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INCENTIVES, SOCIAL NORMS, AND BUSINESS CYCLE: AN EXAMPLE OF BUSINESS LOANS PROVISION BY ISLAMIC BANKS

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ABSTRACT

The interaction of social norms and incentives is a subject of growing interest in economic literature. Basov and Bhatti (2013) pointed out that invoking a social norm is both a blessing, since it allows mitigating moral hazard problem, and a curse, since it restricts the class of admissible contractual arrangements. In this paper, we reiterate this point using particular example of the effects of restrictions imposed on contracts by Shariah law on the optimal risk-incentive trade-off. We show that extra rigidity imposed by Shariah law leads to a greater reluctance to invest into daring new ideas, which are profitable in expectation, but may also result in significant losses. A shared set of social norms between the lender and the entrepreneur allows mitigating adverse consequences of the excess rigidity through creation of good will and may even lead to an improved performance. The adverse consequences may vary according to the stages of business cycle. As a result, recessions can have negative long-term effects and longer booms may be followed by longer recessions. We also hypothesize that turning a social norm into a law will deprive it of the ability to generate good will, while leaving the negative aspects intact. We find a tentative support of this hypothesis by comparing relative performance of Islamic banks in three regions: South East Asia (primarily, Malaysia), Middle East, and the UK.

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I. INTRODUCTION

The interaction of social norms and incentives is a subject of growing interest in economic literature (Abdelsalam et al. 2016, Gul and Ng, 2018). A social norm is an understanding that governs the behavior of members of a society which can be used to promote social control and is self-enforced by feeling of guilt or shame in those who break it. The latter differentiates a social norm from a convention. i.e. a kind of behavior that is expected and is optimal to conform, provided the others do so, though breaking it does not elicit any negative emotions. For example, driving at the left side of the road is a convention: given that everybody drives on the left it is the best response for a driver to follow this rule, no feeling of shame or guilt for driving on the right side is needed. Tipping in a restaurant, on the other hand, is a social norm. A patron who does not frequent a particular restaurant will not leave a tip, unless she feels shame or guilt for not doing so.

Pioneering papers by Akerlof (1976, 1980, 1982) mark the birth of literature that includes social norms in microeconomic analysis. It was followed by extensive literature, studying the effects of social norms on the optimal incentives. For example, Bernheim (1994) explicitly studies the effects of the norm of conformity, Bohnet, Frey, and Huck (2001) investigate the importance of trust, while the research by Fehr and Schmidt (2000) concerns the norms of fairness and reciprocity. Kandel and Lazear (1992), Barron and Gjerde (1997), Che and Yoo (2001), Huck, Kübler, and Weibull (2012), and Huck and Rey-Biel (2006) extend this litera ture to incorporate peer effects. Sliwka (2007) and Fischer and Haddart develop models where social norms arise endogenously.

In early papers the agents were driven by universal ethical principles, such as reciprocity or trust. Such norms can govern bilateral relationships. Recent papers, in particular the ones that endogenize the social norms, require to have an entire population of agents. Festré (2010) provides a review of this literature[1].

The main lesson to be learned from this literature is that relying on the social norms creates a nontrivial trade-off. On the one hand, social norms may be used to mitigate moral hazard. On the other, they restrict the set of allowable contracts that can be signed between the agents. In doing so, the social norms introduce rigidities in the relationship between economic actors that can lead to undesirable consequences, e.g. unemployment and suboptimal portfolio selection. Though this trade-off was in the background of the models since Akerlof (1982), it was first made explicit in Basov and Bhatti (2013), who combine norms of trust and honesty, assuming that honesty should be activated by showing trust. Basov and Bhatti follow earlier literature, modelling social norm as an abstract ethical principle.

