THE SOCIAL ENTREPRENEUR AS TRAILBLAZER - A ROLE FOR THE SOCIAL ENTERPRISE IN A MARKET ECONOMY

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Abstract: This paper advances the field of social entrepreneurship by developing a basic economic model of the social entrepreneur as a profit-deviating firm. We then demonstrate how profit deviation lowers the effective operating costs of the firm, allowing social entrepreneurs to recognize, evaluate, and exploit previously unconsidered opportunities. In doing so, social entrepreneurs may generate knowledge spillovers by providing valuable ex-post entry information regarding the expected costs of a venture, thereby providing a public good to latent entrepreneurs in the commercial sector. Based on this new information, the latter may then enter markets previously considered unprofitable, leading to market development and growth. We illustrate the range of market conditions that are relevant for the social entrepreneur and provide one industry- and one company-focused case study to illustrate the model. The model and evidence provide a complementary role for the social entrepreneur beyond the production of collective goods.

Keywords: social entrepreneurship, entry, profit deviation, market discovery

JEL: L21, L26, L31

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Introduction

What function do social entrepreneurs play in a market economy? How are these actors distinct from existing for-profit and not-for-profits entrepreneurs? How do social entrepreneurs make pricing and output, or entry and exit decisions? Do social entrepreneurs react to competition or regulation differently than other firms? Drawing from economics and entrepreneurship literatures, we develop a basic model of the social entrepreneur as a profit deviating firm. Our aim is to offer a general use model, which provides researchers a clear framework to form hypotheses regarding these and other research questions. We then use the model to demonstrate how social entrepreneurs can play a useful, if limited, role in a market economy.

Researchers have struggled to develop a concise description of social entrepreneurship. Early work on the topic tended to invoke the heroic qualifications of social entrepreneurs,

describing them as innovative, optimistic, relentless, or bold (Dees G. , 1998; Dees G. , 2007). Others require some broad scope of social change or social justice (Martin & Osberg, 2007; Mair & Mart, 2006). A comprehensive review of the early literature has identified the creation of social value as a key distinctive of social entrepreneurship (Austin, Stevenson, & Wei-Skillern, 2006).

Recent research has challenged these definitions on multiple fronts. Santos (2012) argues that previous characterizations of social entrepreneurship are so vague as to be tautological, because they merely imply that social entrepreneurs are entrepreneurs who do social things. In these cases *social* takes on the implied meaning of doing something positive for society. For researchers, however, this generates the uncomfortable situation of requiring normative definition of social value. Such definitions are problematic because not all social interventions are valuable, or equally valued by various constituents.[1]

Further, heroic definitions of social entrepreneurship unnecessarily differentiate between social and economic value (Steinberg, 2013). There is no theoretical reason to do so. All viable firms (social or otherwise) must create value for their customers in excess of the price they charge for their product or service. It is also well known that the vast majority of the value (or surplus) generated by new innovations accrues to consumers, rather than entrepreneurs (Mansfield, Rapoport, Romeo, & & Beardsley, 1977). The more relevant distinction is that social entrepreneurs generate output that is sufficiently collective in consumption such that they unable to capture sufficient value to generate market rates of return.[2]

Consequently, social entrepreneurs must somehow attract inputs (labor or capital) at below market rates. To do this, social entrepreneurs frequently invoke normative arguments (e.g., "make the world a better place") to promote their venture. This approach limits the scope of social entrepreneurship because inputs must be persuaded based on shared values, rather than purchased. Just as problematic, deciding *which* social enterprise will receive scarce inputs requires common metric of valuation by potential stakeholders.

Neoclassical entrepreneurs do not face these same set of constraints.[3] The relative merits of a new dry-cleaner or restaurant requires no public debate or consensus. Competitive markets provide clear, immediate, and decisive feedback of the new venture's value. If revenues exceed the cost of inputs, then society has signaled that a new venture deserves the resources allocated to

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[1] By most definitions, any religious sect, militia, or political advocacy group could be classified as social entrepreneurs. Certainly, positive social change can be in the eye of the beholder. A less extreme, but more common concern comes when determining relative value. Should the funder provide resources for early childhood reading in a large U.S. city or clean water in Africa? The answer is inherently subjective because unlike most business investments, no widely accepted, common metric exists to determine the relative value of output.

[2] The term collective good has a precise meaning in economics. These goods are non-rival, implying that they may be enjoyed by many without a reduction in value. Social entrepreneurs typically produce goods and services, such as new technologies to help the poor or the environment, that have both private value to the consumer and indirect value to all others who gain utility by having that good exist. The indirect value can be very large, but difficult for the entrepreneur to monetize. Conversely, "collective bads" (e.g., graffiti or air pollution) reduce overall utility. Their reduction would improve welfare. .

[3] We are using the term "neoclassical entrepreneur" deliberately throughout the paper. The term denotes the full set of economic assumptions where the entrepreneur will allocate resources according to a profit maximization function, using marginal analysis that only incorporates private costs and benefits.

it. Similarly, capital and labor will generally flow to those firms that offer the highest returns without any discussion of their relative value.

This paper extends the role for social entrepreneurship in a way not previously discussed. We propose that social entrepreneurs are in a unique position to recognize and prove market opportunities that would go unnoticed in their absence. More specifically, we demonstrate how profit deviation objectives of the social entrepreneur can lower an enterprise's effective operating costs, allowing it to enter markets considered unsuitable by the neoclassical entrepreneur.[4] In doing so, the social entrepreneur generates knowledge spillovers by providing valuable *ex-post* entry information regarding the expected costs of a venture (Acs, Braunerhjelm, Audretsch, & Carlsson, 2009). In this sense, the social entrepreneur creates a collective good for latent neoclassical entrepreneurs, who, based on this new information, may enter markets previously not considered or considered unprofitable.

We have organized the manuscript as follows. In the next section, we briefly review social entrepreneurship research, focusing on opportunity recognition and evaluation issues for the social entrepreneur as well as discussing knowledge spillover effects that can result from opportunity exploitation. Second, we sketch a basic economic model of a social enterprise as a profit-deviating firm. Third, we delimit market conditions under which this model applies. Finally, we offer both an industry- and company-focused case study of a social enterprise that entered a highly uncertain market and prompted subsequent entry by neoclassical entrepreneurs, which provide preliminary support for the model.

Literature Review

Entrepreneurship research investigates how and why some individuals (or teams) identify opportunities, evaluate them as viable, decide to exploit them, and, in the process create new products, organizations, wealth, and industries (Brush, et al., 2003; Shane & Venkataraman, 2000). Although some similarities exist between commercial and social entrepreneurship, the latter's focus on maximizing social value will impact the entire entrepreneurship process (Austin, Stevenson, & Wei-Skillern, 2006). We next briefly review each step in this process, in turn.

