Nonprofit Status and Relational Sanctions: Commitment to Quality through Repeat Interactions and Organizational Choice

Albert H. Choi  
University of Virginia

Abstract

An entrepreneur can organize either a for-profit or a nonprofit firm to sell products or services to consumers in the long run. Because quality is nonverifiable and unobservable, investment can still produce low quality; in equilibrium, consumers impose relational sanctions when low quality is delivered. With sufficient relational sanctions, both types of firms produce the same expected quality. However, because the nondistribution constraint reduces the temptation to shirk from investment, the nonprofit firm is subject to shorter relational sanctions, which can make nonprofit status attractive even for the entrepreneur who cares only about the return obtained from the firm. Nonprofit status is preferred as the relationship between investment and quality gets weaker or as stronger market competition reduces the profit margin. The paper also shows how both types of firms can coexist in a market when the legal enforcement against nonprofit status weakens as the number of nonprofit firms increases.

1. Introduction

One of the most influential theories about why nonprofit organizations exist is that nonprofit status works as a signal of, or a commitment to produce, high-quality products or services (Hansmann 1980, 1996). The typical assumption is that quality is not verifiable and thus not contractible, and because nonprofit status imposes a nondistribution-of-profit constraint on the organization, the entrepreneur who controls a nonprofit firm is more likely to spend resources on providing high quality to consumers than on maximizing the firm’s profit for distribution to herself (Glaeser and Shleifer 2001). While the theory has produced many testable predictions and has been subjected to various empirical testing,
questions remain. If a formal, contract-based incentive scheme is not feasible because quality is not verifiable, why do reputational, relational, or other market-based sanctions fail to provide the necessary investment incentive? Presumably, even a for-profit firm would want to commit to, or create a reputation for, providing high quality, not because it cares about quality provision per se but because it can command a higher price and realize a larger profit. In fact, for-profit firms that provide similar products and services can be found in numerous industries, including health care (hospitals and nursing homes), media, performing arts, research, and even education (Deming, Goldin, and Katz 2012). What effect do market-based or relational sanctions have on organizational choice and organizational behavior?

This paper attempts to address some of these questions by more explicitly incorporating repeat interactions. The paper assumes an entrepreneur who can organize either a for-profit or a nonprofit firm. Both types of organizations are endowed with the identical production technology, and the entrepreneur may care only about the return she receives from the organization. Because of the non-distribution constraint, however, for the entrepreneur to receive any distribution from a nonprofit firm, she has to convert its profit into private benefits (such as perquisites or in-kind distributions), and converting profit into private benefits entails a deadweight loss. An important assumption is that the larger the profit she wants to convert into private benefits, the larger the proportionate deadweight loss: the conversion technology is subject to decreasing returns to scale (Burkart, Gromb, and Panunzi 1998). The reason can stem from both physical limitations (there are only so many corner offices and work holidays that the entrepreneur can grant herself) and, more importantly, legal constraint (as the number of the perquisites gets larger, the more likely they are to be challenged by public authorities, including state prosecutors and the Internal Revenue Service, which potentially would lead to the loss of the firm’s nonprofit status) (Hansmann 1980; Malani and Posner 2007).

The decreasing returns to scale in private-benefit extraction has an important implication for a nonprofit organization, especially in terms of the relational sanctions the organization faces. Compared with a for-profit firm, a nonprofit firm faces a weaker (but nonetheless positive) incentive to shirk from providing high quality (Baker, Gibbons, and Murphy 2002). When the incentive to shirk is smaller, smaller relational sanctions are necessary to keep the firm in line. In equilibrium, a for-profit organization is subject to stronger relational sanctions than a nonprofit organization. Stronger relational sanctions against a for-profit organization, in turn, imply that, from the entrepreneur’s perspective, even though her per-period return from a nonprofit firm may be smaller, her long-run expected return may be higher, since the duration during which the firm is subject to relational sanctions is shorter. This can explain why an entrepreneur who cares only about her return from the organization (and has no altruistic or other nonpecuniary motive to provide high quality) may still want to set up a nonprofit, rather than a for-profit, organization.
The theory leads to a number of implications. First, the paper shows that when relational sanctions provide the necessary incentive, in equilibrium nonprofit and for-profit organizations produce the same (expected) quality at comparable prices. This can explain why it may be difficult to show empirically that nonprofit organizations, in general, provide higher-quality products or services to their customers. It also shows why both types of organizations will behave in a similar way (Norton and Staiger 1994; Duggan 2000). Second, the theory suggests that as the nondistribution constraint becomes more binding—that is, as the returns in private-benefit conversion become smaller—an entrepreneur is more likely to use a nonprofit form. The less worthwhile the decreasing returns, the weaker the incentive to shirk becomes, which, in turn, leads to shorter relational sanctions. This also implies that, in terms of reducing deadweight loss and increasing welfare, the policy should focus more on prohibiting nonprofits from making large distributions: it should focus more on the slope rather than the level of nondistribution constraint.

Third, a nonprofit organization becomes more attractive as the realized quality becomes a less reliable signal of the firm’s investment in quality. As the realized quality becomes a poorer signal, relational sanctions are imposed more frequently and for a longer duration. Conversely, when the signal becomes very accurate, for-profit organization is a preferred organizational choice for the entrepreneur. This suggests that when relational sanctions are present, the accuracy of the realized quality for predicting a firm’s investment in quality is a better predictor of organizational choice than the per se nonverifiability of realized quality. Fourth, the model shows that as the degree of competition in the market increases, represented by a lower equilibrium price and a lower profit margin, a nonprofit organization becomes more attractive for the entrepreneur. As the per-period return shrinks, the differential relational sanctions have a bigger effect on an organization’s long-run profit. Furthermore, because the temptation to shirk is larger for a for-profit firm and the relational sanctions are imposed by taking away the profit a firm makes, in equilibrium the market has to guarantee a larger profit for a for-profit firm than for a nonprofit firm. Nonprofit firms are better able to sustain smaller profits and still solve the investment problem. These results suggest that nonprofit organizations are more likely to endure fluctuations in market demand and profit margins, for instance, in terms of entry and exit decisions (Chakravarty et al. 2006) and that nonprofit firms are less likely to convert to for-profit firms when competition gets stronger and profit margins get thinner (Cutler and Horwitz 2000).

Fifth and finally, the model can also explain why the emergence of for-profit charities and the presence (and coexistence) of for-profit organizations in many markets can be found without resorting to reasons based on altruism, tax or subsidy, or heterogeneity in production technology. One reason has to do with the exogenous differences in private-benefit extraction. When some entrepreneurs are better at converting cash flow into private benefits, they will choose a nonprofit form, while others will opt for a for-profit form. This implies that, as em-
The Journal of LAW & ECONOMICS

Empirically documented (Cutler and Horwitz 2000), when the industry is subject to an exogenous shock, such as better access to financing, there should be an observable systemic conversion from one form to the other. The second reason is based on the relationship between the degree of legal enforcement against distribution and the number of nonprofit firms in the market. When, for instance, legal enforcement of nondistribution constraints against nonprofits gets weaker as the number of nonprofits in a given sector gets larger (for instance because of the limited enforcement resources that public agencies face), ex ante identical entrepreneurs will choose ex post different organizational forms.

