THE ECONOMIC CASE FOR CSR:

THE COMPETITIVE ADVANTAGE OF FOR-PROFIT FIRMS IN THE MARKET FOR

SOCIAL GOODS

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ABSTRACT

We develop a formal model of CSR, examining competition between a for-profit firm and a non-profit in the supply of social goods. Using the model, we argue that firms can benefit stakeholders while maximizing profit for shareholders only if their CSR efforts are sufficiently differentiated from those of non-profits, with this effect being stronger if the firm can leverage capabilities from its core business to lower its costs of undertaking CSR. Where this is not the case, CSR may still profit shareholders, but only at the cost of stakeholders. Our paper thus makes an economic case for CSR, specifying conditions under which CSR is Pareto optimal, while also highlighting the heterogeneity of CSR activities and their potentially divergent effects for shareholders and stakeholders.

INTRODUCTION

As firms increasingly invest in corporate social responsibility (hereafter CSR) activities[1], the study of

CSR has become an important topic in the strategy literature. While early work on CSR focused on

the conflict between shareholder and nonfinancial stakeholder interests, seeing the two as

fundamentally opposed (e.g., Friedman, 1962, 1970; Donaldson and Preston, 1995), more recent

research has emphasized compatibility between shareholder and stakeholder interests. This work

argues that firms can 'do well by doing good', with empirical results documenting a positive

relationship between CSR activities and firm financial performance (e.g., Waddock and Graves,

1997; Margolis and Walsh, 2003; Olitzky, Schmidt, and Rynes, 2003; Barnett and Salomon, 2006;

2012; Margolis, Elfenbein, and Walsh, 2009; Choi and Wang, 2009; Kacperczyk, 2009; Minor and

Morgan, 2011; Eccles, Ioannou, and Serafeim, 2014; Flammer, 2014a). Underlying this positive

relationship is the idea that the firm's various stakeholders will reward it for behaving responsibly, so

that a firm that undertakes CSR may enjoy stronger long-term relationships with these stakeholders,

resulting in lower costs and higher quality inputs, and providing a sustainable competitive advantage

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[1] Throughout this paper, we use the term CSR to refer to voluntary activities by firms, i.e., those not legally required.

(Freeman, 1984; Hart, 1995; Jones, 1995; Porter and Van der Linde, 1995; Godfrey, 2005; Porter and Kramer, 2006; Barnett, 2007; Wang and Bansal, 2012). Consistent with this, empirical work has shown evidence for benefits of CSR in a firm's dealings with stakeholders such as consumers (e.g., Casadesus-Masanell *et al.*, 2009; Fosfuri and Giarratana, 2014), employees (e.g., Turban and Greening, 1997), suppliers (e.g., Hillman and Keim, 2001), investors (e.g., Mackey, Mackey, and Barney, 2007; Cheng, Ioannou, and Serafeim, 2014), analysts (e.g., Ioannou and Serafeim, 2014; Luo, Wang, and Raithel, 2015), activists and communities (e.g., Baron, 2001; Baron and Diermeier, 2007; Henisz, Dorobantu, and Nartey, 2014), and regulators (e.g., Koh, Qian, and Wang, 2014), with these effects being stronger, the greater the attention to and importance of social activities among stakeholders (Lev, Petrovits, and Radhakrishnan, 2010; Flammer, 2013; Servaes and Tamayo, 2013; Madsen and Rodgers, 2014).

While the idea that firms can benefit financially from CSR is an important insight, it is a necessary but not a sufficient condition for the claim that the interests of shareholders and stakeholders are compatible. For that claim to hold, we need to also consider whether and to what extent *stakeholders* are benefiting from CSR; specifically, whether the resources being raised to serve stakeholder interests are being used most effectively. The existing literature has paid relatively little attention to the impact of CSR activities for stakeholders (McWilliams, Siegel and Wright, 2006; McWilliams and Siegel, 2011), generally assuming that stakeholders will benefit from any and all CSR activity. But to the extent that the stakeholder interests being served by CSR are also served by alternate (non-profit) suppliers, we need to consider whether the firm is enhancing stakeholder welfare beyond what would be achieved by these other suppliers alone. When this is not the case, positive returns to shareholders from CSR activities may reflect the privileging of shareholder interests at the cost of stakeholders, and stakeholder interests would be better served if those rewarding the firm for its CSR activities would redirect their resources to non-profits instead.

The distinction between shareholder and stakeholder interests, and the efficacy of CSR in advancing the two, also suggests the need for deeper consideration of the heterogeneity of CSR. Though most research on CSR conceptualizes and measures it as a single construct (Chatterji, Levine, and Toffel, 2009), there is a considerable range of activities that fall under the broad rubric of CSR, with CSR activities varying in the type of stakeholder served (Mattingly and Berman, 2006), the way the activity is organized (Boddewyn and Doh, 2011), and the nature of firms undertaking the activity—and these distinct types of activities are likely to differ in both the extent to which they generate profits for shareholders, and the extent to which they benefit stakeholders. There is thus a need for a more systematic theory of CSR, one that considers the benefits of CSR for both shareholders and stakeholders, and defines the factors driving both sets of benefits.

In this paper we seek to develop just such a theory by introducing the concept of a market for social goods, i.e., goods or services that the firm provides to one set of stakeholders (termed recipients) but that are paid for by a second set of stakeholders (termed supporters). The firm's decision to undertake CSR is thus the decision to enter this market for social goods, raising resources from supporters and incurring costs to provide the social good to recipients. Conceptualizing CSR in this way allows us to explicitly consider the competition that firms face from non-profits in providing the social good, and to formally model the extent to which the firm realizes profits from the market for social goods for its shareholders, as well as the extent to which it expands the supply of social goods for recipients.

Using this model of competition in the market for social goods, we derive conditions under which CSR is Pareto optimal, i.e., where a firm maximizes profits for its shareholders, and is able to contribute to stakeholder welfare beyond what a non-profit could do on its own. Our model shows that this is more likely to be the case where the firm's CSR activities raise additional revenues for the cause, and are more substantive than symbolic. Where this is not the case, the firm either cannot

deliver additional profits to its shareholder by undertaking CSR, or does so only by crowding out the non-profit with whom it competes for resources, raising shareholder profits at the cost of a reduced supply of social goods. These effects are amplified if the firm has a cost advantage relative to the non-profit, with such firms contributing more to stakeholder welfare if they offer a differentiated good or service, but doing more harm to stakeholders if they substitute substantive non-profit efforts with symbolic CSR initiatives, all the while making greater profits for their shareholders. This cost advantage in turn is driven by both the relatedness of CSR to the firm's core business, and the extent of the firm's competitive advantage in its core business, so that low capability firms or those simply providing an arm's length donation to a social cause have a relatively modest effect on stakeholder welfare, while high capability firms undertaking CSR as an integral part of their business have the potential to do either substantial harm or substantial good. Moreover, the model suggests that while firms with weak capabilities in their core business will strongly prefer CSR activities that enhance stakeholder welfare, those with strong capabilities may be relatively indifferent between activities that greatly benefit stakeholders and those that do them considerable harm.

Our study contributes to the theory of CSR in a number of ways. By simultaneously considering both shareholder and stakeholder benefits, and deriving the conditions under which firms may advance the latter while maximizing the former, we offer a more complete economic case for CSR. While firms may choose to pursue CSR on non-economic grounds, driven by ethical (Windsor, 2001), relational (Aguilera *et al.*, 2007) or institutional (Campbell, 2005) considerations, so long as these activities are not Pareto optimal they require privileging the interests of one set of stakeholders over the other, creating grounds for dispute. If, however, firms pursuing CSR can advance stakeholder welfare more than non-profits alone, while maximizing shareholder profits, then it is hard to argue against such activities, and they are more likely to prove sustainable.

In examining both shareholder and stakeholder benefits, our study also highlights the

potential for divergence between the two. While existing research on CSR generally assumes that CSR is welfare enhancing for stakeholders, our model suggests that this may not be the case where the firm's CSR efforts substitute for those of non-profits, crowding out these non-profits by reducing the resources available to them. In such cases, the firm will realize substantial profits for its shareholders by undertaking CSR, but will at best simply replace non-profits, leaving stakeholders unaffected, and at worst replace substantive non-profit efforts with symbolic CSR activities, harming stakeholders. Our study thus highlights the potential for divergence in the effects of CSR on profitability and social welfare, and stresses the need for greater attention to the latter.

More generally, our study contributes to the CSR literature by introducing and developing the concept of a market for social goods. By conceptualizing CSR in this way, we focus attention on non-profits as an important counterfactual to CSR and provide a systematic yet intuitive way of thinking about the interaction between for-profits and non-profits in advancing social causes. Thinking about CSR in terms of the market for social goods also allows us to highlight the links between CSR and the firm's core business activities. By developing a formal model of CSR we also provide a more coherent and rigorous mapping between the conditions underlying CSR activities, the extent and nature of CSR, and its benefits for both shareholders and other stakeholders. Not only does our theory have important implications for managers, policy makers, and supporters of social causes, it also offers a strong formal foundation for future work in this area.

THEORY

The market for social goods

As discussed above, recent work on the role of firms in protecting and promoting the interests of its non-shareholding stakeholders has moved beyond a zero sum view of social responsibility to argue both theoretically and empirically that in many circumstances the interest of shareholders and

stakeholders may be aligned, i.e., firms may do well by doing good. Underlying this view is the idea that firms that establish a moral reputation through CSR will reap rewards in the form of favorable environmental conditions and relationships with key stakeholders, resulting in long run competitive advantage (Freeman, 1984; Jones, 1995; Porter and Van der Linde, 1995). Thus, CSR initiatives may serve as a basis of differentiation (McWilliams and Siegel, 2001, Flammer, 2014b), allowing firms to take in extra revenue from consumers who applaud their position (Casadesus-Masanell *et al.*, 2009; Du, Bhattacharya and Sen, 2011; Elfenbein, Fisman, and McManus, 2012; Fosfuri and Giarratana, 2014). They may attract employees who identify with firm's CSR activities and work especially hard or accept lower pay (Tajfel and Turner, 1979; Turban and Greening, 1996; Albinger and Freeman, 2000; Greening and Turban, 2000; Edmans, 2011; Burbano, 2014; Flammer and Luo, 2014). They may lead to more positive sell-side analyst recommendations (Ioannou and Serafeim, 2014), or to more favorable treatment from regulatory agencies in the form of legislative and fiscal actions (Hawn, 2013; Koh *et al.*, 2014). CSR may also help a firm better manage its relationship with activists, unions and other community stakeholders, protecting it from socio-political actions that may damage its performance (Baron, 2001; Baron and Diermeier, 2007; Henisz *et al.*, 2014).