Opportunity Recognition

Opportunity recognition remains a central issue in both commercial and social entrepreneurship (Eckhardt & Shane, 2003; Corner & Ho, 2010), because entrepreneurs must recognize opportunities before they can exploit them.[5] The ability to recognize opportunities can differ

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[4] Although we rely heavily on research from non-profit economics, the model we develop does not just apply to non-profit organizations. Choosing whether the enterprise is structured as a non-profit relates to opportunity exploitation decisions involving whether or not residual profits can be distributed to investors. Although we examine exploitation issues in the present study, we primarily focus on positive externalities created by a social enterprise's market entry (see the "Opportunity Exploitation and Knowledge Spillover" section below).

[5] One on-going debate in the entrepreneurship literature revolves around whether entrepreneurs recognize opportunities in the environment that exist independently of their efforts or whether they create the opportunities that

across nascent entrepreneurs because each can have asymmetric knowledge about existing information (Hayek, 1945) or interpret new information created by changing environmental trends differentially (Eckhardt & Shane, 2003). Several factors may impact recognition, including an entrepreneur's creativity, cognitive abilities, social network ties, deliberate searches for opportunities, previous startup experience, and access to different information based on varying life experiences (Ardichvili, Cardozo, & Ray, 2003; Baron & Ensley, 2006).

Previous research has noted that these factors may prompt social entrepreneurs to recognize an opportunity whereas the uncertainty surrounding the opportunity may lead neoclassical entrepreneurs to either undervalue or completely ignore the opportunity (Robinson & Hayes, 2012). For example, social entrepreneurs' empathy for the distress suffered by particular group may encourage them to focus on environmental trends that differ from the ones that their neoclassical counterparts consider (Mair & Noboa, 2006). Social entrepreneurs' previous work experience with social causes can also play an important role in their recognizing additional socially oriented opportunities (Corner & Ho, 2010).

Opportunity Evaluation

Whether potential entrepreneurs choose to exploit opportunities they have recognized depends on whether they perceive the opportunity to be both feasible and desirable (McMullen & Shepherd, 2006). Feasibility requires a risk/return analysis whereas desirability depends on the value an individual places on a particular outcome (Knight, 1921; Krueger, Reilly, & Carlsrud, 2000).

Social entrepreneurs may evaluate different opportunities as more or less feasible depending on several factors including an individual's self-perceptions of his/her abilities (i.e., "self-efficacy") as well as support received from his/her social and business networks in pursuing the opportunity (Mair & Noboa, 2006). Corner and Ho (2010) noted that opportunity recognition and evaluation by social entrepreneurs can occur relatively simultaneously and in a recursive pattern involving experimentation and refinement.

Opportunity Exploitation and Knowledge Spillover

Exploiting a viable opportunity involves establishing a new venture's organizational boundaries and critical resource exchanges with key stakeholders (Katz & Gartner, 1988). For social entrepreneurs, this process can also involve mobilizing collective action among multiple stakeholder groups (Kickul, Terjesen, & Justo, 2013).

Although a majority of opportunity exploitation research has focused on how entrepreneurs build their new ventures, other outcomes of this process, such as "knowledge spillover," are also important. Specifically, when entrepreneurs enter new markets, they often generate knowledge about the market (e.g., production costs and consumer demand) that can be at least partially observed by others outside the organization via various mechanisms including written texts, informal conversations, employee mobility, or strategic alliances among organizations (Scott, 2006). Unlike other assets, knowledge does not deteriorate with increased usage (Arrow, 1962),

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they subsequently exploit (Alvarez & Barney, 2007). Findings from the current study remain general enough to allow application of either assumption (cf. Corner and Ho, 2010)

so multiple firms can enter a market based on this newly created knowledge, leading to increased market development and growth (Acs, Braunerhjelm, Audretsch, & Carlsson, 2009).

Extant research has noted both the important role that this spillover can have on market development as well as the role that some organizations (e.g., non-profits) have in promoting spillover (Van Praag & Versloot, 2007). For example, studies have found that higher levels of university-sponsored R & D led to increased new venture formation in the surrounding labor market (Kirchhoff, Newbert, Hasan, & Armington, 2007) and that firms locating in a university-sponsored science park benefited from spillover through higher rates of patent and product development (Siegel, Westhead, & Wright, 2003).

In sum, social entrepreneurship, like classical entrepreneurship, involves the process of opportunity recognition, evaluation, and exploitation. Existing entrepreneurship research finds that the particular objectives of the social entrepreneur prompts him/her to recognize opportunities that the classical entrepreneur does not. The social entrepreneur will also often value the opportunity in ways that the classical entrepreneur does not. This will result in the exploitation of latent opportunities that can facilitate sustainable market expansion. We next demonstrate this with a basic economic model.

A Basic Model of Market Entry

As a point of reference, consider the standard case of a neoclassical entrepreneur. By assumption, these entrepreneurs are profit maximizers (PMs), whereby they consider the expected costs and revenues across a range of markets. Choosing the opportunity which seems most profitable, the entrepreneur will maximize the following:

$$\max_{Q} \Pi = P(Q) \cdot Q - C(Q) \qquad (1)$$

where P(Q) is the price of output Q. Then, C(Q) is total cost as a function over Q. The entrepreneur will maximize profits using the standard first order condition, by setting marginal revenue *P(Q)* equal to marginal cost *C'(Q)*. Thus, entrepreneurs will enter the market if they expect revenues to cover costs, implying a standard break-even condition.[6]

$$P(Q) \geq \frac{C(Q)}{Q} \qquad (2)$$

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[6] It is important to note that these are long-run costs, after all local economies of scale have been exploited. Our model assumes free-entry, such that all positive economic profits will be competed away after each short-run expansion of fixed inputs. In this sense, equation (2) could be interpreted as: the discounted present value of expected revenues in all future periods will be at least as much as the discounted present value of expected costs, for all future periods.

Now, instead consider a social entrepreneur that intrinsically values the output of the firm as well as profits generated from the enterprise.[7] There exists a value of α, bounded between zero and one, which represents his or her relative emphasis between output and profit maximization. A simple profit deviating (PD) entrepreneur in a competitive market will choose output to maximize V, a generic value function[8]:

$$\max_{Q} V = (\alpha)Q + (1 - \alpha)(P \cdot Q - C(Q)) \qquad (3)$$

Note that this objective function is slightly more complex than equation (1), and represents the entrepreneur's value of both profit and output. If α = 1, then the entrepreneur only values output, perhaps enough to give the product or service away for free. If α = 0, the function reduces to simple profit maximization, as in equation (1) for the neoclassical entrepreneur. An example of a pure output maximizer (α = 1) could be an advocacy or religious organization where there is no charge for their output. In contrast, universities often use tuition discounting to boost need-based enrollment, yet still charge most students. This model implies an intermediate level of α, less than one and greater than zero.

