Not-for-profit entrepreneurs

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Abstract

Entrepreneurs who start new firms may choose not-for-profit status as a means of committing to soft incentives. Such incentives protect donors, volunteers, consumers and employees from ex post expropriation of profits by the entrepreneur. We derive conditions under which completely self-interested entrepreneurs opt for not-for-profit status, despite the fact that this status limits their ability to enjoy the profits of their enterprises. We also show that even in the absence of tax advantages, unrestricted donations would flow to non-profits rather than for-profit firms because donations have more significant influence on the decisions of the non-profits. © 2001 Elsevier Science B.V. All rights reserved.

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1. Introduction

Many, if not most, not-for-profit firms are started by entrepreneurs. In 1864, Jean-Henri Dunant, after witnessing the bloody battle of Solferino, founded the Red Cross. Dunant co-founded another significant non-profit, the World's Young Men's Christian Association, and (after spending most of his life in poverty and obscurity having neglected his business affairs) won the first Nobel Peace Prize in 1901. In 1892, the American John Muir founded the non-profit Sierra Club. In recent years, Michael Brown and Alan Khazei founded City Year, a program dedicated to promoting national service among young people, and Wendy Kopp

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founded Teach for America, a non-profit service organization attracting recent college graduates to teaching disadvantaged students.

In this paper, we ask a simple question: why would an entrepreneur wish to start a not-for-profit rather than a for-profit firm? We present an answer motivated by the work of Hansmann (1980, 1996) and Weisbrod (1988).[1] Our theory uses the assumption of Hansmann (1996) that 'the critical characteristic of a nonprofit firm is that it is barred from distributing any profits it earns to persons who exercise control over the firm.' Instead, a nonprofit firm can distribute its profits only through improvements in the working environment of the entrepreneur and the employees, which may include lower effort levels, free meals, shorter workdays, longer vacations, better offices, more generous benefits, or even improvements in the quality of the product.[2] In general, such 'perquisites' are not as valuable to an entrepreneur as income, and so it is not obvious why a rational entrepreneur would constrain himself by choosing a non-profit status. Our key point is that such status weakens his incentives to maximize profits. This commitment to weaker incentives is valuable in markets where entrepreneurs might be able to take advantage of their customers, employees, or donors, since it reduces their interest in profiting from such opportunities. When customers, employees, or donors feel protected by the non-profit status of the firm, the entrepreneur has a competitive advantage in the marketplace.

We present a model that attempts to capture this idea using the elements of an incomplete contracts framework of Klein et al. (1978), Holmstrom (1999), Grout (1984), Grossman and Hart (1986), Hart (1995) and Holmstrom and Milgrom (1991, 1994). In some situations, particularly strong incentives lead to inefficient behavior and cannot be controlled by explicit contracts. In our context, high powered incentives resulting from profit maximization encourage shirking on quality. Commitment to non-profit status softens these incentives, and thus reassures the customers that quality will be higher.[3] When quality cannot be part of a contract, such a commitment can benefit both the entrepreneur and consumers.

There are several theoretical ways to make this point. Hansmann (1980), whose views we largely follow, uses the general label of 'contractual failure' to explain the benefits of the not-for-profit status, but does not present a formal model. Hansmann (1996) and Easley and O'Hara (1983) stress more specifically asymmetric information between consumers and entrepreneurs, and the latter paper presents a formal model. We choose instead an ex-post expropriation framework that does not rely on asymmetric information between the entrepreneur and

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[1]Earlier work on non-profit firms includes Arrow (1963) and Nelson and Krashinsky (1973).

[2]Non-profit firms can also retain their profits for long periods of time. Duggan (2000) shows that Californian non-profit hospitals have saved rather than spent their windfalls from increased transfers from the government. Universities, of course, have retained their income for centuries.

[3]Similar issues come up in the discussions of government ownership, see Hart et al. (1997) and Shleifer (1998).

consumers. One way, though not the only way, to interpret the incomplete contracts framework that we rely on is asymmetric information between the trading parties and the contract-enforcing judge. Our paper adds to the literature not so much with the novelty of its ideas as with an especially simple way to model them.

Many recent discussions of non-profits have focused substantially on their tax advantaged status (Weisbrod, 1988, Lakdawalla and Philipson, 1998). Our model does not rely on any tax benefits of non-profit firms to explain their existence. While the non-profit status brings significant tax benefits in the United States both for the firms and for the donors, it does not seem to be the essential characteristic of the non-profit firms. First, non-profits such as the Sierra Club were created long before the introduction of the income tax in the United States, and hence are unlikely to be a byproduct of income taxation. Second, and along the same lines, the majority of donors to non-profit firms in the United States do not derive significant tax benefits from their contributions. In 1994, while 50 percent of charitable dollars came from households with incomes over $100,000, 55 percent of the actual contributors came from households with incomes below $40,000 (Schervish and Havens, 2001). Third, noncharitable non-profits cannot receive tax-deductible contributions but still exist. Fourth, perhaps the greatest contributions to the non-profits come from the millions of volunteers, who donate non-deductible time rather than the possibly deductible money, and who account for nearly 40 percent of the non-profits' labor input. The tax story thus does not appear to be at the heart of the matter.

