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*Abstract.* Limitations on or total prohibition of usury (or interest) have been a pervasive theme across religions and ancient societies. Since medieval times, two major institutional changes relating to non-performance of debt contracts have taken place, namely, the abolition of slavery and the evolution of bankruptcy laws. This paper investigates the welfare implications of these institutional changes by building a state preference model. The model shows that fixed-rate lending contracts yield sub-optimal outcomes under the institutions of slavery and unlimited liability. The abolition of slavery and the limitation of liability have served to mitigate the adverse effects on the welfare of the society. The analysis may help to explain why usury was such a central issue in medieval times but is no longer so in the modern era. It may also help in drawing a distinction between usury and interest based on whether such institutions are weak or ineffective in practice.

*Keywords:* usury, slavery, limited liability, bankruptcy, predatory lending, ethical finance

## 1. Introduction

A pervasive theme in many religions is the prohibition—partial or complete—against charging of interest on debts, although the denunciation of usury (*ribbit* in Hebrew, *riba* in Arabic) by the three Abrahamic religions, Judaism, Christianity, and Islam may be more familiar to some readers. In Hinduism, for example, the Code of Manu proscribes lending at interest by members of higher castes and places a ceiling on the interest rate to be charged (Buhler 1886). The usury question has been extensively discussed in the literature. For example, a brief survey of the usury issue is provided in The Economist (1999) and Steel (1993). For more extensive surveys, see Elliott (1902), Noonan, (1957), Lister (1988), and Nelson (1969) for the Judeo-Christian perspective. Uppal and Mangla (2014) and Taylor and Evans (1987), for example, provide the Islamic perspectives. Khan (1992) provides a survey of the usury practices in South Asia.

In the West, up to around the middle of the seventeenth century, the usury question remained a dominant economic, political, and ethical theme. It all but disappeared from the public debate in the postindustrial era, though some remnants of the debate over usury have lingered on. Although the practice of lending at a fixed rate was legalized, ceilings on the rates of interest (hence the modern distinction between interest and usury) were placed which

survived into the 20<sup>th</sup> century. In the U.S., for example, the state usury laws were phased out only in the 1980s with the deregulation of the financial sector following the Depository Institutions Deregulation and Monetary Control Act of 1980 and Garn-St. Germain Act of 1982. In many Islamic countries the debate over usury still occupies the central political arena. For example, in Pakistan there have been recent moves to eliminate usury (*riba*) and introduce “interest free banking” (The News 2022). Avoidance of interest-bearing loans forms a part of the living religion in the Muslim enclaves in the West (Borchgrevink and Erdal 2021).

This paper investigates the welfare implications of fixed-rate debt contracts under different institutional regimes, namely, slavery and the limitation on the debtor’s liability in insolvency. A state preference model is used to analyze the rationale of a constraint on lending on interest. The model shows that fixed-rate lending contracts yield sub-optimal solutions under the institution of debt slavery and unlimited liability. Abolition of slavery and limitation of liability under the corporate form and modern bankruptcy laws mitigate the adverse effects on the welfare of society. The results of the analysis may help to explain why usury was such a central issue in medieval times and not so in the modern era. It may also help in drawing a distinction between usury and interest where such institutions are weak or not effective in practice.

## **2. Historical background**

The historical limitations on the charging of interest have been explained on various grounds. For example, Adam Smith supported usury laws, despite his *laissez-faire* advocacy, on the grounds that it would discourage speculative and consumption loans (Jadlow 1977). Keynes (1964, 35) justifies the ceiling on interest rates as a response to the tendency of the market rates of interest to rise too high due to an excessive liquidity preference caused by risks and hazards of economic life. Glaeser and Scheinkman (1998), noting that only an institution with significant social benefit could have existed for so long and in so many different places, explain the long-standing persistence and prevalence of the restrictions on interest taking as a means of primitive social insurance; these restrictions help agents in transferring wealth in state of nature when they suffer temporarily negative income shocks from the state of nature when they would be lending. The authors also suggest that usury laws had different functions across time, for example, rent seeking, limiting agency problems within church, limiting overcommitment of debts, and attacking commerce generally.