The paper is organized as follows. Section 2 briefly reviews the relevant literature. Section 3 presents a repeated-game theoretic model. An entrepreneur-seller makes an initial organizational choice and subsequently interacts with a single buyer over time. Although the seller can exert costly, unobservable investment (effort) in each period to increase the likelihood of providing high-quality products or services to the buyer, because realized quality is not verifiable, the buyer must resort to relational sanctions to provide the requisite incentive to the seller. The size of the relational sanctions depends on, among other things, the seller’s profit from deviation, which, in turn, depends on the organizational status. After the equilibrium is derived, comparative statics results are presented. Section 4 focuses on the implications of the model, including how it can explain some of the puzzles surrounding organizational choice, such as the coexistence of for-profit and nonprofit organizations in the same industry and geographical market, the midstream conversion from one organizational form to another, and differential responses to changes in market conditions. It also makes suggestions for how the legal policy can lead to greater social welfare. Section 5 concludes with thoughts for future research, including more expressly taking into account the effect of competition and taking a closer look at the internal organizational issues. All the proofs are in the online appendix.

2. Related Scholarship

In his seminal works on nonprofit organizations, Hansmann (1980, 1996) makes two important observations. First, nonprofit organizations, such as hospitals, nursing homes, and universities, often operate in an environment where the quality of the service or the product delivered is difficult or impossible to verify in court. Second, an important characteristic of a nonprofit organization is that it is 1

1 See Arrow (1963) and Easley and O’Hara (1983) for earlier costly verification or asymmetric-information-based theories of nonprofit organizations and Pauly and Redisch (1973) for a model of nonprofits that maximize the returns for employees. See also Weisbrod (1988, 1998), Rose-Ackerman (1996), Lakdawalla and Philipson (1998), and Glaeser (2002) for more comprehensive surveys of the existing theories, testable empirical predictions, and descriptive and empirical data.

barred from distributing any profits it earns to persons who exercise control over the firm (the nondistribution constraint). Instead, a nonprofit organization can distribute its profits only through noncash perquisites, such as shorter workdays, better working environments, better offices, and more generous fringe benefits. When quality is not verifiable and an explicit, contract-based incentive cannot be used, nonprofit status and the nondistribution constraint, according to Hansmann, work as a signal or commitment to provide higher quality, since nonprofit entrepreneurs have a weaker incentive to chisel on quality and maximize the organization’s profits.

Taking these points from Hansmann (1980, 1996), Glaeser and Shleifer (2001) more formally model the interaction between the nondistribution constraint and the incentive to provide quality. They present a static model in which an entrepreneur who has both altruistic and profit motives can organize and operate either a for-profit or a nonprofit firm. When a nonprofit firm is organized, the entrepreneur incurs a deadweight loss in converting the firm’s profit into perquisites for her consumption. Consistent with the commitment-to-quality hypothesis, they show that the weaker incentive to maximize profits (due to the nondistribution constraint) induces the entrepreneur to put more emphasis on her altruistic motive to provide high quality.\(^3\) They argue that a nonprofit status makes constituents of the organization, such as customers, employees, or donors, feel more protected, and this allows the entrepreneur to gain a competitive advantage in the marketplace. An important implication of their model is that the organizational choice is directly linked to how much consumers care about quality: when the preference for quality is sufficiently great, the market will be served by nonprofit firms, whereas when the preference is weak, for-profit firms will dominate. More recently, Vlassopoulos (2009) takes Glaeser and Shleifer’s (2001) setup and extends it to a repeated-interaction setting (with one-to-one correspondence between the entrepreneur’s input and the realized quality and grim-trigger punishment strategy). The paper shows, not surprisingly, that a for-profit organization will be better for the entrepreneur when relational punishments are sufficiently strong to sustain optimal quality.\(^4\)

Empirical research on nonprofit organizations, while mildly supportive of the theory of noncontractible quality, has not produced a definitive answer as to whether the two types of organizations behave in systematically different man-

\(^3\) The results are similar in spirit to the multitask principal-agent model by Holmstrom and Milgrom (1991), who show that when an agent can engage in multiple tasks, only some of which are verifiable and contractible, when the tasks are substitutes, the principal will want to reduce the express incentive on the verifiable tasks so as to induce more effort on nonverifiable tasks.

\(^4\) With one-to-one correspondence between the entrepreneur’s input and the realized quality (\(\alpha = 0\) in this paper), when the entrepreneur is sufficiently patient and the consumers care sufficiently about the quality, for-profit organization will always produce a higher equilibrium return for the entrepreneur, regardless of whether she has an altruistic motive. When consumers’ care about quality is sufficiently small (small \(\Delta v\) in this paper), on the other hand, an entrepreneur with some altruistic motive can do better by choosing a nonprofit form.
Duggan (2000), for instance, examines the hospital industry and finds that nonprofit hospitals are just as responsive to financial incentives and are no more altruistic than for-profit hospitals. Malani and Posner (2007) observe the emergence of for-profit charities, citing Google’s and Starbucks’s charities as examples, and doubt whether nonprofit organizations are better at providing nonverifiable quality to consumers. They argue for delinking organizational status from tax benefits and for similar tax treatments for for-profit charities. On the other hand, Chou (2002) shows that there are differences in health outcomes between for-profit and nonprofit nursing homes. Erus and Weisbrod (2003) show that compensation and/or incentive structures used in hospitals systematically differ, with for-profit hospitals using stronger profit-based compensation, although they also find that the difference decreases with competition, with the penetration of health maintenance organizations, and over time. Chakravarty et al. (2006) find that, as far as entry and exit decisions are concerned, nonprofit hospitals are less responsive to changes in demand. Horwitz (2007) and Horwitz and Nichols (2009) show that nonprofit hospitals behave more like for-profit hospitals as the market share of for-profit hospitals rises. Finally, Deming, Goldin, and Katz (2012) document the rise and dominance of for-profit organizations in the post-secondary vocational and trade education sectors.

3. A Simple Model of Relational Sanctions and Organizational Choice

Suppose there is an entrepreneur who wants to set up an organization to provide products or services (collectively, goods) to consumers. To keep the analysis simple, I assume that once the organization has been set up, the seller-entrepreneur (S) deals with a single long-term buyer-customer (B). At $t = 0$,
the seller makes an organizational choice: she decides whether she will operate a for-profit or a not-for-profit entity: $O \in \{FP, NP\}$. The main implication of the organizational choice, as will become clearer shortly, has to do with the ease with which the seller can distribute profits to herself. I assume that the organizational choice is known to the buyer. In subsequent periods $t \in \{1, 2, 3, \ldots \}$, the seller transacts with the buyer-customer. In any period, the relationship can terminate with a positive probability (for instance, because of an unforeseen dissolution or liquidation of one of the parties). The parties also value present dollars more than future dollars. Both of these effects can be captured by assuming that the parties discount future earnings by a factor of $\delta \in (0, 1)$, which is assumed to be the same for both parties.

In terms of the transaction, in each period $t \in \{1, 2, 3, \ldots \}$, the buyer approaches the seller and inquires about purchasing a single unit of good (product or service). To keep the analysis simple, I assume that the seller, in response, makes the buyer a take-it-or-leave-it offer, which the buyer either accepts or rejects.\(^9\) The seller’s offer contains two elements: a description of the good and the price, represented by $(g, p)$. I assume that the quality of the good is not verifiable (and therefore not contractible), so $g$ can identify only what type of product or service the seller is providing and not its quality. If the buyer rejects the offer, both parties get a payoff of 0 (their normalized outside reservation values) for that period. If the buyer accepts, he pays the price, and the seller chooses the level of effort (investment) that affects the quality of the delivered good. More precisely, the realized quality can be either high or low, $q \in \{q_H, q_L\}$, and the seller’s choice of effort (or per-period investment) affects the probability that the good will be of high quality ($q_H$).

