

**KELLEY SCHOOL OF BUSINESS**

INDIANA UNIVERSITY

Department of Business Economics and Public Policy

**Corporate Social Responsibility and the Environment:
A Theoretical Perspective**Thomas P. Lyon[†]
University of MichiganJohn W. Maxwell[‡]
Indiana University

August 31, 2007

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 morally-motivated or altruistic CSR. Welfare effects of CSR are subtle and situation-contingent, and there is no guarantee that CSR enhances social welfare. We identify numerous areas in which additional theoretical work is needed.

Keywords: corporate social responsibility, environment, self-regulation, preemption, private politics

JEL Nos.

Q58 – Environmental Economics: Government Policy;
D21 – Firm Behavior;

[†] Director, Erb Institute for Global Sustainable Enterprise and Dow Chemical Professor of Sustainable Science, Technology and Commerce, Ross School of Business and School of Natural Resources and Environment, University of Michigan, Ann Arbor, MI 48109. Email: tplyon@umich.edu

[‡] Professor of Business Economics and Public Policy, Kelley School of Business, Indiana University, Bloomington, IN 47405. Email: jwmax@indiana.edu

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 PepsiCo buys renewable energy credits for all of its electricity.³ Nike plans to be carbon neutral by 2011.⁴ DuPont has voluntarily cut its greenhouse gas emissions by over 65% since 1991, and claims to have saved over \$2 billion in energy costs in the process.⁵ The U.S. Climate Action Partnership---which includes Alcoa, British Petroleum and General Electric---even lobbies for government regulation of greenhouse gas emissions.⁶

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.⁷ After all, it seems intuitive that voluntary actions internalizing environmental externalities are socially responsible and a good thing. But to what extent can voluntary action substitute for government mandates? Might the two be complements instead of substitutes? Can we be sure that corporate environmental initiatives really enhance social welfare? 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?

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://phx.corporate-ir.net/phoenix.zhtml?c=78265&p=irol-newsArticle&ID=992341>.

⁴ See <http://www.environmentalleader.com/2007/05/31/nike-plans-to-be-carbon-neutral-by-2011/>

⁵ From a speech by DuPont CEO Chad Holliday, available at http://www2.dupont.com/Media_Center/en_US/speeches/holliday_09_17_05.html

⁶ For more on this program, visit <http://www.us-cap.org/>.

⁷ For a formal theory of greenwash, see Lyon and Maxwell (2006). For empirical evidence on greenwashing by electric utilities, see Lyon and Kim (2007).

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 the frontiers of economic research on corporate social responsibility (CSR) and the environment.⁸

One of the perplexing things about the notion of CSR is that it means different things to different people. We shall define environmental CSR as environmentally friendly actions not required by law, which are also referred to as going beyond compliance, the private provision of public goods, or voluntarily internalizing externalities.⁹

It is important to recognize that not everyone accepts our definition of environmental CSR. Indeed, Milton Friedman, in his brilliantly 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.” Other scholars, perhaps most notably David Baron, take a similar view. Baron distinguishes CSR (which is driven by altruistic motives and is unprofitable) from “strategic CSR” (which is profitable).¹⁰ In the remainder of this article, when we refer to CSR driven by altruistic or moral motivations, we will use the terms morally-motivated CSR or altruistic CSR.

⁸ 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).

⁹ Hay, Stavins and Vietor (2005) present a lively series of papers and commentaries that reflect varying notions of CSR.

¹⁰ 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.

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 below, 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 who are willing to pay extra for environmentally-friendly products, labor market advantages with employees who have green preferences, and a reduced cost of capital from green investors. Political forces can take the form of regulatory threats, enforcement pressures, or boycott threats from non-governmental organizations (NGOs).