This paper follows closely the modelling strategy developed in Basov and Bhatti (2013), however the particular social norm under consideration here is motivated by Islamic law. Under the law, the principal-agent relationships are partnerships usually governed by Mushārakah and Mudārabah. Both types of contracts are quite similar with the difference that under Mudārabah party's capital is entirely managed by another party, while under Mushārakah a joint management is possible. Both types of contracts are like traditional incentives

1 For a book level treatment of interaction of social norms and incentives, see Basov (2016). See Basov and Bhatti (2016) and Uddin et al. (2022) for basic concepts of Islamic Finance products.

contracts, where pay ment of the agents depends on the profits she generates to the principal. However, Mushārakah and Mudārabah contracts are more rigid in several ways. First, the profits of the venture are shared between the two parties per a pre-agreed ratio, while the losses are shared per shares of capital invested by the parties in the venture[2]. This implies that contracts must be piece-wise linear with slope fixed for negative values of profits. Moreover, the above-mentioned contracts do not allow a fixed payment. Arbi, Basov, and Bhatti (2014) considered optimal contracts under such a restriction and have shown under some additional assumptions on distribution of profits and preferences, that optimal contract will have a fixed slope irrespective of the riskiness of the venture. Therefore, risky projects will not be undertaken, even if they have highly positive NPV. In a recent paper, Ebrahim and Sheikh (2015) suggested that a way out may be to combine a Mudārabah and Ijarah contracts[3], since the latter allows a fixed wage. We will take the latter point of view in this paper and allow a fixed payment in the incentive scheme.

The paper is organized as follows. In Section 2 we develop the basic static model. In this model an Islamic bank finances an entrepreneur engaged in a business venture. The expected profit of the venture depends on the effort put by the entrepreneur. The effort is non-contractible therefore, the payment to the entrepreneur depends only on realized profit (loss). In the case of loss, the sharing rule is exogenously fixed by the amount of the initial capital put in by the entrepreneur, while in the case of profit it reflects the optimal risk-sharing versus incentives provision trade-off. We show that the extra rigidity that comes from a predetermined way to share the losses is particularly handicapping during the recessions. It also leads to a greater reluctance to invest into daring new ideas, which are profitable in expectation, but may also result in significant losses.

Though extra rigidity imposed by Shariah law is usually costly, there may be a silver lining that emerges from a shared cultural heritage between the bank and the entrepreneur. Let us assume that at the top of the offering a wage schedule, the bank may offer a suggested effort level. In accepting the contract the entrepreneur promises to exert the suggested effort, though this promise cannot be enforced in a court. The idea behind the promise is that Muslims have a moral obligation to be good to their word. Of course, the contract once offered will attract both: sincere Muslims and opportunists. The degree of opportunism is the entrepreneur's private information. The bank offers a menu of contracts that consist of the share of the up-front cost the bank finances, her share of profit, and suggested effort levels, to maximize her profits in the presence of private information.

To investigate the effects the shared social norms can have on different stages of the business cycle, in Section 3 we extend the basic static model in several ways. First, we allow the bank to choose whether to operate as a conventional or an

2 Some schools of Islamic jurisprudence are even more restrictive. For example, Shafi'ì school insists that both gains and losses must be shared proportional to investment (Udovitch, 1970). This leaves no room to provide incentives to reward entrepreneurial talent and we will not consider such models in this paper.

3 For a definition of an Ijarah contract and a detailed discussion of other Islamic financial instruments, see Basov and Bhatti (2016).

Islamic bank and to recommend an effort to the entrepreneur. Following Basov and Bhatti (2013) we assume that an agent experiences a psychological cost of deviating from the recommended effort if she perceives the bank to be a bone fide Islamic bank, which she does if the contracts offered by the bank up to that date complied with the Shariah law. We also assume that the economy can be in one of two states: a boom or a recession, with the marginal product of effort higher during the boom. We show that the bank will have stronger incentives to break restrictions imposed by Sharia law during the recession. We conclude in Section 4.

II. THE STATIC MODEL

In this Section we start by proposing a general contracting framework in the presence of social norms and then adapt it to study business loans, provided by Islamic banks.

2.1. A General Contracting Model in the Presence of Social Norms

Suppose two parties enter a bilateral contracting relationship. The first party (the principal) has an access to set E of enforceable contracts. The society also possesses a social norm that specifies set of N c E of appropriate contracts. The second party (the agent) controls set A of available actions. The principal offers to the agent contract enforceable $\varepsilon \in E$ and recommends action $\alpha^* \in A$. The gross payoff x to the principal is distributed according to F (x, α).