Some recent literature (Hart and Moore, 1997; Kremer, 1997) focuses on cooperatives and the consequences of collective decision making. In contrast, we focus on firms — for profit or not-for-profit — started by entrepreneurs, which do not face this particular problem.

Our basic model examines a firm that sells a commodity to a single consumer. The quality of this commodity is non-verifiable, and is chosen by the entrepreneur after the sale. The entrepreneur bears some non-cash costs from choosing a lower non-contractible quality. The source of these costs might be a lower reputation not immediately translated into profits, or a genuine preference from providing goods of higher quality derived from altruism for the consumers. Consumers are willing to pay higher initial prices if they expect a higher quality good. As a mechanism of such a commitment to higher quality, non-profit status ensures higher prices. Entrepreneurs choose the non-profit status if the benefits of committing to higher quality outweigh the costs of having to take their net revenues in the form of perquisites rather than cash.

Customers may not be the only ones to prefer dealing with non-profit firms. Employees may invest more in specific human capital at not-for-profit firms because these firms have less financial incentive to cut wages or perquisites ex post. Donors, who almost never have clear contracts specifying their wishes, are better protected against expropriation when they give to non-profits. When

customers, employees and donors prefer to contract with not-for-profit entrepreneurs, the latter can get higher utility by committing to not-for-profit status ex ante. This status commits the entrepreneur to softer incentives and higher quality and consequently, in equilibrium, enables him to charge more or get more donations.

The model predicts a larger role for non-profit firms in sectors with more opportunities for ex post expropriation of consumers, employers, or donors. Sectors dominated by non-profit firms, such as child care, long term care for the aged, the performing arts, hospitals and schools, indeed face such expropriation problems. With child care or schools, parents who pay up front worry that these institutions may hire cheaper but less competent teachers. With the repertory theatres, performers invest in the company, and worry about being underpaid or fired. Donors to universities worry that the money be used for the purposes they intend. Weisbrod (1988) discusses the case of long term care for the aged, where for-profit nursing homes evidently used more sedatives (a cheap way to keep patients calm) than the non-profits — a dramatic example of a cost-reducing strategy adversely affecting non-contractible quality. Hansmann (1996) applies the same idea to saving and loan mutuals in the United States. When these firms were founded, the risk of misuse and appropriation of savings of middle-class consumers was significant, and the mutual status was used in part as a commitment to softer incentives.[4]

Our basic results are driven by the effect of the non-profit status on incentives, and do not depend on entrepreneurial altruism, since the non-cash cost of inferior quality to the entrepreneur can come from a reputational loss. Still, most founders of non-profits — such as Dunant or Muir — appear to have a strong altruistic interest in their causes (Drucker, 1990; Rose-Ackerman, 1996). If we interpret the entrepreneur's cost of delivering low quality as a reflection of altruism, our model shows that more altruistic entrepreneurs would opt for non-profit status.

Finally, we examine general (non-targeted) donations from charitable donors who wish to improve product quality. Donations to for-profit firms do not to a first approximation change the marginal conditions for production of quality. However, donations to non-profit firms lower the marginal utility of revenues and soften incentives. Through this channel, unverifiable quality in non-profits may improve. For similar reasons, governing boards of non-profit firms are often structured to have very low benefits of perquisites, and also staffed by donors.

In the next section, we present a simple model in which firms sell a product to consumers and later choose non-contractible quality. This model gives formal

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[4]Not-for-profit status is only one of many solutions to expropriation problems; reputation-building, certification, and competition are others. Sherwin Rosen asked why the sellers of diamonds do not use not-for-profit status. The quality of diamonds can be, and often is, certified by the Gemological Institute of America. Interestingly, GIA is a non-profit, presumably in part to assure diamond buyers that its incentives to be corrupted by the sellers are weak.

conditions under which non-profit firms dominate a market. Section 3 discusses the role of non-profits when potential donors seek to increase the quality of products with their donations. Section 4 concludes.

2. The basic model

We consider an entrepreneur's decision of whether or not to obtain non-profit status for his firm. All firms face the same technological opportunities. Non-profit status only limits the ability of the entrepreneur to distribute profits to himself.

At time zero, the entrepreneur decides on non-profit or for-profit status. At time one, the entrepreneur sells exactly one unit of a good to a competitive market of consumers. At the time of sale, the entrepreneur collects the price P and agrees to deliver at time two a product of non-verifiable quality q.[5] At time two, the firm produces the good of non-verifiable quality q and delivers it to consumers. The key assumption is that consumers cannot go to a court and complain that the firm has produced shoddy quality, because the court cannot verify it.[6] We assume that consumers are willing to pay $P = z - m(q^* - \hat{q})$ for the good, where z, m, and q^* are constants, and $\hat{q}$ is the consumers' expectation of the non-contractible quality. We assume that z is sufficiently high that firms earn a positive profit when they set $q = q^*$.