The seller’s choice of effort (investment) also comes at two levels: $e \in \{e_H, e_L\}$. The seller’s effort is unobservable to the buyer or to any third party (and therefore is not contractible). A low level of effort ($e_L$) costs the seller $c_L \geq 0$ and produces $\alpha \in (0, \frac{1}{2})$ chances of producing a high-quality ($q_H$) good. On the other hand, a high level of effort ($e_H$) costs the seller $c_H > c_L$ and leads to a $1 - \alpha \in (\frac{1}{2}, 1)$ chance of producing a high-quality good.\(^10\) The cost and probability param-

---

\(^9\) Allowing the seller-entrepreneur to make a take-it-or-leave-it offer to the buyer makes the seller the residual claimant of the transaction. This convenient assumption allows me to compare the efficiency of different sanctioning regimes by simply looking at the seller’s long-run profit. It also minimizes the length of the relational sanctions necessary to provide the requisite incentive, which, in turn, maximizes welfare. If the buyer and the seller were to split the surplus, as in corollary 3, although the basic analysis would remain the same, the comparison of efficiency would become more cumbersome. The buyer would also have to impose longer relational sanctions (and generate a larger deadweight loss) to solve the incentive problem.

\(^10\) The uncertainty in quality realization can come either from technological uncertainty (for example, even after performing the best possible surgery, the outcome may still be poor) or from other idiosyncratic shocks that affect the customer’s experience (for example, even when the same service or product is offered, some consumers may have a poor experience). Without the uncertainty in quality realization, however, relational sanctions will solve the incentive problem at no cost regardless of the organizational status, and the selfish entrepreneur will always prefers a for-profit organization. As will be shown, when $\alpha$ is sufficiently small, the entrepreneur will prefer a for-profit organization.
eters are independent of the organizational form: both organizational types are endowed with the same production technology. The buyer values high-quality goods more than low-quality goods: valuations are given by \( v_H = v(q_H) \) for high quality and \( v_L = v(q_L) \) for low quality, where \( v_H > v_L \geq 0 \). I assume that although both parties observe the realized quality, neither the realized quality nor the buyer’s valuation is verifiable.\(^{11}\) Finally, I assume that it is efficient for the seller to choose a high, rather than low, level of effort, and if the seller chooses a low level, the expected surplus is negative: \( E(v | e_H) - c_H > 0 > E(v | e_L) - c_L \).\(^{12}\)

With regard to the organizational form and the nondistribution constraint, I assume that for a for-profit organization, the seller-entrepreneur is free to distribute the profit to herself. So, for instance, if she charges the buyer price \( p \) and chooses a high level of (investment) effort \( (e_H) \), the organization realizes a profit of \( \pi = p - c_H \) and distributes the same amount to the entrepreneur.\(^{13}\) On the other hand, in a nonprofit organization, the organization cannot directly transfer the profit to the entrepreneur. Rather, the firm has to compensate the entrepreneur through other means, such as fringe benefits, perquisites, or in-kind distributions. Conversion of cash profits into perquisites for the benefit of the entrepreneur is inefficient in the sense that \$1\ of profit will generate less than \$1\ of benefit for the entrepreneur, and the larger the amount of profit to be converted, the larger the size of the inefficiency (deadweight loss). This may be because of technological constraints on converting cash flows into perquisites, because of le-
gal constraints that the nonprofit organization faces in distribution,\(^\text{14}\) and/or because the entrepreneur faces a sharper diminishing marginal utility with respect to in-kind distributions. To capture this idea, I assume that for a nonprofit entrepreneur, for any profit \(\pi \geq 0\), the size of the perquisite-based distribution is \(\phi(\pi)\), where \(\phi(0) = 0\), \(\phi'(0) = 1\), \(\phi'(\pi) > 0\), and \(\phi''(\pi) \leq 0\). In words, as the profit gets larger, it becomes (weakly) more difficult, at the margin, for the nonprofit entrepreneur to convert that profit into her private benefit.\(^\text{15}\) To make the analysis more straightforward, in most cases I assume that \(\phi(\pi)\) is strictly concave: \(\phi''(\pi) < 0\).

With these parameters, if the seller and the buyer transact only once, regardless of the organizational status and the price offer \(p\) made by the seller, the (weakly) dominant strategy for the seller is to choose a low level of effort \(e_i\). Rationally expecting this, the buyer will reject all offers made by the seller. The unique Nash equilibrium of the stage game, therefore, is Not Purchase, Low Effort, and both parties earn 0. Table 1 presents the stage-game payoffs when the entrepreneur sets up a nonprofit organization. Note that \(\phi(p - c_i) > \phi(p - c_H)\), which leads the seller to choose a low level of effort when the buyer accepts the seller’s offer. For a slight abuse of notation, since the two profit levels will be of primary concern, for analytical convenience, I adopt scalar variables \((\phi_H, \phi_L)\), such that \(\phi[H(v \mid e_H) - c_H] \equiv \phi_L[H(v \mid e_H) - c_H]\) and \(\phi[H(v \mid e_H) - c_H] \equiv \phi_H[H(v \mid e_H) - c_H]\). In words, \(\phi_L\) stands for the fraction of the expected surplus that the nonprofit entrepreneur can turn into perquisites, conditional on the seller’s choice of effort (investment) level \(e_i\). By assumption, \(0 < \phi_L < \phi_H < 1\), with the weak inequality becoming strict when \(\phi''(\pi) < 0\). For the for-profit organization, simply replace \(\phi(p - c_i)\) and \(\phi(p - c_i)\) with \(p - c_i\) and \(p - c_H\), respectively, and the same Nash equilibrium will result.

To induce the seller to exert costly effort (investment) in producing high quality, the buyer has to engage in relational sanctions.\(^\text{16}\) Since the seller’s choice of effort (investment) level is private information but the realized quality (while not

---

\(^{14}\) When large, nonpecuniary distributions are made to the entrepreneur as a proxy for the organization’s profits, state attorneys general and the Internal Revenue Service can bring legal actions against the organization and the recipient of the distribution for remedy, possibly including denial of beneficial tax treatment. See Hansmann (1980), Malani and Posner (2007), and Fishman and Schwarz (2010) for more detailed analyses of the legal enforcement of the nondistribution requirement.

\(^{15}\) In the corporate finance literature, a controlling shareholder (or a manager) can turn a firm’s cash flows into her private benefit but only at a deadweight loss that increases as the private benefit grows. See, for example, Burkart, Gromb, and Panunzi (1998). Although the entrepreneur may want to spread out the distribution over time, the time discounting will produce similar decreasing returns to scale. Suppose the firm makes a profit of \(\pi > 0\) in a given period. If the firm distributes all of its earnings as perquisites in that period, the entrepreneur will get \(\phi_H\pi\), whereas if it divides that into two distributions over 2 periods, in each period the entrepreneur will receive \(\phi_H(\pi/2)\), where \(\phi_L < \phi_H\). But with a discount factor of \(\delta\), the present value of the two distributions is \(\phi_H(\pi/2) + \delta\phi_H(\pi/2) = [(1 + \delta)/2]\phi_H\pi < \phi_H\pi\).