The welfare effects of CSR are more difficult to establish than the positive economic explanation for it, and they have received less attention in the literature to date. *The Economist* magazine’s recent survey of CSR presented the simple 2x2 diagram below.¹¹

	Raises Social Welfare	Reduces Social Welfare
Raises Profits	Good management	Pernicious CSR
Reduces Profits	Borrowed virtue	Delusional CSR

This schematic has the disturbing implication that both strategic and morally-motivated CSR can be welfare-reducing, an issue we explore in depth in section 4. In Friedman’s view, of course, unprofitable CSR (which for him was the only true type) is always of the delusional variety because it represents a failure by managers to pursue their profit-maximizing fiduciary duty to shareholders; in effect, it is just another way

¹¹ “The Union of Concerned Executives,” *The Economist*, January 25, 2005.

managers abuse managerial slack.¹² However, as we discuss in section 4, more recent scholarship is beginning to identify the assumptions implicit in Friedman's argument and subject them to greater critical scrutiny. The recent literature also has quite a lot to say about the welfare effects of strategic CSR.

The rest of the paper is organized as follows. Section 2 provides a brief introduction to 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 in this area.

2. The Policy Life Cycle

The concept of 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.¹³ 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 is the stage of *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 in the public's mind. The incident at Three Mile Island, the Thalidomide tragedy, the tampering with Tylenol, and the discovery of a hole in the ozone layer represent such events. Third is the *legislative* stage, in which political leaders

¹² Elhauge (2005) argues that a close reading of the law reveals that sacrificing profits in the public interest is generally not considered a breach of fiduciary duty.

¹³ See, for example, Baron (2006a).

take action to create new laws responding to the issue. Fourth comes the *implementation* stage, 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.¹⁴

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 has termed “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 issues 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 is intransigent in the face of the NGO’s demands, the NGO will attempt 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. The resolution usually involves bargaining between the two sides, in which the firm agrees to undertake improvements in its environmental and/or social profile and in return the NGO agrees to stop inflicting harm on the firm.

¹⁴ For a detailed discussion of the economic literature on the policy life cycle, see Lyon and Maxwell (2004a), chapter 2.

The strategic effects of CSR activities differ greatly depending on the stage of the cycle an issue occupies at a given time. In this paper, we review the recent theoretical literature on CSR activities that lay out these effects in detail. The remainder of this section provides a context in which to view this theoretical work, by briefly surveying the political economy literature on public and private behavior at each stage of the policy life cycle.

Development and Politicization

Chronic environmental problems may go ignored for long periods of time before interest groups form around the issue and begin to take action. A particular issue gradually comes to public recognition as scientists, political activists, and other opinion leaders begin to actively debate its importance, and the various means by which it can be addressed. Often, a looming public problem is taken up by one or more activist groups well before it becomes an object of public opinion. If the problem is specific to one or a few companies, activists may target the offenders for a boycott. If the problem is endemic to an entire industry or cuts across multiple industries, then effective collective action may require resort to the political process.

Mobilizing public opinion to make an issue politically salient is no easy feat. Demonstrations, news coverage, editorials, and talk shows all gradually raise public awareness of an issue. It may take years to bring an issue to the top of the public agenda, and once there it can easily be dislodged. Smart companies take advantage of these hurdles to derail threatening issues before they become politically salient. Numerous techniques are available for corporations to defuse volatile issues. One of the most

effective is preemption---taking enough action that the potential benefits of collective action no longer justify its cost. Another potentially less costly tactic is public outreach building cooperative relationships with potentially antagonistic groups, and possibly reducing the credibility of criticism from groups that are perceived as being co-opted by industry.¹⁵

From a modeling perspective, the key step in the development and politicization of an issue occurs when interest groups organize around the issue. Mobilizing an interest group is a costly process that requires individuals to collect resources, gather information, coordinate on a mutually agreeable political strategy, and reach out to potential members and encourage them to take action. If industry can prevent opposing interest groups from mobilizing, it can greatly reduce the risk that it will face costly direct actions or new regulations. The recent literature on corporate environmentalism highlights the role of strategic CSR activities at this stage of the policy life cycle in deterring interest group formation and action.

If the costs of mobilization are so high that interest group activity will not occur, even in the absence of CSR activities, then political entry is said to be *blockaded*. In this case, NGOs are likely to turn their efforts toward private, rather than public, politics.