The total cash profits of the firm are $P - c(q)$. If the firm is for-profit, these profits are realized as income to the entrepreneur. If the firm is not-for-profit, the entrepreneur is forced to spend these revenues on perquisites, denoted by Z. We further assume that each entrepreneur, regardless of his firm's status, bears a non-cash cost of $b(q^* - q)$ of shirking on quality. This non-cash cost can come from a reputational loss from low quality, or from the entrepreneur's own altruistic preferences of providing higher quality. Entrepreneurs maximize a quasi-linear utility function:

$$\text{Income} + V(\text{Perquisites}) - B + bq = I + V(Z) - b(q^* - q) \tag{1}$$

In this section, we further assume that $V(Z) = d \cdot Z$, with $d < 1$. The entrepreneur would rather have cash than perquisites at the going price for perquisites. Since the entrepreneur could buy many of the perquisites in the open market, compensation in this form is worse than receiving cash.

When the entrepreneur chooses q, he has already collected the price P. Total utility of a for-profit entrepreneur is $P - c(q) - b(q^* - q)$. His optimal quality

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[5]The model can be easily extended to also incorporate a verifiable component of quality.

[6]An alternative way to specify this model is by relying on asymmetric information about quality, in the spirit of Hansmann (1996), but it seems to us that in many examples, such as substitution of inferior teachers in schools or use of sedatives in nursing homes, the issue is not customer ignorance but rather contractual incompleteness.

choice is given by $c'(q) = b$. Define q_f as the effort level that satisfies this first order condition.

The not-for-profit firm cannot distribute profits. This constraint defines spending on perquisites: $Z = P - c(q)$. In this case, the entrepreneur chooses the level of effort to maximize $d \cdot [P - c(q)] - b(q^* - q)$, and first order condition is $d \cdot c'(q) = b$. We let q_n denote the quality level that solves this equation. Comparing q_n and q_f, and using the fact that $c(\cdot)$ is concave, yields:

Proposition 1. *Non-verifiable quality of the non-profit firm exceeds that of the for-profit firm.*[7]

When consumers contract with the firm, they agree to pay an initial price P that correctly anticipates the quality level q. The price charged by non-profit entrepreneurs is therefore higher.[8]

The non-profit status serves as a valuable commitment to higher quality only if the entrepreneur cannot pocket the profits by converting the firm to a for-profit status after collecting the revenues. Such conversions do occur in the United States, particularly in the hospital industry, but they restrict the use of profits by the for-profit firm. If effective, this device eliminates incentive to convert in order to distribute the profits, although some abuses do occur. As the law stands, then, non-profit status is a pretty credible commitment to non-collection of profits by the entrepreneur.

At time zero, the entrepreneur chooses not-for-profit status if:

$$d(z - m(q^* - q_n) - c(q_n)) - b(q^* - q_n)$$
$$> z - m(q^* - q_f) - c(q_f) - b(q^* - q_f) \tag{2}$$

or,

$$(b + m)(q_n - q_f) - (c(q_n) - c(q_f)) > (1 - d)(z - m(q^* - q_n) - c(q_n)) \tag{3}$$

The left hand side of (3) represents the benefits that a for-profit firm would obtain by committing to the non-profit firm's higher level of quality. The right hand side represents the loss imposed on a non-profit firm by the restriction that profits can only be enjoyed as perquisites. This comparison represents the fundamental

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[7]All the proofs are contained in Appendix A.

[8]Our basic model is set up in terms of the choice of quality and price by a selfish entrepreneur facing consumers. Some entrepreneurs might choose to have lower prices because they are altruists, or because they want to attract donations from donors who are altruists. In this case, non-profit firms would receive donations and ration their products, rather than charge higher prices. Thus Harvard and other top universities ration the slots in their entering classes, as do some of the non-profit long term care facilities. An alternative view is that low prices make administration easier, since there is less need for advertising and management (since there is always a queue of customers) and that non-profits set lower prices to avoid effort.

tradeoff between non-profit and for-profit status. The following proposition describes conditions determining the entrepreneur's choice of status:

Proposition 2.

(A) *There is a unique value of m* (*denoted m**) *given by*:

$$m^* = \frac{(1-d)z + b(q_f - q_n) - c(q_f) - dc(q_n)}{(1-d)\,q^* - q_f + dq_n}$$

below which all entrepreneurs choose non-profit status and above which all entrepreneurs choose for-profit status.
(B) *If $c(q) = \underline{c}r\tilde{c}$ (8), then as profits rise because either z rises or as $\underline{c}$ falls, m** *falls and non-profit status becomes less attractive.*
(C) *If for-profit firms produce positive utility levels for entrepreneurs, then for low enough levels of d, for-profit status strictly dominates non-profit status.*
(D) *If $c''(q)^2 > mc'''$ (8), then m** *is increasing with b, and non-profit status becomes more attractive. If there is a distribution of b's in the population, then entrepreneurs with higher level of b will choose non-profit status.*

Part (A) illustrates a crucial point. Markets for goods whose non-contractible quality is not valued by consumers would be dominated by for-profit firms, but markets where consumers do value such quality — by the non-profits. When consumers care deeply about non-verifiable quality, entrepreneurs prefer non-profit status because it softens incentives and brings higher prices ex ante. The more valuable such quality, the more valuable is the ability to commit.