It is important to remember that the profit maximization (i.e., α = 0) does not imply that the profit maximizer is indifferent to the quality of the product or service provided to their customer. On the contrary, ethical business practices, customer service, and quality products may all be profit maximizing. For the PD entrepreneurs (where α > 0), however, the quantity output has intrinsic value, such that it causes the entrepreneur to make deliberate, profit-reducing choices in exchange for higher output.

For our purposes, we are interested in how the hybrid value function alters opportunity recognition, market entry, and subsequent output decisions by the social entrepreneur. Optimizing the value function over Q gives the following:

first order condition:
$$P = C'(Q) - \frac{\alpha}{(1 - \alpha)} \qquad (4)$$

break even condition:
$$P = \frac{C(Q)}{Q} - \frac{\alpha}{(1 - \alpha)} \qquad (5)$$

Equation (4) demonstrates that the marginal cost schedule faced by a PD firm is lower than would be faced by a PM firm producing the same quantity of output. The result is driven by the

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[7] For simplicity, we do not fully specify a utility function in the text.

[8] More detailed versions of the profit deviation model can be found in (Lakdawalla & Philipson, 2006) and (Harrison & Laincz, 2008). To our knowledge, this is the first application of the profit deviation model to the social enterprise sector.

term $\frac{\alpha}{(1-\alpha)}$ which, if $\alpha > 0$, shifts the marginal cost curve downward. Thus, for a given price, profit deviators will increase output relative to their profit maximizing counterparts.[9]

Equation (5) demonstrates how the PD entrepreneur will enter a market at a price lower than would be required to induce entry for the PM entrepreneur. This implies that the PD entrepreneur is willing to enter—and stay—in a market where they cannot charge a price sufficient to cover their expected average cost. Again, this outcome is driven by the term $\frac{\alpha}{(1-\alpha)}$, which increases in α, the relative preference for output by the PD entrepreneur.

Profit Deviation as Market Creation

The implication of this basic model is that PD entrepreneurs can enter markets at a lower effective cost, which will have a significant impact on the entrepreneurial process of opportunity recognition, evaluation, and exploitation (Shane & Venkataraman, 2000). Consider the circumstance where a finite number of profit deviating social entrepreneurs exist, who are willing to accept lower financial returns for higher output. At the same time, a large number of profit maximizing neoclassical entrepreneurs also exist, but remain latent, because expected revenues for a particular venture do not exceed expected costs.

For the moment, we restrict our attention to markets where price is at or below long-run average costs. We assume firms are price takers, so expected long-run costs will determine the entry and production decisions of the entrepreneur.[10] Both types of entrepreneurs face risk, which implies a probability distribution surrounding the expected long-run cost associated in producing the good or service.

Figure 1 illustrates the entry decision by the firm.[11] The vertical line indicates the entrepreneur's reservation value. Costs above (to the right) this level indicate that it is unprofitable for the firm to enter. Entrepreneurs have expectations about their ventures' cost of production c(y). Our model described in the previous section implies that the expected effective cost of the PD social entrepreneur will lie to the left of the expected cost of the PM entrepreneur.

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[9] It is important to note that this does not necessarily imply that the profit deviator possesses a technology to produce the good or service using fewer resources, though it may be the case that the profit deviator can attract donated goods and /or time. More likely, the social entrepreneur is willing to operate at a lower "reservation price," either through lower wages or lower returns on invested capital than a profit maximizer. This is commonly called the labor donation hypothesis and has been widely discussed in the nonprofit economics literature (Preston, 1989; Leete, 2001; Ruhm & Borkoski, 2003).

[10] As discussed later in the paper, markets where expected price is above average costs do not require social entrepreneurs. We argue that price-taking is a natural assumption for markets where price is expected to be below average cost.

[11] Note that the inverse relationship between output and factor prices is derived from a standard Cobb-Douglas production function. This particular diagram was originally sketched in Harrison & Laincz (2008), though we employ a slightly different interpretation.
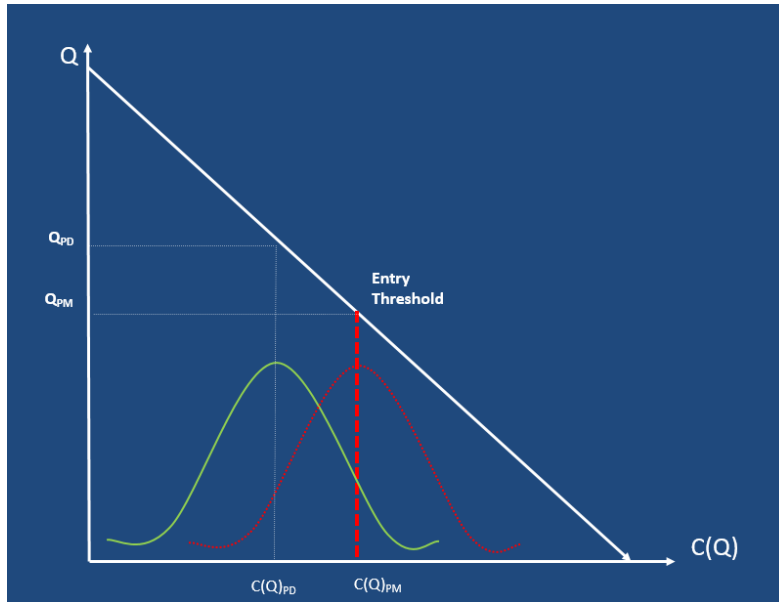
Figure 1

Figure 1 depicts the simultaneous entry case where both traditional PM and PD entrepreneurs must choose whether to enter the market simultaneously. The PD firm's expected cost distribution lies to the left of the PM firm, because of its lower effective cost. In this example, a substantial fraction of the PM firm's cost distribution lies to the right of the entry threshold, making it unlikely that the PM firm will enter the market. The PD entrepreneur may, however, still enter the market, because they operate at a lower effective costs. In this case, PD firms will completely populate the market, and market size will be limited by both the availability of PD entrepreneurs and altruistically motivated factors of production (e.g., volunteer labor or donor capital) willing to be hired at below market rates.