Explanations of the historically diminishing importance of the usury question have centered on two themes: the increasing importance of economic values around the turn of the seventeenth century, and the growing schism between the secular and the religious spheres of authorities (Jones 1989). Growth of capitalism led to the increasing prevalence of debts for commercial rather than personal purposes, while individual conscience came to be increasingly accepted as the final arbitrator of ethical conduct. With the rise of the commercial

classes, reform of the usury laws was also driven by the new wealth ascending to political power.<sup>1</sup>

Nelson (1969), in the tradition of Weberian sociology, traces the roots of the changing perception on usury to the evolution of social norms as tribal societies transformed into capitalist societies. Usury was an anathema within the tribal brotherhood but acceptable in relationship to the *otherhood*. As we moved from tribal brotherhood to universal brotherhood, all men became “brothers” in being equally “others,” and a general acceptance of usury followed as a logical sequence. The major change in the public stance towards usury came with the Reformation—and in particular with the teaching of Calvin.

With the rise of utilitarianism, the distinction was made between usury as illegitimate predatory lending and interest as legitimate compensation (Mews and Abraham 2007). Jeremy Bentham in his *Defence of Usury* set aside the arguments of Adam Smith on the reasonableness of the laws against usury, and worked towards the abolition of the usury laws in England in 1854. Persky (2007) summarizes the transition from Smith’s thinking in defending usury laws to Bentham’s on lifting the ban on usury, arguing that anything else must reduce total welfare. Smith had argued that usury caps would be useful by limiting borrowings by both *prodigals* and *projectors*. Noting that there is no guide to defining usury except custom, Bentham argued that prodigals are unlikely to be deterred by interest rates since their problem lies in their pattern of excessive spending. To Bentham, the projectors are the source of the “invention” and “improvement” which lie at the core of the growth of productivity.

Following the Utilitarian paradigm, neoclassical economics centers on *homo economicus* and creates a sharp distinction between the positive and the normative. Yet more recently there is a growing realization that ethical values cannot be divorced from economics, and a call has come to restore ethics to economics (see, for example, Annett 2018; Lewison 1999; and Blommestein 2006). In this spirit, a renewed interest has risen in financial regulations.

One aspect that has not received much attention thus far in the analysis of usury is consideration of the changing economic and legal institutions over time as these relate to individual entitlements. As Tawney (quoted in Jones 1989, 2) said that “to explore the economy without exploring the legal institutions within which it exists is like a geographer discussing the river systems of a country without mentioning its mountains”, we can get a better insight into the question of usury by examining it in relation to the changing institutional regimes over time.

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<sup>1</sup> Benmelech and Moskowitz (2010), in their study of the political economy of state usury laws in 19th-century America, provide evidence suggesting that financial regulation is driven by private interests capturing rents from others rather than public interests protecting the underserved.

### **3. Slavery and limited liability**

A central issue in the process of discovering the ethical and welfare basis of prohibition against, and ceilings on, usury is to analyze the consequences of a failure to discharge debt obligations. The consequences for the debtor are defined by the social and legal system at the time of default. Graeber (2011) provides an exhaustive history of credit and debt and the practice of debt slavery and bonded labor when the borrower was unable to pay back a loan. He shows that across the globe debt has not only been at the center of political debates but has also led to insurrections. Since the medieval pronouncements of the religions against usury, substantial changes have taken place with regard to the rights of individuals over others as recognized by social practice and by law. Two major changes relevant to the non-performance of debt contracts over the centuries have been the abolition of slavery and the evolution of laws relating to bankruptcy. This paper focuses on these two institutional changes and on the ways they affect the resolution of legal obligations.