While some of these examples involve cases where the firm reaps a direct reward from its CSR activities, e.g., when the firm makes socially responsible investments that lower long-term costs (Hart, 1995; Russo and Fouts, 1997; King and Lenox, 2001; 2002; Hart and Dowell, 2011) or serves previously ignored, underserved or disenfranchised customers (Prahalad and Hammond, 2002; Prahalad, 2005; George, McGahan and Prabhu, 2012), in many cases the firm is rewarded for its CSR efforts by those who do not benefit directly (or exclusively) from these efforts, but are concerned about those who do benefit from them. So, for instance, firms may serve a variety of social causes through arm's length transfers to those in need, such as lump-sum charitable donations

to non-profits[2] and cause-related marketing initiatives that explicitly link the sales of a company's

product to company contributions to worthy causes[3]. Firms may also undertake socially responsible

actions as an integral part of their operations, such as implementing technologies and practices that

benefit stakeholders[4], or undertaking in-house efforts (often in partnership with a non-profit) to

directly serve those in need[5]. Whether CSR involves arm's length transfers or is undertaken in-house,

in all these cases it is not those who receive the firm's goods or services that reward the firm directly,

rather it is other stakeholders—consumers, employees, even shareholders—who compensate the

firm for behaving in socially responsible ways. There thus exists a 'market for virtue' (Vogel, 2006)

through which stakeholders may reward firms for behaving responsibly towards others.

We build on this idea by defining the concept of social goods, i.e., goods or services that are

provided to one set of stakeholders but paid for (at least in part[6]) by another. The key feature of the

social good is that those paying for the provision of the good are doing so out of concern for the

welfare of recipients other than themselves. In a sense, this is a fundamental feature of CSR

activity—that it involves firms providing goods and services to stakeholders who do not directly

demand (or pay for) these goods and services themselves. Our concept of social goods includes

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[2] U.S. firms donate significant amounts to non-profits: charitable contributions as a percentage of pretax income were between 0.7 percent and 2 percent in the last forty years (Galaskiewicz and Colman, 2006), with Fortune 100 companies donating a median amount of approximately $50 million in 2007 (Marquis and Lee, 2012).

[3] Examples include the sale of RED-branded products (by companies like Gap, Hallmark and Dell) where a portion of profits are earmarked for non-profits fighting AIDS in Africa, or Macy's Santa letter writing campaign to raise money for Make-a-Wish Foundation, or AmazonSmile that donates a percentage of purchase to a foundation of consumer's choice.

[4] Examples include Nestle's Milk District project where they work with small farmers in developing countries to source milk, coffee and coca (Porter and Kramer, 2006), and Body Shop's commitment not to sell products tested on animals (Vogel, 2006).

[5] Examples include initiatives such as IBM partnering with schools and communities to apply its technical expertise on educational programs (Kanter, 1999), banks using their professional expertise to help microfinance projects, pharmaceutical companies lending their technical experts to work on the drugs for neglected diseases (Delgado, Kyle, and McGahan, 2013), and law firms doing pro bono work (Burbano, Mamer and Synder, 2013). A recent example of such an activity is Toyota's effort to harness its operations management expertise to help Food Bank for New York City improve its efficiency. As a result, the wait time for dinner at a soup kitchen in Harlem was reduced from 90 minutes to 18 minutes (New York Times, 2013).

[6] Our definition of social goods includes instances where the recipient of the good pays some fraction of its cost; as long as some part of the recipient's consumption is subsidized by a third party, it constitutes a social good. It also includes the case of non-excludable public goods where part of the benefit from the good goes to the person paying for it; so long as this person is not concerned only with her own welfare when paying for the good it is a social good.

both the provision of goods and services that create utility for recipients (e.g., free health clinics, donations in cash or in kind), and the abatement of negative externalities generated by the firm (e.g., reduction of CO_2 emissions, adoption of anti-bias policies, fair trade agreements, etc.).

We can thus conceive of the firm's decision to undertake CSR as its decision to enter the market for social goods. This market is characterized by the interaction between three parties: supporters, who offer resources for the provision of social goods; recipients, who receive social goods and benefit from them; and suppliers (either for-profit firms or non-profit organizations) who supply social goods to recipients while competing for resources from supporters[7]. The key feature that distinguishes this market being the (at least partial) separation of the supporters from the recipients. So, for instance, a person (supporter) concerned with the preservation of tropical ecosystems (the recipient) could either give financial support to an organization fighting to protect rainforests (the non-profit option), or pay a premium for products for companies with sustainable practices (the CSR option). Similarly, a supporter wanting to improve the lot of children in developing countries (the recipients) could either donate to an organization fighting for children's rights (non-profit) or patronize an apparel company with a strict policy against child labor (CSR).

We believe that conceptualizing CSR in this way is helpful for three reasons. First, it highlights the availability of alternate suppliers of the social good, and the consequent need to think about competition among suppliers for resources from supporters. Second, it emphasizes the need to think not only about the benefits of CSR activities but also their costs; for the shareholders of the firm to benefit from CSR it is not enough that supporters reward the firm for the supply of the social good, they must do so in excess of the cost of supplying the social good. Third, it draws attention to the relatively passive nature of recipients—unlike consumer markets where consumers make their own choices, in the market for social goods recipients have little direct control over the

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[7] While we generally think of non-profit organizations as non-governmental organizations (NGOs) throughout this paper, our analysis could be extended to include government agencies among non-profits.

quantity or price of goods they receive[8] (indeed, this is what makes them vulnerable to exploitation in the first place), and must rely on the preferences of supporters. This means that if these supporters are misinformed about recipients' welfare, they may reward suppliers for actions that do not, in fact, benefit recipients. It also means that the demand for social goods is constrained not by the needs of the recipients but by the appetite of the supporters to pay for them.

The advantage of CSR relative to non-profits

Having introduced the concept of a market for social goods, we next turn to consider the competitive advantage of for-profit firms in this market; specifically, we are interested in how these firms may be able to realize profits while competing with non-profit suppliers[9]. The sources of the competitive advantage of for-profits relative to non-profits in providing social goods are of critical importance to both shareholders and recipients. From the perspective of shareholders, CSR is only beneficial if the firm is able to successfully compete with non-profits for resources from supporters, and to do so while making a profit. From the perspective of the recipients of the social good, CSR is only beneficial if for-profit firms are able to provide more of the social good than non-profits alone; where this is not the case, the recipients would be better off if the resources given to the firm as a reward for CSR were channeled to non-profits instead.

The competitive advantage of for-profits may be either on the demand side or the supply side. On the demand side, for-profits will have an advantage if they are able to raise additional resources from supporters beyond those raised by non-profits, effectively expanding the pool of resources available in the social goods market. There are several reasons why firms may be able to raise such additional resources by undertaking CSR. First, firms may serve the needs of recipients in ways that are very different from those of non-profits, on account of differences in organizational

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[8] This is especially true where the 'recipients' are natural resources, e.g. animals, ecosystems, natural resources; but may also be the case for human being with little or no economic power over firms.

[9] The question is important even if there are no non-profits in the market, in which case the focal firm has an absolute advantage over non-profits, and we need to consider the source of that advantage.

form (Carroll and Swaminathan, 2000), identity (Ingram and McEvily, 2007), or expertise. Second, firms may raise resources from sources not being tapped by non-profits, e.g., by reaching supporters in new geographies or consumer segments. This may be especially important if some supporters find it more convenient to give resources through for-profits than through non-profits (Bénabou and Tirole, 2010). Third, consumers may differ in their preferences when giving to a social cause versus purchases of goods (Ariely, Bracha, and Meier, 2009; List, 2011). So, for instance, while some consumers may be skeptical of the motives of for-profits (Fosfuri *et al.*, 2014), others may see non-profits as ineffective or inefficient and prefer to give to for-profits, allowing for-profits to raise additional resources for the cause from this second set of consumers.

In addition to these demand side advantages, for-profits may also have supply side advantages, enabling them to raise resources and supply the social good at costs lower than those of the non-profit. As the literature on corporate diversification (Teece, 1982; Hoskisson and Hitt, 1990; Palich, Cardinal and Miller, 2000) has argued, firms may benefit from synergies when using firm-specific but fungible resources across markets (Penrose, 1959; Montgomery and Wernerfelt, 1988; Barney, 1991). Specifically, firms may benefit from leveraging resources and capabilities that are capacity unconstrained or scale free across markets (Levinthal and Wu, 2010), so long as these resources and capabilities are relevant to the markets in question (Capron and Mitchell, 2009; Kaul and Wu, 2015). A similar argument may be made for firms competing in both consumer goods and social goods markets, with firms leveraging the resources and capabilities in their main business to provide social goods at a lower cost than non-profits (McWilliams and Siegel, 2001). These resources and capabilities include technological knowledge and expertise (Markides and Williamson, 1994; Tanriverdi and Venkatraman, 2005) that may enable the firm to produce the social good more effectively, as well as a strong corporate brand or reputation, that may allow the firm to raise additional resources by bundling its consumer and social goods (Barney, 1997; Ye *et al.*, 2012).

Besides advantages in differentiation and cost, for-profit firms may also benefit from information asymmetry between supporters and recipients (Siegel and Vitaliano, 2007), which may allow firms to engage in CSR efforts that are symbolic rather than substantive (Delmas and Burbano, 2011; Kim and Lyon, 2011; Lyon and Maxwell, 2011; Hawn and Ioannou, 2014; Marquis and Toffel, 2014), or cause supporters to overestimate the supply of social goods by the firm. In such cases, for-profit firms may be rewarded by supporters for supplying social goods they do not in fact supply, which is to their advantage, though not to the benefit of recipients. This problem is likely to be more pronounced for for-profits than for non-profits, moreover. Unlike for-profit firms, non-profits have neither the incentive nor the ability to disburse the resources they raise to shareholders (Hansmann, 1996), enabling non-profits "to commit not to cheat" (Glaeser, 2003, p. 1). In addition, non-profits are typically focused exclusively on the supply of the social good, making it easier to track their spending on social goods, relative to for-profits who operate in both social and consumer goods markets. To the extent that the firm's CSR activities are purely symbolic, then, an increase in CSR activity may come at the cost of the supply of social goods to recipients, as supporters redirect resources from substantive non-profit activities to symbolic CSR efforts, crowding out the former. This problem arises because of the separation between supporters and recipients, which creates information asymmetry in the social goods market. The likelihood of CSR being purely symbolic is thus higher, the more severe the information asymmetry, i.e., where supporters have few independent sources of information about recipients, such as when institutions monitoring CSR activity are absent or weak, and where stakeholder activism is muted. Ironically, it is precisely where information asymmetry is high that supporters may be most apt to rely on the firm's brand and reputation in the consumer goods market (Nayyar, 1990, 1993; Dranove and Shanley, 1995; Spiller and Zelner, 1997; Baron, 2007), so that the use of these market resources, while offering the for-profit an advantage, may also exacerbate the problem of purely symbolic CSR.