According to part (B), when net revenues are high, entrepreneurs prefer for-profit status because spending these revenues on perquisites is too unattractive. With heterogeneity in costs among producers, the lower cost ones choose for-profit and the higher cost the non-profit status. One implication of parts (B) and (C) together is that a very profitable firm, for which the marginal benefit of perquisites to an entrepreneur is trivial, is unlikely to be a non-profit.

According to part (D), quality-altruists prefer non-profit status because non-profit firms produce higher quality products. This, however, is not true in all cases, because there is a countervailing effect. Entrepreneurs with a greater taste for quality, which is known to all, may be able to earn greater revenues, which makes the for-profit status more appealing. The technical assumption rules out this possibility. Presumably, Mother Theresa could have assured everyone of her commitment to quality of care for the indigent even if she ran a for-profit firm.

In many situations, consumers do not directly observe the producers' commitment to quality. Non-profit status may then signal that the entrepreneur cares more about quality relative to pecuniary rewards. Examples of this inference exist both in the health and the schooling industries, where consumers may be suspicious of

for-profit firms because such firms may be more willing to cut services to raise profits. While we do not present a model in which non-profit status serves as a signal of altruism, such a model is straightforward to construct (the single-crossing property holds here). This point suggests that non-profit status is even more important in situations where individuals' altruism is not readily recognized.

The critical assumptions of our model are that ex post expropriation (1) hurts the buyer (or employee or donor), (2) yields financial returns, and (3) has non-financial costs such as reputation. Since non-profit status reduces the financial returns, but not the non-financial costs, it softens incentives and cuts ex post expropriation in any setting that has these three features.

2.1. Market equilibrium

When consumer tastes and the producer technology are homogeneous, inequality (3) either holds or fails for all possible entrepreneurs. As a consequence, all firms in an industry choose the same status. Indeed for-profit firms almost completely dominate some industries (automobile manufacture), while non-profits dominate others (child care). In other industries, such as healthcare and theatres, for-profit and non-profit firms coexist. One possible reason for such coexistence is heterogeneity of consumer tastes. Assume, as an illustration, that (3) holds for most consumers and most firms choose non-profit status. If a small fraction of consumers receive no utility from non-contractible product quality, then for-profit firms would enter and supply just these consumers. Two types of firms then coexist in equilibrium: for-profits and non-profits, with the latter catering to consumers who demand high quality.

Co-existence of the two types of firms in equilibrium can also arise because of heterogeneity of employment relationships. For example, repertory theaters might need the non-profit status to commit to good treatment of actors who make large investments in their jobs, whereas more conventional theatres do not rely on such investments, and hence can be for-profit.

Hospitals to a significant extent cater to the interests of the doctors who treat patients there (Pauly and Redisch, 1973; Herzlinger and Krasker, 1987). If hospitals are organized as for-profit institutions, doctors may be concerned that the profits would be expropriated by the owners, whereas the non-profit status may serve as a commitment to spend the profits on wages and perquisities for doctors, including research.[9] This argument would suggest that doctors who care the most about perquisites would gravitate toward non-profit hospitals. This argument also suggests that, as profitability and hence the perquisite potential of hospitals declines, the attractiveness of the non-profit status declines as well. Consistent

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[9]In recent work, Hassett and Hubbard (2000), following the approach outlined here, find that not-for-profit hospitals with a relatively high share of revenues devoted to wages are less likely to convert to for-profit status.

with this view, a significant number of non-profit hospitals have recently converted to a for-profit status under revenue pressure from managed care providers (Cutler and Horwitz, 2000). A more general message here is that the doctors' perspective on hospital quality may be as important as that of the patients.[10]

One potentially interesting dimension of heterogeneity among consumers is the difference in the ability to monitor suppliers. Consumers who are bad at monitoring would then select non-profit firms to deal with. If governments are particularly weak at monitoring contracts (because of their own incentive problems), they will specialize in dealing with non-profit firms.

2.2. Examples and discussion

Not-for-profit status is not the only means of softening incentives. Other institutional arrangements may supplement (or replace) it. For example, entrepreneurs with a known taste for perquisites that is low, or whose consumption of perquisites can be restricted by a higher authority, might make particularly effective operators of non-profit firms. This may be the reason why so many non-profits such as schools and hospitals are operated by or affiliated with particular religions that restrict consumption.

Another device that serves the same purpose is a governing board consisting of people who are unable to consume perquisites, uninterested in the consumption of perquisites, or, perhaps ideally, are donors to the institution and therefore have an interest in restricting the consumption of perquisites. In fact, not-for-profit institutions typically have such governing boards. The benefits of the not-for-profit status for quality, then, can be amplified through additional devices reducing the value of perquisites to the decision-makers.

Two further mechanisms that can help guarantee quality in either for- or not-for-profit firms are reputations and ex post competition. Our model already incorporates the possibility that low quality providers pay a non-cash reputational cost, but bad quality also reduces prices and profits in the future (entails cash costs). If a firm can establish a reputation for producing high quality, it may charge high prices regardless of its status. American universities, for example, try hard to maintain reputations for quality, as do the for-profit luxury car-makers.