Figure 2, in contrast, describes the sequential case, where latent PM entrepreneurs can first observe the market performance of their PD counterparts before choosing to enter a market. Consider the case where the PD entrepreneur enters first and reveals information regarding true production costs. The PD firm may also generate valuable market information regarding consumer demand, technology, and regulatory barriers. It is this knowledge spillover created by the PD firm that reveals an opportunity for the latent PM firm (Audretsch & Keilbach, 2007). Once the PD firm has entered the market, the distribution of expected costs for the PM entrepreneur will narrow about its mean. This, in turn, should stimulate PM entry for two reasons.

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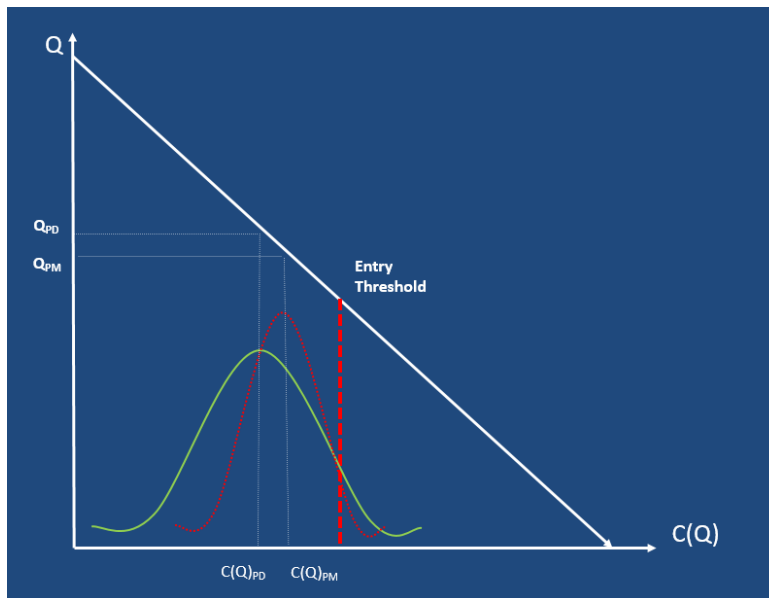ISSN 2305-7394

Figure 2

First, PM entrepreneurs now face reduced risk regarding production costs, consumer demand, and regulatory uncertainty, which may prompt them to revise previous feasibility assessments (McMullen & Shepherd, 2006). This is shown in Figure 2, where the distribution of expected costs around the mean for the PD firm compresses.

Second, PD firms may actually lower the initial fixed cost of entry for PM firms because the latter can exploit economies of scope or agglomeration effects generated by the previous entry of the PD firm (Jaffe, 1998; Hall, 1996). For example, "lay the groundwork" In Figure 2, this effect would shift the entire cost distribution for the PM firm leftward, increasing the probability of market entry.

Because PD firms value output, more firms in the market could be a desired outcome. This situation deviates from traditional market entry, where successful entrants attempt to restrict entry to a new market by mechanisms such as intellectual property protection (e.g., seeking patents on innovations) or pricing strategies (e.g., using economies of scale to set prices below where potential new entrants can profitably enter a market).

Consequently, it would not be inconsistent with the model's findings for PD firms to actually promote knowledge spillover by "broadcasting" information (e.g., through press releases or professional presentations) to encourage market entry (Jaffe, 1998). Indeed, given a social entrepreneur's high valuation of output, we would expect this outcome to occur with fairly high frequency because increased market entry means more output can be produced. In addition, in the case of social enterprises structured as nonprofits, entry by PM firms can help overcome finite altruistic resources that may prevent the PD firms from expanding to sufficiently serve the entire market.

Our model coincides with current entrepreneurship theory examining factors needed to prompt entrepreneurial action. Specifically, potential entrepreneurs may recognize opportunities based on asymmetric knowledge resulting from previous experience or the motivation to seek opportunities (Baron R. , 2006). Whether they choose to exploit these opportunities, however, also requires that entrepreneurs perceive the opportunity as both feasible and desirable

(McMullen & Shepherd, 2006). As noted, lower production costs for PD firms and high valuation of output by social entrepreneurs enhance the former and latter, respectively.

The model also corresponds with current social entrepreneurship research examining the important role that social entrepreneurs play in market development by identifying and exploiting opportunities that improve social welfare (Austin, Stevenson, & Wei-Skillern, 2006). Most importantly, it shows that social enterprise plays an important and unexpected role in a market economy. Their lower effective cost implies they will enter otherwise risky or marginally profitable markets. Profit deviating entry creates an information collective good, increasing the probability that profit maximizing firms will also enter and expand the market. Thus, social enterprises can exploit opportunities that would otherwise remain dormant.

Range of Application

Our model describes a circumstance where profit deviating entrepreneurs can stimulate market formation by creating new ventures which would be *ex ante* unprofitable for traditional entrepreneurs. Through market entry, PD entrepreneurs can facilitate market formation by (1) revealing more precise cost information through knowledge spillovers or (2) reducing fixed costs via agglomeration and economies of scope. For example, because early entrants need suppliers, trained workers, and infrastructure, firms entering a market later often face lower entry barriers because many of these critical resources are already in place (Porter, 1998). Once a PD entrepreneur has facilitated market entry for the PM firm, normal market processes can expand the scale and scope of the market.

As noted, the range of market conditions over which this symbiotic relationship will hold is narrow. Consider Figure 3 which maps the dimensions of motivation for our entrepreneurs. Profit—revenues in excess of costs—expands along the x-axis. Social impact, along the horizontal axis, is less well defined. For our purposes, social impact represents the mix of collective goods that typically motivate social entrepreneurs. The bottom-left quadrant represents those ventures which are neither profitable nor serve a valuable social purpose. We would expect few ventures to be launched under such conditions.

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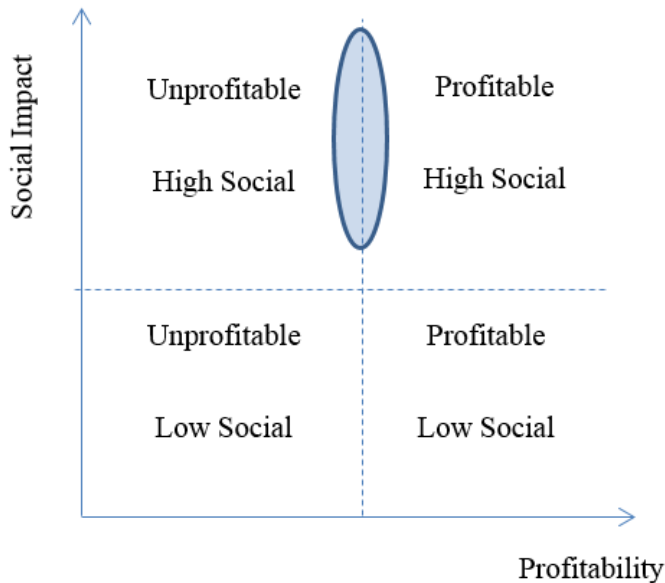ISSN 2305-7394

Figure 3

The bottom-right quadrant is representative of typical PM industries. In these markets, firms earn revenues equal to, or greater than, their economic cost of production. Importantly, market participants are able to capture the relevant consumer and producer surplus, while flexible prices ensure that mutually beneficial transactions are consummated. In markets strictly along the x-axis, no collective goods are created in the exchange.