A FORMAL MODEL OF CSR

In order to consider the joint effect of the three factors listed above—differentiation, cost advantage, and information asymmetry—we develop a formal model of CSR. Our intent is to use this model to consider two related questions: to what extent does CSR benefit shareholders by adding to firm profit? And to what extent, if at all, does it benefit recipients by adding to the supply of the social good? We use a formal model to answer these questions because it offers a more coherent and rigorous way of assessing the simultaneous effects of all three factors above, and allows us to explore how both shareholder and recipient benefits change as we vary the effect of the three factors, and their underlying drivers. Our approach is to formally derive the equilibrium conditions across both consumer and social goods markets, thus ensuring that the firm's shareholders, consumers and input providers have all maximized their objective functions given market constraints, and then examine whether the supply of social goods to recipients has increased or decreased at this equilibrium to determine whether CSR is Pareto optimal.

The model

Consider a for-profit firm that competes in both the consumer goods and social goods markets. For simplicity, we focus on the consumers in the consumer goods market as the supporters of the social good, and model the resources that the firm receives for the provision of the social good (i.e., for undertaking CSR) as a price premium paid by consumers[10]. To model the competition the firm faces in these two different markets, we draw on models of differentiated duopoly (Singh and Vives, 1984; Zanchettin, 2006), which allow us to vary the level of competition in the market while keeping the analysis tractable by modeling a single rival. We extend this model to the case where the focal firm competes in two markets, facing competition from a rival for-profit in the consumer goods market, and from a non-profit organization in the social goods market. The utility function of the consumers

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[10] Our analysis would be similar if these resources took the form of foregone payments such as lower wages to employees or lower returns to shareholders, or involved payments from the government rather than consumers.

across the two markets takes the linear-quadratic form:

$$U = a_f q_f + a_z q_z + \alpha_f s_f + \alpha_n s_n - \frac{1}{2}(q_f{}^2 + q_z{}^2 + s_f{}^2 + s_n{}^2 + 2dq_f q_z + 2\gamma s_f s_n) - p_f q_f - p_z q_f -$$

$$g_f s_f - g_n s_n, \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad \dots(1)$$

where q_f and q_z are the quantities of the consumer good supplied by the firm (f) and a rival firm

(z); p_f and p_z are the prices of the consumer good; s_f and s_n are the quantities of the social good

claimed to be supplied by the firm (f) and a rival non-profit (n); g_f and g_n are the average resources

received per unit of the social good provided by the for-profit and non-profit respectively, taking the

form of a price premium in the former case, and a donation in the latter. Parameters a and α reflect

the level of demand for the consumer good and social good respectively; parameter d $(0 \leq d \leq$

$1)$ reflects the extent of substitutability between the firm's consumer goods and those of its rival,

such that the goods are perfect substitutes if $d = 1$ and entirely independent if $d = 0$; and parameter

γ $(0 \leq \gamma \leq 1)$ similarly reflects the substitutability between the firm's social goods and those of the

non-profit. All quantities are greater than or equal to zero. Market parameters a, α, d and γ are

assumed to be exogenously determined and fixed.

The firm's objective is to maximize its total profit, by choosing either price or quantity in

each market. Note that for-profit firm effectively sells the consumers a bundle consisting of $\frac{s_f}{q_f}$ units

of the social good per unit of the consumer good, with the final price of this bundle including the

price for the consumer good itself, as well as a price premium ω for supplying the social good,

where $\omega = \frac{g_f s_f}{p_f q_f}$ is the ratio of the revenues the firm seeks to earn in the two markets[11]. So, for

instance, when a consumer buys a cosmetic product made without animal testing, she is paying for

the cosmetic itself (the consumer good) as well as a premium for the avoidance of animal cruelty

(the social good). The profit function that the firm seeks to maximize is thus given by

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[11] Given consumer utility the choice of either price or quantity in each market effectively determines the other.
Moreover, choosing either price or quantity in both markets also determines ω.

$$\Pi_f = (p_f(1+\omega)-v)q_f - c_f s_f = (p_f - v)q_f + (g_f - c_f)s_f \qquad \ldots(2)$$

Where v and c_f are the (constant) variable costs associated with production of the consumer good and social good respectively (described in more detail below). Expression 2 reflects the divisibility of the two markets from a demand perspective, with the total profits of the firm being equal to the sum of the profits in the two markets, i.e., $\Pi_f = \varpi_f + \pi_f$ where $\varpi_f = (p_f - v)q_f$ is the profit the firm makes in the consumer goods market, and $\pi_f = (g_f - c_f)s_f$ is the profit it derives from the social goods market. This follows from the assumption that the utilities of the two types of goods to the consumer are independent, i.e., that the utility of a given quantity of social good to the consumer does not increase as the firm sells more of the consumer good. Note that this does not mean that the two goods are produced separately; indeed, in the specific case where the social good is the abatement of externalities from the firm's core business operation, the production of the social good is necessarily integrated with the production of the consumer good. It only requires that the firm be able to choose the level of the social good it provides independent of the level of consumer good it produces[12]. So, for instance, in the case where the social good is pollution control, the activities to limit pollution will be integrated with the firm's core manufacturing activities, but the firm can still decide how much it wants to limit pollution independent of how much pollution it generates (Morgan and Tumlinson, 2015). We also define $\zeta = \frac{\pi_f}{\varpi_f}$ as the ratio of the firm's profits from the two markets. Intuitively, ζ captures the relative importance of the CSR activity to firm's overall profitability.

Consumer goods equilibrium

Given the utility function above, we can derive the equilibrium price and supply of goods in both markets. Consider first the consumer goods market. For simplicity, we assume that the focal

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[12] Of course, where the two production processes are integrated the cost of producing the social good will be linked to the cost of producing the consumer good—a point we taking into account in our section on costs below.

firm and its rival are entirely symmetric[13], i.e., $a_f = a_z = a$ and they both have equal (constant)

marginal cost v, such that $0 \leq v < a$. We assume that the two firms compete on price in the

consumer goods market. The relevant demand curves for the two firms are thus:

$$q_f = \frac{a(1-d)-p_f+dp_z}{1-d^2}; \; q_z = \frac{a(1-d)-p_z+dp_f}{1-d^2}$$

Given these assumptions, we can derive the Bertrand equilibrium price and quantities:

$$p_f^* = p_z^* = \frac{a(1-d)+v}{2-d}; q_f^* = q_z^* = \frac{a-v}{(1+d)(2-d)}$$

In equilibrium the firm makes a profit from its consumer good business that is equal to:

$$\varpi_f^* = q_f^*(p_f^* - v) = \frac{(1-d)(a-v)^2}{(1+d)(2-d)^2} \qquad\qquad \text{...(3)}$$

As the equations above show, if $d = 1$, i.e., if the rival's products are perfect substitutes for the firm,

then the equilibrium is perfectly competitive with each firm setting price equal to marginal cost and

earning no profit in equilibrium. On the other hand, if $d = 0$, i.e., if the rival's products are entirely

independent of the firm's, then each firm operates as an independent monopolist.

Social goods equilibrium

Next, consider the market for social goods. Our treatment of the social goods market differs

from that of the consumer goods market in four important respects, reflecting the special nature of

these goods. First, while we assumed price competition in the consumer goods market, we assume

that competition in social goods will be based on quantity. We believe this better reflects the nature

of competition in the social goods space, where the concept of 'price' does not really apply, and

firms compete on the quantities of the social good they provide.

Second, unlike standard models of duopoly competition where both players are seeking to

maximize their profit, we assume that the two players in the social goods space have asymmetric

objectives, with the (focal) for-profit firm seeking to maximize its profits, while the non-profit

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[13] We make this assumption primarily because our focus in this paper is on the social goods market rather than the consumer goods market. We discuss the implications of relaxing this assumption in the section on extensions below.

organization seeks to maximize the total supply of the social good, subject to the constraint that it makes no losses. The assumption that the focal firm will seek to maximize its profit from the provision of the social good follows from the assumption that the firm seeks to maximize its overall profit (Π_f) and is consistent with our focus on Pareto optimality as well as with prior theoretical work (McWilliams and Siegel, 2001; Bagnoli and Watts, 2003). We recognize that firms may undertake CSR for motives other than profit—though the preponderance of empirical studies documenting an improvement in firm profitability as a result of pursuing CSR (Barnett and Salomon, 2006; 2012; Flammer, 2014a) suggest that this is often not the case—but the point of our formal analysis is to consider whether and how much they can benefit recipients without sacrificing potential profits for shareholders.

Third, as already discussed, the information asymmetry arising from the separation between consumers and recipients in the social goods market will allow the firm to undertake some CSR activities that are purely symbolic. Specifically, we assume that the for-profit firm actually provides $(1 - \kappa)$ units of the social good for every unit of the social good it claims to provide, with the remaining κ units of CSR being purely symbolic, where $0 \leq \kappa < 1$. We assume no such slippage for the non-profit, so that κ is best thought of as the difference between the for-profit and the non-profit in the extent to which their efforts are purely symbolic. κ is assumed to be exogenously determined and is a reflection of the information environment in which the firm undertakes CSR.

Finally, unlike the consumer goods market where we assumed that both firms had equal costs, in the social goods space we model asymmetric costs between the for-profit and the non-profit (though we assume that the two types of firms produce social goods that are of equivalent quality, though non-identical, and therefore have equal demand intercepts, i.e., $\alpha_f = \alpha_n = \alpha$). Specifically, we assume that the constant marginal cost of providing a unit of the social good is c_f for the for-profit and c_n for the non-profit. We define a parameter $\theta = \frac{c_f}{c_n}$, where $0 \leq \theta$. For ease

of notation, we further define $c_n = c$ as the baseline cost of providing the social good, so that

$c_f = \theta c$. While θ technically has no upper bound, we assume that the for-profit always has the

option of outsourcing supply of the social good to the non-profit, and would do so if the cost of

producing in-house was greater than the cost of outsourcing. Specifically, we assume that the for-

profit can outsource to the non-profit for an additional cost[14] $\mu \geq 0$, so that in effect $\theta \leq 1 + \mu$. As

in the consumer goods market, we assume that $0 \leq c < \alpha$, so that positive supply of the social

good by the non-profit is feasible[15].

Given these assumptions, we can derive the equilibrium quantities of the social good

supplied by both the for-profit and the non-profit. From the utility function in (1), we can derive the

following inverse demand functions:

$g_f = \alpha - s_f - \gamma s_n; \ g_n = \alpha - s_n - \gamma s_f$

Note that for the for-profit firm s_f is the amount of the social good it claims (or is perceived) to

provide; it actually provides only $(1 - \kappa)s_f$ of the social good. Remembering that the non-profit is

seeking to maximize supply of the social good subject to a budget constraint rather than to

maximize profit, the best response functions for the two firms are:

$s_f^*(s_n) = \frac{\alpha - (1-\kappa)\theta c - \gamma s_n}{2}; \ s_n^*(s_f) = \alpha - c - \gamma s_f$

Solving these, we get the equilibrium values:

$$s_f^* = \frac{\alpha(1-\gamma) - c((1-\kappa)\theta - \gamma)}{2 - \gamma^2} = \frac{(\alpha-c)(1-\gamma) + c(1-(1-\kappa)\theta)}{2-\gamma^2} \qquad \text{...(4a)}$$

$$s_n^* = \frac{2(\alpha-c) - \gamma(\alpha - (1-\kappa)\theta c)}{2-\gamma^2} \qquad \text{...(4b)}$$

$$g_f^* = \frac{\alpha(1-\gamma) + c((1-\gamma^2)(1-\kappa)\theta + \gamma)}{2-\gamma^2} \qquad \text{...(4c)}$$

$$g_n^* = c \qquad \text{...(4d)}$$

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[14] We discuss the meaning of μ and the conditions under which the firm will outsource in the section on cost below.
[15] We relax this assumption in extensions to the main model below.