The recommendation by the principal is assumed to be not enforceable. The agent decides whether to accept the contract and if yes then what action to take. The cost of action to the agent is

$$C(\alpha, \alpha^*) = c(\alpha) + c_p(\alpha, \alpha^*)I(\varepsilon \in N) \quad (1)$$

where c(·) is the physical cost of action and $c_p(\cdot, \cdot)$ is the psychological cost of not following the principal's recommendation. We assume that $c(\alpha) \geq 0$ and $c_p(\alpha, \alpha^*) \geq 0$ and $c_p(\alpha^*, \alpha^*) = 0$. One can interpret formula (1) in the following way. If the principal offers a contract that respects the social norm the agent feels a warm glow and feels bad about not following the principal's recommendation. The warm glow, however, disappears if the contract chosen by the principal does not respect the social norm.

Note that formulation (1) assumes that agents, while feeling a warm glow to principals who abide by the norm do not feel any spite towards the violators, neither does a violator suffer a cost from the society at large. We will say about a society where social norms operate in such a way that it possesses mild social norms. If, on the other hand, one or both of the above assumptions are violated, we will say that a society possesses hard social norms Note that while social norms can never have negative effects on economic performance, the latter is not true if the social norms are hard.

2.2. Business Loan Provision by Islamic Banks

Suppose an entrepreneur possesses a project that requires up-front cost $K > 0$ to finance. Given effort $e > 0$, the profits from the project, x, are distributed per distribution function F (x, e). Exerting effort is costly. For simplicity, we assume that the cost is quadratic, i.e.

$$c(e) = \frac{e^2}{2} \tag{2}$$

To see how this formulation fits in the general framework developed above, assume $A=R_+$ and write e, for effort, to denote a generic element of A. The bank cannot observe the effort, so it can affect the level of effort only indirectly by offering a wage schedule, $\omega(x)$. To keep matters simple, assume that the bank is restricted to offering a piece-wise affine wage scheme, i.e.

$$\omega(x) = \alpha + \beta_1 xI\left(\{x : x \geq 0\}\right) + \beta_2 xI\left(\{x : x < 0\}\right) \tag{3}$$

where $I(A)$ is the indicator function of set A, i.e. $I(x) = 1$ if $x \in A$ and $I(x) = 0$ otherwise. We will also assume that

$$\beta_2 \leq \beta_1 \tag{4}$$

That is, in set E is the set of piece-wise linear contracts, satisfying (4). One can justify this set by assuming that the bank can use only three instruments. The bank issues some shares to finance the project run by entrepreneur and sells some of them at an initial public offering (IPO). It promises the entrepreneur a fixed wage, offers her some shares in the project, and some number of protective European put options, with the strike price equal to the price of a share, obtained at the IPO.

Coefficient β_1 (β_2) is the share of profits (losses) the entrepreneur is entitled to due to the profit-loss (PLS) sharing agreement. Another way to understand constraint (4) is to assume that if the enterprise experiences a loss and the share price goes down the bank can commit to partially reimburse the entrepreneur's losses, but cannot impose any extra penalties. From a technical point of view, restriction without this restriction (4) is important, since without it Mirrlees' contract (Mirrlees, 1999) can be used to closely approximate the first best.

According to Usmani (2002), a Mudārabah contract cannot involve lump-sum payments to either party, which will force $\alpha = 0$. Arbi, Basov, and Bhatti (2014) consider optimal contracts under such a restriction and have shown under some additional assumptions on distribution of profits and preferences, that optimal contract will have $\beta_1 = \beta_2 = 0.5$ irrespective of the riskiness of the enterprise. As a result, sufficiently risky projects will not be undertaken, even if they have positive NPV. In a recent paper, Ebrahim and Sheikh (2015) suggest that a way out may be to combine a Mudārabah and an Ijarah contract, since the latter allows a fixed wage. Here we will consider such a hybrid contract and allow for a non-zero value of α. However, we will respect the constraint a Mudārabah contract imposes on

the way the parties share losses. Such a contract requires that the share of losses endured by the entrepreneur should equal her fraction of capital investment.