The top-left quadrant will typically be dominated by non-profit firms. These markets are characterized by low (or negative) profitability and high social impact. Firms in these markets are focused on the private provision of collective goods, such that it is impossible for PM firms to charge a price equal to their average costs. Firms in this sector will tend to be organized as nonprofits and heavily rely on altruistically motivated inputs (volunteer labor or donor capital) for production. Our assumption that altruistically motivated inputs are limited implies that entry and growth in this sector will be restricted.[12]

In the top-right quadrant, ventures have both high social benefit and profitability. Google is an example of a firm in this type of market. Their market exchanges with advertisers create profits as well as significant positive externalities (e.g., Google Scholar) and public goods (e.g., Google Maps). PD firms which enter this type of market will likely be swamped by PM firms, which have access to deeper capital markets and labor pools. To the extent that ventures are obviously profitable, PM firms will adequately fill in the market without any help from the profit

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[12] The argument that altruistic inputs are limited is critical to the analysis. If donor capital and volunteer time were available in unlimited amounts, then nonprofit firms would dominate any market. This, obviously, is not the case. For example, in the U.S., charitable contributions currently total slightly more than $300 billion, which has remained remarkably steady at about two percent of annual GDP for the past several decades (Center on Philanthropy, 2011).

deviators. PM firms, who are, at worst, indifferent to positive externalities and the creation of public goods, will happily engage in any and all sufficiently profitable activities.

We argue that the key economic role of social enterprise lies in the small shaded area of Figure 3. These are ventures that are not obviously profitable enough to support a PM firm, *ex ante*. These opportunities, however, must have sufficient social value to attract the social entrepreneur. In this small slice of the market space, there is genuine uncertainty whether a venture will be sufficiently profitable. The PD firm can enter the market as the proverbial "canary in the coal mine," revealing latent opportunities to PM entrepreneurs that would have been unrealized without their efforts.

Albeit narrow, this process provides a distinct role for social enterprise independent of normative justifications. Lacking empirical investigation, it is, as yet, unclear what the magnitude of this particular market process is in different industries. Thus, to provide initial support for the model's applicability, we provide a specific case study of a social enterprise that (1) was created to generate knowledge spillovers to subsequent PM entrepreneurs and (2) encouraged subsequent PM firm entry into the market.

Industry Study: MicroCredit

As an illustration of our model, we examine the microcredit sector. This sector, which uses small loans as an anti-poverty strategy, has been a leading example of social enterprise for many decades. A 2008 Federal Reserve Bank of St. Louis report traces the history of the microcredit industry (Sengupta & Aubuchon, 2008). The report used the Microfinance Information Exchange (MIX) database (described in more detail below) to study the rapid expansion of modern microfinance over the previous three decades.[13] The report identifies the origin of modern microcredit (a subsector of microfinance) as Grammeen Bank, which was founded by Muhammad Yunus around 1983 in Bangladesh.

Some key distinctives of the modern micro credit movement that distinguish it from historical moneylending are: 1) a deliberate emphasis on very poor households and vulnerable groups such as women, 2) the use of social relationships rather than collateral as an enforcement mechanism, and 3) the application of group lending to mitigate moral hazard and adverse selection problems that typically plague small scale lending. These innovations resulted in rapid expansion of between 1,000 and 2,500 distinct microcredit institutions serving nearly seventy million clients in 100 different countries (Sengupta & Aubuchon, 2008).

Important for our paper, the Federal Reserve report notes how the early success of socially oriented microcredit organizations has generated interest from profit oriented microfinance institutions (MFIs). For example,

"As more and more MFI's establish positive returns, microfinance is being seen by many professional investors as a profitable investment opportunity." (Sengupta & Aubuchon, 2008, p.14).

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[13] www.mixmarket.org.

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We use the MIX database to illustrate the two theoretical predictions from the previous model. The Microfinance Information Exchange (MIX) is an international repository of financial data for microfinance institutions. The dataset contains financial information for over fifteen thousand organizations dating back as early as 1995. The data entered into MIX is internally validated. However, it is not possible to determine the scope of the data coverage relative to the vast universe of microfinance organizations around the globe.[14] As a consequence, we rely on the data for trends, rather than levels.

Recall that our model has two primary predictions. First, profit deviating firms will operate at a lower (opportunity) cost, because they can use socially motivated inputs (capital or labor) in the production process. Second, because they operate at a lower cost, profit deviating firms will enter risky markets first, relative to profit maximizing firms. This will allow profit deviating firms to "trail-blaze", by demonstrating market viability and lowering the fixed cost of entry to subsequent profit maximizing firms.

The MIX dataset does not contain an indicator for profit deviation (or for a social entrepreneur). As a proxy, we use each organization's charitable exempt status. The current dataset contains 8,792 nonprofit and 6,268 for-profit firms. The MIX data set also contains information concerning the yield on gross portfolio, which is the total interest and fees earned by each firm's lending operations. Using this data, we find that, over the entire sample, nonprofit organizations earn an average yield of 32% on their portfolios. This is less than for-profit institutions, which earn 36%, on average. The difference, while not large, is statistically significant ($p < .05$) and consistent with our first hypothesis.
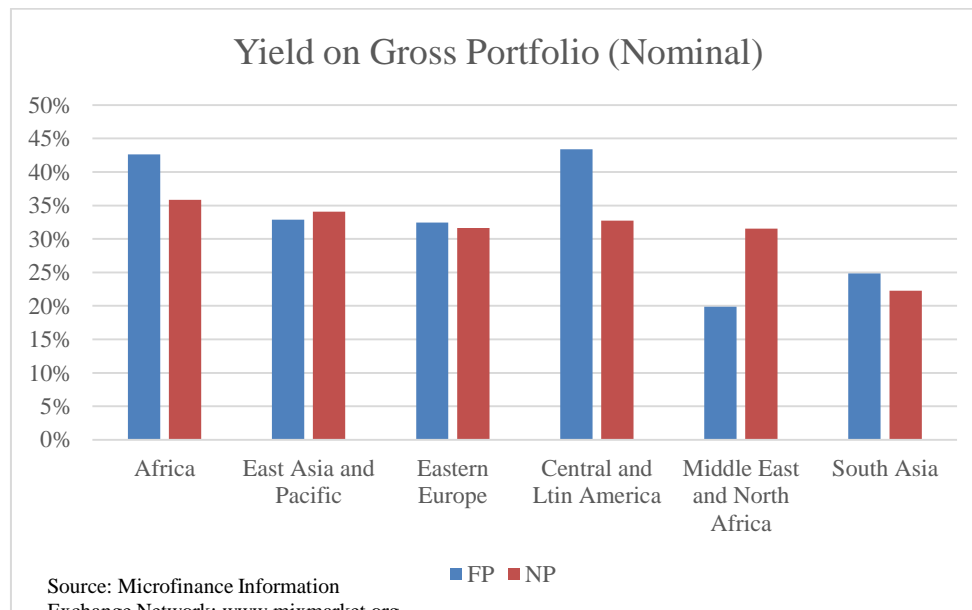