Although most slaves were the product of wars, slave-raiding, or piracy expeditions, we are interested in enslavement that occurred due to indebtedness in biblical and medieval times. Individuals were sold into slavery to satisfy debt obligations by parents, spouses, or relatives. Many debtors sold themselves to avoid destitution and starvation, although many were enslaved as punishment for defaulting on debt. Though slavery, as generally understood, was characterized by forceful domination, there have been other forms of dependent labor which arose because of insolvency or destitution; among these are serfdom, indentured labor, and peonage. Serfs usually enjoyed more rights than slaves but were bound to land they did not own—although they did own the implements of production. An indentured servant voluntarily agreed to work off their debt during a specified period; debt slaves, on the other hand, were compelled to work off their debts at a specified rate. Indentured servants were sometimes more abused than slaves, as their owners tried to get most of their labor within the specified period. Debt slaves were regarded as criminals and received harsher treatment. Peonage prevailed mostly in Latin-America, and included debtors as well as felons. The former included those who could not pay the debt and committed a felony; the latter were those who could not pay the fine and became insolvent debtors. The debt peon worked for his creditor and the criminal's labor was sold off by the state to a third party.

Though there are now laws prohibiting slavery in all countries, modern slavery or neo-slavery continues to occur in all societies. According to the latest ILO (2022) survey, fifty million (one in 150) people are caught in modern slavery. Modern-day slavery takes many forms: slavery by descent and chattel slavery, state-forced labor and conscription, penal labor, debt bondage, enslavement of migrant workers, sexual slavery and forced prostitution, child labor, domestic servitude, and forced marriages. Human trafficking has grown to be one of the largest criminal enterprises globally. People may end up trapped in slavery often because of poverty and exclusion. At the same time, the legal system fails to properly protect them. External circumstances push the vulnerable into taking risks in search of opportunities; these

people find themselves in exploitative situations—such as being a bonded laborer, or not having proper documents (e.g., migrants under the *Kafala* system in the Middle East). Modern slavery is not about legal ownership, but about illegal control over another human being. The medieval formal slave market has been replaced by slavery-like markets for exploitable labor. Modern slavery is most prevalent in countries with extreme poverty rates, lack of education, and a weak rule of law. Minority communities are most vulnerable.

Bankruptcy laws are the second area in which there has been a monumental change since the biblical times. Medieval laws did not distinguish between the properties of the firm and those of the owners. There were, however, religious and social norms in place enjoining accommodations to the debtor in case of insolvency (e.g., sabbatical release from loans in Deuteronomy, and exhortation to release the indigent from debt in Islam). In the West, the advent of the corporate form in the seventeenth century, and its evolution over time, eventually resulted in limiting the liability of the stockholders to the extent of their contributed capital (for its legal development, see, for example, Hillman 1997 and Kempin 1960).

In one sense, abolishment of debt slavery is basically also a limited liability reform. However, the former refers to a condition in which one human being was owned by another (as property, or chattel, because of unpaid debt), while the latter refers to the possession of the debtor's personal assets which are necessary for them to function as an independent agent.

For personal debts, the relief to the debtor in insolvency came in stages and took the following general direction in the West. First, bankruptcy was decriminalized. Debtor jails were abolished. Second, certain personal assets of the individual were made exempt from the liquidation process in order to leave the bankrupt party something to go on. Under modern bankruptcy laws the future claims against the debtor are extinguished and the insolvent debtors can start afresh. The current emphasis is on composition and prevention of liquidation by allowing the insolvent debtor to reorganize in an orderly fashion.

The institution of limited liability has evolved differently over time across countries according to their varied political and economic environments. Consequently, there is widespread divergence in debt enforcement, its scope and implementation from state to state, in the U.S. (see, e.g., Djankov et al. 2008). Legal scholars have discussed the reasons for the divergence of legal resolution of the state of insolvency and the lack of harmonization in corporate law (see, e.g., Balas et al. 2009; Juenger 1997; and Pistor et al. 2003).

Debt bondage is prohibited by international law, specifically by article 1(a) of the United Nations 1956 Supplementary Convention on the Abolition of Slavery. Despite that, it persists in various forms especially in developing countries, where the rule of law is weak, and mechanisms for the protection of debtors faced with bankruptcy are inadequate. For example, although India, Pakistan, and Bangladesh all have laws prohibiting debt bondage, it is estimated that 84 to 88 per cent of the bonded laborers in the world are in South Asia (Kara 2014). Similarly, despite the International Covenant on Civil and Political Rights (ICCPR) 1976 Article 11, stating, "No one shall be imprisoned merely on the ground of inability to fulfill a

contractual obligation,” imprisonment of debtors exists in several countries, for example, in the UAE.