Formally, if the entrepreneur possesses own funds $L \in [0, K]$, and chooses to invest $I \leq L$ then

$$\beta_2 = \frac{I}{K} \leq \frac{L}{K} \tag{5}$$

Combining (4) and (5) one obtains:

$$\beta_2 \leq \min(\beta_1, \frac{L}{K}) \tag{6}$$

Coefficient β_1, on the other hand, is assumed to be unrestricted.

To close the model, assume that entrepreneur's utility is linked to the distribution of her income, ω, and effort she chooses to exert by:

$$U\big(e; \omega(.)\big) = E\omega(x) - \frac{\varphi}{2} Var\big(\omega(x)\big) - c(e)) \tag{7}$$

where E stands for the expected value of the wage and *Var* for its variance. In the case when the wage schedule is linear in profits and distribution of profits is normal with mean that depends on e, expression (7) corresponds to the certainty equivalent of an agent with a CARA Bernoulli utility:

$$v(\omega) = \frac{1-\exp(-\varphi(\omega-c(e)))}{\varphi} \tag{8}$$

Under more general assumptions on wage schedule preferences described by (7) are not derivable from any expected utility model, however, we will still assume them for analytical tractability.

Let us also introduce the following notation:

$$\omega_v(x) = \beta_1 x I\left(\{x : x \geq 0\}\right) + \beta_2 x I\left(\{x : x < 0\}\right) \tag{9}$$

where subscript v stands for variable. One can show that

$$E\omega_v(x) = \beta_2\theta e + (\beta_1 - \beta_2)\theta e \Phi\left(\frac{\theta e}{\sigma}\right) + \frac{\sigma(\beta_1-\beta_2)}{\sqrt{2\pi}} \exp(-\frac{\theta^2 e^2}{2\sigma^2}) \tag{10}$$

$$E\omega_v^2(x) = \beta_2^2(\theta^2 e^2 + \sigma) + (\beta_1^2 - \beta_2^2)(\theta^2 e^2 + \sigma^2)\Phi\left(\frac{\theta e}{\sigma}\right) + \frac{\theta e \sigma(\beta_1^2-\beta_2^2)}{\sqrt{2\pi}} \exp(-\frac{\theta^2 e^2}{2\sigma^2}) \tag{11}$$

$$Var(\omega) = E\omega_v^2(x) - (E\omega_v)^2 = \beta_2^2\sigma^2 + (\beta_1 - \beta_2)^2 H(e) \tag{12}$$

where Φ(·) stands for the cumulative normal distribution function and

$$H(e) = (\theta^2 e^2 + \sigma^2)\Phi(\frac{\theta e}{\sigma}) + (\frac{\theta e \sigma}{\sqrt{2\pi}}) \exp(-\frac{\theta^2 e^2}{2\sigma^2}) + \theta e \Phi\left(\frac{\theta e}{\sigma}\right) + \frac{\sigma}{\sqrt{2\pi}} \exp(-\frac{\theta^2 e^2}{2\sigma^2}))^2 \quad (13)$$

2.2.1. The Optimal Contract, When There are No Psychological Costs

Let us start by considering the situation, when the psychological costs are zero. If an entrepreneur accepts the contract she will choose an effort to solve:

$$e \in \arg\max[U(e; \omega(.)] \quad (14)$$

She will choose to participate if

$$\underset{e}{Max}(U(e; \omega(.))) \geq 0 \quad (15)$$

The wage schedule is given by (3), with coefficients β_i satisfy (6). The bank chooses α, β_1, β_2 to maximise its expected profits,

$$E(x - \omega(x)), \quad (16)$$

subject to (6), (14), and (15).

Let us assume that profits are distributed normally with a mean equal to θe, where e is the exerted effort and variance σ^2.