Competition may further the same goal as well. Consider the ex post

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[10]Even when markets are divided between for-profit and non-profit firms, it will be difficult to distinguish empirically between the quality of their output. The reason is that both types of firms may well produce output of the same contractible quality, but non-profit firms would choose higher non-contractible quality. To the extent that non-contractible quality is hard to put in a contract and verify in court, it may also be difficult for an econometrician to measure. This may explain why some comparative studies of quality across for-profit and non-profit firms such as hospitals had trouble identifying any differences in observable quality (Norton and Staiger, 1994) A further problem is that these studies focus on quality from the perspective of patients, whereas the relevant perspective might be that of the doctors.

appropriation problem that results from worker investment in specific human capital (as in Rotemberg and Saloner, 1990). A firm can protect the worker by locating in an area where a large number of other employers also demand this particular form of human capital. When competition reduces risks of ex post appropriation, competition among for-profit firms may again render non-profit status unnecessary. In the absence of such competition, however, the non-profit status becomes all the more essential. For example, universities in the US have traditionally served local markets (Hoxby, 1998) and only one university of a particular quality level often still serves a given metropolitan area. There is then little local competition for the services of professors who invest heavily in university-specific human capital. If universities were able to expropriate the rents from such investments, professors would refuse to invest. Non-profit status protects professors against this problem.

These examples raise the obvious question: what are the markets in which reputation and/or competition suffice for quality assurance by for-profit firms, and what are the markets where the not-for-profit status is necessary? Non-profit status is usually only necessary when the potential expropriation problem — and the disutility to consumers or donors from reduced quality — are very large. In the case of donations in particular, where the donor cannot take the money back or switch, the non-profit status might be essential. This logic might explain why we see non-profit hospitals (they deal with life and death and rely on donations) but not non-profit doctors (it is easier to switch or get a second opinion, and there are no donations). This logic might also explain why universities are non-profit (rely on donations) while vocational schools are not (no donations). Finally, this logic might explain why, for most goods where quality matters, market mechanisms are good enough for assuring quality production by for-profit firms.

3. Donors

In many situations, nonprofit firms provide charitable services for which they charge below cost, if anything. As a consequence, not-for-profit firms often rely on outside donations for part of their revenues.[11] Many individuals, with the help of the tax exemption for charitable donations, are willing to donate funds. Many donations can be understood as attempts to fund a particular project or interest of the donor or to gain social standing through displays of wealth and altruism. Such donors are best thought of as customers of the non-profit, and thus fit nicely into the model described above. The non-profit is supplying the donor with prestige or a very particular service (e.g. a full time researcher at a distinguished university dedicated to Gender Studies). The firm has the opportunity to either comply with

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[11]Weisbrod (1998) reports that private contributions as percentage of all nonprofit operating expenditures in the United States were 53.5% in 1964, falling steadily to 23.6% in 1993.

the wishes of the donor (glorify her name or fulfill the implicit agreement) or to renege and use the money for other purposes. While any institution has its reputation at stake in such a situation, a non-profit has less of an incentive to completely renege because of the limits placed on its use of new funds (Rose-Ackerman, 1996). Non-profits have an advantage with donors, not only because of their tax status, but also because the inability to personally profit makes the people who run them more trustworthy.

A large number of donations are general funds given to an institution, not funds given for a particular purpose. In fact, donations sometimes lose their tax advantages when an explicit contract describing the terms of the arrangement is written. Moreover, in many non-profit institutions, funds are substantially fungible, and even specifically targeted gifts can be used for general purposes. To understand the role of general gifts to a non-profit institution, we must return to the previous model and explicitly incorporate an altruistic donor. Furthermore, we now assume that $V(Z)$ is not linear, but an increasing, strictly concave function.

The timing of the model must be adjusted to include a donor. In period zero, the entrepreneur decides on the not-for-profit or the for-profit status. In period one, a donor decides on a level of general donations, denoted by D. The donor correctly anticipates the effect of his donation on the future price and the non-contractible quality level. In period two, the entrepreneur sells the good to the consumer at a price P. In period three, the entrepreneur chooses the non-contractible quality level q and delivers the good to the consumer.

We assume that a donor wishes to improve q, but can only do so through general donations and cannot in any sense contract to directly induce the firm to deliver a higher quality product. The donor chooses the level of general donations, denoted by D, to maximize $(1 - t)(Y - D) + F(q)$, where Y is the donor's taxable income, t is the tax rate and $F(q)$ is an increasing, twice differentiable concave function. The function $F(q)$ is meant to capture the idea that the donor just wants to see good health, good universities or good theater. We assume that there is no competition, so a single entrepreneur is maximizing the utility function specified previously. If there is an interior solution for D, the donor sets its level so that $dq/dD \cdot F'(q) = 1 - t$. To ensure that this first order condition is a maximum, we assume that second order conditions hold.

