Corporate Social Responsibility and the Environment:
A Theoretical Perspective

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ABSTRACT

We survey the growing theoretical literature on the motives for and welfare effects of corporate greening. We show how both market and political forces are making environmental CSR profitable, and we also discuss altruistic CSR. Welfare effects of CSR are subtle, and there is no guarantee that CSR enhances social welfare. We identify numerous areas in which additional theoretical work is needed.

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1. Introduction

Companies increasingly desire to appear "green." Toyota and Bank of America have new buildings that are Gold-certified by the U.S. Green Building Council.[1] Dell Computer allows customers to buy carbon offsets when they purchase a new computer.[2] Nike plans to be carbon neutral by 2011.[3] The U.S. Climate Action Partnership---which includes Alcoa, BP and GE ---even lobbies for government regulation of greenhouse gas emissions.[4]

Despite creeping concerns that some of these actions may be mere "greenwash," for the most part they are welcomed by employees, consumers, investors, regulators, and the public. After all, it seems intuitive that voluntary actions internalizing environmental externalities are socially responsible. But to what extent can voluntary action substitute for government mandates? Might the two be complements instead of substitutes? Is it appropriate for the private sector, instead of government, to determine which environmental issues deserve priority treatment? Is it socially desirable for managers to take costly environmental initiatives at the expense of shareholders?

Although the foregoing questions arouse strong opinions, they can be addressed objectively with the help of a guiding theoretical perspective. Fortunately, they are attracting increasing attention from economists, who are in the process of building the theories needed to answer them. In this paper, we offer readers a non-technical view of

[1] For details on the U.S. Green Building Council's program of Leadership in Energy and Environmental Design (LEED), visit http://www.usgbc.org/
[2] For further information, visit http://blogs.business2.com/greenwombat/2007/03/the_corporate_c.html.
[3] See http://www.environmentalleader.com/2007/05/31/nike-plans-to-be-carbon-neutral-by-2011/
[4] For more on this program, visit http://www.us-cap.org/.

the frontiers of theoretical economic research on environmental corporate social responsibility (CSR).[5]

One of the perplexing things about the notion of CSR is that it means different things to different people. We define environmental CSR as environmentally friendly actions not required by law, also referred to as going beyond compliance, the private provision of public goods, or voluntarily internalizing externalities.[6] Not everyone accepts this definition. Milton Friedman, in his provocative 1970 *New York Times Magazine* article, took a much narrower perspective. For Friedman, an action only counts as an act of CSR if it is unprofitable. Socially beneficial actions that increase profits are merely "hypocritical windowdressing." Similarly, Baron (2001) distinguishes CSR (which is driven by altruistic motives and is unprofitable) from "strategic CSR" (which is profitable).[7] In the remainder of this article, when we refer to CSR driven by altruistic or moral motivations, we will use the term altruistic CSR.

The theoretical literature on environmental CSR addresses two main questions. First, what drives firms to engage in CSR? Second, what are the welfare effects of CSR?

Answers to the first question, which we discuss in section 3, can generally be categorized as either market forces or political forces. Market forces include "win/win" opportunities to cut costs by improving the efficiency of resource use; a growing tide of green consumers willing to pay extra for environmentally-friendly products; labor market advantages with employees who have green preferences; and a reduced cost of capital

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[5] For a more rigorous treatment of many of the issues discussed here, especially the interactions between environmental CSR and public policy, see Lyon and Maxwell (2004a).

[6] Hay, Stavins and Vietor (2005) present a lively series of papers and commentaries that reflect varying notions of CSR.

[7] For a detailed discussion, see Baron (2001). Baron uses the term "corporate social performance" to mean what we mean by CSR here: socially or environmentally friendly actions that go beyond what is required by law.

from green investors. Political forces can take the form of regulatory threats, enforcement pressures, or boycott threats from non-governmental organizations (NGOs).[8]

The welfare effects of CSR are more difficult to establish than positive economic explanations, and have received less scholarly attention. Nevertheless, the literature provides some important insights into the welfare effects of strategic CSR, and is beginning to address the welfare effects of altruistic CSR.

The rest of the paper is organized as follows. Section 2 introduces the notion of the policy life cycle, which we find a helpful construct for understanding the causes and consequences of CSR. Section 3 surveys positive theories of CSR behavior, while section 4 reviews the welfare effects of CSR. Section 5 concludes with an assessment of future research needs.

2. The Policy Life Cycle

The public policy life cycle is a very useful framework for corporate issues management, and is commonly used in textbooks on the relationship between public policy and business strategy.[9] Four stages are typically identified. First is the *development* stage, in which events occur that lead various segments of the public to become aware that a problem exists. Second comes *politicization*, in which the issue acquires a label, opinion leaders begin to discuss the problem in public, the news media become more active in covering the issue, and interest groups begin to mobilize around the issue. This stage is sometimes capped by a dramatizing event that crystallizes the nature of the problem for the general public, setting the stage for legislative action. The incident at

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[8] Like Baron (2006a), we treat NGOs as fundamentally political actors, even when they use tactics such as boycotts that operate through markets.

[9] See, for example, Baron (2006a).

Three Mile Island and the discovery of a hole in the ozone layer represent such events, which strengthened the hand of interest groups pressing for action on these issues. Third is the *legislative* stage itself, in which political leaders create new laws responding to the issue. For example, following the dramatizing events mentioned above, politicians tightened regulatory standards for nuclear plants and negotiated the Montreal Protocol on ozone-depleting substances. Fourth comes *implementation*, in which administrative agencies flesh out the details of the new legislation and regulators, police and the courts enforce it. The effects of environmental CSR differ at different points in the policy life cycle. For example, CSR may preempt legislation if conducted early in the life cycle, while later in the cycle it may be useful as a way to influence the stringency of regulations that cannot be preempted.[10]

The traditional policy life cycle assumes that policy pressures are translated through government. However as Baron (2001) has noted, non-governmental organizations (NGOs) are increasingly abandoning the legislative process in favor of direct engagement with corporations. In this view, the third and fourth stages of the policy life cycle are replaced by what Baron calls "Private Politics." Rather than legislation occurring in the third stage, NGOs make direct demands on corporations for changes in their social or environmental activities. An NGO may either issue threats (such as boycotts or negative media campaigns), or promise rewards (such as endorsements) to induce a company to accede to its demands. If the company refuses, the NGO attempts to follow through on its threats. The final stage of the policy life cycle in a setting of private politics involves some resolution of the NGO-firm dispute. This usually involves bargaining between the two sides, in which the firm agrees to undertake

[10] For a detailed discussion of the policy life cycle, see Lyon and Maxwell (2004a), chapter 2.

improvements in its environmental and/or social profile and in return the NGO agrees to stop inflicting harm on the firm.