Figure 4

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[14] For more information on data quality and reporting procedures, see http://www.mixmarket.org/about/faqs.

Presumably, our nonprofit firms are willing to accept lower rates of return on their portfolio, or operate in markets where repayment rates are lower. The results also generally hold when we disaggregate the data by region. Figure 4 depicts nominal average yield on the portfolios of microcredit institutions over separate regions. In Africa, Eastern Europe, Central America, and South Asia, the mean rate of return on a lending portfolio for nonprofit firms is lower than their for-profit counterparts. This is not true for East Asia or the Middle East. South Asia is, by far, the largest and most mature market. For-profit yields have steadily fallen with global competition. In contrast, the Middle East is the youngest and smallest micro lending market. Thus, the data there is highly volatile from year to year.

These cases also illustrate the weaknesses of this data. While it is the best available, it remains quite noisy. Furthermore, it would be best to compare microfinance institutions within their relevant economic markets, rather than global or even regional averages. This level of detail, however, is simply not available.
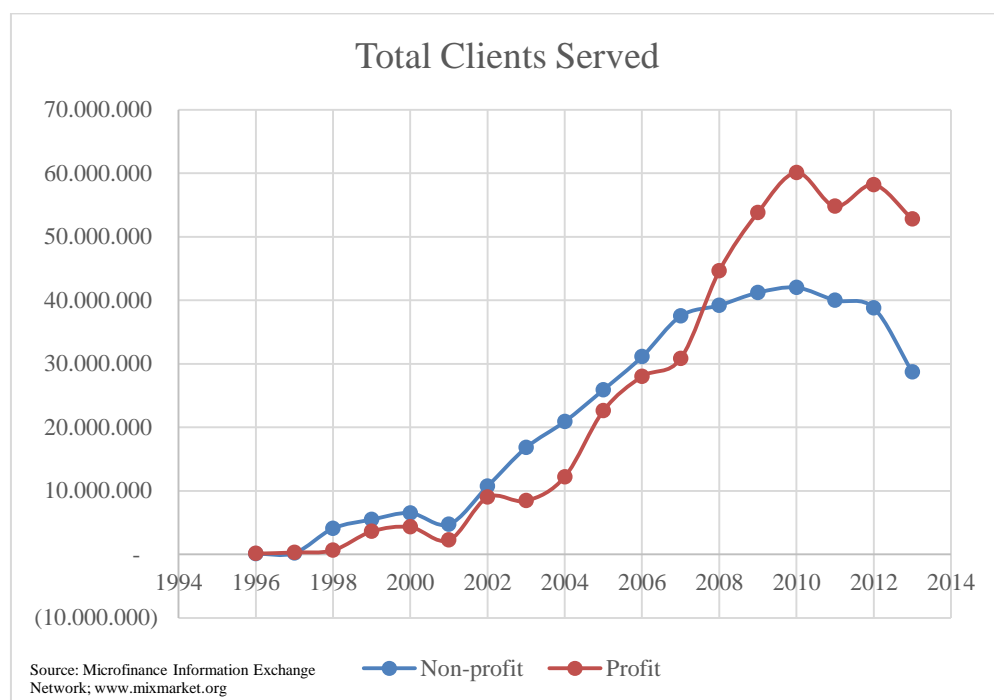

Figure 5

From our second hypothesis, we are interested if there is a sequential ordering between nonprofit and for-profit entry. The MIX data only extends back to 1996, over a decade after the introduction of modern microcredit by Grameen. Consequently, the data has a limited ability to illustrate the early expansion patterns of the industry. That said, we are able observe some relevant patterns in the data. Figure 5 shows the number of clients served by both nonprofits and for-profit micro lending institutions over time. Note a modest lead by nonprofit institutions, until the trend sharply reverses in 2008. From then on, for-profit institutions lead the market. The trends are similar when looking at specific regional markets. To conserve space, we only display the region with the largest number of institutions, South Asia, in Figure 6.

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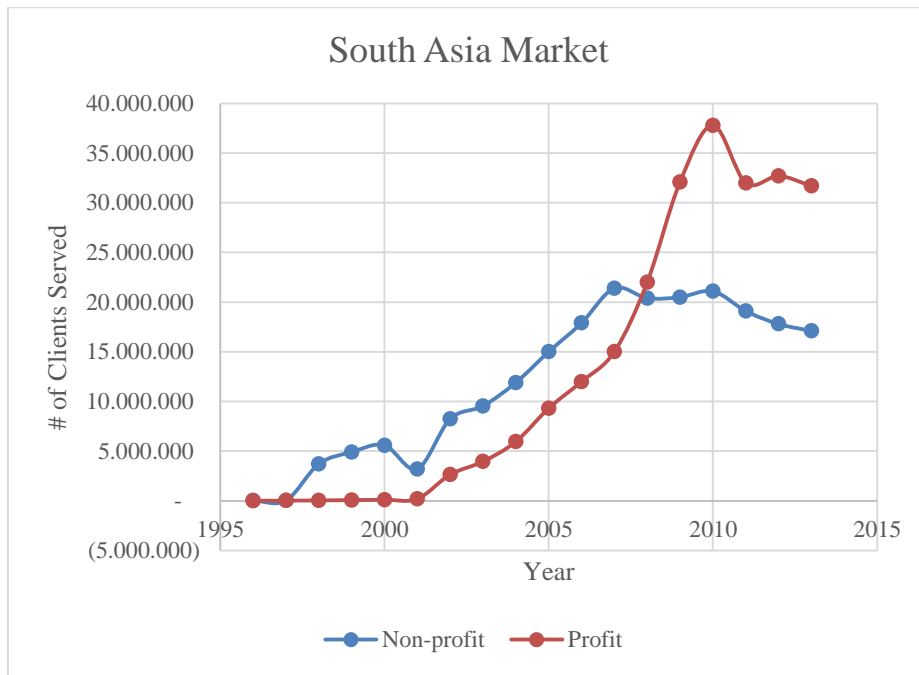ISSN 2305-7394

Figure 6

While certainly not definitive, MIX data from the micro credit sector supports our proposed model. This is important because micro credit has often been used as a prominent example of social enterprise. As a final bit of evidence, we turn our attention to a case study, which illustrates our propositions in a more detailed way.