\(^{16}\) Although the sanctions imposed by the buyer can also be thought of as reputational or market sanctions, because there is no uncertainty with respect to the seller’s types, I avoid the term “reputational” and exclusively use the term “relational.”
verifiable) is observed by the buyer, the buyer can impose relational sanctions against the seller based on the realized quality. Suppose, initially at $t = 1$, that the buyer believes that the seller will exert a high level of effort (investment) and is willing to purchase the good so long as $p \leq E(v | e_H)$. At any period $t \in \{1, 2, 3, \ldots \}$, if the buyer observes low quality ($q_L$), the buyer’s belief switches to a low effort level ($e_L$) for $T \in \mathcal{R}^+$. When the buyer believes that the seller will put in a low level of effort (in the punishment phase), the parties revert to the Nash equilibrium of Not Purchase, Low Effort. The equilibrium validates the buyer’s belief. After $T$ punishment periods, the buyer’s belief switches back to a high level of effort ($e_H$), and he becomes willing to purchase from the seller again so long as $p \leq E(v | e_H)$. I assume that the buyer chooses a value of $T$ just sufficient to solve the incentive problem. The size of the relational punishment depends on the additional return the seller can capture.

The results of lemma 1 are fairly straightforward, and its intuition can be easily presented. Because the seller’s choice of effort (investment) level is not observable and the realized quality (though observed by the buyer) is subject to error, to provide the necessary investment incentive to the seller, there has to be some relational punishment imposed against the seller in equilibrium ($T_O > 0$). The size of the relational punishment depends on the additional return the seller can capture.

**Lemma 1.** In equilibrium, both types of organizations are subject to relational sanctions, but a for-profit organization is subject to a lengthier relational sanction than a nonprofit organization: $T_{FP} \geq T_{NP} > 0$.

The punishment period $T$ is a real number (rather than a natural number) for analytical convenience. The buyer’s restoration of belief that the seller is choosing a high level of effort, at the end of the punishment period, must occur with a positive probability.

This assumption requires the buyer to be aware of all the relevant parameters of the relationship. This may impose a strong informational burden. In addition, when there is more than one buyer—for example, a market with dispersed consumers—coordinating on the optimal relational sanctions may also be difficult. Perhaps the buyers (or the market) can overcome the informational and coordination burden through learning by doing and dissemination of information. At minimum, the rest of the analysis can be thought of as that on social welfare boundaries (or the maximum possible welfare that can be achieved in equilibrium).
through deviation. Although both types of organizations have the same technology ($\alpha$ and $c_i$) for affecting quality, because the nonprofit organization is subject to the nondistribution constraint and converting profits into private benefits for the entrepreneur is subject to decreasing returns to scale ($\phi_H > \phi_L$ when $\phi''(\pi) < 0$), the nonprofit entrepreneur, compared with the for-profit entrepreneur, faces a weaker (but still positive) incentive to deviate. Hence, the length of relational punishment can be shorter against a nonprofit firm than against a for-profit firm ($T_{FP} > T_{NP} > 0$). The result implies that, to the extent that the nondistribution constraint is effective, empirically, market participants, including consumers, should be more lenient toward nonprofit organizations. In addition, if the nondistribution constraint is thought of as the result of some legal enforcement, the result exemplifies how public enforcement can aid or complement the market mechanisms in solving the commitment problem.

**Proposition 1.** Even with the nondistribution constraint, the entrepreneur may earn a higher return from a nonprofit organization. There exists $\bar{\alpha} \in (0, \frac{1}{2})$, so that the entrepreneur strictly prefers a nonprofit organization when $\alpha > \bar{\alpha}$ and a for-profit organization when $\alpha < \bar{\alpha}$. The entrepreneur is more likely to form a nonprofit organization as $\phi_H$ increases or as $\phi_L$ decreases.

Building on the results from lemma 1, proposition 1 demonstrates that when comparing the performance of a for-profit organization with that of a nonprofit organization, there are two important factors to consider. First, because of the nondistribution constraint, in each period when there is trade, the nonprofit entrepreneur captures a lower fraction ($\phi_H$ versus 1) of the equilibrium profit ($E(v | e_H) - c_H$). This makes choosing a nonprofit form less attractive. On the other hand, because the nondistribution constraint creates a weaker incentive to deviate from providing high quality, a nonprofit organization will be subject to a shorter (less harsh) relational sanction period compared with a for-profit organization (lemma 1). This latter effect makes choosing a nonprofit form more attractive for the entrepreneur. Note that while the magnitude of the first factor, a smaller distribution to the nonprofit in case of trade, depends on the size of the overall surplus ($E(v | e_H) - c_H$) and the equilibrium price ($p - c_H$), the latter effect, shorter relational sanctions ($T_{FP} > T_{NP} > 0$), is dictated largely by the deviation incentive, in particular, the difference in costs ($\Delta c$), which is independent of the equilibrium price. This has an important implication for the degree of competition and the organizational choice (corollary 3).

The entrepreneur’s preference for one of the two organizational forms will depend on the relative magnitudes of these two opposing forces, which, in turn, depend on $\alpha$. A marginal change in $\alpha$ produces three distinct effects on each or-
organization’s long-run return \((V_o^+)\). First, as \(\alpha\) gets larger, the buyer’s equilibrium reservation value, given by \(E(v \mid e_h)\), decreases, and this reduces the size of the surplus and each organization’s per-period profit margin. Second, from the incentive perspective, because a larger \(\alpha\) makes the realized quality a less reliable indicator of costly investment, it requires bigger relational sanctions for both types of organizations: \(\Delta c/(1 - 2\alpha)\) for a for-profit organization and \(\lambda/(1 - 2\alpha)\) for a nonprofit organization, where \(\lambda = (\phi_L/\phi_H) \times [E(v \mid e_H) - c_L] - [E(v \mid e_H) - c_H] < \Delta c\). Finally, the larger the value of \(\alpha\), the more likely the relational sanctions are to be imposed on the equilibrium path: \(a[\Delta c/(1 - 2\alpha)]\) for a for-profit organization and \(a[\phi_L \times [E(v \mid e_H) - c_L] - \phi_H \times [E(v \mid e_H) - c_H]/(1 - 2\alpha)]\) for a nonprofit organization. All three effects will reduce the organization’s long-run return when \(\alpha\) increases, but the three effects manifest differently depending on the organizational form.

I illustrate these points with the aid of Figure 1, which represents the relationship when \(\phi_H > \phi_L\) and \(V_{NP}(\bar{\sigma}_{PP}) > V_{PP}(\bar{\sigma}_{PP})\). When \(\alpha = 0\), so that there is a one-to-one correspondence between unobservable investment and observed quality, no relational sanctions are imposed in equilibrium, and the entrepreneur strictly prefers a for-profit form that allows her to capture the maximal amount of surplus from the transaction. When \(\alpha > 0\), however, because the realized quality no longer serves as a perfect indicator of investment, relational sanctions are imposed in equilibrium, and the sanctions become lengthier and more frequent as the value of \(\alpha\) rises (the second and the third effects). Lengthier and more frequent relational sanctions not only reduce the long-run profit of both types of organizations \((V_o^+\) strictly decreases as \(\alpha\) rises) but make the nonprofit form more attractive because nonprofits are subject to less severe relational sanctions \((V_{PP}^+\) has a steeper downward slope). Hence, there is a threshold \(\bar{\alpha}\) such that, whenever \(\alpha \in (\bar{\alpha}, \bar{\alpha}_{NP})\), the entrepreneur will strictly prefer a nonprofit organization \((V_{NP}^+\) is both positive and strictly larger than \(V_{PP}^+\)). Overall, the results imply that when market sanctions are taken into account, an important indicator for organizational form is the relationship between realized quality and unobservable investment (given by \(\alpha\) in the model). The model also predicts that nonprofit organizations should be more prevalent when the realized quality is a poor indicator of underlying investment or effort (for example, liberal arts higher education or certain services provided by hospitals), and there should be a larger presence of for-profit organizations when there is a stronger correlation between investment and realized quality (for example, vocational and trade education, media, or certain sectors of health care).