Benefit to shareholders

Given these equilibrium prices and quantities, we start by considering the benefit of CSR to the shareholders of the firm, which is equal to the profit the firm makes in the social goods market. As expression 4d shows, the non-profit always provides the social good to the point where its average grant equals its average cost, and makes no profit. For the for-profit firm, the equilibrium profit from the social goods market is given by:

$$\pi_f^* = \left(g_f^* - (1-\kappa)\theta c\right)s_f^* = \left[\frac{\alpha(1-\gamma) - c((1-\kappa)\theta - \gamma)}{2-\gamma^2}\right]^2 = s_f^{*2} \qquad \ldots(5)$$

Thus the benefit to shareholders from CSR increases with the quantity of social goods it supplies, and does so at an increasing rate. As the numerator of the final term in expression 4a shows, this quantity of social goods in turn is driven by the three factors discussed in our theory section above. First, the quantity of social goods the for-profit supplies depends upon the extent of its differentiation from the non-profit, and therefore the amount of additional resources it is able to raise, an effect reflected by the term $(\alpha - c)(1 - \gamma)$. Second, the for-profit firm supplies more of the social good if it enjoys a cost advantage relative to the non-profit (reflected in a lower θ in the second term of the numerator). We return to consider the drivers of this cost advantage in the section on costs below. Third, the firm may benefit by undertaking purely symbolic CSR, receiving premium prices from consumers without incurring the cost of actually providing the social good to the recipients, a possibility reflected by the $1 - \kappa$ term in expression 4a.

Where none of these advantages apply, i.e., where $\gamma = 1$, $\theta \geq 1$, and $\kappa = 0$, there is no benefit to shareholders from CSR, so a profit-maximizing firm does not enter the market and the non-profit acts alone. More generally, we can define a maximum level of substitutability $\bar{\gamma} = \frac{\alpha - (1-\kappa)\theta c}{\alpha - c}$ such that the firm will profit from supplying social goods if and only if $\gamma < \bar{\gamma}$. If $\theta(1 - \kappa) < 1$ then $\bar{\gamma} > 1$, i.e., the firm always profits from CSR if it can claim to supply the social

good at a cost less than the non-profit, even if the social goods provided by the two organizations are perfect substitutes. More generally, $\bar{\gamma}$ reflects the extent to which the for-profit is able to compete directly with the non-profit (due either to its cost advantage or the symbolic nature of its CSR), with the for-profit firm being better able to take on the non-profit, the higher the value of $\bar{\gamma}$.

The three sources of for-profit advantage not only determine whether shareholders benefit from CSR, but also how much they benefit. Specifically, the amount of the social good supplied by the for-profit, and therefore the profit it makes, is strictly decreasing in θ and strictly increasing in κ, meaning that CSR is more profitable for shareholders, the greater the firm's cost advantage and the extent to which its CSR efforts are purely symbolic. The benefit to shareholders is also decreasing[16] with γ for low values of γ, but may start to increase as γ approaches 1, provided $\bar{\gamma} > \frac{3}{2}$. Thus, shareholders benefit more from CSR activities that are differentiated from those of the non-profit, except where the firm is able to successfully compete with the non-profit.

Benefit to recipients

Having discussed the benefits of CSR to shareholders, we now turn to consider its effect on recipients. The fact that the firm provides some quantity of social goods (and therefore benefits it shareholders) does not necessarily imply that recipients are better off. This is because the for-profit's supply of the social good will tend to crowd out the non-profit as it is forced to compete with the for-profit for resources. In the extreme, expression 4b shows that the non-profit exits the market if $\gamma \geq \frac{2}{\gamma}$. More generally, the extent of crowding out the non-profit faces is given by

$\gamma s_f^* = \frac{(\alpha-c)(1-\gamma)\gamma+\gamma c(1-(1-\kappa)\theta)}{2-\gamma^2}$. The extent of this crowding out first increases with γ, but may start to decrease as the for-profit and non-profit become close substitutes, provided the for-profit's

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[16] $\frac{\partial s_f^*}{\partial \gamma} = \frac{2\gamma(\alpha-(1-\kappa)\theta c)-(\gamma^2+2)(\alpha-c)}{(2-\gamma^2)^2}$, which becomes positive at the point where $\gamma = \bar{\gamma} - \sqrt{\bar{\gamma}^2 - 2}$, a point which only occurs for feasible values of γ if $\bar{\gamma} > \frac{3}{2}$.

advantage is small enough to allow the non-profit to hold its own[17].

Whether recipients are better (or worse) off as a result of CSR thus depends upon how much the supply of social goods by the for-profit exceeds (is less than) the crowding out of the non-profit. To evaluate the net benefit of CSR to recipients, we define a measure $W = s_n^* + (1 - \kappa)s_f^* - (\alpha - c)$. This measure captures the net increase in the supply of the social good as a result of the for-profit's entry since $s_n^* + (1 - \kappa)s_f^*$ is the total quantity of social good supplied in equilibrium, and $\alpha - c$ is the quantity of the social good that the non-profit would supply if it operated alone. Replacing values from 4a and 4b and rearranging terms, we get:

$$W = \frac{((1-\kappa)-\gamma)(\alpha(1-\gamma)-c((1-\kappa)\theta-\gamma))}{2-\gamma^2} = ((1 - \kappa) - \gamma)s_f^* \qquad \text{…(6)}$$

This is positive so long as $\gamma < 1 - \kappa$. The basic intuition for this result is that CSR benefits recipients if and only if the resources raised by the for-profit by providing a differentiated offering exceed the resources it redirects to its shareholders by undertaking purely symbolic CSR. Where this is not the case, the total supply of social goods will fall as a result of CSR. Together, expressions 4a, 5 and 6 suggest that the profitability and Pareto optimality of CSR depend upon the extent to which the social good supplied by the for-profit is a substitute for that of the non-profit's (i.e., of γ), with CSR being unprofitable (and therefore not in the interests of shareholders) if $\gamma \geq \bar{\gamma}$, profitable but harmful to recipients if $\bar{\gamma} > \gamma > 1 - \kappa$, and only Pareto optimal if $\gamma \leq 1 - \kappa$. These results are shown graphically in Figure 1, which divides combinations of γ and κ into four zones, depending on whether is γ less or greater than $\bar{\gamma}$ and whether it is less or greater than $1 - \kappa$. In Zone I, neither shareholders nor recipients benefit from CSR, so the firm does not undertake it and recipients are better off as a result. In Zone II, the recipients would benefit if the firm were to undertake CSR, but the firm would make a loss, i.e., shareholders would be worse off. The profit-maximizing firm

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[17] $\frac{\partial \gamma s_f^*}{\partial \gamma} = \frac{(\gamma^2+2)(\alpha-(1-\kappa)\theta c)-4\gamma(\alpha-c)}{(2-\gamma^2)^2}$, which is positive at $\gamma = 0$ but becomes negative by $\gamma = 1$, except where $\bar{\gamma} > \frac{4}{3}$.

therefore chooses not to undertake CSR, foregoing some recipient benefit by doing so. In Zone III, the firm does undertake CSR and increase profit for its shareholders, but does so only at the cost of reduced welfare of recipients. In this zone, then, firms undertaking CSR are doing well but not doing good. Only in Zone IV are both shareholders and recipients better off as a result of the firm's CSR activity, i.e., only then is CSR Pareto optimal.

Insert Figure 1, Figure 2a and Figure 2b about here

Several additional points about this result are worth noting. First, if $\kappa = 0$, i.e., if CSR is entirely substantive rather than symbolic, then CSR is less likely, but always Pareto optimal, with any quantity of the social good the firm supplies benefiting recipients. While the firm cannot harm recipients in this special case, it may still contribute little or nothing to their welfare, even as it realizes substantial profits, if its offering simply substitutes for that of the non-profit.

Second, W is generally decreasing in γ. Specifically, it is strictly decreasing[18] in γ where $\gamma \leq 1 - \kappa$ and $\overline{\gamma} < \frac{3}{2}$, or where $\overline{\gamma} > \frac{3}{2}$ and $\gamma > 1 - \kappa$. If $\overline{\gamma} < \frac{3}{2}$ and $\gamma > 1 - \kappa$, however, then W may no longer decrease with γ in some cases (in particular, if $\overline{\gamma} < 1$, then W goes to zero as s_f^* goes to zero) though it never becomes positive. In other words, so long as CSR is beneficial to recipients, this benefit is greater, the more differentiated the for-profit's offering. Where CSR is harmful to recipients, their loss of welfare increases as the firm competes more directly with the non-profit if the firm tends to crowd out the non-profit, but they suffer little or no loss if the non-profit has the advantage and forces out the for-profit.

Third, it is worth noting that while a positive value of W implies that the recipients are better off as a result of CSR compared to the case where the non-profit supplied the social good alone,

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[18] $\frac{\partial W}{\partial \gamma} = (1 - \kappa - \gamma)\frac{\partial s_f^*}{\partial \gamma} - s_f^*$ which is strictly negative for $\gamma \leq 1 - \kappa$ so long as $\frac{\partial s_f^*}{\partial \gamma} < 0$, i.e. so long as $\overline{\gamma} < \frac{3}{2}$. For $\overline{\gamma} > \frac{3}{2}$, $\frac{\partial s_f^*}{\partial \gamma} > 0$ if $\gamma > 1 - \kappa$, since $\frac{\partial s_f^*}{\partial \gamma}$ is positive for $\gamma > \overline{\gamma} - \sqrt{\overline{\gamma}^2 - 2}$ which is always less than $1 - \kappa$ if $(1 - \kappa)^2 - 2\overline{\gamma}(1 - \kappa) + 2 < 0$, which is always the case for $\kappa \geq 0$ and $\overline{\gamma} > \frac{3}{2}$.

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there is still a value loss to recipients compared to what the supply of the social good would be if the for-profit were to supply at cost, i.e., without making any profit for its shareholders. If the firm were to provide the social good on a non-profit basis, then the total gain to recipients would be $W_{alt} = \frac{\alpha(1-\gamma)-c(\theta-\gamma)}{1+\gamma}$, which is strictly positive for $s_f^* > 0$. The difference between W and W_{alt} reflects the dead weight loss of the supply of the social good by a profit-maximizing firm. Of course, for the firm to provide the social good on a non-profit basis would violate Pareto optimality, since it would mean foregoing profits for shareholders. Still, it is worth keeping in mind that expression 6 does not represent the maximum value the firm can contribute to the welfare of recipients; only what it contributes while maximizing profits for shareholders.