Case Study: Spring Back

Launched in 2011, Spring Back's mission is to provide sustainable employment and small business training to disenfranchised men while diverting solid waste from area landfills. Its business model focuses on providing mattress retailers, waste management companies, institutions, and consumers an alternative to either feeding a "refurbished" market or incurring freight and "tipping fees" associated with discarding used mattresses and box springs. The business model's value proposition relies on providing institutions access to solid waste diversion credits that can be marketed to government, corporate, and consumer stakeholders. These credits serve as externally or self-imposed indicators for "green" initiatives that require quantifiable levels of environmental stewardship.

Presently, over 98% of all mattress and box spring components processed within Spring Back are reconstituted into carpet underlay, landscape mulch, raw metal, and padding. Figure 7 itemizes the contents, weights, revenue generated, and reconstituted purposes of the 22,100 mattresses and box springs processed at Spring Back in 2012. The operational business model not only involves the disassembly and sorting of each form of scrap commodity, but also the baling, storing, and ultimate loading of outgoing freight to each scrap buyer. As a result, the cost of labor is dependent on the operational efficiency and effectiveness of trained men processing incoming mattresses and box springs so that the baled scrap is out-the-door in as little time as possible.

Mattress/Box-Spring Commodities
January to December 2012

Commodity	Total Pounds	Price Per Pound	Total Revenue	Repurpose Use
Metal Springs	411,530	$0.11	$39,095.35	Foundry Melt
Foam	54,563	$0.15	$3,273.78	Carpet Underlay
Cotton/Wool Blend	95,700	$0.02	$1,914.00	Packaging Padding
Foam/Poly Outer Layer	16,234	$0.06	$974.04	Carpet Underlay
Wood Frames	95,028	$0.00	$0.00	Landscape Mulch
Other (Plastic/Cardboard)	5,311	$0.04	$185.89	Industrial Uses

Figure 7

In addition to environmental benefits, Spring Back's social mission involves employing "work release" men from prison. The consistent employment of six men lowers the prison's recidivism rate and provides each man with an above-market wage upon release. Over an 18 month period in 2011 and 2012, 21 men were trained and employed for an average of 5 months each, transitioning from incarceration into immediate full-time employment. More than 70 percent of the men previously employed at Spring Back are either permanently employed at Spring Back or another production facility, and the organization presently offers full-time employment to one production manager, one metal baler, and four mattress disassemblers.

Consider Spring Back's first year of operations through the lens of a capital budgeting project, measured by the profitability of a Net Present Value (NPV) calculation. This calculation is at the root of the decision to enter this market as a PD or PM firm. Using a basic NPV framework, Spring Back's initial capital outflows for equipment and working capital are represented by a negative CF_0. Its operating cash flows (operating earnings + depreciation +/- taxes paid) are represented by CF_1 through CF_N, and its cost of capital is represented by its required rate of return "r", where

$$NPV = \sum_{i=1}^{n} CF_0 + CF_1 / (1+r)^1 + ... CF_n / (1+r)^n \geq 0$$

(6)

Spring Back generates a positive NPV when the sum of the present value of its operating cash flows (discounted at the shareholder and/or creditor's required rate of return) is greater than its initial negative cash outlays. Spring Back was fully capitalized in late 2011 and early 2012 with an external infusion of donated capital to cover its initial working capital and equipment needs (e.g., balers, fork lifts, tools, and scaffolding/stacking infrastructure) at time period zero.

It is particularly difficult for a PM firm, particularly a new venture, to enter the waste diversion market of mattress recycling because capital requirements are high and operating cash flows are irregular. The latter results from three unique industry trends. First, revenue is dependent on retailers and/or institutions incurring the more costly decision to divert solid waste from landfills. This decision is typically based on the potential to pass a higher recycling cost to a

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willing customer who values such solid waste diversion activity. Second, freight costs associated with procuring inbound mattresses and box springs are unpredictable. Variances in diesel fuel surcharges and the ability to secure relatively cheap rail service or truck lines are often large enough to challenge realistic estimates of revenue and cost projections in a pro forma forecast of future cash flows. Last, commodity scrap prices for cotton, foam, and metal can also be unpredictable, thus presenting a challenge to forecasting future revenues. Specific to Spring Back, yet not necessarily an industry trend, using disenfranchised labor can also create uncertainties; higher relative turnover of its labor force implies lower labor productivity and higher training costs.

According to the International Sleep Products Association (ISPA), social enterprises like Spring Back rarely exist because of these high uncertainties associated with start-up and operational costs. Figure 8 references IPSA's assessment of 12 mattress disassembly facilities in the U.S., finding that initial start-up costs covering capital equipment and working capital averaged more than $268,000. In addition, average per-unit fixed and variable costs, as detailed in Figure 9, are $5.58/unit higher than the per-unit scrap revenue that would have been generated through recycling commodity scraps.

CAPITAL EQUIPMENT: Investment for a new start-up is estimated at $268,000			
Spring Baler	$130,000	Forklift	$25,000
"Soft" Baler	20,000	Dock Leveler	20,000
Pallet Shearer	17,000	Electrical	7,500
Spin Tables (4)	3,000	Office Furniture	5,000
Totes (55)	24,750	Hand Pneumatic Tools	4,000
Powered Pallet Jacks (2)	7,400		
Manual Pallet Jacks (4)	4,000	*Annual Depreciation is Projected at $41,700*	

Figure 8

			Cost per Unit
LABOR	*Direct*	Unload	$0.1366
		Disassembly	2.5797
		Steel Baling	0.2150
		Soft Baling	0.2180
			$3.1493
	Indirect		1.7336
FACILITIES	*Building Lease*		2.2500
	Utilities, Maintenance		0.5625
FIXED OVERHEAD	*Depreciation/ Equipment Lease*		1.3304
	Insurance		0.4688
TRANSPORT	*Waste to Landfill*		0.1250
			$9.6195
INCOME FROM SALE OF MATERIALS	*Steel*		$3.4035
	Cotton		0.2936
	Foam		0.2493
	Quilt Toppers		0.0903
			$4.0367

Figure 9

This industry situation forces most PM recycling firms to overcome this per-unit loss with a drop fee that is substantially higher than per unit landfill disposal.15 Therefore, unless a PM firm can consistently contract with retailers, waste management companies, or institutions (e.g., hospitality, government, education, or healthcare) to source a predictable number of mattresses at a $5.58/unit or higher price point, a mattress disassembly model offers a negative net present value, regardless of a firm's cost of capital.