In a for-profit firm, quality is set so that $c'(q) = b$. Increases in the firm's income do not change this first order condition, and donations have no effect on quality. This conclusion is too strong if the entrepreneur has diminishing marginal utility of income because of satiation. However, satiation with consumption as a whole is likely to set in much slower than satiation with perquisites, and hence for the comparison of non-profit and for-profit firms, we can assume constant marginal utility of income.

In a non-profit firm, in contrast, donations influence the marginal utility of perquisites and thereby affect quality. To solve the model, we proceed recursively and first solve for effort. The first order condition for quality is $c'(q) \cdot V'(Y) = b$,

where we use Y to denote net income of the firm: $Y = P + D - c(q)$. We can then use the equilibrium relationship $P = z - m(q^* - q)$ to find the relationship between q and D that incorporates the idea that donations affect the price.

If $\hat{q}$ reflects consumers expectations about the quality of the good, then conventional stability arguments require that:

$$\frac{\partial q}{\partial \hat{q}} = \frac{- mc'(q) V''(Y)}{c''(q) V'(Y) - c'(q) V''(Y)} < 1$$

which we assume. If this condition does not hold, then the problem is inherently unstable. A slight increase in expected quality will raise actual quality by an even greater amount. We then have:

Proposition 3. *Quality rises with the level of donations.*

Proposition 4. *Donations rise with the tax rate and decline one-for-one as the firm obtains alternative sources of income.*

Proposition 4 suggests that tax deductible donations will be higher among donors who face a higher marginal tax rate and that, as the firm acquires alternative sources of revenue, donations dry up. When firms are already rich, donors expect their donations to have less of a marginal impact on quality-related incentives and contribute less. Segal and Weisbrod (1998) find some evidence that donations and sales revenues are indeed substitutes for non-profit firms.

This result may explain why state-supported institutions receive few donations. In our model, state funding reduces private donations because private donors do not expect to have much of an impact on quality.[12] In practice, there does appear to be a strong substitution between private charity and state funding. City Year, the national service organization founded by Brown and Khazei (discussed in the Introduction), originally faced tremendous difficulties finding private donors to fund its programs, evidently because it already received sizable public funds. State universities in the United States have traditionally been less successful in fundraising than private schools. Indeed, both Yale and Harvard received most of their funding from state governments until the first quarter of the 19th century. The two schools only focused on private donations after the states cut them off for refusing to cater to the prevailing religious winds (Hansmann, 1990). More recently, state universities in California also turned to private donors after state funding became scarcer. In European countries, which have a long tradition of government funding of artistic, educational and medical institutions, there is much less of a tradition of private giving to such firms (until government funds dry up,

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[12]In addition, donors may fear the ratchet effect whereby their gifts reduce future state funding.

as they did for British universities in the 1980s and Finnish musical institutions in the 1990s). Since the government has already created soft incentives for state-supported firms, private donors are not needed to further soften their incentives.

Our results are related to a large literature in public economics on whether government funding of public goods crowds out private contributions to the provision of these goods. Warr (1983), Bergstrom et al. (1986), and Bernheim (1986) ask how much contributors reduce donations when the government taxes them to pay for the public goods directly. Under some circumstances, government spending crowds out private contributions 100 percent. The empirical evidence on this issue from the United States is extensive, and generally does find significant crowding out (e.g. Kingma, 1989; Payne, 1998), although not 100 percent. Our analysis is consistent with this literature but the economic mechanism we focus on is different: the donors in our model are concerned with the incentives of the producer to shirk on quality rather than with the ultimate quantity of the public good produced.

Proposition 3 also suggests that institutions will put themselves in situations where donations have a real effect on their incentives. For example, they may overcommit their resources so as to become cash poor. Alternatively, non-profits may have rules such as 'spend only 5% of the endowment every year regardless of market returns' or 'every tub on its own bottom,' which means that every new project must find its own financing. Our analysis explains why some non-profits with lush endowments work hard to stay poor on the cash flow basis.

4. Conclusion

Not-for-profit firms are often controlled by entrepreneurs, and not by their employees or customers. The decision of entrepreneurs to establish such firms can be understood as an attempt to commit themselves to softer incentives. Soft incentives protect customers, volunteers, donors, and employees of the firm against ex post expropriation. Donors in particular would favor non-profits with unrestricted donations even if such donations had no tax advantages because the risk of diversion of funds is much smaller. While sufficient reputation or competition may substitute for the non-profit status, in many cases we still expect entrepreneurs to seek the non-profit status, even if they are completely self-interested.

This basic framework yields several empirical predictions about non-profit firms. According to the theory, we expect to find non-profit firms in activities where:

1. There exist substantial opportunities for reductions of the quality of the good after it is purchased, or for other forms of expropriation of consumers;
2. The activity is not too profitable, or — more importantly — relies on charitable donations;

3. Altruism or public spiritedness are important motivators of entrepreneurs;
4. It is costly for consumers or employees to change firms they deal with.

The need for donations to assure the survival of a business is probably the most important determinant of the preference for non-profit status, because it is difficult to imagine a market mechanism that would support donations to for-profit firms.