Fourth, the condition for Pareto optimality above is independent of the relative costs of the for-profit firm (θ). Whether CSR is Pareto optimal or not depends only upon the extent to which the for-profit firm's offering is differentiated from that of the non-profit, not on whether it is more or less costly for the firm to provide this offering. The intuition for this result is that in the presence of competition from the non-profit the firm has neither the ability to pass on higher costs of social goods to consumers, nor the incentive to pass on lower costs. To the extent that the for-profit and non-profit are substitutes for each other in the mind of the consumer, any cost advantage the for-profit firm has relative to the non-profit will be passed on to its shareholders as profit.

This is not to suggest that the relative costs of the for-profit in providing the social good have no implications for recipients at all. A final point to note about the result in expression 6 is that so long as $\gamma < 1 - \kappa$, W is strictly decreasing in θ, implying that so long as CSR is Pareto optimal, the benefit from CSR to recipients is greater, the lower the cost to the for-profit of providing the social good. If $\gamma > 1 - \kappa$, however, W increases in θ, so that the loss of welfare to recipients may be greater, the stronger the firm's cost advantage. This result is shown graphically in Figure 2a, which

shows the effect of γ on W for high and low values[19] of θ. It shows that the benefit to recipients is positive for values of $\gamma < 1 - \kappa$, but negative for values of $\gamma > 1 - \kappa$, with lower values of θ (i.e., a greater cost advantage of the firm relative to the non-profit) amplifying both the benefit to recipients in the former case, and the loss to recipients in the latter case.

By way of contrast, Figure 2b shows the firm's profit (i.e., the benefit to shareholders) from providing the social good (π_f^*) for the same values of γ, θ, and κ as in Figure 2a. Two key points of difference between the two figures are worth noting. First, we see a clear divergence between recipient and shareholder interests where θ is low and $\gamma > 1 - \kappa$, with profits rising but recipient benefit falling as γ increases. Second, a greater cost advantage (lower θ) results in consistently higher profits (Figure 2b) but only results in substantially increased welfare if γ is low. Together, the two figures thus show that firms may realize substantial profits from undertaking CSR if they have a cost advantage in doing so, while adding little to, or even detracting from, recipient welfare.

Integration, outsourcing and relative costs

Given the importance of the for-profit's relative cost (θ) in determining the benefit to both shareholders and recipients from CSR activity, we next turn to consider the drivers of costs for both the for-profit and the non-profit. To do so, we begin by considering the drivers of the cost of the non-profit.

We model the supply of the social good as requiring the combination of two inputs: a set of business inputs, and a set of social inputs. By business inputs we mean the resources and capabilities required to produce the social good that are the same as those used to produce consumer goods—these may include manufacturing facilities, technological knowledge or expertise, distribution networks, brands, etc. By social inputs, we mean the resources and capabilities specific to the social

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[19] Specifically, we plot lines for $\theta = 1 + \mu$, which is the outsourcing case and reflects the maximum value of θ, and for $\theta = \theta_{min}$ which is the lowest value θ can achieve given a number of other factors we discuss in our section on costs below. Figures 2a and 2b thus reflect the full range of values θ can potentially take.

nature of the good—these may include social workers, education and outreach facilities, and other specialized investments aimed at meeting a social objective. Given these two types of inputs, we model the production function of the social good as a simple Cobb-Douglas function[20] with constant returns to scale. Thus, for the non-profit:

$$s_n = \tau (B_n)^\eta (H_n)^{1-\eta} = \tau H_n \psi_n{}^\eta \qquad \qquad \ldots(7)$$

Where B and H are measures of the business and social inputs respectively, and $\psi_n = \frac{B_n}{H_n}$ is the ratio of the two types of inputs used by the non-profit. Both τ and η reflect the nature of the production process, and are assumed to be given and fixed, with $\tau > 0$ and $1 > \eta > 0$. τ is a technical constant reflecting the conversion of inputs to outputs; intuitively, τ represents the general efficiency of the organization, with a better managed organization having a higher τ. η is a parameter reflecting the relative importance of business inputs to social inputs in providing the social good; intuitively, it represents the extent to which the provision of the social good requires purely commercial activities. We assume that each unit of the business input costs m_n and each unit of the social input costs e_n, where the subscript reflects the fact that the costs of these inputs will be different for for-profit and non-profit organizations. Since we are treating the non-profit as the base case we assume that $m_n = m$ and $e_n = e$. Given these assumptions, we can derive the optimum (i.e., cost minimizing) ratio of business to social inputs, as well as the average cost of providing the social good corresponding to that ratio as:

$$\psi_n^* = \frac{\eta e}{(1-\eta)m} \qquad \qquad \ldots(8a)$$

$$c_n^* = \frac{1}{\tau} \left(\frac{m}{\eta}\right)^\eta \left(\frac{e}{1-\eta}\right)^{1-\eta} \equiv c \qquad \qquad \ldots(8b)$$

Having derived an expression for the average cost of the social good for the non-profit, we next turn to consider the cost of supplying a comparable social good for the for-profit. As already

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mentioned, we consider that the for-profit can provide the social good in two alternate ways[21]. The firm can integrate the provision of the social good with its core activities, such as when a firm takes steps to reduce the negative externalities from its business operations, or provides a social good or service to those in need directly. Or it can keep the social good at an arm's length from its main business, transferring the resources it raises for the cause to a non-profit which then undertakes the provision of the social good to the recipients. In this case, the firm essentially outsources the actual provision of the social good to the non-profit.

We denote the average cost of the for-profit under integration as c_f^i and under outsourcing as c_f^o. As discussed above, we assume that $c_f^{o*} = (1 + \mu)c_n^* = (1 + \mu)c$, where $\mu \geq 0$ is the incremental cost of outsourcing. μ reflects both the costs associated with identifying and monitoring worthy non-profits, and the additional bureaucratic costs of managing resource disbursements and coordinating CSR activities. Note that it is the nature of the non-profit that makes this outsourcing possible; a for-profit firm supplying to a competitor would want to recoup the opportunity cost of lost profits, so there would be no advantage to outsourcing to such a for-profit firm[22]. The non-profit, however, would be willing to supply the social good to the for-profit at cost.

For the integration case, we assume that the for-profit's production function is identical to that of the non-profit[23], i.e., $s_f = \tau H_f \psi_f^{\eta}$, except that it faces equal or higher units costs of the social input, and equal or lower unit costs of the business input. The higher unit costs of the social input reflect the integration costs that are likely to result from managing "clashes of goals,

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[21] In practice, the for-profit could choose a number of hybrid forms that lie on the continuum between outsourcing and integration, e.g. corporate foundations (Walker, 2013), private-public partnerships (Mahoney, McGahan and Pitelis, 2009), etc. For our present purposes, we model the costs of the two pure forms on the assumption that the cost of the hybrid lies between these two extremes, though future work could use our model to explore these alternate arrangements.
[22] This is also why we ignore the case of the non-profit sourcing from the for-profit. The non-profit could itself outsource to a different non-profit, in which case the relevant production function above would be the production function of the non-profit from which it sources.
[23] In particular, we assume that the for-profit firm has the same τ and η as the non-profit.

objectives, values, cultures, strategies, management styles and operating approaches"(Berger *et al.*, 2004, p.59) when commercial and social activities are placed within the same organization. They may also reflect the costs of social comparison between employees working on commercial activities and those working on social tasks (Nickerson and Zenger, 2008; Larkin, Pierce, and Gino, 2012), who would typically be compensated differently. Specifically, we assume that $e_f = (1 + \lambda)e$ where $\lambda \geq 0$ is a parameter capturing the additional cost of integrating a social activity within a for-profit firm.

Turning to the cost of business inputs, we assume, as discussed above, that the firm will enjoy a cost advantage with regards to these inputs to the extent that it is able to leverage its firm-specific capabilities and resources when providing the social good (McWilliams and Siegel, 2001). The extent of this advantage depends upon two factors. First, it depends upon the relatedness of the firm's activities in the consumer goods market and its social activities, since the capabilities of the firm in the consumer goods market will only benefit it in the social goods market if they are relevant to that context (Capron and Mitchell, 2009; Kaul and Wu, 2015). We model this relatedness between the firm's commercial and social activities as r, where $0 \leq r \leq 1$ and higher values of relatedness mean a stronger connection between the firm's commercial and social activities.

Second, the extent of the firm's advantage will depend upon the extent to which its resources and capabilities are scale-free (Levinthal and Wu, 2010), since it is only if the firm is able to leverage unconstrained or scale-free capabilities and resources, such as brands or technology, that it can deploy these resources and capabilities for the production of the social good without detracting from its core business performance. In order to determine the extent of the firm's scale-free capabilities in its core business, recall from expression 3 that the firm made a non-negative profit in the consumer goods market in equilibrium. For this equilibrium to be sustainable, it must be the case that that firm has some unique resources or capabilities that limit entry by new firms (and/or expansion by its rival), allowing it to sustain the competitive advantage reflected in positive profit. If

this were not the case, then so long as $\varpi_f^* > 0$, other firms would enter or encroach on the focal

firm's market. Moreover, these resources and capabilities must be scale free since they do not impact

the marginal cost of producing an extra unit of output. We can thus define a measure χ of the extent

of the firm's scale free capabilities, and therefore of its competitive advantage, where

$$\chi_f = \frac{\varpi_f^*}{p_f^* q_f^*} = \frac{p_f^* - v}{p_f^*} = \frac{(a-v)(1-d)}{a(1-d)+v} \qquad \qquad \dots(9)$$

χ_f is strictly decreasing in d, and is equal to zero where $d = 1$, consistent with our

interpretation of χ_f as reflecting the extent of a firm's competitive advantage. It follows that χ_f also

reflects the advantage that the firm is able to transfer to the social goods market. Specifically, since a

stable equilibrium in the consumer goods market implies that the marginal cost of a competitor

seeking to imitate our focal firm must be equal to or greater than $\frac{v}{1-\chi_f}$, we assume that $m_f =$

$(1 - r\chi_f)m.$

Taking these values of e_f and m_f and using the same approach we used to arrive at the

optimal input ratio and average cost for the non-profit, we get:

$$\psi_f^* = \frac{\eta e(1+\lambda)}{(1-\eta)m(1-r\chi_f)} = \frac{1+\lambda}{1-r\chi_f}\psi_n^* \qquad \qquad \dots(10a)$$

$$c_f^{i*} = \frac{1}{\tau}\left(\frac{m(1-r\chi_f)}{\eta}\right)^{\eta}\left(\frac{e(1+\lambda)}{1-\eta}\right)^{1-\eta} = (1 - r\chi_f)^{\eta}(1 + \lambda)^{1-\eta}c \qquad \qquad \dots(10b)$$

Given that λ, r and χ_f are all greater than or equal to zero, expression 10a implies that

$\psi_f^* \geq \psi_n^*$, i.e., the for-profit firm generally uses a greater proportion of business to social inputs

than the non-profit when undertaking the provision of the social goods in-house. This result reflects

the fact that for-profits and non-profits will generally develop different solutions to the same social

problem, each playing to its relative strengths. So, for instance, a for-profit firm looking to improve

worker health outcomes may do so by changing its internal work practices or installing new

machinery, while a non-profit working to the same end may focus on agitating for stronger worker

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safety statutes, or providing lower cost health services to eligible workers.