In addition to \(\alpha\), the entrepreneur’s organizational choice also depends on how easily she can extract private benefits from the organization, which is determined

---

20 As documented by Deming, Goldin, and Katz (2012), even in the postsecondary-education sector, while nonprofit colleges and universities offer education, such as liberal arts, for which the quality of the outcome is difficult to verify, for-profit organizations dominate in the vocational and trade education sectors, including health care, computers, business, cosmetology, massage, and pet care. As the authors note, the quality of the education is easier to verify in the latter sector through certification and job-placement outcomes, and reputation is easier to establish.
There are two distinct possibilities to consider. First, when \( \phi_L \) decreases, although the entrepreneur’s equilibrium per-period return from a nonprofit firm (given by \( \phi_H[E(v | e_H) - c_H] \)) does not change, because the seller’s incentive to deviate gets smaller, the size of the relational sanctions decreases (\( T_{NP} \) gets smaller). And shorter relational sanctions increase the nonprofit firm’s long-run expected return. With regard to Figure 1, a decrease in \( \phi_L \) makes the \( V_{NP}^+ \) curve pivot (rotate) upward, thereby decreasing \( \tilde{\alpha} \). As an extreme case, when \( \phi_L = \phi_H \), the \( V_{FP}^+ \) and the \( V_{NP}^+ \) curves cross the horizontal axis at the same point, thereby making a nonprofit form strictly inferior to a for-profit organization. Second, an increase in \( \phi_H \) produces two effects. A higher \( \phi_H \) allows the seller to more efficiently realize her private benefit from a nonprofit firm’s profit. At the same time, with \( \phi_L \) being held constant, the seller faces a smaller incentive to deviate (just like a decrease in \( \phi_L \)), which reduces the length of relational sanctions (\( T_{NP} \) gets smaller) and boosts the nonprofit’s long-run profit. From Figure 1, an increase in \( \phi_H \) shifts up the entire \( V_{NP}^+ \) curve, thereby shifting \( \tilde{\alpha} \) to the left. Finally, note that because a for-profit entrepreneur faces a larger incentive to deviate, in equilibrium the market has to guarantee a larger profit to a for-profit organization (so that a bigger punishment is imposed when profit is reduced through relational sanctions). This is the reason why a nonprofit can operate with lower equilibrium return at the maximum possible \( \alpha \): \( V_{NP}^+ (\tilde{\alpha}_{NP}) < V_{FP}^+ (\tilde{\alpha}_{FP}) \). This will, in turn, make a nonprofit firm more viable when the market becomes more competitive and the equilibrium price falls (as shown in corollary 3).
In terms of social welfare, the model incorporates two types of inefficiency. The first is the loss of trade that stems from relational sanctions. Given that there is no trade when the buyer imposes relational sanctions, the longer the relational sanctions, the bigger the loss in social welfare. Since a nonprofit organization is subject to shorter relational sanctions (lemma 1), relational-sanctions-based inefficiency is smaller for a nonprofit firm. The second type of inefficiency is the deadweight loss that stems from conversion of profit into the entrepreneur’s private benefits in a nonprofit organization (which, in equilibrium, is determined by \( \phi_H \)). Because a for-profit firm is not subject to such conversion-based deadweight loss, this makes the nonprofit firm less attractive from a social welfare perspective. In terms of organizational choice, when the entrepreneur, with the power to make take-it-or-leave-it offers, is the residual claimant, she fully internalizes both types of inefficiency and makes the choice that maximizes welfare. On the other hand, when either the for-profit firm is subject to income (or profit) tax or the nonprofit firm is subject to production subsidy, as is observed in the real world, the entrepreneur’s organizational choice will not generally be consistent with welfare maximization. At the same time, such tax or subsidy can be chosen to improve welfare. I analyze these policy instruments in the following two-part corollary.

**Corollary 1.** Suppose the for-profit organization is subject to profit tax, so the entrepreneur receives \( \beta(\pi) \in [0, 1] \) as distribution in each period, where \( \beta'(\pi) > 0 \), \( \beta(0) = 0 \), \( \beta'(0) = 1 \), and \( \beta''(\pi) \leq 0 \).

i) If \( \beta''(\pi) = 0 \) and \( \beta'(\pi) = \beta > 0 \ \forall \ \pi \), relational sanctions against the organization \( T_{FP} \) are independent of the tax rate \( (\beta) \), and the entrepreneur is more likely to form a nonprofit organization. Compared with the case of no profit tax, the level of social welfare will be lower. If \( \beta < \phi_H \), the entrepreneur will strictly prefer a nonprofit organization.

ii) When \( \beta''(\pi) < 0 \), the entrepreneur is more likely to form a for-profit organization as \( \beta_H - \phi_H \) gets larger or as \( (\beta_H - \beta_L) - (\phi_H - \phi_L) \) gets larger, where \( \beta_H \times [E(\nu | e_H) - c_L], \beta_L \times [E(\nu | e_H) - c_L] \equiv \beta[E(\nu | e_H) - c_L] = \beta[E(\nu | e_H) - c_L] \). If \( \beta_L \leq \phi_L \) and \( \beta_H \geq \phi_H \), the entrepreneur will always choose a for-profit status, and the level of social welfare will be (weakly) higher compared with the case of no profit tax.

From the entrepreneur’s perspective, the tax on a for-profit organization’s income (or distribution to the entrepreneur) functions just like the deadweight loss \( (1 - \phi_i) \) that she must incur when converting profit into private benefits from a nonprofit organization. When the marginal tax rate is progressive \( (\beta''(\pi) < \)
0), the incentive to shirk and distribute a large amount of profits gets smaller, and so will the relational sanctions. At the same time, the entrepreneur receives a smaller fraction of profit in each period. More generally, organizational preference and the effect on social welfare will depend on the difference in the equilibrium tax rate \((\beta_H - \phi_H)\) and the relative progressivity of the tax rate on for-profit organizations and the private-benefit-conversion rate of nonprofits \(((\beta_H - \beta_L) - (\phi_H - \phi_L))\). As a special case, when \(\beta_L \leq \phi_L\) and \(\beta_H \geq \phi_H\), by forming a for-profit organization, the entrepreneur receives a larger distribution (in equilibrium) and is subject to shorter relational sanctions. Since there is no deadweight loss from profit conversion either, the level of social welfare will be (at least weakly) higher. As another special case, when the marginal tax rate is constant \((\beta''(\pi) = 0)\), while a for-profit organization loses a fraction of its income to the government, it does not gain any in terms of reduced relational sanctions. Therefore, the entrepreneur is less likely to choose the for-profit status, and this reduces welfare because a nonprofit organization also generates deadweight loss from private-benefit conversion.

**Corollary 2.** Suppose the nonprofit organization’s production cost can be subsidized so that the seller bears the cost \(\gamma c_i\), where \(\gamma c_i \in (0, 1)\). Relational sanctions against the nonprofit organization will strictly decrease \((T_O\) decreases), and the entrepreneur will be strictly better off. While the entrepreneur becomes more likely to form a nonprofit organization, the effect on welfare is uncertain.