Proposition 1. Get us assume that the entrepreneur has su cient funds then constraint (6) does not bind at equilibrium, i.e. $\beta_2 < \min(\beta_1, L/K)$.

Proof. Let us assume that constraint (5) does not bind, i.e. the entrepreneur has sufficient funds. Then constraint (6) will bind if and only if $\beta_1 = \beta_2$, i.e. If constraint (4) binds. The principal chooses β_1, β_2, e to maximize the total certainty equivalent:

$$T = \theta e - \frac{e^2}{2} - \frac{\varphi}{2}(\beta_2^2 \sigma^2 + (\beta_1 - \beta_2)^2 H(e)) \quad (17)$$

subject to the incentive compatibility constraint

$$e = \beta_2 \theta + (\beta_1 - \beta_2)\theta \Phi \frac{\theta e}{\sigma} - \frac{\varphi}{2}(\beta_1 - \beta_2)^2 H'(e)) \quad (18)$$

and constraint (4). The constant term α is then chosen to ensure the participation constraint holds. The Lagrangian for the problem is:

$$L = T - \lambda\left(e - \beta_2 \theta - (\beta_1 - \beta_2)\theta \Phi \frac{\theta e}{\sigma} + \frac{\varphi}{2}(\beta_1 - \beta_2)^2 H'(e)\right) - \mu(\beta_2 - \beta_1) \quad (19)$$

where λ is the Lagrange multiplier for (18) and μ is the Lagrange multiplier on (18). Let us assume that constraint (4) is binding, write the first order conditions with respect to β_1 and β_2 and evaluate them at $\beta_1 = \beta_2$. Following this procedure, one obtains:

$$\begin{cases} \lambda\theta\Phi\left(\frac{\theta e}{\sigma}\right) + \mu = 0 \\ \lambda\theta - \lambda\theta\Phi\left(\frac{\theta e}{\sigma}\right) - \mu - \varphi\sigma^2\beta_2 = 0 \end{cases} \tag{20}$$

which implies

$$\mu = -\varphi\sigma^2\beta_2\Phi\left(\frac{\theta e}{\sigma}\right) \tag{21}$$

By Kunh-Tucker Theorem, $\mu \geq 0$, implying $\beta_2 = 0$ and since we assumed that constraint (4) is binding, this implies $\beta_1 = 0$, but such contract will implement zero effort and therefore should expect zero profits. The principal can do better by offering small positive β_1.

Example. Let us consider almost risk neutral entrepreneur operating in the environment of extreme uncertainty, i.e. consider a limit $\sigma\to+\infty$, $\varphi\to+0$, and $\varphi\sigma^2 \to \varphi_0>0$. Then $\varphi H(e)\to\varphi_0/2, \varphi H'(e)\to 0$ and the total certainty equivalent becomes:

$$T = \theta e - \frac{e^2}{2} - \frac{\varphi_0}{2}\left(\beta_2^2 + \frac{(\beta_1-\beta_2)}{2}\right)^2 \tag{22}$$

which should be maximized subject to:

$$e = \frac{\beta_1+\beta_2}{2}\theta \tag{23}$$

The solution is

$$\beta_1 = 2\beta_2 = \frac{4\theta^2}{3\theta^2+2\varphi_0} \tag{24}$$

In this example, this solution applies as long as:

$$L \geq \frac{2\theta^2 K}{3\theta^2+2\varphi_0} \tag{25}$$

and the entrepreneur invests

$$I = \frac{2\theta^2 K}{3\theta^2+2\varphi_0} \tag{26}$$

Note that the riskier the project or the more risk-averse the entrepreneur, the smaller is the fraction of funds she invests. If condition (25) is violated, then constraint (5) binds, i.e.,

$$\beta_2 = \frac{L}{K} \tag{27}$$

Since fixing β_2 partially protects entrepreneur against losses, the bank will choose to increase β_1 to provide the entrepreneur with stronger incentives, provided the effort is sufficiently productive. Let us revisit the above example of extreme uncertainty and almost risk neutral manager, but assume that the latter has no funds, i.e. L = 0. Then the Islamic bank will be forced to set β_2=0 and one can calculate that in this limit