In the remainder of this article we draw on a variety of theoretical models of important aspects of corporate CSR activities. Each model combines a representation of industry structure with a representation of a particular aspect of the public or private political process. Throughout, we emphasize the importance of NGO pressure as a determinant of public or private political outcomes. In the public political realm we also emphasize the need for political decision makers to balance pressures from a variety of groups, and in the private political arena we emphasize that the power of private NGO action depends on the support the NGO obtains from the broader public.

While each model yields its own unique insights, they act as complements rather than substitutes in the study of CSR activities. We take the policy life cycle as a convenient organizing structure, but it also provides insight into how different aspects of the models may be combined in the quest to develop an over-arching framework for understanding environmental CSR.

3. Positive Theories of Environmental CSR

Numerous explanations have been advanced for the recent surge of environmental CSR. Perhaps pollution is symptomatic of broader production inefficiencies, and pollution reduction and cost reduction go hand-in-hand to create "win/win" opportunities in today's economy. Perhaps a new generation of "green" consumers is willing to pay higher prices for clean products, and firms are simply responding to this shift. Or perhaps business has become savvier about the workings of the political system, taking pro-active steps to avert political conflict rather than reacting to public pressure after the fact. In our view, all of these factors matter, and we review them in turn below.[11]

3.1 Market Forces and Environmental CSR

Green consumption is a growth business, from organic food to organic cotton shirts to hybrid cars and ethanol fuel. Arora and Gangopadhyay (1995) were the first to provide a rigorous economic explanation of this phenomenon, applying a standard model of vertical product differentiation to capture consumer heterogeneity in willingness-to-pay for environmental attributes. In this setting, one firm has incentives to increase its quality so as to relax price competition between itself and a rival. The notion that green products command a price premium has since been incorporated in numerous other models that study additional aspects of environmental CSR.[12]

As one might expect, the level of competition in a market affects the amount of environmental CSR firms undertake. As shown by Bagnoli and Watts (2003), if the market for "brown" products is highly competitive, then its prices are low and fewer consumers wish to buy "green" products. If the brown market exhibits market power, however, then consumers switch toward the green good.

Consumers often rely on product labels to determine the environmental quality of the products they purchase, but they do not necessarily know exactly what a given label means. When there is uncertainty about the standard that lies behind a label, then consumers tend to give firms less credit for having a label, and may also give the benefit

[11] For a detailed analysis of the drivers of environmental CSR, see Lyon and Maxwell (2004a).
[12] These include the political economy model of Lutz, Lyon and Maxwell (2000), the labeling models of Feddersen and Gilligan (2001) and Heyes and Maxwell (2004), and the private politics model of Baron and Diermeier (2007).

of the doubt to firms that do not have the label. Harbaugh, Maxwell and Roussillon (2006) show that both of these factors reduce firms' incentives to label their products; thus uncertainty about standards weakens green consumer-motivated CSR activities.

There has been much popular discussion of the role of green investors in driving companies to adopt greener practices. There is a small literature on socially responsible investing, including Graff Zivin and Small (2005) and Baron (2006b, 2007). In these papers, investors allocate their wealth between savings, charitable donations or shares of a socially responsible firm. If some investors prefer to make their social donations through bundled corporate activities (perhaps in order to avoid taxation of corporate profits), then CSR can profitably attract investors. Baron (2006b) shows that the value of the firm is less than it would be without CSR, but because its investors derive value from CSR, its shares trade at a price above what they would fetch if no investors cared about CSR. Baron (2007) goes on to show that when CSR expenditures are fully anticipated by investors, the initial public offering of stock is offered at a price discount, with the cost borne by the entrepreneur who creates the firm, not shareholders. Nevertheless, since the value of the firm is less than it would be without CSR, the firm may still be vulnerable to a takeover in the capital market. For non-strategic CSR to be sustainable, shareholders must refuse to tender their shares to takeover artists.

The labor market also provides incentives for CSR. Most employees want to feel good about the company where they work, and want to be able to tell their children they are working to make the world a better place. One way companies try to attract and retain the best employees is by making environmental commitments that are aligned with those employees' environmental values. Frank (2003) surveyed Cornell graduates and found many are willing to accept substantially lower salaries from firms offering socially responsible employment. If such morally-motivated employees are also less likely to engage in shirking on the job, then companies can profitably screen for them by adopting socially responsible practices. Brekke and Nyborg (2004) find that if abatement is inexpensive, the gains from labor market screening outweigh the costs of abatement, and brown firms may be driven from the market, even when there is a substantial share of workers who have no moral motivation.

In developing countries with weak regulatory systems, international markets may be the strongest force for environmental improvement. For example, Colombia is a major exporter of cut flowers to the United States and Europe. Customers in the EU have begun to choose suppliers based in part on their practices with regard to the use of pesticides. This shift in market demand may well play a stronger role than the nation's incomplete and imperfectly enforced pesticide regulations. When downstream retailers require their suppliers to achieve ISO 14001 certification, this can have a large impact on environmental performance upstream.