Some scholars draw parallels between debt-slavery and the modern practice of wage garnishment as a form of wage slavery (e.g., Birckhead 2015). Although there may be similarities to involuntary servitude, there are stark differences from the institution of classical slavery, which is the focus of this paper. In the U.S., a person who owes debts to a creditor, or to the government, is not generally forced to perform labor to satisfy such debts—although in some cases (such as non-payment of child support, or tax fraud) they may be imprisoned or fined. However, a person cannot be either imprisoned or forced to perform labor to satisfy a debt.

#### **4. A stylized classification of capital**

To analyze the wealth effects of bankruptcy under different legal regimes, we postulate a fourfold classification of capital:

- a) *Physical capital*: consists of tangible goods, marketable and transferable. It is further subdivided into:
  - i. *Investible capital*: denoted here as D, this consists of loanable funds.
  - ii. *Survival capital*: denoted here as S, this consists of the capital essential for the survival of a person as an independent agent. The survival capital is the minimum amount of capital required for a person to exercise their free choice, pursue investment opportunities, and opportunities of growth in human capital as described below. When this capital falls below a minimum level, the debtor is forced to sell their labor in the labor market, and growth opportunities cannot be pursued.
  
- b) *Human Capital*: represents productive investments already embodied in a human being as well as options of future investment in human productive capacity.<sup>2</sup> It consists of:
  - i. *Labor capital*: denoted here as L, represents the capitalized value of the wages a person is expected to earn while selling their labor. Human capital, although not transferable, could be possessed by creditors under slavery or quasi-slavery contracts.
  - ii. *Growth capital*: denoted here as G, represents the human potential achievable through the exercise of options of investing in human capital. Its value to the individual and to society can be expressed as the capitalized expected value of the options available and created through the exercise of human creativity, initiative, entrepreneurship, and opportunities of growth in the future earnings capacity from

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<sup>2</sup> Human capital refers to productive investments embodied in human persons. “These include skills, abilities, ideals, health, etc., that result from expenditures on education, on-the-job training programs, and medical care” (Todaro 1989, 629).

investment in human capital. To exercise such options a person would, however, need a minimum amount of survival capital. Without survival capital these options would expire unexercised. As it is not transferable, this capital would also evaporate in conditions of human bondage and slavery.

This distinction between human labor capital and human growth capital is parallel to the concept put forth by Myers and Majluf (1984) that the total assets of a firm consist of tangible assets in place, and the *value of growth options* available to a firm; the former represents the investment decisions already undertaken, and the latter represents the value of the options of investing in positive net present value projects in the future. Just as the literature typically assumes the non-transferability of human capital, human capital growth options are not transferable.

## 5. Distribution of assets in bankruptcy

We consider a two-agent world of the entrepreneur and the lender. The entrepreneur is endowed with access to profitable opportunities in addition to survival capital, but does not possess investible capital. The entrepreneur also possesses human capital of two kinds: i) labor capital and ii) growth opportunities. The lender, on the other hand, has investible capital which could be lent to the entrepreneur. For simplicity, we assume that the lender does not possess any other form of capital.

We construct a one-period, two-date model. At time  $t=0$ , the entrepreneur takes out a discounted loan of  $D_0$  with a maturity value of  $D_1$  to be paid back at time  $t=1$ ; the loan thus carries an implicit interest (or usury) rate of  $D_1/D_0-1$ .<sup>3</sup> The entrepreneur invests the proceeds of the loan in an opportunity from which an uncertain (but non-negative) state-contingent cash flow  $X_1(s_1)$  at  $t=1$  (the end of the period) is expected. The end-of-period cash flow  $X_1$  depends on the state of the world ( $s_1$ ) prevailing at the time. For the purpose of the current analysis, the following states are noteworthy:

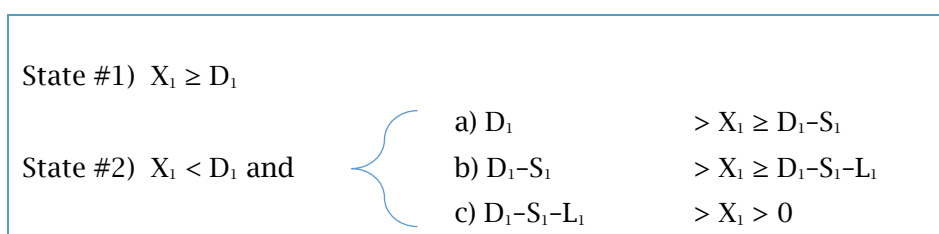


Figure 1. States of the world and cash flows

<sup>3</sup> A distinction between usury and interest is not central to the issue here, although many scholars have made such a distinction from legal, ethical, and economic points of view; see for example, Dempsey (1943).

The end-of-period cash flow can be either greater than the contracted debt (state #1) or less than the contracted debt (state #2). If the end-of-period debt obligation is greater than the cash flow from the venture, then there are three mutually exclusive possibilities, denoted here as a, b, and c. At the end of the period, claims to the cash flows are settled between the entrepreneur and the lender according to the institutional regimes prevailing at the time. The three panels of Table 1 show the distribution of wealth at  $t=1$  between the lender and the entrepreneur under three different institutional regimes (we omit the time subscripts here for clarity).

Panel A: Time 1 Wealth under slavery and unlimited liability

	State of the world	Wealth of the lender	Wealth of the entrepreneur	Total wealth
1	$X \geq D$	$D$	$X - D + S + L + G$	$X + S + L + G$
2a	$X < D$ and $X \geq D - S$	$X + S - (S - (D - X)) = D$	$S - (D - X) + L$	$X + S + L$
2b	$X < D$ and $X \geq D - S - L$	$X + S + L - (S + L - (D - X)) = D$	$S + L - (D - X)$	$X + S + L$
2c	$X < D$ and $X < D - S - L$	$X + S + L$	$0$	$X + S + L$

Panel B: Time 1 Wealth under no slavery and unlimited liability

	State of the world	Wealth of the lender	Wealth of the entrepreneur	Total wealth
1	$X \geq D$	$D_1$	$X + S + L + G - D$	$X + S + L + G$
2a	$X < D$ and $X \geq D - S$	$X + S + L - (S + L - (D - X)) = D$	$S - (D - X) + L$	$X + S + L$
2b	$X < D$ and $X \geq D - S - L$	$X + S$	$L$	$X + S + L$
2c	$X < D$ and $X < D - S - L$	$X + S$	$L$	$X + S + L$

Panel C: Time 1 Wealth under no slavery and limited liability

	State of the world	Wealth of the lender	Wealth of the entrepreneur	Total wealth
1	$X \geq D$	$D$	$X + S + L + G - D$	$X + S + L + G$
2	$X < D$	$X$	$S + L + G$	$X + S + L + G$

Table 1. End-of-period wealth under different institutional regimes

Panel A of Table 1 shows period-1 wealth under the institution of slavery as well as when the borrower's liability is not limited. When state 1 prevails, the creditor is entitled to the contracted debt amount  $D_1$ , and the entrepreneur is entitled to the residual,  $X_1 - D_1$ . In addition, the entrepreneur retains the human capital unencumbered. In the event that the debt obligation is greater than the cash flow from the project (i.e., state 2 occurs), the creditors can have recourse to the borrower's personal capital, his survival capital as well as the human capital. In state 2a, the lender can seek satisfaction of the debt claim from liquidation of the



personal assets of the borrower. In the event that the cash flow is even lower (in state 2b), and the debt claim cannot be satisfied through repossession of the personal capital of the borrower, the lender also takes possession of the borrower's labor capital through the institution of slavery. Under 2a and 2b states of insolvency, the lender recovers the full amount of the debt. In state 2c the lender must settle for a loss. A consequence of the enforcement of the collateral against the borrower is that their survival capital is impaired and falls below the minimum to sustain their human growth capital, which is dissipated. In states of bankruptcy, the total wealth of the community is lower by the value of the human growth capital,  $G$ .