One of the important policies favoring nonprofit organizations is the provision of various types of subsidy, such as tax-deductible donations, tax-favored financing, and exemptions from property or sales tax. Corollary 2 examines the effect of such production subsidies on nonprofit firms and the entrepreneur’s organizational preference. With a subsidy, nonprofit firms are better off in equilibrium. The effect manifests through two distinct channels. First, the subsidy directly increases the per-period profit of the firm by lowering the equilibrium production cost (from \(c_H\) to \(\gamma c_H\)). The second effect is through the size of the relational sanctions. When the subsidy proportionately reduces the production cost, it reduces the cost differential between high and low levels of effort (from \(\Delta c\) to \(\gamma \Delta c\)), thereby reducing the incentive to shirk on quality. This, in turn, lowers the size of the relational sanctions \((T_{NP}\) decreases) and increases the long-run profit of the firm. Not surprisingly, when such a production subsidy applies only to nonprofit firms, the entrepreneur is more likely to organize a nonprofit rather than a for-profit firm. It is easy to show that when such a production subsidy is also offered to for-profit organizations, they will benefit as well. Furthermore, if the subsidy can be targeted toward high cost \((c_H)\), so that, for instance, the firm faces \(\gamma c_H\) and \(c_L\), although the first-best outcome cannot be achieved unless \(\gamma c_H \leq c_L\), relational sanctions will get shorter, thereby improving welfare compared with the case in which the subsidy is less discriminate.

Compared with the case of no subsidy, however, it is uncertain whether the subsidy to nonprofit organizations will increase welfare. Although the reduction
in relational sanctions is welfare enhancing, this is (at least partly) offset by an increase in deadweight loss from converting higher-equilibrium per-period profit (from \( E(v | e_H) - c_H \) to \( E(v | e_H) - \gamma c_H \)) to private benefit. When the latter effect is stronger (such that each nonprofit firm is reducing welfare), there could also be additional welfare loss from organizational choice: since a production subsidy makes nonprofit firms strictly better off, the entrepreneur becomes more likely to choose a nonprofit rather than a for-profit form, and such organizational choice is welfare reducing. When I combine the results from corollaries 1 and 2, therefore, it is clear that properly calibrated profit tax on for-profit organizations can function better to improve welfare. Under corollary 1, when the profit tax is sufficiently progressive, while leaving the entrepreneur with enough profit in equilibrium (when both \( \beta_H - \beta_L \) and \( \phi_H - \phi_L \) get larger), for-profit organizations are subject to less relational sanctions, and the entrepreneur becomes more likely to choose for-profit status, both of which will increase welfare. Finally, taxing for-profit income has the benefit of producing additional revenue for the government, whereas a production subsidy reduces government revenue and may require additional expenditure of resources.

Before I proceed, a short note about the necessary conditions for corollaries 1 and 2 is in order. They assume that the realized profit, the cost, or both are observed by the relevant government authorities so that the proper amount of tax or subsidy can be levied. At the same time, they are not observed by consumers (or the firm cannot credibly reveal them to consumers) since, otherwise, consumers will be able to tailor relational sanctions on the basis of the realized cost and/or profit. Production subsidy in the form of tax benefits that accrue to donors or investors, in particular, will be quite difficult to observe (or verify) from consumers’ perspective. If the assumption is not realistic, taxing profit or subsidizing production cost will not be feasible, in which case the policy tools examined in both corollaries will not be available. Alternatively, however, both (or either) could be observed by others, including consumers, but with sufficient noise. Profit, for instance, can also come from other sources that produce uncertain streams of cash flow, and cost can be subject to various temporary or technological shocks. With sufficient noise, consumers will rely primarily (but not necessarily exclusively) on the realized quality in imposing relational sanctions, for example, when the realized quality is a much superior indicator of a firm’s behavior, and the main conclusions of the model will carry through. The effect of having such additional signals is informally discussed in Section 4.

**Corollary 3.** Suppose the seller no longer has the power to make a take-it-or-leave-it offer to the buyer, and the equilibrium price is determined as a solution to Nash bargaining in which the seller receives \( \theta \in [0, 1] \) of the equilibrium per-period surplus: \( p(\theta) = \theta \times E(v | e_H) + (1 - \theta) \times c_H \). There exists \( (\theta_{NP}, \theta_{FP}) \) with \( 0 < \theta_{NP} < \theta_{FP} < 1 \) such that, if \( \theta \in [\theta_{NP}, \theta_{FP}) \), the entrepreneur will form only a nonprofit organization. As \( \theta \) decreases, \( \theta_{NP} \) decreases, which makes it more likely that the entrepreneur will choose to form a nonprofit organization.
The effect of market pricing pressure on the organizational choice is examined in corollary 3. If I drop the assumption that the seller can make a take-it-or-leave-it offer and let the bargaining power between the buyer and the seller be more evenly shared, the equilibrium price can be represented as a solution to Nash bargaining: 
\[ p = \theta \times E(v | e_H) + (1 - \theta) \times c_H, \]
where \( \theta \) is the seller’s relative bargaining power. As shown in corollary 3, as the equilibrium price decreases (as \( \theta \) falls), the entrepreneur becomes more likely to choose the nonprofit status. As the equilibrium price goes down, the amount of profit that she can distribute to herself decreases, which makes the for-profit status less attractive: \( p - c_H \) and \( \phi(p - c_H) \) both converge to 0 as \( p \) converges to \( c_H \). However, shorter relational sanctions against nonprofit organizations, determined primarily by the difference in costs \( (\Delta c) \), persist regardless of the equilibrium price. When the per-period difference in returns thus gets smaller but the difference in (expected) durations of relational sanctions remains, forming a nonprofit organization becomes more attractive for the entrepreneur. Furthermore, as briefly noted in proposition 1, because a for-profit entrepreneur faces a larger incentive to deviate, in equilibrium, the market has to guarantee a larger profit to a for-profit organization than to a nonprofit organization (so that a larger punishment is imposed when the profit is reduced through relational sanctions). Therefore, a nonprofit firm can operate with a lower equilibrium return, and this makes the nonprofit status more attractive when the equilibrium market price is low.

I have so far assumed that the nonprofit entrepreneur responds to an exogenously given private-benefit-extraction technology that exhibits a decreasing rate of return \( (\phi''(\pi) \leq 0) \). An important premise behind the assumption is that of legal enforcement. If a nonprofit organization were to distribute profit directly or make a large in-kind distribution, presumably it will be subject to a legal sanction by the relevant governmental authorities.\(^{22}\) At least in theory, whether a relevant government entity will challenge a nonprofit organization’s activities will depend on the amount of resources spent on such enforcement. When there are many nonprofit organizations in a given sector, given the limited enforcement resources, a nonprofit organization will be more likely to be able to evade detection and successfully make a large distribution to its controller. When consumers expect this to be the case, that will, in turn, have an effect on the market’s response in terms of relational sanctions and the organizational preference of the entrepreneur. To parsimoniously capture this idea, I assume that as the number of nonprofit organizations (given by \( N_{NP} \)) increases in the market, the nondistribution constraint gets weaker: \( \phi(\pi | N_{NP}) \) converges to 1, and \( \phi''(\pi | N_{NP}) \) converges to 0.

\(^{22}\) The two most important authorities in the United States are state attorneys general and the Internal Revenue Service. Unlike for-profit corporations, which could be subject to their shareholders’ direct or derivative lawsuits, consumers or donors to a nonprofit institution do not have standing (apart from that based on breach of contract) to challenge a nonprofit organization’s operations, including compensation for its executives and other employees. See, generally, Fishman and Schwarz (2010).
as \( N_{NP} \) gets larger.\(^{23}\) The following corollary examines the effect of change in the nondistribution constraint on the equilibrium organizational form.