In addition to the demand-side market forces mentioned above, there are also supply-side forces encouraging firms to adopt greener production. Porter and van der Linde (1995) provide numerous examples of firms that increased their resource use efficiency, reducing pollution and costs at the same time. The presence of waste does not mean that pollution abatement has been transformed into a strictly negative cost enterprise, however. There is likely nothing unique about environmental efficiency improvements as a way to cut costs. Indeed, it is tempting to postulate an "*Equal Slop Hypothesis*:" businesses can reduce costs just as effectively by rooting out waste in human resources, outbound logistics, or any other business function as they can by improving environmental efficiency. Nevertheless, the presence of X-inefficiency (Leibenstein 1966) means that environmental regulations may often cost firms less than they initially expect.

Even when there are no cost-reduction opportunities, firms in imperfectly competitive markets can profit by colluding to reduce their production of “brown” products, as shown by Ahmed and Segerson (2007).

The growing attention to corporate environmental initiatives in the business press strongly suggests that market forces---in the markets for products, capital, and labor---are increasingly powerful drivers of corporate environmental improvement. If market participants had complete information about waste reduction opportunities and transaction costs were zero, then markets would bring about all socially beneficial pollution abatement without any government intervention. In practice, however, these conditions are unlikely to hold and market-driven emission reductions are unlikely to be sufficient to achieve the social optimum. As a result, politics and government regulation will remain key forces driving environmental improvement.

3.2 Public Politics and Environmental CSR

Collective action is often required to solve environmental problems, and public politics remains the key venue for most collective action to protect the environment. We use the policy life cycle to organize theoretical insights about environmental CSR.

3.2.1 Identification

In the literature, there is a key distinction between models with complete information and models of incomplete information. Within the policy life cycle, the Identification phase is primarily concerned with gathering and disseminating information, and virtually requires the use of incomplete information models. To the best of our knowledge, however, there is as yet no theoretical work in economics on the Identification phase of the life cycle.

3.2.2 Politicization

We distinguish two key aspects of the Politicization stage: political entry by organized groups, and the influence game that ensues once all groups have entered (Peltzman 1976). *Organizing costs* include the costs of gathering information on environmental issues, learning about the costs and efficacy of various policy alternatives, and coordinating with other individuals on a common strategy for achieving political influence. These can be viewed as the fixed costs involved in preparing to enter the political arena. *Influence costs* are the marginal costs incurred after a group has decided to enter, and include campaign contributions, programs to mobilize public opinion, and lobbying costs.[13] One of the most compelling aspects of environmental CSR is that it can economize on both types of costs.

Preempting Regulatory Threats

[13] Economists have not devoted much attention to the details of how public opinion is created, but Yu (2005) and Baron (2005) offer insightful models that lay the groundwork for future research.

One important reason industry invests in CSR is to preempt advocacy groups from organizing to enter the political arena and press for regulation. Because organizing and lobbying is costly for advocacy groups, industry may be able to preempt regulation with a lower level of abatement than would be required through the political process. Maxwell, Lyon and Hackett (2000) formalize this notion, and identify conditions under which firms can profitably preempt regulatory threats. When organizing and lobbying costs are low, preemption may be excessively costly, because advocacy groups cannot commit to refrain from entering the political process after industry makes voluntary reductions in emissions. With higher organizing costs, however, preemption becomes profitable, and beyond that point voluntary abatement declines with organizing costs.

It is easy to see why industry and advocacy groups prefer to avoid the high costs of working within the regulatory system. Interestingly, regulators may share the desire to reduce the costs of regulation, and may negotiate "voluntary agreements" (VAs) with industry to circumvent the traditional regulatory process. Since industry is not required by law to participate in such programs, they also form a part of environmental CSR.

When regulators bargain with industry, one might argue that the regulator can credibly commit to block passage of threatened legislation if a VA is reached. Segerson and Miceli (1998) present a model based on this notion, and find that assuming the VA has lower transaction costs than government regulation, both industry and government benefit from signing the agreement.[14]

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[14] In Segerson and Miceli (1998), the probability of legislation is exogenous. Glachant (2005) extends their analysis to determine this probability endogenously through a political influence game played between industry and a green advocacy group. Like the earlier analysis, Glachant (2005) finds that a negotiated agreement enhances social welfare. Glachant (2007) extends the analysis further to the case where government observes industry compliance with the agreement with a detection lag. As a result, industry can use a voluntary agreement to delay compliance with threatened legislation.

In the developing world, there may be considerable uncertainty regarding when regulators will have the capacity to enforce environmental laws that are on the books. When firms take this uncertainty into account, government may use a VA to accelerate environmental improvement. Blackman, Lyon and Sisto (2006) find that a VA is only socially desirable when the probability of enforcing mandatory regulations is low, in contrast to the results of Segerson and Miceli (1998), who find that a VA is always socially desirable, regardless of the probability of enforcing mandatory regulation.

When industry groups negotiate with government, free-riding becomes a problem and firms may disagree regarding how to allocate the burdens of the agreement. Any game that requires industry coordination to cut emissions typically has a multiplicity of equilibria, each allocating the burden of emissions reduction across firms in different ways. Although there is a substantial economic literature on equilibrium refinements, it has not led to a consensus on a single best approach to eliminating multiple equilibria.[15] Nevertheless, in the area of CSR, Dawson and Segerson (forthcoming) and Manzini and Mariotti (2003) have applied refinements to issues of industry negotiation of voluntary agreements. Dawson and Segerson (forthcoming) apply the approach of d'Aspremont et al (1983) to argue that we should expect negotiated agreements to be entered into by only a subset of the total population of the industry, as is indeed often observed in practice. In contrast, if the negotiation process for some reason requires consensus from all firms in the industry, Manzini and Mariotti (2003) show that the outcome of the negotiations is controlled by the firm with the highest cost of abatement, which tends to produce low levels of CSR.

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[15] For a good introduction to equilibrium refinements, see Fudenberg and Tirole (1991).

Most of the business/government partnerships offered by the U.S. Environmental Protection Agency do not fit the foregoing analysis. These "public voluntary programs" (PVPs) are typically initiated by government when political conditions preclude any credible regulatory threat. Most of U.S. climate policy to date has been conducted through these programs, which include the Energy Star program, Natural Gas Star, Climate Challenge, etc.[16] These programs typically offer firms technical assistance and favorable publicity if they adopt environmentally friendly practices. Hence, PVPs offer industry small "carrots" (subsidies) when big "sticks" (regulatory threats) are unavailable.