Panel B of Table 1 shows the distribution of the end-of-period wealth between the lender and the entrepreneur. Here, the liability is unlimited, but slavery is not permitted. In the event that the cash flow is not sufficient to cover the nominal debt obligations, the lender must resort to the borrower's personal assets which in the model are comprised only of survival capital. Again, as the survival capital is impaired, the human capital cannot be supported. Although the debtor's labor capital is unencumbered, the value of the human growth capital is lost to the community in the event of bankruptcy.

In the third case, panel C of Table 1, the distribution of wealth is shown where the borrower's liability is limited, and slavery is not permissible. In case of bankruptcy, legal institutions protect the borrower's survival capital as well as the human capital.

We can employ the state preference framework to value the wealth of the community at time  $t=0$ , by using the following notation:

$r_0$       $\equiv$  risk-free rate of return.

$k$         $= 1/(1+r_0) \equiv$  one-period risk-free discount factor.

$\tilde{W}_t(s_t)$   $\equiv$  state contingent wealth at time  $t$  over the states,  $s_t$ .

$f(Y)$     $= f(s_t: \tilde{W}_t = Y) \equiv$  the price at time 0 of a pure security, one dollar delivered at time  $t$  in all states  $s_t$  for which  $\tilde{W}_t(s_t) = Y$ . Note that  $\int f(Y)dy = k$ .

$E_a^b[g(W_t)] = \int_a^b g(W_t)f(W_t)dW_t \equiv$  valuation operator at time 0 for time 1 cash flows over the interval  $[a,b]$ . Absence of sub/super script denotes no lower/upper bound.

$D$ ,  $S$ ,  $L$ , and  $G$  denote the investible capital, survival capital, human labor capital and human growth capital, respectively, as defined above.

$\tilde{W}^*$       $= X_1+S_1+L_1+G_1$

$b$         $= \{\tilde{X}_t : \{\tilde{X}_t \leq D_1\}, \text{ point of insolvency.}$

The present value of the total community wealth at time  $t=1$  under the three different institutional arrangements can then be summarized as follows in the Table 2:

<i>Institutional regime</i>	<i>Total wealth at t=0</i>
A: Slavery and unlimited liability	$E[W^*] - E^b[G_1]$
B: No-slavery but unlimited liability	$E[W^*] - E^b[G_1]$
C: No-slavery and limited liability	$E[W^*]$

Table 2. Community wealth under different institutional regimes

It is clear from Table 2 that the total community wealth when slavery is outlawed and liability is limited is first-order dominant over the value under the other two institutional regimes. It could be shown that the total welfare of the community will be greater if liability is limited and slavery abolished by, for example, assuming a simple additive societal utility function,  $U(W) = U(\Sigma W_i)$ . That is, community utility is a function of the total wealth.

It can also be noted that if  $\min(X_i \leq D_i)$ , a risk-free debt cannot be issued when liability is limited: the lender's capital is always at risk. Under unlimited liability and the institution of slavery, however, the amount of risk-free debt is positive:  $D_1 = \min(X_i) + L + S$ .

## 6. Discussion and conclusions

The analysis in this paper suggests a rationale for the prohibition of fixed-rate debt contracts under pre-modern social and legal institutions. We have shown that under legal institutions permitting slavery and/or not limiting liability, there is a deadweight loss to the community in case of default. In the model, the bankruptcy cost appears in the form of loss of growth opportunities in human capital; distribution of assets in bankruptcy is therefore not a zero-sum game. The bankruptcy will also impose external costs to the society, as the borrower becomes destitute and a burden on the family, tribe, or community.

With the abolition of slavery and the limitation on personal liability there is a transfer of wealth from lenders to borrowers. This, however, is an offset and not a deadweight loss for society. The creditors may adjust the terms of lending to compensate for it. Or they may find compensation as the restrictions on lending are relaxed and total credit volume is expanded.