**Corollary 4.** Suppose there is a unit mass of firms, indexed by \( i \in [0, 1] \), with each firm’s organizational choice given by \( O_i \in \{NP, FP\} \), that can operate in the market. Let \( N_{NP} \) and \( N_{FP} \) represent the mass of firms with respective organizational choice, such that \( N_{NP} + N_{FP} = 1 \). Suppose also that the equilibrium market price is given by \( p = E(\nu | e_i) \) and that \( \phi(\pi | N_{NP}) \to 1 \) and \( \psi(\pi | N_{FP}) \to 0 \) as \( N_{NP} \to 1 \), with \( \phi(\pi | 0) \) given as before. When \( \alpha \leq \alpha^* \), only for-profit organizations operate; when \( \alpha < \alpha \leq \alpha_{FP} \), both for-profit and nonprofit organizations can coexist; and when \( \alpha_{FP} < \alpha \leq \alpha_{NP} \), only nonprofit organizations operate.

Corollary 4 analyzes the equilibrium organizational selection when the nondistribution constraint \( (\phi(\pi | N_{NP})) \) becomes less binding as the number (or fraction) of nonprofit firms increases in the market. Now I can divide the \( \alpha \) space into (possibly) three regions. When \( \alpha \) is sufficiently small \( (\alpha \leq \alpha^*) \), previous findings show that for-profit firms outperform nonprofit firms, and, hence, the entrepreneur will always choose for-profit status. Similarly, when \( \alpha \) is sufficiently large \( (\alpha_{FP} < \alpha \leq \alpha_{NP}) \), nonprofit firms produce a positive long-run profit, while for-profit firms make a negative profit, and the entrepreneur will always choose nonprofit status. The most interesting region is the middle: \( \alpha < \alpha \leq \alpha_{FP} \). Here the entrepreneur can choose either for-profit status or nonprofit status, but because nonprofit status produces a larger long-run return, the entrepreneur has an incentive to choose nonprofit status. However, as the number of nonprofit firms increases, the nondistribution constraint becomes less binding, and their returns converge to that of for-profit firms. In equilibrium, the entrepreneur will be indifferent between the two organizational types, and both can coexist in the market.\(^{24}\) The results suggest that both types of organizations should coexist when realized quality is sufficiently noisy with respect to the underlying (unobservable) investment.

\(^{23}\) Although I do not adopt a specific functional form, one tractable example can be \( \phi(\pi | N_{NP}) = \pi\{1 - \rho(\pi(1 - N_{NP}))\} \), where \( \rho \in (0, 1) \) controls the rate of convergence. In terms of linking more directly to the limited-resources story, I can let \( \sigma(\pi, e_0 | R, N_{NP}) \in [0, 1] \) be the probability of detection, where \( R \) is the government’s resources and \( e_0 \) is the amount of resources that a firm spends (for example, conversion into more obscure types of private benefits) in avoiding detection at cost \( \psi(e_0) \geq 0 \), with \( \psi(e_0) > 0 \) and \( \psi''(e_0) \geq 0 \). As a simple form of punishment, I can assume that the government takes away the distributed private benefits or profit when detected. As the profit grows, the firm will spend more resources in avoiding detection, and with \( \psi(e_0) \) sufficiently convex and \( \sigma(\pi, e_0 | R, N_{NP}) \) not too convex with respect to \( \pi \), the share of profit that the entrepreneur can capture as private benefits, at the margin, will fall. This will generate \( \phi(\pi | N_{NP}) \), which is concave with respect to \( \pi \).

\(^{24}\) The results are similar in spirit to that in Gibbons, Holden, and Powell (2012). They show how ex ante homogeneous firms can choose ex post heterogeneous governance structures (either engineering focused or marketing focused) when the proliferation of one type of firm creates a larger return for the other type so that, in equilibrium, firms become indifferent between choosing either type of governance structure. In my scenario, proliferation of nonprofit firms leads to less enforcement against distribution, which, in turn, makes the for-profit form relatively more attractive. Hence, the lower return is more through the effect on nonmarket, regulatory enforcement intensity.
4. Implications

The model is fairly straightforward, but it renders a number of predictions that are consistent with the empirical findings and suggestions for policy. Foremost, when relational, market-based sanctions are taken into account, both for-profit and nonprofit organizations deliver the same (expected) level of quality to their customers. This is in contrast to the previous theoretical works that have argued that nonprofit organizations have a stronger incentive to produce higher quality (or weaker incentive to shirk). Previous studies, however, primarily examined into a single-period commitment problem. In that setting, it would not be surprising to see that a weaker profit motive (through the nondistribution constraint) will generate a bigger incentive to invest in quality. When relational sanctions are possible, however, both for-profit and nonprofit organizations can be incentivized to invest in quality. Perhaps this can explain why empiricists (see, for instance, Duggan 2000) have had trouble finding definitive quality differences between for-profit and nonprofit organizations in certain industries, such as medical care and education.

While the equilibrium (expected) quality is the same for both types of firms, the severity of the market sanctions differs. When conversion of profits to private benefits (perquisites) exhibits decreasing returns to scale, nonprofit firms face a weaker (but still positive) incentive to invest in quality, and this implies that relational sanctions against nonprofit firms can be shorter. Because, in equilibrium, both types of firms make optimal investments in quality, relational sanctions end up decreasing their equilibrium profits. The shorter relational sanctions for nonprofit firms imply that, ceteris paribus, their long-run profit will be generally higher. While the per-period private benefit the entrepreneur receives from the firm may be lower, when the increase in private benefits due to shorter relational sanctions is strong, she will prefer setting up a nonprofit, rather than a for-profit, organization, even though she has no altruistic motive and cares only about the return she gets from the firm. In previous studies, because the nondistribution constraint always reduced the return for the entrepreneur, for her to set up a nonprofit organization, other exogenous factors, such as altruistic motives or tax considerations, had to be relied on as an explanation. With relational sanctions, this is no longer necessary.

The model can also explain both the coexistence of for-profit and nonprofit organizations in the same market and conversion from one form to another. This can be done in two ways. First, when certain entrepreneurs are more efficient at converting profits into private benefits (for example, $\phi_H$ is higher), they are more likely to form nonprofit organizations to compete against for-profit organizations. Hence, those who are better at private-value extraction will use nonprofit organizations, while the others will opt for for-profit status. The source of variation here is not the underlying production technology, quality of the product or service offered, heterogeneity in consumer preferences, or how much the
The entrepreneur cares about quality or consumer welfare but the ability to convert cash flows into private benefits. Second, even if all entrepreneurs are identical ex ante, because nondistribution constraint requires a legal enforcement and public authorities have limited resources, there can be endogenous coexistence of for-profit and nonprofit firms in the same market. As shown in corollary 4, as the number of nonprofit organizations increases, legal enforcement of nondistribution gets weaker, which, in turn, makes choosing a nonprofit form less attractive. In equilibrium, there could be ex post heterogeneity in organizational form despite ex ante homogeneity among entrepreneurs. Corollary 4 also shows that coexistence is not a necessary phenomenon. When for-profit firms are clearly superior or clearly inferior at providing quality (when $\alpha$ is sufficiently large or sufficiently small), only for-profit firms or only nonprofit firms will be operating in the market.