PVPs are inherently weaker instruments than mandatory regulations such as environmental taxes, standards or cap-and-trade programs (Lyon and Maxwell 2003). Since PVPs are voluntary and involve only carrots, they cannot force inefficient, dirty firms out of business, unlike a mandatory program. Additionally, PVPs deplete public coffers, rather than contributing to them as would an environmental tax. Furthermore, if industry believes a subsidy program is possible, it has greater incentives than usual to lobby against mandatory regulation. For these reasons, we should have only modest expectations for PVPs. Nevertheless, PVPs may be useful programs when stronger measures are politically infeasible.

As PVPs have grown in popularity over the past decade, they have attracted increasing attention from researchers. Ironically, despite the growing use of PVPs, most empirical research has concluded they are ineffective. Morgenstern and Pizer (2007) review many of the best known PVPs, finding little evidence that participants in the programs achieved substantially more environmental improvement than non-participants.

[16] See Lyon and Maxwell (2004a) for a thorough discussion of these programs.

However, Lyon and Maxwell (forthcoming) argue that most PVPs should be viewed as information diffusion programs, whose goal is to change overall industry behavior, not just the behavior of participants. Thus, a successful PVP would diffuse information about pollution reduction opportunities throughout an entire industry. If so, then empirical work that simply compares the performance of participants and non-participants is unlikely to uncover the true value of the program.

3.2.3 Shaping Future Regulations

Despite industry's best efforts, not all environmental regulations can be preempted. Even so, environmental CSR can pay dividends by helping industry shape the regulations that are ultimately implemented. In particular, CSR investments can constrain the regulator's options, or send a signal about the costs of meeting new regulations.

Industrial organization teaches that a firm's sunk investments constrain its subsequent actions, and hence the actions of its competitors. This insight applies to the regulatory arena as well. Lutz, Lyon and Maxwell (2000) show that corporate leaders may strategically commit to modest environmental improvements that constrain regulators' ability to set tough standards. A firm's sunk investments make it very costly to re-tool and achieve more substantial environmental gains, so if the regulator cares about industry profits as well as environmental performance, he will set a weak standard so as not to dissipate profits too much. The disquieting implication is that environmental CSR leadership does not necessarily have beneficial results for society.

When the regulator lacks information about the costs of alternative policies, CSR can play an important informational role. For example, as shown by Denicolo (2003), a firm's voluntary adoption of a clean technology can signal to the regulator that the cost of adoption is low. Consequently the regulator, in balancing profits, consumer welfare, and environmental externalities, may find it socially desirable to mandate the adoption of the clean technology.[17]

Of course, firms also use the familiar tools of campaign contributions and lobbying to influence future regulations. To date, the relationship between CSR and these tools of corporate public affairs management has not received much attention, but this may be changing. Beloe, Harrison and Greenfield (2007) argue (p. 1) that because companies have not been sufficiently transparent about their public affairs activities, "other stakeholders — namely the mainstream investment community — are showing more involvement in assessing the public affairs activities of companies [and]… and in some cases are now driving measurement of business activity in this area."[18] There are many challenges in developing a theory of socially responsible corporate political influence activities, not the least of which is defining what forms of political speech should be protected under the First Amendment and what forms should be deemed undeserving of protection.

3.2.4 Deflecting Monitoring and Enforcement

[17] Innes and Bial (2002) show how a pro-active government can strengthen incentives for firms to reveal their environmental innovations, using a combination of policy instruments.
[18] One of the most egregious examples of opaque lobbying practices is "astroturf lobbying," in which companies covertly foot the bill to create artificial "grassroots" political lobbying organizations. This form of lobbying has been studied in a CSR context by Lyon and Maxwell (2004b).

Even after regulations are promulgated, they are unlikely to have much impact on corporate behavior unless government undertakes costly monitoring and enforcement activity. Enforcement agencies are chronically underfunded, which means that officials must carefully allocate their enforcement resources. As a result, companies (or plants) viewed by regulators as socially responsible are likely to be monitored less frequently. Harrington (1988) argued that regulators can leverage their enforcement resources by targeting firms with poor environmental performance records. If CSR activities are correlated with other aspects of a firm's environmental performance, then it is a small step to argue that regulators should target firms that are less active in CSR. Indeed, Maxwell and Decker (2006) show that if a firm voluntarily makes an observable investment in pollution control that lowers its marginal cost of abatement, then it is optimal for the regulator to monitor the firm less frequently.[19]

3.3. Private Politics and Environmental CSR

NGOs play an increasingly influential role in influencing CSR. Thanks to the Internet, NGOs now experience significantly lower internal and external communication costs. The former lowers the cost of bringing together like-minded individuals and groups to plot complex strategies that can bring attention to the group's concerns. The latter lowers the costs of informing the public about objectionable corporate activities, and mobilizing the public for action. Nevertheless, since activism produces a public good it remains subject to free-riding, and thus will generally be under-provided.

[19] Sam and Innes (2007) find empirical support for this theory with respect to toxic waste emissions.

In the realm of private politics, an NGO targets a firm to induce it to undertake environmental or social change. The NGO's goal is perhaps best thought of as the optimization of environmental services subject to constraints, the most important of which is retaining the support of the general public, as this support is the source of the NGO's power.

Mitigation of the objectionable activity is presumably costly to the firm; otherwise the NGO would simply need to request the change in order to have the firm comply. In order to induce compliance with its demands, the NGO may take an adversarial approach, threatening harm for non-compliance, or take a cooperative approach, offering the firm a reward for compliance. As mentioned above, the firm might at this point decide to self-regulate by taking voluntary actions in order to avoid a threat of harm. Alternatively, the NGO may participate in firm self-regulatory efforts, as part of the provision of a promised reward. In general, as shown by Baron and Diermeier (2007), the NGO prefers to deliver harm rather than rewards, since harm decreases the level of the targeted activity while rewards tend to increase it, which generally runs counter to the objective of the NGO.