$$e = \frac{\beta_1 \theta}{2}, \varphi H(e) \to \varphi_0/2, \varphi H'(e) \to 0 \tag{28}$$

and the optimal contract has slope

$$\beta_1 = \frac{2\theta^2}{\theta^2 + 2\varphi_0} \tag{29}$$

Entrepreneur with no funds faces stronger incentives than the one with sufficient funds, provided

$$\theta^2 > 2\varphi_0 \tag{30}$$

In the above model Islamic banks maximize the same objective as the conventional ones, but face more stringent constraints. As a result they can perform at best at a par with the conventional ones, and usually will underperform in comparison. Basov and Bhatti (2014) further pointed out that such underperformance can be exacerbated by positive assortative matching in the market for human capital. However, Islamic banks can also play on a shared cultural heritage with the entrepreneur to mitigate the moral hazard problem and boost the performance. We will enrich the model in the next Section to take this possibility into account. We will also consider a dynamic version of the model, where an economy can be in a boom or in a recession. We will show that recessions can lead to opportunistic behavior by the banks, eroding trust and having long-lasting consequences.

2.2.2. The Optimal Contract With Positive Psychological Costs

In this Section, we enrich the model by assuming that on the top of providing financial incentives, the bank can recommend a level of effort to the entrepreneur. Though this level of effort is not contractible, the entrepreneur will endure psychological cost if she chooses to deviate from it. We assume that this cost is given by:

$$c_P(e, e^*) = \frac{(e-e^*)^2}{2\gamma} \quad (31)$$

where e^* is the level of effort recommended by the bank. The problem of bank is like the one we solved in the previous Section, but with cost of effort given by the sum of physical cost (2) and psychological cost (31). Coefficient γ can be viewed as the degree of trust between the bank and the entrepreneur. It can be boosted by the common cultural heritage, for example, by common faith. If the latter is the case, an Islamic bank operating in a Muslim country can have a better ability to tap into this channel than a conventional one.

Let us introduce

$$k = \frac{\sigma}{\theta} \quad (32)$$

Assume that k <<1, i.e. the probability of a loss is negligible. In that case slope β_2 is irrelevant and we can use the results obtained in Basov and Bhatti (2013) to argue that at equilibrium the bank would recommend the efficient level of effort and the slope of the optimal compensation schedule will decrease, exposing the entrepreneur to less risk in the case of gains and countervailing effects of the loss-sharing restriction. Since without a loss sharing restriction, having an extra instrument will always be beneficial, one may argue that an Islamic bank may outperform a conventional one during a boom when loss-sharing is not important. Basov and Bhatti (2013) argue that in the latter case the optimal contract will contain the following slope of the optimal incentive scheme and the recommended effort:

$$\beta_1 = \frac{\theta^2\gamma}{(1+\gamma)\varphi\sigma^2 + \gamma\theta^2} + O(\exp -\frac{1}{k})$$

$$e = \theta\frac{1+\gamma\beta_1}{(1+\gamma)} + O\left(\exp -\frac{1}{k}\right), e^* = \theta$$

Let π_S denote the profit the bank will earn if it relies on the social norm and shares losses proportionally to the investment, while π_F is the profits earned by the bank that fully on the financial contract. If σ<<θ the probability of a loss is negligible and $\pi_S > \pi_F$, since relying on the social norm provides the principal with additional instrument. In the opposite case, θ <<σ, commitment to share losses proportionally to investment introduces significant extra rigidity in the contract. It can still be optimal if γ is small, i.e. psychological cost of breaking her promise is significant for the entrepreneur. However, as γ increases the psychological cost becomes less significant and there exists γ^* such that $\pi_S < \pi_F$ for $\gamma > \gamma^*$.