More interestingly, even when the private-benefit-extraction technology is not subject to shocks or exogenous changes, shifts in market conditions can also lead to changes in preferences for one type of form over another. As shown in proposition 1, as consumers receive more accurate signals of the firm’s investment behavior ($\alpha$ gets smaller), less severe relational sanctions are imposed in equilibrium, and the entrepreneur is more likely to organize the activity using a for-profit form. More accurate signals can come from either better disclosure or increased competition in the market that allows firms to distinguish themselves with more proxies or indices of quality. Furthermore, as shown in corollary 3, as market competition, measured by how close the equilibrium price is to the cost of production, gets stronger, the entrepreneur is more likely to organize the production activity using a nonprofit form. This suggests that if initially there were some for-profit and some nonprofit firms in a given market, as the degree of competition rises and the equilibrium price falls, for-profit firms are more likely to exit

---

25 In Glaeser and Shleifer (2001), for instance, because the entrepreneur cares more about provision of quality, she is more likely to choose the nonprofit form. Their model also shows that when certain consumers do not care as much about quality, there could be coexistence of the two types of firms, in which for-profit firms supply low-quality goods to consumers who care less about quality while nonprofit firms supply to those who care more about quality. With relational sanctions, however, in equilibrium, both the nonprofit and the for-profit firms supply an equal level of quality. Empirical studies seem to suggest that when both for-profit and nonprofit organizations compete in the same market, they behave more like each other. See Section 2 for related scholarship.

26 When such private-benefit-extraction technology is subject to change or shock, for instance because of the changes in the law, the entrepreneur will convert the organizational form from for-profit to nonprofit and vice versa. Cutler and Horwitz (2000) conduct in-depth studies of hospitals converting from nonprofit to for-profit status. They find that although for-profit hospitals have access to better sources of financing, for example, equity investment, and are more successful when examined through financial measures, in the long run, nonprofit hospitals behave similarly to for-profit hospitals, for instance in terms of exploiting loopholes in Medicare.

27 When the buyer receives additional signals of the seller’s investment behavior, say $s \in \{s_H, s_L\}$, that correlates with her investment choice and is conditionally independent from $q \in \{q_H, q_L\}$, the relational sanctions are likely to be triggered only when the buyer observes both $s_L$ and $q_L$, thereby reducing the deadweight loss. This will make a for-profit organization more attractive for the entrepreneur. If $s$ is verifiable, buyers are likely to use both formal contracts (based on $s$) and relational sanctions (based on $q$). See Baker, Gibbons, and Murphy (1994) and Baker and Choi (2014).
the market or convert to nonprofit status. The opposite will happen as the degree of competition falls and the equilibrium price rises. The results are roughly consistent with Chakravarty et al. (2006), who find that for-profit firms are more sensitive to market conditions in terms of entry and exit decisions, and with Norton and Staiger (1994), who find that for-profit hospitals are more likely to locate to an area with a lower fraction of uninsured in the population.

In terms of the policy implications, to reduce the amount of deadweight loss, imposing and enforcing restrictions on how nonprofit entrepreneurs pay perquisites is important. The emphasis should not be on the across-the-board limitation but on larger amounts of distribution: the emphasis should be on the slope and not the level. Imposing more stringent limitations on large distributions of profits induces nonprofit organizations to better solve the commitment problem and rely less on relational sanctions that engender deadweight loss. It also induces a situation in which more products and services are delivered by nonprofit, rather than for-profit, organizations. One possible way of approaching this objective could be through imposition of luxury tax (or partial to complete revocation of tax benefits) on large in-kind distributions. At the other end of the spectrum, allowing some amount of profit distribution to the entrepreneur ($\phi_H \to 1$) might be considered to be another form of making large perquisite-based distribution relatively more difficult. Finally, according to the results from corollaries 1 and 2, when the policy choice is between lowering the income tax and increasing the production subsidy, a properly tailored and sufficiently progressive income tax against for-profit firms is more effective in reducing deadweight loss than a production subsidy. Imposition of income tax has the benefit of generating additional government revenue, while provision of a subsidy either requires government resources or reduces government revenue.

5. Concluding Remarks

While previous research has focused on the choice between for-profit and nonprofit organizations in a more static (1-period) setting, when quality of products or services produced is not verifiable, one reasonable means of providing necessary investment (effort) incentive is through relational, market-based sanctions with repeated interactions. This paper has shown that when such dynamic interactions are taken into account, both for-profit and nonprofit firms can be incentivized to undertake desired investment in quality. At the same time, the severity of the relational sanctions will differ depending on the organizational form. Because nonprofit organizations face the nondistribution constraint that, under reasonable assumptions, makes it more difficult to distribute a large amount of in-kind payment to a controller (entrepreneur), nonprofit organizations face a weaker (but positive) incentive to deviate, and less severe relational sanctions will be necessary. Less severe relational sanctions, in turn, can explain why an entrepreneur, who may not have any altruistic motive, may prefer setting up a nonprofit, rather than a for-profit, organization. While a nonprofit firm allows the
entrepreneur to make a smaller (in-kind) return in each period, she can realize those returns for a longer period in expectation, thereby increasing the long-run return.

The analysis generates a number of predictions. In terms of organizational preference, the model shows that the entrepreneur is more likely to organize a nonprofit firm as the realized quality becomes a weaker signal of investment, as the nondistribution constraint gets stronger at the margin, when a for-profit firm’s profit is subject to tax or a nonprofit firm’s production is subsidized, or when there is more competition in the market and the profit margin gets smaller. The first prediction, in particular, suggests that an important motivator for organizational choice is not the nonverifiability of realized quality per se but how strongly the realized quality is related to the underlying investment. In addition, the fourth prediction supports the empirical finding that nonprofit firms are less sensitive, in terms of entry and exit decisions, to changes in market conditions. Finally, when the intensity of public enforcement of the nondistribution constraint is inversely related to the number of nonprofit firms in the market, when the realized quality is sufficiently noisy, the entrepreneur will, in equilibrium, be indifferent between choosing a nonprofit or a for-profit firm. The model demonstrates how for-profit and nonprofit organizations can coexist even when all underlying parameters, including the entrepreneur’s ability to extract private benefits and the cost structures, are identical.

While the model generates a number of predictions that are consistent with the empirical data and some policy proposals, more research needs to be done to enhance our understanding of these organizational forms. One area of research is the effect of competition. The paper makes some suggestions about how both types of organizations would compete in a single market and how to think about the effect of competition on organizational choice, for instance, using a reduced-form Nash bargaining solution. On the other hand, a more explicit account of cross-organizational competition and, in particular, how competition interacts with relational sanctions can lead to a better understanding of the industry dynamic.28 As documented by Chakravarty et al. (2006), there seem to be meaningful differences between the organizational forms in terms of entry and exit decisions. And, as shown by Cutler and Horwitz (2000), nonprofit organizations seem to behave differently when there are more for-profit firms in the market. Another topic for future study is examining more closely the incentive issues within the organization. As documented by various empirical studies, for instance, Erus and Weisbrod (2003), there seem to be important differences between organizational types in terms of how managers are compensated.

28 Even when there are multiple firms competing in the same market with homogeneous goods, when realized quality is not verifiable, customers will have to rely on relational sanctions to incentivize the firms, and the firms will have to make a positive profit in equilibrium (θ ≥ 0), as shown in corollary 3. Without a positive per-period profit, imposing relational sanctions will not produce any incentive effect. At the same time, when there are multiple firms in a market, relational sanctions may be easier to impose when customers can switch from one firm to another after receiving low-quality goods.
and incentivized. As many scholars have peeked into the organizational box of for-profit firms, taking a closer look at the incentive (agency) issues within a nonprofit organization remains an important topic.

References


With nonverifiable quality, the principal has to rely on a relational contract to provide necessary incentive to the agent. The relational contract used to incentivize the agent can be coordinated with the relational sanctions imposed by customers against the firm. One possible reason why nonprofit firms have flatter incentive schemes is that a stronger pay-for-performance model may run into the nondistribution constraint. More reliance on relational sanctions can have important implications for, among other things, issues involving the boundaries of the firm. See, for example, Baker, Gibbons, and Murphy (1994, 2002) and Levin (2003).