Furthermore, in the activities where for-profit and non-profit firms coexist, we expect the latter to deliver higher quality to consumers. Finally, we expect to find higher levels of perquisites in non-profit firms, which may show up as better working conditions, wages, and benefits for the employees. Many of these implications appear to be consistent with the available evidence, while others are at least potentially testable.

Acknowledgements

Appendix A. Proofs of Propositions

Proposition 1. The first order conditions for maximization yield $c'(q_n) = b/d > b = c'(q_f)$. As $c(\cdot)$ is convex $c'(q_n) > c'(q_f)$ implies that $q_n > q_f$.

Proposition 2. Part A: Define w as the returns non-profit status relative to for-profit status:

$$w = m((1-d) q^* - q_f + dq_n) - (1-d) z - (bq_f - c(q_f) + bq_n - dc(q_n))$$

$$(A1)$$

We define the value of m at which $w = 0$ as m^*. Since $q^* > q_f$ the denominator of m^* is positive. As $bx - c(x)$ is maximized at $x = q_f$, $bq_f - c(q_f) > bq_n - c(q_n)$. Since firms earn positive profits if $q = q^*$, we have $z > c(q^*) > c(q_n)$. Thus, the numerator is also positive and m^* is positive. As $\partial w/\partial m = (1-d) q^* - q_f + dq_n > 0$, w is less than zero for $m < m^*$ and greater than zero for $m > m^*$.

Part B: Differentiation of m^* yields that:

$$\frac{\partial m^*}{\partial z} = \frac{(1-d)}{(1-d)\,q^* - q_f + dq_n} > 0$$

Letting $c(q) = \underline{c} + \tilde{c}(q)$, differentiation produces:

$$\frac{\partial m^*}{\partial \underline{c}} = \frac{-(1-d)}{(1-d)\,q^* - q_f + dq_n} < 0$$

Hence increases in z raise m^* and make non-profits less attractive. Increase in $\underline{c}$ lower m^* and make non-profits more attractive.

Part C: When $d = 0$, $w = -[z - m(q^* - q_f) - c(q_f) - b(q^* - q_f)] - b(q^* - q_n)$. The first term equals -1 times the utility from being a for-profit firm (which we have assumed is positive) and the second term is negative because $q^* > q_n$. Thus, the expression is negative and at $d = 0$, for profit status dominates non-profit status. Since the relative returns to for-profit status are continuous in d, there must be some interval around $d = 0$, where $w < 0$.

Part D: Differentiating (A1) yields:

$$\frac{\partial m^*}{\partial b} = \frac{\left(q_f - \dfrac{m^*}{c''(q_f)}\right) - \left(q_n - \dfrac{m^*}{c''(q_n)}\right)}{(1-d)\,q^* - q_f + dq_n}$$

If $c''(q)^2 > mc'''(q)$, then $x - m^*/c''(x)$ is strictly increasing in x and, as $q_n > q_f$, it follows that $q_n - (m^*/c''(q_n)) > q_f - (m^*/c''(q_f))$, and hence $\partial m^*/\partial b < 0$.

Differentiating $w(\cdot)$ with respect to b yields: $q_n - (m/c''(q_n)) - q_f + (m/c''(q_n))$, which is positive because $c''(q)^2 > mc'''(q)$. Hence, entrepreneurs with higher levels of b will gain more from non-profit status.

Proposition 3. Firm's first order condition is: $c'(q)V'(D + z - m(q^* - q) - c(q)) = b$. Differentiation with respect to D yields:

$$\frac{\partial q}{\partial D} = \frac{-c'(q)\,V''(Y)}{c''(q)\,V'(Y) + (m - c'(q))\,V''(q)\,c'(q)}$$

As $V(\cdot)$ is concave, and $c(\cdot)$ is increasing, the numerator is positive. By assumption, $1 > (-mc'(q)\,V''(Y))/(c''(q)\,V'(Y) - c'(q)\,V''(Y))$ or $c''(q)\,V'(Y) + (m - c'(q))\,V''(Y) > 0$, which means that the denominator is positive as well, and quality rises with donations.

Proposition 4. Part A: The donor's first order condition is $1 - t = F'(q)(\partial q/\partial D)$. Second order conditions require that:

$$\frac{\mathrm{d}}{\mathrm{d}D}\left[F'(q)\,\frac{\partial q}{\partial D}\right] < 0$$

Differentiating the first order condition yields that:

$$\frac{\partial D}{\partial t} = -1 \Big/ \frac{\mathrm{d}}{\mathrm{d}D}\left[F'(q)\,\frac{\partial q}{\partial D} \right] > 0$$

Part B: Consider the effect of an exogenous increase in z, which will increase profits for the firm. The terms z and D only enter together into the firm's decision, so we can write the donor's decision as:

$$1 - t = \frac{F'(q(z+D))}{\dfrac{c''(q(z+D))\,V'(z+D-m(q^*-q(z+D))-c(z+D))}{c'(q(z+D))\,V''(z+D-m(q^*-q(z+D))-c(z+D))} + m - c'(q(z+D))} \tag{A3}$$

where $q(\cdot)$ is an increasing function of $z + D$. The stability condition ensures that there is a unique level of $z + D$ that solves this equation. Thus, if z rises, D must fall one-for-one.