III. BUSINESS CYCLE AND PERSISTENCE OF SOCIAL NORMS

In this Section we assume that productivity of effort can fluctuate due to random shocks. Such shocks in productivity are known to be the main course of business cycles (see, for example, Long and Plosser, 1983). Let us consider a dynamic model

where time is discrete and the bank and the entrepreneur enter a new contractual relation in every period. Assume that $\gamma>\gamma^*$ and $\theta \in\{\theta_L,\theta_H\}$ with $\theta_H>\theta_L>0$. We will interpret periods when $\theta=\theta_H$ as booms and the ones with $\theta=\theta_L$ as recessions and assume that $P_r(\theta=\theta_L)=p$ irrespective of the history, i.e. every period the economy has the same probability to be in a recession[4]. We also assume that

$$\pi_S(\theta_H) > \pi_F(\theta_H), \pi_S(\theta_L) < \pi_F(\theta_L) \tag{33}$$

i.e. during boom the bank is better off to rely on a social norm, while during a recession it prefers to rely on a purely financial contract. We will also assume that γ that determines the psychological cost evolves in the following way:

$$\gamma_t=\{\gamma_0\in(0,+\infty) \text{ if } \forall\tau<t \text{ the contract respects the social norm } +\infty, \text{ otherwise} \tag{34}$$

i.e. once the bank has broken the social norm, it will have to rely on the financial contracts forever. The optimal strategy for the bank is the following: as long as the economy is in a boom, offer the optimal contract that respects the social norm, once the economy has gone to a recession offer a contract that respects the social norm if and only if

$$\frac{1-\delta-\delta_P}{\delta(1-p)} > \frac{\pi_S(\theta_H)-\pi_F(\theta_H)}{\pi_F(\theta_L)-\pi_S(\theta_L)}, \tag{35}$$

where δ is the discount factor the bank applies to its profits. We see that if a discount factor is sufficiently low the social norm will be broken. If the capital markets are perfect the discount rate is given by:

$$\delta = \frac{1}{1+r'} \tag{36}$$

where r is the marginal product of capital. In that case destruction of social norms is efficient: a norm is destroyed if and only if it is too rigid. In practice, however, it is likely that $\delta<1/(1+r)$. The latter can reflect, for example, the fact that the bank's shareholders face credit restrictions due to information asymmetries. If this is the case, beneficial social norms can be destroyed during the recession and therefore recessions can have undesirable long term effects. Therefore, a policy that eases credit restrictions during a recession can have an additional benefit of preserving beneficial social norms and making recovery easier.

IV. CONCLUSIONS

In this paper, we discussed how restrictions imposed by Shariah law affect structure of optimal contracts and performance of Islamic banks. We have shown

4 Here we define booms and recessions directly in terms of productivity, rather that the output, as is common in the business cycle literature. Assumption that productivity shocks are i.i.d. is pretty common, resulting in the output following a more complicated autoregressive process.

that due to the restrictions imposed on loss-sharing, the Islamic banks will provide entrepreneurs with higher-powered incentives for the gains. This will lead to inefficient risk-sharing and may result in otherwise profitable projects not been financed. These considerations may play particularly important role during a recession.

We also argued that an Islamic bank operating in a Muslim country can rely on shared social norms to mitigate moral hazard problem. This may allow it to outperform a conventional bank, especially during a boom, when loss-sharing constraint is likely to have less bite. A crucial qualification, however, is that the Islamic bank should have the pool of human capital of the same quality as the conventional one. As argued by Basov and Bhatti (2014), the latter qualification is far from innocent.

Finally, we extended the model to discuss long term economic effects recessions might have by destroying beneficial social norms. In this paper adherence to the social norms by the principal induced a warm glow in the agent, but the failure to do so did not cause retaliation either by the agent or by society. We call such social norms mild. Having mild social norms is always beneficial for the society. The situation can, however, change if the norms are hard, i.e. economic actors seek to punish the violators even at a personal cost. If the latter is the case, society with rigid social norms can perform worse than the one without norms. Another issue is the effect of legalization of norms on economic performance. Suppose the government passes a legislation that stipulates that all contracts must be in N. Then the ability to generate a warm glow by sticking to a norm will be lost, while the rigidity will remain. Therefore, social norms will become an unambiguous handicap to the economy.

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