Legislation or Direct Action

Once interest groups mobilize around an issue, and public opinion supports its salience, the stage is set for legislative action. The academic understanding of legislative activity has advanced rapidly over the last decade, as theorists have used the tools of

¹⁵ For years, Mobil Oil Company (now ExxonMobil) has had a long-standing practice of placing opinion pieces on the op-ed pages of prominent newspapers such as the New York Times and the Washington Post, with the goal of influencing the views of opinion leaders.

game theory to analyze voting behavior, bargaining in legislatures, the power of committee jurisdiction, and other aspects of legislative decision-making. In addition, empirical work has revealed in increasing detail the links between campaign contributions, lobbying activity, constituent interests, and legislative voting. Once legislation has passed, compliance with it does not fall into the realm of CSR. However, corporations can use CSR activities to influence the type of legislation that arises.

Regardless of whether the focus is on elections or the behavior of sitting legislatures, there is wide agreement that special interest groups wield important influence in the political process. A large literature has developed in recent years that opens up the “black box” of interest group politics to examine interest group strategies in detail. Grossman and Helpman (2001) provide a rigorous approach to these issues, with two main emphases: (1) the role of lobbying in providing information, and (2) the role of campaign contributions in influencing legislative behavior.¹⁶

To the extent CSR activities can influence the policy positions of political candidates or the decisions of sitting legislators, a better understanding of the strategic use of CSR activities will arise when we examine the impact of those activities using this literature. Strategic CSR can influence political agents directly or indirectly through its impact on voters, NGOs and special interest groups that may be more predisposed toward the corporate perspective.

¹⁶ The analysis of lobbying builds on the model of strategic information transmission due to Crawford and Sobel (1982), Lohmann's (1993) application of the model to mass political action, and Krishna and Morgan's extension to the case of multiple information-transmitting groups (2001). The analysis of campaign contributions builds on the full-information model of common agency due to Bernheim and Whinston (1986), the model of bargaining in legislatures due to Baron and Ferejohn (1987), and Baron's (1994) model of electoral competition with both informed and uninformed voters. Most of this work is positive in nature, intended to describe the nature of political reality rather than assess its performance from a normative perspective.

In Baron's (2001) seminal work on private politics, entry by NGOs into the arena of public politics is implicitly assumed to be blockaded, and direct action by NGOs replaces the traditional political process. The NGOs target firms directly, defining the problem, stating their demands for corporate change, and issuing a threat of harm and/or offering a reward for compliance. In studying CSR activities designed to preempt private political action, one must develop a deep understanding of how direct action works. Baron and Diermeier (2007) study the anatomy of a boycott campaign, while Baron (2005) studies informational competition between industry and NGOs that takes place through the media. Lyon and Maxwell (2006) examine the phenomenon of corporate greenwashing, in which NGOs attempt to punish corporations for trumpeting their CSR activities while remaining silent about less desirable aspect of their CSR profile.

Implementation

Most legislation, especially concerning the environment, establishes general objectives but leaves the details of implementation to a regulatory agency. It is important to distinguish between the passing of legislation and its implementation, for the CSR strategies appropriate at each stage are quite different. While much of regulation involves the implementation of legislation passed by others, it is not uncommon for regulators to pursue their own initiatives. Legislatures often give broad, vague, charges to regulators, such as "protect the public health and safety." It is virtually impossible to determine whether a particular regulatory action faithfully executes such a mission. Even when legislative mandates are communicated clearly to regulators, there are good reasons to expect slippage between the wishes of the "principal" (the legislature) and the "agent"

(the regulator). For example, Niskanen (1971) argues that a key motivation for bureaucrats, including regulators, is maximizing their budgets, clearly something that is not the objective of the legislature. Regulators also have future career concerns that may involve obtaining a position within the regulated industry or running for elected office. McCubbins, Noll and Weingast (1987) present a theory in which administrative procedures are used as tools to constrain regulatory discretion, though they recognize that these tools will not have complete success.