3.3.1 NGOs as Adversaries

If the NGO chooses the adversarial path and the firm rejects the NGO's demand, the NGO will attempt to deliver its threatened harm, e.g. disseminating negative propaganda about the firm, or launching a consumer boycott of the firm's products. These activities are designed to negatively impact sales, employee morale, corporate recruitment efforts, etc. These same tactics may also be used against the firm's suppliers to induce them to cease dealing with the firm, thus bringing about indirect pressure on the firm to step up its CSR activities.

Resolution of the NGO campaign can occur in three ways: 1) The firm remains intransigent and the NGO decides to cease its campaign, 2) The firm acquiesces to the NGO's demands, or 3) The firm and the NGO negotiate a mutually acceptable level of CSR activity and the NGO stops its campaign.

Within this setting, actions that seem altruistic may be indistinguishable from strategic CSR. Interestingly, even an altruistic firm that voluntarily undertakes the socially optimal level of mitigation is not necessarily protected against adversarial NGO demands. Because the NGO is concerned only with environmental quality, it will pressure firms to reduce pollution beyond the level that balances the costs and benefits of abatement. In some cases, the altruistic firm may be a more attractive target for the NGO than a profit-maximizer, since it has less incentive to resist the NGO's demands.

The targeting strategies of NGOs are fascinating, and play a critical role in shaping strategic CSR behavior, but they have just begun to receive academic attention. A pioneering example is the work of Baron and Diermeier (2007), who develop a theory of adversarial NGO campaigns.[20] They show that the NGO prefers to pick issues that have high social value and target firms that are likely to be responsive to the campaign, i.e., have low costs of complying with the NGO's demand (this will reduce the amount of resources needed to carry out a successful campaign). NGOs will not necessarily target the worst social or environmental offenders, as these firms may be the most intransigent. As mentioned above, firms that have undertaken some CSR activities, for altruistic or strategic reasons, can find themselves targets of NGOs that view them as weaker targets.

[20] The findings we discuss in this and the next two paragraphs all come from this paper.

The NGO prefers to target firms sequentially rather than targeting multiple firms at the same time. Sequential targeting lowers the cost consumers face in participating in the boycott, allowing them to switch to a supplier of a similar product rather than giving up the product category altogether. Sequential targeting also reduces the NGO's campaign costs and allows it to use interim successes to raise funds.

Potential targets may use two very different strategies to deflect the NGO. First, they may increase their CSR activities if the NGO can commit not to retarget the firm after its makes these improvements. Such commitment ability may arise if self-regulation makes the pursuit of an alternative firm more desirable. Second, they may develop a reputation for being resistant to NGO demands, to induce NGOs to target alternative (weaker) firms. This may have implications for public politics to the extent that intransigence in the public arena enhances a firm's general reputation for resisting social and environmental changes.

A boycott is costly for the firm in terms of lost sales and is costly for the NGO since it must expend resources conducting the campaign, raising the question of why bargaining should not always preempt a boycott from taking place. However, Innes (2006) shows that an NGO may be willing to conduct a long-term boycott against a dirty firm in order to shift consumer demand towards a cleaner rival. The dirty firm will resist acquiescing to even a long-term boycott if the market gains from complying with the NGOs demands are small, e.g. if the dirty firm is small or if price competition between similar products would be too fierce.

While firms face growing NGO pressure to undertake CSR activities, they also face growing demands for transparency, that is, for full disclosure of their environmental profiles. This pressure is stronger when stakeholders are worried about environmental impacts and when an NGO boycott threatens to be very costly. Sinclair-Desgagne and Gozlan (2003) show that when the NGO wields a big threat, it can induce green firms to distinguish themselves by issuing a detailed CSR report. If the NGO threat is weak, however, then both green and brown firms release only moderately informative CSR reports. The NGO then conducts its own audit of the firm, and initiates a boycott if the firm is found to be brown.

As firms increasingly strive to appear green, NGOs have become more vigilant about perceived corporate hypocrisy, which NGOs often label as "greenwash." Lyon and Maxwell (2007) develop a theory of greenwash as selective disclosure, in which an NGO may attack a firm for promoting green activities if it finds that the firm also suppressed information about environmentally harmful activities. Firms with poor reputations fully disclose: they gain much from trumpeting a success, and lose little by hiding a failure (since they are already expected to fail); thus, there is little value in risking public backlash by refusing to disclose. At the other extreme, firms with excellent reputations disclose nothing: they gain little by disclosing successes (since they are already expected to succeed), and lose a lot by disclosing a failure; thus, there is little value in risking public backlash by disclosing a success. For firms with moderate reputations, however, selective disclosure is attractive: disclosing a success can produce a significant improvement in public perception, and withholding information about a failure can prevent a significant negative public perception; thus, they are willing to risk public backlash by disclosing only partially.[21]

[21] Lyon and Kim (2007) provide empirical evidence of greenwashing by firms in the electric utility sector.

3.3.2 NGO as allies

Most environmental CSR involves changes to a firm's production process. Consequently, when viewed through the lens of CSR, a corporation's products can be classified as credence goods, that is, goods whose relevant attribute, in this case environmental or social responsibility, is not discernable even after consumption. If firms wish to obtain credit for their CSR activities though increased prices or sales, or possibly even through heightened employee morale, public recognition is necessary. While some firms may have reputations that make their statements credible to the public, this is likely the exception rather than the rule. Consequently, firms often need to seek third-party verification of their CSR efforts. For this purpose, NGOs make excellent potential corporate allies, since their credibility with the public is much higher than that of a typical corporation. One recent poll found that 55% of Americans trust NGOs, while less than 30% trust CEOs of major corporations.[22]

NGOs can use their credibility with the public to certify the existence of environmental or socially beneficial process changes. The literature has focused on two issues: 1) How NGOs can credibly convey information to the public and 2) How the presence of NGOs may affect government decisions to set minimum quality standards on an industry.