As a PD firm, Spring Back Recycling 501(c)(3) capitalized itself with donated capital, with relatively no requirement to generate a shareholder-induced expected rate of return. Spring Back Nashville (the first licensee of the Spring Back non-profit) raised more than $87,900 in grants and in-kind donations to purchase equipment (as listed in Figure 10). With capital in hand, Spring Back secured an 8,000 square foot facility, trained its labor force, created an operational manual and risk assessment tool, and developed the needed systems and marketing to logistically procure inventory inflow and scrap outflow. Ultimately, retailers and waste management firms have found that associating with Spring Back generates enough reputational capital (through the

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15 A Davidson County, Tennessee landfill charges $32/ton as a drop fee; coupled with freight charges, Spring Back approximates the total per unit disposal fee for a mattress to be between $2.50 and $3.00/unit.

promotion of social and environmental benefits to prospective customers) to overcome the additional costs of freight and disassembly/recycling. In other words, the difference in $5.58/unit recycling expense and approximately $2.50/3.00 per unit landfill expense is presently overcome by passing along the costs to new retail and institutional clients who value advertising the social benefits they generate from recycling their old mattresses.

Direct Purchase and In-Kind Donations
2011-2012

Grant Funding for Capital Equipment	$	23,000
Grant Funding for Working Capital	$	1,250
In-Kind Labor (Isaiah 58 Employees)	$	18,500
In-Kind Rent	$	6,750
In-Kind Administration*	$	38,400
TOTAL	**$**	**87,900**

*Students, Entomologists, Occupational Therapists, and Faculty (MGMT, MKTG, FIN, ACC) Oversight

Figure 10

Figure 11 offers a consolidated income statement, assuming consistency in Spring Back's revenue and cost drivers. Since February of 2012, Spring Back has been able to accurately track revenue from both mattress drops (institutional and retail) as well as baled scrap. Based on ten months of data, we project that the first three years would generate an initial loss in net income in year one, followed by positive earnings in years two and three.

INCOME STATEMENT		Year 1	Year 2	Year 3
Revenue				
Mattress Collection Revenue		41,915	112,050	171,810
Bundled Material Revenue		31,100	83,450	128,950
Total Revenue		73,015	195,500	300,760
Cost of Revenue				
Mattress Collection		4,345	11,614	17,809
Processing Expense		30,507	81,553	125,048
Material Selling		3,850	10,250	16,000
Total Cost of Revenue		38,701	103,417	158,856
Gross Profit		34,314	92,083	141,904
Operating Expenses				
License Fee		5,000	-	-
Royalty Fee		2,525	6,750	10,350
Manager Labor		36,000	36,000	36,000
Insurance		3,600	3,600	3,600
Rent		18,000	18,000	18,000
Utilities		3,600	3,600	3,600
Web Expense		360	360	360
Phone		720	720	720
Printing / Supplies		300	300	300
Marketing		1,200	1,200	1,200
Operations-Other		1,200	1,200	1,200
Total Operating Expenses		72,505	71,730	75,330
EBITDA		(38,191)	20,353	66,574
Depreciation		7,000	8,000	8,000
Interest Expense:				
Revolver	8.0%	1,529	2,660	393
Term Note	8.0%	-	-	-
Notes Payable, Long Term	8.0%	-	-	-
Pref. Equity	0.0%	-	-	-
Total Interest Expense		1,529	2,660	393
Interest Income	1.0%	154	20	133
Earnings Before Tax		(46,566)	9,713	58,313
Taxes	0.0%	-	-	-
Net Income		(46,566)	9,713	58,313

Figure 11

Because of its apparent success, Spring Back's is now attracting interest from both PM and PD firms across the United States. PD firms are seeking earned income opportunities that "pay for themselves" and complement existing social ventures. PM firms are also examining Spring Back's operating model. Learning from Spring Back's production processes and demonstrating customer demand for environmentally responsible mattresses may eventually encourage large PM firms to expand the market.

Initial results have been encouraging and support our model's propositions. In the past year, Springback managers have consulted with several U.S. and one Irish company about mattress recycling. The organization has demonstrated that critical production can be obtained in

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sufficient quantity to produce marketable scrap materials, and, in turn, that these materials can be sold at a price that can cover operational expenses. Based on these consultations, at least three new organizations, two of which were PM, have entered this market in the past year.

This case, thus, illustrates how opportunity exploitation has generated knowledge spillover that has subsequently lead PMs to enter and grow a market. For Spring Back, a positive NPV would not have been possible without initial injections of donor capital, which drives down r, the required rate of return to capital, potentially to zero. A lower r implies that future cash flows can be smaller and more variable, but the organization must still break even to survive.

Because donor capital is finite, however, it has been difficult for Spring Back to expand its operations. Thus, one of the only viable ways for the organization to increase its social impact is by attracting for-profit ventures to the industry by publicizing its production technologies and market information. Using production practices pioneered by Spring Back, future PM firms may be able to tap traditional capital markets to expand their enterprise, promote employment, and reduce landfill waste.

Conclusions

Social entrepreneurs are generally cast as creating enterprises that generate social returns. This narrative typically omits that social enterprises are often unprofitable, rely on donated resources for operation, and have considerable difficulty demonstrating their social value to stakeholders. Dependence on donated inputs and a lack of a common metric by which to determine relative resource allocation are fundamental constraints to the scalability of social enterprises. Despite this pessimistic perspective, we promote the idea that social enterprise can play an important role in market formation.

In this paper, we offer a basic theoretical model that offers a clear distinction between social and traditional business entrepreneurship. The model demonstrates how a preference for output can be characterized as a deviation from neoclassical profit maximization. This deviation, in turn, implies that social entrepreneurs can enter markets at a lower economic cost. By entering markets, the PD firms generate knowledge spillovers, providing valuable cost and market information to latent PM entrepreneurs.

Typically, PD entrepreneurs' growth will be constrained due to the limited availability of altruistic capital or labor. Under particular circumstances outlined in this study, however, the PD firm can reveal viable market opportunities to PM firms that are then able to exploit and scale these opportunities because of their access to deeper pools of capital and labor. This result provides a surprising alternative motivation for social entrepreneurship that can help motivate social entrepreneurship research.

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