From expression 10b, we can derive the conditions under which the firm will prefer to undertake the production of the social good in-house, or outsource the provision of the social good to the non-profit. The firm will prefer integration to outsourcing if: $c_f^{i*} < c_f^{o*}$, i.e., if

$$(1 - r\chi_f)^\eta (1 + \lambda)^{1-\eta} c < (1 + \mu)c \iff 1 - r\chi_f < \left[\frac{1+\mu}{(1+\lambda)^{1-\eta}}\right]^{\frac{1}{\eta}} \qquad \ldots(11)$$

From (9) and (11), we can derive a minimum value of relatedness for integration

$$\underline{r} = \frac{1}{\chi_f}\left(1 - \left[\frac{1+\mu}{(1+\lambda)^{1-\eta}}\right]^{\frac{1}{\eta}}\right) \equiv \frac{a(1-d)+v}{(a-v)(1-d)}\left(1 - \left[\frac{1+\mu}{(1+\lambda)^{1-\eta}}\right]^{\frac{1}{\eta}}\right) \qquad \ldots(12)$$

Such that the firm will integrate if $r > \underline{r}$ and outsource otherwise. Expression 12 suggests several things about the conditions under which the firm chooses integration over outsourcing. First, the firm will always choose to integrate if the coordination and monitoring costs of outsourcing are substantially greater than the costs of integrating commercial and social operations, specifically if $1 + \mu > (1 + \lambda)^{1-\eta}$. Second, the likelihood of the firm undertaking the provision of the social good in-house is lower, the lower its competitive advantage in the consumer goods market (or, equivalently, the weaker its scale free capabilities in that market). Specifically, where $\chi_f = 0$ (or $d = 1$), the firm always outsources provision of the social good to a non-profit. More generally, we can define a minimum level of competitive advantage $\underline{\chi_f} = 1 - \left[\frac{1+\mu}{(1+\lambda)^{1-\eta}}\right]^{\frac{1}{\eta}}$ such that if $\chi_f < \underline{\chi_f}$ the firm will always outsource the provision of a social good. $\underline{\chi_f}$ corresponds to $\overline{d} = 1 - \frac{v\underline{\chi_f}}{\alpha\left(1-\underline{\chi_f}\right)-v}$, so that firms operating in consumer goods markets with low levels of differentiation (specifically in markets where $d \geq \overline{d}$) will always choose to outsource the supply of the social good, i.e. they will undertake CSR at an arm's length to their core business operations.

Finally, we can derive an expression for θ from 10b:

$$\theta = \min\left((1 - r\chi_f)^\eta (1 + \lambda)^{1-\eta}, 1 + \mu\right) \qquad \ldots(13)$$

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If $r \leq \underline{r}$, then the firm prefers to undertake CSR at an arm's length and $\theta = 1 + \mu$. If $r > \underline{r}$, then the firm integrates CSR into its core business operation and $\theta = (1 - r\chi_f)^\eta (1 + \lambda)^{1-\eta}$.

Substituting from (9) and setting $r = 1$, we can define the lower bound for relative cost as

$\theta_{min} = (1 - \frac{a-v}{a+v})^\eta (1 + \lambda)^{1-\eta}$, which is the lowest relative cost the firm can achieve, even if it is a

monopolist in its core business, and chooses a CSR activity that is entirely related to that business.

More generally, the firm's cost advantage relative to the non-profit in the integration case

increases with the strength of its competitive advantage in the consumer goods market (χ_f), as well

as the relevance of these capabilities to the provision of the social good, which in turn depends on

both the relatedness between the firm's core business and the social cause (r), and the extent to

which the provision of the social good requires business inputs (η). Figure 3 shows the firm's

relative cost as a function of relatedness (r) and the level of substitutability in the consumer market

(d). It shows that θ rises as r falls or d rises, hitting its maximum value of $1 + \mu$ (implying that the

firm is outsourcing) where $d \geq \bar{d}$ or $r \leq \underline{r}$. Only where d is low and r is high do we see a

substantial cost advantage for the firm, with θ tending to θ_{min} as d goes to 0 and r to 1.

Insert Figure 3 and Figure 4 about here

Thus for-profit firms are likely to have the greatest cost advantage compared to non-profits

when they have strong capabilities in their core business, and when they undertake CSR activities

that leverage these business capabilities. Such firms are thus likely to see the largest profits from

CSR. When it comes to the welfare of the recipients, however, such firms will enhance recipient

welfare if their offerings are differentiated, but reduce recipient welfare if they are substitutive.

Moreover, the sensitivity of the quantity of social goods supplied by the for-profit (and therefore the

profit it realizes) to the level of differentiation in the social goods market increases with the relative

cost of the firm[24], the intuition being that the greater the firm's competitive advantage, the more

effectively it competes with the non-profit even when the two are close substitutes. In addition,

while firms with strong competitive advantage will realize greater profits from the provision of social

goods than those without, other things being equal, such firms will also, by definition, realize greater

profits from the consumer goods market. In fact, as the strength of the firm's competitive advantage

falls, its profits from the consumer goods market are likely to fall faster than those from the social

goods market—in the extreme, a firm in a perfectly competitive consumer market ($d = 1$) that is

still able to offer a differentiated social good while outsourcing its production would make all of its

profits from the social goods market.

The implication of the last two points is shown in Figure 4, which shows how the

responsiveness to γ of both the change in recipient welfare (W) and the relative importance of the

profits from social goods (ζ) change with the extent of differentiation in the firm's consumer goods

market (d). It shows that $\frac{\partial W}{\partial \gamma}$ is highly negative but $\frac{\partial \zeta}{\partial \gamma}$ is close to zero for firms with strong

competitive advantage in consumer goods (low d), but for firms with weak competitive advantage

(high d), $\frac{\partial W}{\partial \gamma}$ is relatively less negative, whereas $\frac{\partial \zeta}{\partial \gamma}$ is highly negative. Thus, it is precisely where the

level of differentiation between the for-profit and non-profit is most critical to stakeholder welfare

that it is least important to shareholders. Figure 4 thus suggests a subtler form of the trade-off

between stakeholder and shareholder interests, one where, even if both recipients and shareholders

benefit from CSR, the relative benefit to each changes sharply with the nature of the CSR activity.

Extensions

Having derived and discussed the results of our main model, we now turn to consider some

extensions to the model, specifically considering the implications of relaxing some of our key

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24 $\frac{\partial^2 s_f^*}{\partial \gamma \partial \theta} = \frac{-2\gamma(1-\kappa)c}{(2-\gamma^2)^2} \leq 0$

assumptions. To begin with, consider the case where $c > \alpha > \theta c$, i.e., the case where the non-profit cannot supply the social good because there is not enough demand from consumers to cover its costs, but the for-profit can do so because it has an *absolute cost advantage*. Clearly, this will only be the case where $\theta < 1$, meaning that the firm is able to leverage capabilities from its core business to provide the social good at a lower cost by producing in-house. This would be the case, for instance, for activities that were inherently tied to the firm's existing operations, such as the prevention of human trafficking or the enforcement of socially and environmentally responsible practices in its supply chain, which would be easy for the firm to implement internally, but prohibitively expensive for outsiders to put in place or monitor. In this case the for-profit firm unambiguously adds to stakeholder welfare, since any quantity of social good it supplies is a net addition to the recipient. Note, however, that the quantity of the social good supplied by the for-profit firm in this case is likely to fall substantially short of the socially optimal quantity. Specifically, the firm in this case supplies only $\frac{\alpha - (1-\kappa)\theta c}{2}$ of the social good, when the socially optimal quantity is $\alpha - \theta c$. This gap represents the dead weight loss resulting from both the firm's for-profit nature and the extent to which its CSR efforts are purely symbolic.

A second case in which the for-profit unambiguously adds to stakeholder welfare is the case where the for-profit's and non-profit's offerings in the social goods market are *complements*, i.e., $\gamma < 0$. In such a case the for-profit's entry into the social goods space enables the non-profit to provide more of the social good, so that recipients are unambiguously better off. This might be the case where the entry of the for-profit into a social goods space lends legitimacy to a non-profit operating in that space, so that consumers are willing to not only pay a premium for the for-profit's products, but also to donate more to the non-profit because they now see the cause as more worthy or salient. It might also be the case where the for-profit's solution to the social issue complements that of the non-profit, for instance where the firm donates medicines in conjunction with a non-profit clinic.

A third parameter that deserves more attention is λ, which reflects the integration and comparison costs of undertaking the production of the social good in-house. The more *modular* the production process, i.e., the more the social aspects of the process can be kept separate from the business aspects, the lower the challenge of integration or comparison between business and social inputs, and therefore the lower the value of λ. A low value of λ in turn would mean that the firm would be more likely to integrate social good production, and would realize a greater cost advantage when it did. In the extreme, if social comparisons worked to lower costs for the firm in the consumer market rather than to raise them in the social goods market (e.g., if employees on the consumer goods side were willing to accept lower wages in solidarity with their colleagues on the social goods side) then λ could be less than zero. In that case, the firm would always choose to integrate production of the social good, and would always have a cost advantage relative to the non-profit, even when providing social goods entirely unrelated to their core business, though as we have already seen, the implication of this for stakeholder welfare is ambiguous.

In thinking about the implications of integration, we may also consider the relationship of integration with both the differentiation of the for-profit's offering (γ) and the extent to which its efforts are merely symbolic (κ). While our model assumes, in the interest of generality, that these factors are independent of the choice of integration or outsourcing (and therefore of θ), it is worth considering that these factors may be empirically correlated. In particular, it may be the case that for-profits that integrate their CSR efforts are able to both provide a more differentiated offering (because, as we have seen from expression 10a, they offer a different solution than the non-profit) and undertake more symbolic CSR (because the extent of a firm's CSR efforts may be harder to observe when they are internal to the firm). Clearly, both effects will tend to boost the profitability of CSR, making in-house CSR even more beneficial for shareholders. To the extent that integration makes CSR more differentiated than symbolic (Eccles *et al.*, 2014), it is relatively more likely to boost

recipient welfare; where integration makes CSR more symbolic than differentiated, however, it is likely to leave recipients worse off.

Finally, while our results above focus only on the competitive advantage of the firm in the consumer goods market as reflected by its differentiation from its rival (d), the firm may have a further competitive advantage if it produced a higher quality product than its rival at the same average cost, i.e., $a_f > a_z$. Such a quality advantage of the focal firm would work in exactly the same way as greater differentiation (higher d), i.e., it would imply stronger scale free capabilities (higher χ_f), greater cost advantage (lower θ), higher profits for shareholders (π_f^*), and either more positive or more negative recipient welfare depending upon whether CSR was Pareto optimal or not. Similarly, if the firm's social good offering were of higher quality than that of the non-profits, i.e., if $\alpha_f > \alpha_n$, this would have the same effect on both shareholder and recipient benefit as lower γ.