Even though NGOs are generally viewed as trustworthy, they may not always be able to credibly vouch for the greenness of corporate offerings. Assuming NGOs seek to minimize environmental damage, Feddersen and Gilligan (2001) show that they may prefer to discourage consumption across the board, rather than shifting consumption toward less damaging products. Thus, an NGO may be happy to label a few products in

[22] See http://www.euractiv.com/en/pa/ngos-top-public-trust-ratings-poll-shows/article-134675

an industry as green, but it does not want to label all products as green (even if they are!) for fear of increasing overall demand and hence overall environmental impact.

Further complications arise when NGO certification and government minimum quality standards may both be present in the marketplace. The NGO's voluntary label is more attractive to industry, since it allows higher quality producers to distinguish themselves without forcing lower quality producers to exit the industry, something a minimum quality standard would do. Heyes and Maxwell (2004) show that if the NGO's label is seen as an alternative to government regulation, then its very existence may raise industry resistance to the government's minimum quality standard, effectively weakening the standard due to industry lobbying pressures. However, if the NGO's label is seen as a complement to government regulation, then industry will support their co-existence.

3.3.3 Summary

The literature on private politics, while fairly new, already provides interesting insights into the roles NGOs play in CSR efforts. This literature includes two distinct lines of work. The first focuses on the NGO as an adversary, inducing firms to engage in strategic CSR either as a preemptive measure or as a means to stop NGOs from inflicting harm on the firm. NGOs will desire more CSR than even altruistic firms are likely to undertake voluntarily. Therefore, altruistic firms are not immune to NGO threats, and may even represent more attractive targets than profit-maximizing rivals. The second line of research shows how NGOs can be corporate allies in some CSR activities, using their reputations to certify the CSR activities of firms. Indeed, NGOs with global reach can be a very important source of endorsements given that globalization has resulted in production and distribution across different governmental jurisdictions.

4. Welfare Effects of Environmental CSR

Thus far we have focused on positive analysis illuminating the roles environmental CSR can play as a part of overall corporate non-market strategy. In this section we consider what theory has to say about the social desirability of CSR in the environmental arena.[23] Overall, there is no grand result showing that corporate CSR is necessarily beneficial to society. Whether it improves welfare depends upon the function CSR plays within a particular context, e.g. a specific phase of the public or private policy life cycle.

4.1. Welfare Effects of Strategic CSR

We begin our discussion of welfare with strategic, profit-driven CSR. We consider first the effects of CSR in a pure market setting, then we turn to traditional public politics, distinguishing between CSR's effects in different phases of the policy life cycle, and finally discuss welfare effects in the context of private politics.

4.1.1 Welfare Effects of Strategic CSR in the Marketplace

When externalities are present, market forces alone typically will not induce socially optimal environmental protection. As is well known, monopoly power in markets for polluting goods is environmentally beneficial, since it reduces total quantity purchased and hence total pollution. Even when "green" goods compete with "brown"

[23] Throughout, we discuss welfare from a second-best perspective, that is, we compare social outcomes with and without the presence of CSR, rather than comparing to the first-best outcome.

goods, markets will not achieve optimal environmental protection, since market prices will reflect private benefits from purchasing a green good but not the benefits to society at large. In this setting, as shown by Bagnoli and Watts (2003), monopoly power in the brown segment aids the attainment of environmental protection, while monopoly power in the green segment impedes it.

4.1.2 Welfare Effects of Strategic CSR in the Political Arena

To understand the welfare effects of CSR in markets with the potential for regulation, we must account for the political context in which CSR is conducted.

Preempting Legislation

Preemptive self-regulation avoids the costly political process, and hence offers the potential for welfare gains. When consumer organizing costs are high, firms may be able to preempt legislation with much less abatement than would have been imposed legislatively. Poorer environmental performance, however, must be weighed against the reductions in political costs when abatement is voluntary rather than mandatory. Maxwell, Lyon and Hackett (2000) point out that if consumers allow themselves to be preempted, they must be better off than if they entered the political arena and fought for tough regulations. Of course, firms will only preempt if doing so increases their profits. Thus, if preemption occurs, both firms and consumers are better off than if consumers had fought to impose legislation on the industry.

Similar issues arise when a firm and a regulator sign a voluntary agreement that preempts legislation. If the regulator maximizes social welfare, then any VA that is signed will necessarily increase expected welfare, but the amount of environmental abatement may be less than it would be under legislation. Segerson and Miceli (1998) show that if compliance with the agreement is perfect, then there always exists a negotiated agreement that will preempt legislation, although the amount of abatement may be less than would have been legislated.

In practice, corporate compliance with self-regulatory promises is imperfect, and there is a lag between non-compliance and the imposition of any legislative threat. Thus, voluntary agreements may be unable to improve upon the results of mandatory legislation. Glachant (2007) shows that a welfare-maximizing regulator may opt for a voluntary agreement if two conditions hold. First, Congress must be highly sensitive to lobbying pressure, which implies that legislation would produce weak environmental standards. Second, the lag between non-compliance and its correction through subsequent legislation must be short.

Overall, the welfare effects of preemptive CSR depend upon whether CSR is undertaken unilaterally or through a VA with regulators. Unilateral self-regulation that preempts legislation is typically welfare-enhancing, since consumer groups will intervene in the political process if they find the firm's CSR efforts unsatisfactory. Negotiated agreements improve welfare when they are negotiated by welfare-maximizing regulators, but there is no guarantee this result holds if regulators are influenced by particular interest groups, as Stigler (1971) and much subsequent literature on regulation suggests they are in practice.

Shaping Regulations

Even if legislation is not preempted, there may be substantial delays before regulatory standards are put in place, providing another opportunity for CSR to influence policy. For example, delays for new National Emission Standards for Hazardous Air Pollutants requirements under the Clean Air Act Amendments stretched to a decade. Lutz, Lyon and Maxwell (2000) show that if the regulator cares about firms' adjustment costs, then a firm can take advantage of regulatory delays by committing itself to a technology with moderate environmental benefits. The regulator then eschews tough environmental standards that would require the firm to retool. Although the firm's commitment increases its profits, society is worse off.