References

Arrow, K., 1963. Uncertainty and the welfare economics of medical care. American Economic Review 53, 941–973.

Bergstrom, T., Blume, L., Varian, H., 1986. On the private provision of public goods. Journal of Public Economics 29, 25–50.

Bernheim, D., 1986. On the voluntary and involuntary provision of public goods. American Economic Review 76, 789–793.

Cutler, D., Horwitz, J., 2000. Converting hospitals from nonprofit to for profit status: why and what effects. In: Cutler, D. (Ed.), The Changing Hospital Industry. University of Chicago Press for the NBER, Chicago.

Duggan, M., 2000. Effects of ownership structure on hospital behavior. Quarterly Journal of Economics 115, 1343–1374.

Drucker, P., 1990. Managing the Non-profit Organization: Practices and Principles. Harper Collins, New York.

Easley, D., O'Hara, M., 1983. The economic role of the nonprofit firm. Rand Journal of Economics 14, 531–538.

Grossman, S.J., Hart, O., 1986. The costs and benefits of ownership: a theory of vertical and lateral integration. Journal of Political Economy 94, 691–719.

Grout, P., 1984. Investment and wages in the absence of binding contracts: a Nash equilibrium approach. Econometrica 52, 449–460.

Hansmann, H., 1980. The role of the nonprofit enterprise. Yale Law Journal 89, 835–901.

Hansmann, H., 1990. Why do universities have endowments? Journal of Legal Studies 19, 3–42.

Hansmann, H., 1996. The Ownership of Enterprise. Harvard University Press, Cambridge, MA.

Hart, O., 1995. Firms, Contracts, and Financial Structure. Oxford University Press, Oxford.

Hart, O., Moore, J., 1997. Cooperatives versus outside ownership. Harvard University, Mimeo.

Hart, O., Shleifer, A., Vishny, R., 1997. The proper scope of government: theory and an application to prisons. Quarterly Journal of Economics 112, 1127–1162.

Hassett, K., Hubbard, G., 2000. Noncontractible quality and organizational form in the US hospital industry. Columbia University, Mimeo.

Herzlinger, R., Krasker, W., 1987. Who profits from nonprofits. Harvard Business Review January–February, 93–106.

Holmstrom, B., 1999. Managerial incentive problems: a dynamic perspective. Review of Economic Studies 66, 169–182.

Holmstrom, B., Milgrom, P., 1991. Multi-task principal–agent analyses: incentive contracts, asset ownership and job design. Journal of Law, Economics and Organization 7, 24–52.

Holmstrom, B., Milgrom, P., 1994. The firm as an incentive system. American Economic Review 84, 972–991.

Hoxby, C., 1998. How the changing market structure of US higher education explains college tuition. Harvard University, Mimeo.

Kingma, B.R., 1989. An accurate measurement if the crowd-out effect, income effect, and price effect for charitable contributions. Journal of Public Economics 97, 1197–1207.

Klein, B., Crawford, R., Alchian, A., 1978. Vertical integration, affordable rents and the competitive contracting process. Journal of Law and Economics 21, 297–326.

Kremer, M., 1997. Why are worker cooperatives so rare. MIT, Mimeo.

Lakdawalla, D., Philipson, T., 1998. Nonprofit production, competition, and long-term care. University of Chicago, Mimeo.

Nelson, R., Krashinsky, M., 1973. Two major issues of public policy: public policy and the organization of supply. In: Nelson, R., Young, D. (Eds.), Public Subsidy for Day Care of Young Children. D.C. Heath, Lexington, MA.

Norton, E., Staiger, D., 1994. How hospital ownership affects access to care for the uninsured. Rand Journal of Economics 25, 171–185.

Pauly, M., Redisch, M., 1973. The not-for-profit hospital as a physicians' cooperative. American Economic Review 63, 87–99.

Payne, A., 1998. Does the government crowd-out private donations? New evidence from a sample of non-profit firms. Journal of Public Economics 69, 323–345.

Rose-Ackerman, S., 1996. Altruism, non-profits, and economic theory. Journal of Economic Literature 34, 701–728.

Rotemberg, J., Saloner, G., 1990. Competition and human capital accumulation: a theory of interregional specialization and trade. MIT, Mimeo.

Schervish, P., Havens, J., 2001. Wealth and the commonwealth new findings on wherewithal and philanthropy. Nonprofit and Voluntary Sector Quarterly, forthcoming.

Segal, L., Weisbrod, B., 1998. Interdependence of commercial and donative revenues. In: Weisbrod, B. (Ed.), The Nonprofit Economy. Harvard University Press, Cambridge, MA, pp. 105–127.

Shleifer, A., 1998. State versus private ownership. Journal of Economic Perspectives 12, 133–150.

Warr, P., 1983. The private provision of a public good is independent of the distribution of income. Economic Letters 13, 207–211.

Weisbrod, B., 1988. The Nonprofit Economy. Harvard University Press, Cambridge, MA.

Weisbrod, B., 1998. To Profit or Not to Profit. The Commercial Transformation of the Nonprofit Sector. Cambridge University Press, Cambridge, UK.