DISCUSSION AND CONCLUSION

To summarize, our model shows that firms can profitably undertake the supply of social goods if they can: a) raise additional resources by differentiating themselves from non-profits; b) gain cost advantages in the production of social goods by deploying scale free resources and capabilities from their core business; or c) take advantage of the information asymmetry between the supporters and recipients by undertaking merely symbolic CSR. While all three sources of firm advantage result in higher profits for shareholders, only the differentiation advantage unambiguously benefits recipients, while symbolic CSR is likely to leave recipients worse off. There is thus a gap between the benefits of CSR for shareholders and stakeholders, with CSR efforts that crowd out non-profits benefiting shareholders but harming stakeholders, or at best leaving them unaffected.

Whether CSR is Pareto optimal (i.e., whether it benefits both shareholders and stakeholders) thus depends upon the extent to which the for-profit's social good offering is differentiated from

that of the non-profit. Only if the firm's CSR efforts are more differentiated than they are symbolic will they benefit both shareholders and stakeholders. Thus, CSR initiatives are more likely to benefit stakeholders the more they are differentiated from non-profit activities, and the more they are substantive rather than symbolic. Any cost advantage the firm has relative to the non-profit does not, by itself, determine whether CSR is welfare enhancing or destroying, because in the presence of competition from the non-profit cost-differentials are not passed on to the consumer. However, the cost advantage does amplify the welfare effect, increasing the welfare gain if CSR is Pareto optimal, and increasing the welfare loss if it is not.

This cost advantage in turn is determined by the strength of the firm's capabilities in its core business, as well as the relevance of those capabilities to the provision of social goods. Firms with weak capabilities (who have little to differentiate them from their rivals in their core business) or those pursuing social causes where their business expertise has little value, will prefer to undertake CSR on an arm's length basis, raising additional revenues for the cause, but outsourcing the actual provision of the social good to a non-profit. Such firms will have a relatively modest impact on social welfare—they are unlikely to cause much (if any) crowding out of the non-profit and may help expand the pool of resources if they can tap into resources not available to the non-profit. In contrast, firms that possess strong capabilities (who face limited competition in their core business) and choose to benefit from these capabilities by integrating their CSR activities and providing social goods that are closely related to their core business, will generate high profits for shareholders. Such firms may substantially benefit recipients if they offer sufficiently differentiated offerings, but may also cause recipients harm if their offerings substitute and crowd out non-profits.

We believe these arguments make an important contribution to the theory on CSR. While recent work in this area has moved beyond the stakeholder vs. shareholder debate (Friedman,1962; 1970; Donaldson and Preston, 1995) to argue that firms can do well by doing good, the focus of this

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work has been on the benefits of CSR for shareholders, highlighting the role of CSR as a source of sustainable competitive advantage (e.g., Hart, 1995; Porter and Van der Linde, 1995; Porter and Kramer, 2006, 2011), of long-term relationships with key stakeholders (e.g., Jones, 1995; Aguilera *et al.*, 2007; Henderson and Isaacs, 2013), and of utility derived by socially concerned shareholders (Mackey *et al.*, 2007). We extend this literature by considering the understudied impact of CSR on the recipients of these activities (McWilliams *et al.*, 2006; McWilliams and Siegel, 2011), developing a theory that simultaneously considers the benefits to both shareholders and other stakeholders (Porter and Kramer, 2006; 2011; Tantalo and Priem, 2014) and deriving conditions under which their interests are compatible or in conflict. In doing so, moreover, we systematically consider the heterogeneity of CSR activity, developing a framework that maps the nature of the activity and how it is organized, the capabilities of the firm undertaking the activity, and the competitive context in which the activity takes place, to the extent of its benefit for both shareholders and stakeholders.

By simultaneously considering the benefit of CSR for both shareholders and stakeholders, we are able to show that there are conditions under which CSR is Pareto optimal, i.e., the firm can both maximize profits for its shareholders and benefit the recipients of its socially responsible actions beyond what could be achieved by non-profits alone. This is important because it allows us to make a purely economic case for CSR, one that does not depend upon ethical considerations, or require us to give primacy to the interests of one stakeholder over the other. Pareto optimality is also important because it speaks to the sustainability of CSR (Oberholzer-Gee and Yao, 2008): pragmatically, CSR activities that benefit either stakeholders or shareholders at the cost of the other may be hard to sustain, but CSR activities that benefit stakeholders while maximizing returns for shareholders make long-term strategic sense.

By considering the benefits of CSR for both shareholders and stakeholders simultaneously, we also highlight the potential for divergence between the two in cases where CSR is merely

symbolic or where the firm's cost advantage at CSR is simply used to substitute non-profit efforts. In such cases CSR may raise shareholder profits while leaving the recipients of the CSR activity no better or even worse off. At the same time, our model shows that there are also conditions where CSR may benefit the recipients of CSR only at the cost of shareholders. Thus, firms may not always do well or do good when they undertake CSR. Moreover, our formal model suggests that there are subtler tradeoffs between shareholder and stakeholder interests, so that even where both shareholders and stakeholders benefit from CSR, the factors that increase the benefit for one are not the same as those that increase the benefit for the other.

More generally, our paper advances our theoretical understanding of CSR by introducing and formalizing the concept of a market for social goods. While this concept builds on the idea of a market for virtue (Vogel, 2006) it extends that idea in a number of important ways. First, conceptualizing a market for the firm's socially responsible activities draws attention to the fact that there are alternate suppliers of these social goods, with whom the firm must compete to capture resources from supporters (consumers, employees, etc.). In particular, it highlights the role of non-profits as the appropriate counterfactual to CSR, and allows us to speak to the question of how firms add value to global welfare (Oberholzer-Gee and Yao, 2010) while also answering the call from more work examining competition between for-profit and non-profit entities (Mahoney *et al.*, 2009). Second, by modeling a market for social goods we are able to link the outcomes of CSR to conditions in the consumer goods space, mapping the level of competition and the firm's competitive advantage in its core business to the benefits of CSR for both shareholders and stakeholders, and complementing prior work that has examined the effect of CSR on consumer market competition (McWilliams and Siegel, 2001; Siegel and Vitaliano, 2007). Third, modeling the market for social goods enables us to systematically consider the heterogeneity of CSR activities, studying how various cost conditions, the nature of the social cause, and its relatedness to the firm's

core business all interact to determine both how the CSR activity is best organized—i.e., whether it is integrated or outsourced (Boddewyn and Doh, 2011)—and what effect it has on both shareholder and stakeholder welfare. Finally, by integrating all these diverse aspects into a single coherent model, our paper offers a valuable theoretical framework of CSR, one that incorporates insights from existing work on CSR as well as from both competitive and corporate strategy, and that may serve as a foundation for future research in this growing and important area.

In addition to advancing CSR theory, our paper also has several practical implications. For managers of firms, it suggests that they may best serve both their shareholders and society at large by looking for innovative solutions to social problems that are related to their core business and draw on their existing sources of competitive advantage, rather than simply imitating the CSR initiatives of others, or choosing initiatives based on their own preferences (Chin, Hambrick and Trevino, 2013). It also suggests that, ceteris paribus, CSR will be more profitable when it is integrated with the firm's core business operation, and may also be more beneficial for stakeholders in such a case, provided it does not substitute existing non-profits. Moreover, CSR activities may be most beneficial when undertaken from a position of strength by firms with strong capabilities; firms seeking to use CSR to offset their failing performance in their core business may see a substantial boost in relative profits (though limited absolute profits), but will deliver little value to stakeholders.

For supporters of social causes, our paper highlights the need to carefully consider the alternate suppliers (for-profit and non-profit) who serve that cause, and to make an informed choice of the most efficient or effective supplier, being especially wary of purely symbolic CSR initiatives (Marquis and Toffel, 2014). In particular, it suggests that when supporting a CSR initiative, it may be a good idea to consider how the initiative is different from what existing non-profits are already doing. At the same time, it also suggests that supporters should be more concerned with the innovativeness and effectiveness of an initiative than with the intent behind it: given transparency

and accountability, a CSR initiative motivated purely by the desire to profit shareholders may benefit recipients more than a CSR initiative that is well-meaning but imitative of a non-profit.

Finally, from a policy perspective, the study highlights the importance of formal institutions (Short and Toffel, 2010; Marquis and Qian, 2014), self-governance mechanisms (King, Lenox and Terlaak, 2005), third parties including rating agencies (Chatterji and Toffel, 2010) as well as vocal social activists (McDonnell and King, 2013) in making CSR more transparent to supporters. At the same time, it also suggests that informal institutional pressures for firms to adopt CSR practices that conform to existing norms may prove counter-productive if they reduce the differentiation between CSR efforts, increasing the crowding out of non-profits and stifling social innovation.

We acknowledge several limitations of our study. First, we are concerned with making an economic case for CSR, and therefore focus on the Pareto optimality of CSR activities, without delving into the ethical aspects of CSR, that are widely dealt with elsewhere (Maitland, 1994; Windsor, 2001). This is not to suggest that firms do not undertake CSR for ethical or non-economic reasons, nor is it to offer any normative prescriptions. Our paper simply examines analytically the conditions under which a firm may maximize profits to shareholders while benefiting other stakeholders; it does not speak to whether firms do, or should, do so. Second, while we have tried to keep our model as general as possible, our study does not deal with cases of 'implicit' CSR, i.e., socially responsible actions that are mandated by laws and regulations that the firm has no choice but to undertake (Matten and Moon, 2008). Future work could also use our model to study the effect of such laws and regulations, as well as the implications of a variety of other government interventions such as tax policies, subsidies, etc. Future work could also deepen our analysis by extending our model to consider the effects of different utility functions or fixed costs, or by testing the predictions from our model empirically.