The commitment associated with CSR investments does not necessarily worsen regulatory outcomes. It can play a useful role by providing credible information to regulators, e.g. signaling that the costs of pollution control are not too onerous. When regulators are unsure of the costs of reducing pollution, corporate leadership by example can speak louder than words, as shown by Denicolo (2003), conveying information that traditional lobbying cannot. Such information provision can enhance overall social welfare. Still, it is important to recognize that having a well-informed regulator is only guaranteed to benefit society if the regulator's goal is aligned with overall social welfare. If the regulator is captured by the regulated industry or by environmental advocates, then signaling via CSR investments may make society worse off.

Deflecting Enforcement

If a firm's CSR investments lower the marginal cost of environmental compliance, then they can lead to reduced regulatory oversight. Such investments serve as a credible commitment by the firm to improve its compliance, so if the regulator observes them, it rationally shifts resources away from monitoring the firm and toward other productive uses. The EPA's 1995 changes to its Audit Policy free regulators to respond to CSR investments, thereby conserving on regulatory resources.[24] Maxwell and Decker (2006) show that the optimal monetary fine with responsive regulatory enforcement is different than if enforcement is unresponsive to CSR. A change in fines does not necessarily accompany a shift to responsive regulation, however, so the shift could be welfare-reducing.

4.1.2 Welfare Effects of Strategic CSR in Private Politics

The literature on NGO campaigns against corporations has focused on positive theories, and has few welfare results to report. However, the literature on NGO endorsements does have some interesting welfare implications.

In an unregulated market, NGO certification increases sales of environmentally friendly products, and enhances social welfare if consumers switch from "brown" to "green" products. However, the NGO may be concerned about increasing overall sales, even of green products, if the latter generate some environmental damage. As a result, Feddersen and Gilligan (2001) show that an NGO may be unwilling to certify all firms in an industry. By leaving doubt in the consumer's mind regarding the environmental

[24] *Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations*, Federal Register, 60 FR 66706.

footprint of some products, the NGO can discourage overall purchases of the product category, thereby reducing overall environmental impact.

When there is a possibility of government regulation, NGO certification does not necessarily enhance social welfare. Heyes and Maxwell (2004) show that social welfare is higher under a government standard, since it can force out of the market all products that do not meet the standard. If industry views the NGO's label as a substitute for government regulation, then the existence of the NGO's label intensifies industry's resistance to regulation, effectively weakening the mandatory standard due to enhanced industry opposition. Thus, the NGO standard is socially damaging if it substitutes for the government standard. However, if the industry standard augments regulatory efforts, then the NGO's label enhances social welfare, since it certifies environmentally-friendly products that exceed the government standard.

4.2 Welfare Effects of Non-Strategic CSR

The literature on altruistic CSR is much smaller than that on strategic CSR, and has also focused on positive rather than normative analyses. Friedman (1970) argued that "true" CSR is socially irresponsible, as it imposes a manager's preferences on a whole group of shareholders, who might prefer to allocate their charitable contributions in different ways. However, Friedman made a number of implicit assumptions that render his assessment less general than it purports to be. First, he assumed shareholders are motivated solely by the desire to maximize money earnings from their investments. Second, he assumed that the market for charitable donations is perfectly competitive, so that individuals can allocate their charitable giving to precisely the causes they prefer and in their preferred allocations. Third, he assumed the invisible hand of the marketplace functions effectively in the political realm as well. When these assumptions fail, the distinction between “altruistic” and “strategic” CSR blurs and Friedman’s argument against CSR must be called into question. Even when these assumptions hold, it is possible that CSR---as a transfer from the wealthy to society more generally---increases welfare, even though it may not produce Pareto improvements.

When Friedman’s implicit assumptions are relaxed, shares in a socially responsible firm can be viewed as a charity-investment bundle. Such a bundle may be attractive to investors who prefer to do their charitable giving through investing in socially responsible firms (perhaps to avoid taxation of corporate profits or transaction costs associated with personal giving), and who view socially-responsible corporations as competing with non-profits in the charitable donations market. Under these circumstances, Graff Zivin and Small (2005) show that what appears to be “altruistic” CSR can actually increase both share prices and welfare .

If investors prefer to make charitable donations directly, rather than through corporations, socially responsible firms can still survive in the marketplace, but they will trade at a discount to other firms. Under these circumstances, Baron (2007) shows that if investors are informed about the firm’s CSR activities at the time they invest, then it is the entrepreneurs who create the firms who bear the cost, not ordinary shareholders.[25] Because their share prices are discounted, CSR firms may be vulnerable to takeover attempts by investors concerned only with profit maximization. For this to be prevented,

[25] Friedman might respond that a firm’s unanticipated conversion to CSR appropriates shareholder value; however, such a conversion would be opposed by shareholders and hence only be possible if the firm were shielded from the market for corporate control.

there must either be transaction costs to making tender offers for takeover, or a socially-responsible mutual fund that holds a large enough share in the company to prevent a takeover. From a welfare perspective, the entrepreneur's creation of a CSR firm is a gift to society---he benefits from starting the firm, investors benefit from the expanded range of investment opportunities, and the recipients of CSR benefit directly.

The other key assumption in Friedman's argument is that the political marketplace is workably competitive, so it is appropriate for do-gooders to work through the political system rather than through corporate voluntarism. However, Friedman's long-time colleague George Stigler argued strongly that regulatory agencies are often captured by the companies they regulate, implying that the political marketplace is far from efficient. This point reinforces the arguments in favor of environmental CSR.[26].

4.3 Summary of Welfare Effects of CSR

Intuitively, it seems as though environmental CSR must be socially beneficial, but we have seen that this is not necessarily so. The overall welfare effects of CSR depend very much on the context in which it occurs. In the domain of public politics, CSR can be a less costly substitute for government mandates, and increase welfare. However, CSR can also distort regulatory decisions in a way that lowers overall welfare, so no general conclusion can be established.