The analysis also indicates that the ethical exhortations of the great religions were perhaps rightly motivated in considerations for maximizing the total welfare of the society from financial contracting. Christian emphasis on charity to the needy can also be appreciated with regard to its role in the preservation of the human growth capital of the community. In Islam, while fixed-rate financing contracts are prohibited, the emphasis has been on profit- and loss-sharing commercial loans and on charity for the needy through the institution of *Zakat*. It can be shown that under the strict profit- and loss-sharing arrangements, the total wealth of the community remains unchanged in all states.<sup>4</sup> The results of the model may also

<sup>4</sup> If  $\alpha$  is the share of the entrepreneur in the distribution of the proceeds of the venture, then the sum of the wealth is  $W = \alpha W - (1-\alpha)W$ , which remains unaltered by the distribution ratio.

shed light on an apparent “double standard” for usury (prohibited toward your brother but allowed toward a stranger) prescribed in Deuteronomy.<sup>5</sup> In case the lending is to the stranger, bankruptcy costs are external to the community and would thus not figure in the community’s social welfare function.

The model shows that with the abolition of the institution of slavery and the limitation of liability, human growth capital is preserved in states of insolvency. Modern societies have been able to mitigate the ill effects of debt financing through creating legal frameworks. The historical injunctions against usury reflected the moral and ethical ethos of the pre-modern societies, which have been supplanted by formal legal frameworks balancing the interests of debtors, creditors, and the public. In other words, the grounding of these regulations in religious tradition may therefore no longer be necessary.

Our analysis also shows a way to make a distinction between usury and interest—the former referring to lending contracts with a likelihood of imposing external economic and social costs, and the latter as a compensation deemed necessary for the financial intermediaries to play their critical role in resource mobilization. That distinction may be based on whether in a financial market effective institutional safeguards for the debtor exist that limit their liability and provide protection against falling into quasi-slavery situations.

Another implication of our analysis is that the calls for a total prohibition of interest-based debt, as are made in many Islamic countries based on a literal interpretation of the scripture, may be misplaced. *Riba* (or interest) being a social construct must be understood in the context of the social and economic institutions governing the rights and obligations of the contracting parties. The well-intentioned efforts to render finance more ethical and to seek justice in financial transactions might better be directed toward reforming and strengthening the legal institutions and their enforcement. In addition, developing charitable institutions and expanding private charity and public support for the vulnerable should help in protecting the at-risk populations.

Finally, some limitations of the model may be noted. The model considers the consequences of debt default from the perspective of debtors and society. A related question could be how to prevent capital providers from charging interest that is “too high” especially on consumptive loans to low-income borrowers. Firstly, financial markets can be a rational mechanism for determining the fairness of interest rates. Public policy should then be focused on ensuring competitive credit markets, developing and regulating the financial sector to lower the costs of intermediation, and promoting financial inclusion, literacy and equal access to credit without discrimination. Second, extending a loan is not the ideal remedy in many cases. For example, in case of negative economic shocks from natural disasters, medical and other emergencies, provision of appropriate insurance products, and charitable donations would be better alternatives. In the absence of such alternatives, the unfortunate ones are forced to resort to borrowing—usually from predatory and abusive lenders. Therefore, the

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<sup>5</sup> “Thou shalt not lend upon usury to thy brother...” and “Unto a stranger thou mayest lend upon usury ...” (Deuteronomy 23:19 and 20).

debate over placing a ceiling on interest rates, which has been shown to be counterproductive, distracts from the need to develop alternatives to the traditional forms of borrowing.

Another limitation of the model relates to the supply side of credit; i.e., the supply of loanable funds is assumed to be fixed (inelastic) under different institutional arrangements. On the one hand, it can be argued that the supply of credit may shrink as more risk is shifted to the creditor under abolition of slavery and limited liability. On the other hand, as the consequences associated with default are contained, religious and social stigmas associated with lending money may be diminished, the supply of credit is likely to increase. It would therefore be reasonable to assume that the credit supply is unaffected by the institutional changes to keep the analysis tractable.

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