcome the commitment problem.

A historical analysis relates this theoretical insight to the fourth-century Church's ban on interest. The historical record confirms the predictions of the model, shedding light on the timing of the interest ban as well as on other seemingly disparate historical facts, such as admonitions against usurious borrowing and changes in the scope of Church charity. Combined, the theory and history provide a unique insight into the Christian prohibition of interest.

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