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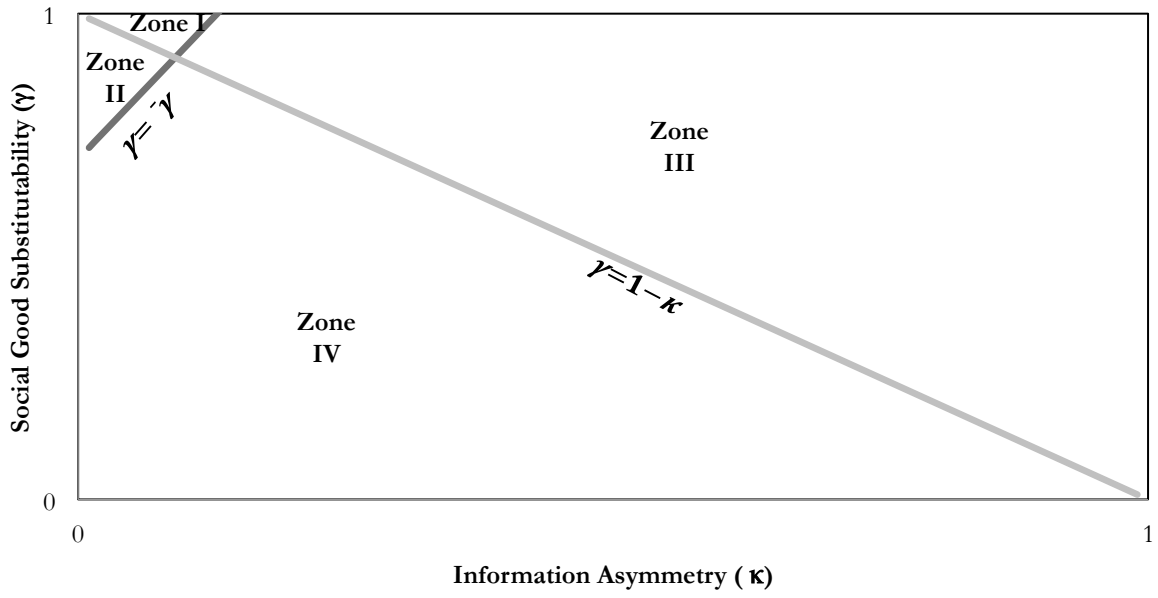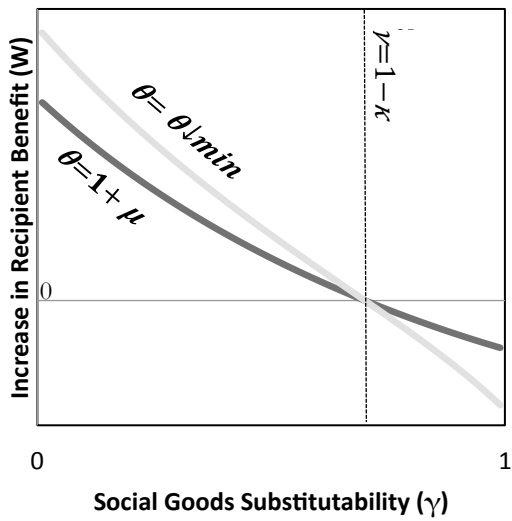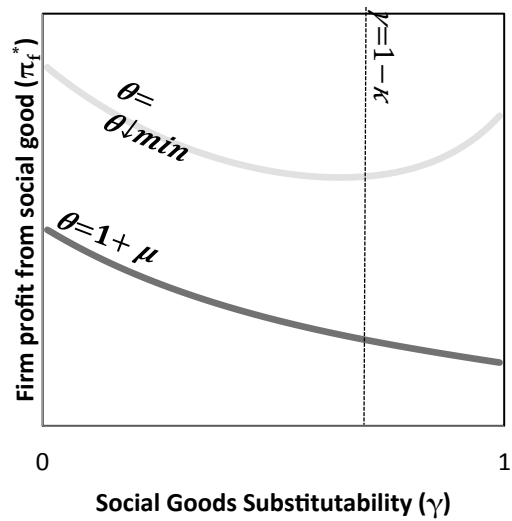
Figure 1

Figure 2a

Figure 2b
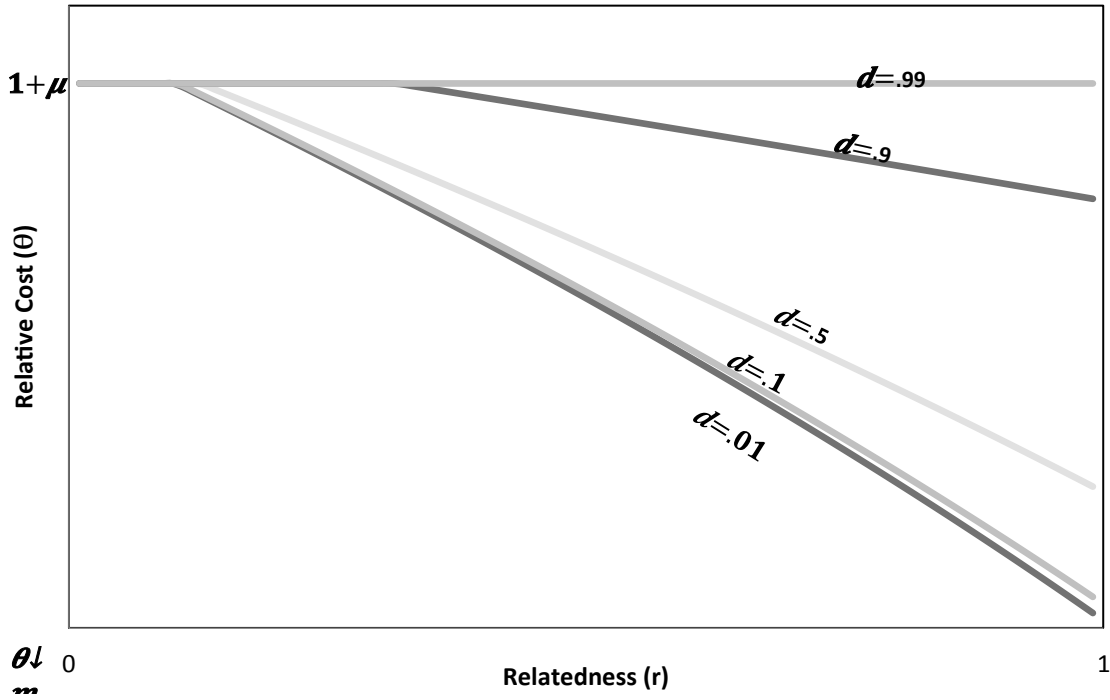
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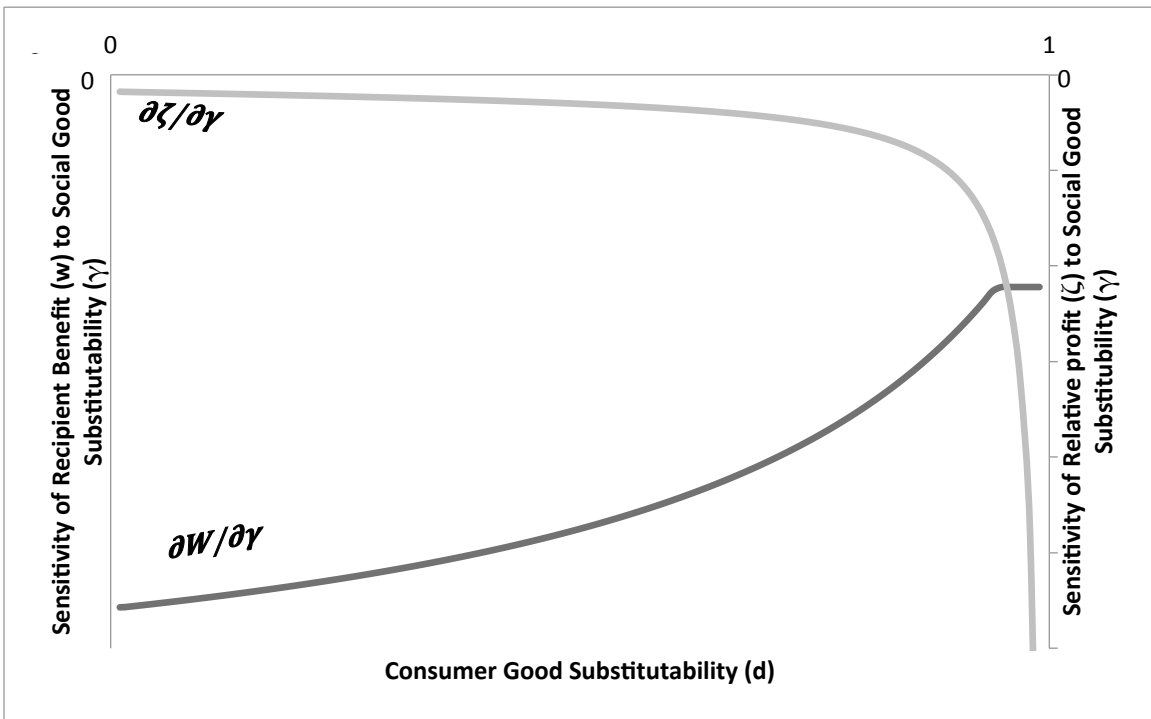
Figure 4

Appendix 1. Summary of Key Notations

Symbol	Definition
a_t	Intercept of demand curve in the consumer goods market; $t = f, z$
B_t	Business input to produce a social good; $t = f, n$
c_t^k	Marginal cost of producing a social good; $t = f, n; k = i, o$
d	Level of substitutability in the consumer goods market; $0 \leq d \leq 1$
f	Subscript for the focal for-profit firm
g_t	Amount per unit that resource providers pay for a social good ('price' of the social good); $t = f, n$
H_t	Social input to produce a social good; $t = f, n$
i	Superscript for integration
e_t	Unit cost of social input in producing a social good; $t = f, n$
k	Superscript for the integrated form ($= i$), outsourced form ($= o$)
m_t	Unit cost of business input in producing a social good; $t = f, n$
n	Subscript for a non-profit organization
o	Superscript for outsourcing
p_t	Price in the consumer goods market; $t = f, z$
q_t	Quantity of the consumer goods supplied; $t = f, z$
r	Relatedness between for-profit organization's commercial and social activity; $0 \leq r \leq 1$
s_t	Quantity of the social good supplied (or claimed to be supplied); $t = f, n$
t	Subscript for for-profit organization ($= f$), non-profit organization ($= n$), or rival firm ($= z$)
U	Utility function
v	Variable cost in consumer goods; $0 \leq v < a_t$
W	Net increase in the supply of social goods as a result of CSR
z	Subscript for a rival firm
α_t	Intercept of demand curve in the social goods market; $t = f, n$
γ	Level of substitutability in the social goods market; $0 \leq \gamma \leq 1$
η	Relative importance of business to social inputs in producing social goods; $0 < \eta < 1$
θ	For-profit's relative cost in the social good market; $c_f = \theta c_n; \theta \geq 0$
κ	Extent to which CSR is merely symbolic; $0 \leq \kappa < 1$
λ	Cost of integrating a social activity within a for-profit firm; $\lambda \geq 0$
μ	For-profit's incremental cost of outsourcing to a non-profit; $\mu \geq 0$; $c_f^o = (1 + \mu)c_n$
π_t	Profit the for-profit realizes by supplying a social good; $t = f$
ϖ_t	Profit the for-profit realizes by supplying a consumer good; $t = f$
$\prod_t$	Total profit the for-profit realizes in the consumer and social goods market; $t = f$
ζ	Ratio of the for-profit's profit in the social goods market divided by that of the consumer goods
τ	Technological constant; $\tau > 0$
χ_t	Profit divided by revenue; measure of scale free capabilities of the firm; $t = f$
ψ_t	Ratio of business to social inputs used to produce a social good, i.e., B_t / H_t; $t = f, n$
ω	Price premium charged by the for-profit for supplying the social good