Within the domain of private politics, NGO endorsements of green products and firms can have beneficial effects. But it is also possible that the existence of NGO labeling schemes can undermine government regulatory programs that would be of even

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[26]As discussed earlier, Segerson and Miceli (1998) and Maxwell, Lyon and Hackett (2000) show that voluntary action that preempts government regulation can improve welfare.

greater value, by inducing firms to lobby against government standards. A more complete understanding of environmental CSR will require further research into NGO motives for endorsement programs (and how they are affected by agency problems within, and competition between, NGOs). It also requires expanding our notion of CSR to include corporate political activities, as well as corporate decisions regarding products and production processes.

The welfare implications of altruistic CSR have not been studied in detail. Still, revealed preference suggests that such firms create value for the entrepreneurs who choose to create them, those who choose to invest in them, and for the charities they fund.

5. Future Research Needs

Although there has been much progress in the theoretical understanding of environmental CSR in recent years, much remains to be done. Strategic CSR has received the most attention to date, but even in this area we are far from having a unified theory of strategic environmental CSR.

Strategic CSR and Public Politics

Regarding strategic CSR and public politics, we highlight two areas needing more work. First, the literature generally assumes full information, and hence ignores the question of the credibility of corporate environmental disclosure. How does the disclosure of environmental information affect demands for environmental regulation by NGOs and the public? Can companies preempt regulatory threats with prominent actions that lack environmental substance? If so, exactly what is the nature of the information transmission process that allows for such outcomes and what are the welfare effects?

Second, corporate political activities need to be incorporated into an overarching framework for CSR. Such activities include lobbying against mandatory regulations or for environmentally harmful subsidies, funding candidates that oppose internalizing environmental externalities, and funding "junk science" intended only to sow seeds of doubt in the public debate. Although such actions seem unlikely to be socially beneficial, there is no accepted paradigm for speaking of them in the language of CSR.

Strategic CSR and Private Politics

Regarding strategic CSR and private politics, many questions remain open. First, we need a better understanding of how NGOs and companies compete for public opinion. Why do NGOs seem to respond more angrily toward perceived greenwash by companies with green reputations (e.g., BP) than they do to almost total lack of interest by others (e.g., Exxon-Mobil)? How does the public respond to competing public advertisements by companies and NGOs? Can corporate greenwash forestall or weaken NGO campaigns?

Second, what are the welfare effects of CSR driven by NGO campaigns? To answer this, we need a richer "theory of the NGO," which is undeveloped relative to the theory of the firm. Even if one accepts that environmental NGOs attempt to maximize environmental quality, we need to understand when their fundraising constraints and internal agency problems may lead them to pursue campaigns that could reduce social welfare, and possibly even environmental quality itself. These issues call for an "industrial organization of NGOs," in which NGOs compete for financial resources and public support.

Third, we need to better understand the dynamics of corporate targeting by NGOs. Often, NGOs want to transform the environmental practices of an entire industry, not just a single firm. What is the optimal sequence of targets in an industry? Should the NGO start with the weakest firm and gradually work towards tougher ones? Should it instead target the most visible firm first, or the one with greatest power over its supply chain? When can private politics transform an entire industry? Can a shift in public opinion cause a cascade effect that leads to new performance norms in an industry?

Fourth, we need a better understanding of cooperative relationships between firms and NGOs. It is difficult to enforce agreements between the two parties, so they may need to develop long-term relationships in order to build trust with one another. To what extent does the inability to write enforceable contracts limit the value of corporate/NGO partnerships? When can a history of corporate CSR buy a firm protection from NGO attacks if an accident occurs?

Fifth, more research is needed linking the domains of public and private politics. In many cases, private political actions may pave the way for more effective NGO efforts in the public political arena. More research is also needed on the identification phase of the policy life cycle. How do issues come to light? What is the role of NGOs in this process? Relatedly, information campaigns to shape public opinion will influence the effectiveness of both corporate campaigns and NGO lobbying for new legislation. What is the optimal mix of private and public political strategies for NGOs? How does the existence of a private political option increase or decrease the likelihood of public regulatory action?

Sixth, the role of environmental CSR in developing countries needs more study. When government regulatory capabilities are limited, large international NGOs often play important roles in protecting biodiversity and environmental services. The effects of CSR may be very different under such conditions than in the U.S. or Europe, and the importance of private politics is likely to be much greater.

Non-Strategic CSR

Theoretical work on altruistic CSR is still in its early stages. Two areas in particular need further work. First is the market for charitable contributions. To what extent is it a competitive market? Which aspects of charity are non-traded goods? What is the comparative advantage of firms in social giving? Environmental CSR may be an area in which firms have comparative advantages over non-profits , but more research is needed before this can be asserted with confidence.

A second area concerns the welfare effects of altruistic CSR. The existing literature is almost entirely positive in orientation. Friedman's argument against altruistic CSR was couched in an assumed environment in which all social goods are traded, the market for charitable contributions is perfect, and the political marketplace is frictionless. None of these conditions holds in practice. We believe it will be particularly interesting to explore the role of CSR when corporations have the ability to block political attempts to internalize externalities. It may also be worthwhile to examine corporate political activity from the perspective of altruistic CSR, taking as a benchmark how an altruistic firm would behave in the political arena.

Conclusions

We hope this review has conveyed the dynamic nature of the literature on CSR and the environment. Much has been accomplished in recent years, yet much remains to be done. Market drivers of CSR will likely continue to grow in importance. For environmental issues that are complex, that require expensive remedies, or that require change across multiple firms---such as global warming---political pressure is likely to remain a critical influence on CSR activities. However, as NGOs have become more important, especially in developing countries, they have come to have major economic impacts on firms, and will often shape the nature of environmental CSR. Finally, as interest in social entrepreneurship grows, the boundaries between non-profit organizations and altruistic corporations are likely to become increasingly blurred. We expect that ten years from now there will be a rich literature on CSR and the environment that will merit a revisit in the pages of the *Review of Environmental Economics and Policy*.

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