In the literature on environmental regulation, a variety of different objective functions are assumed on the part of the regulator. Many papers adopt social welfare maximization as the regulatory goal, and solve for optimal regulatory policies. Others adopt the economic theory of regulation and the maximization of political support as the drivers of regulatory behavior. A few papers assume budget maximization. Papers that focus on monitoring and enforcement often assume that regulators aim to maximize compliance with regulations, or seek to maximize the environmental benefits of enforcement.¹⁷

In the private politics version of the policy life cycle, the final stage envisions a resolution of the corporate-NGO dispute. The NGO agrees to call off its campaign of harm in return for improvements in the firm's CSR profile. While compliance with a regulation does not generally fall within the definition of CSR, negotiated solutions to the private political conflict do. Research, which we review below, indicates that CSR activities designed to influence agents at each stage of the policy life cycle are interdependent. Since agents are forward-looking, preemptive CSR activities must take

¹⁷ Noll (1985) synthesizes the contributions of economics, political science and sociology to produce an "external signals" theory of regulatory behavior. In this view, which bears some resemblance to Peltzman's (1976) more formal analysis, regulators respond to a diverse set of external pressures.

into account the level of CSR that might arise from bargaining to resolve, for example, a boycott. Similarly, if the NGO views a firm as a weak target, which may occur because of earlier CSR activities, then its bargaining threat point will rise, making the outcome of a Nash bargaining solution over CSR less favorable for the target firm.

Conclusions

In the remainder of this article we review a variety of models that examine in detail the most important aspects of corporate CSR activities. All of these models share the feature that they combine 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 legislative 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 within which one might develop a deeper understanding of corporate CSR actions.

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 more savvy about the workings of the political system, taking proactive 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. Nevertheless, we feel that at least up through the present time, political drivers have been generally the strongest drivers for environmental CSR.¹⁸

3.1 Market Forces and Environmental CSR

It is undoubtedly true that market forces are playing a role in motivating companies to become greener. 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, and applied a standard model of vertical product differentiation to capture consumer heterogeneity in willingness-to-pay for environmental attributes. In this setup, a consumer's utility of consuming one unit of a product is a function of the product's quality multiplied by the consumer's unit valuation for quality (which is often interpreted as income). Thus, in this model all consumers agree that electricity from renewable

¹⁸ For a detailed analysis of the political drivers of environmental CSR, see Lyon and Maxwell (2004a).

sources is better than coal-fired power, but they differ in how much that quality difference is worth to them. In this setting, as shown by Shaked and Sutton (1982), 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 been incorporated in a number of other models that study additional aspects of environmental CSR, which we discuss below.¹⁹

Bagnoli and Watts (2003) explore how environmental CSR is affected by market structure and the nature of competition. Unlike Arora and Gangopadhyay (1995), who have only two firms, but allow them to freely choose their level of greening, Bagnoli and Watts (2003) allow for any number of firms, but have only two goods, a brown one and a green one,²⁰ Their key finding is that the amount of environmental CSR provided is inversely proportional to the competitiveness of the market for the brown good. If the brown market is highly competitive, then its prices are low and fewer consumers wish to buy the green good. If the brown market exhibits market power, however, then consumers switch toward the green good.

Harbaugh, Maxwell and Roussillon (2006) identify a potential problem regarding environmental CSR activities motivated by green consumerism. Consumers often rely on product labels to determine the environmental quality of the products they purchase. Harbaugh et. al. investigate firm incentives to adopt a label that discloses the environmental quality of their products when consumers are uncertain about the standard behind the label. The authors show that this uncertainty leads to a dual inference problem

¹⁹ 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).

²⁰ They interpret the green good as a brown good “linked” to the provision of a public good

in which consumers may use their priors over firm quality to update their expectation of the label's standard as well as the firm's environmental quality. They show that an increase in uncertainty over the labeling standard will increase the likelihood of non-disclosure equilibria and a decrease in the likelihood of disclosure equilibria, suggesting that such uncertainties weaken 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 and growing literature on socially responsible investing, which is exemplified by Graff Zivin and Small (2005) and Baron (2005, 2007). In these models, investors can allocate their wealth between savings, charitable donations or shares of a socially responsible firm. Graff Zivin and Small (2005) shows that if charitable works are not traded on markets, or if corporate charitable donations are tax-advantaged, then there may be efficiency advantages to having companies offer bundles of profit-making and charitable endeavors. In addition, if investors prefer to make their social donations through bundled corporate activities, then companies may find it profit-maximizing to engage in CSR to attract investors. Baron (2007) shows that when CSR expenditures are fully anticipated by investors, their cost is borne by the entrepreneur who creates the firm, not shareholders. Nevertheless, the value of the firm is less than it would be without CSR activities, so the firm may be vulnerable to a takeover in the capital market. For non-strategic CSR to be sustainable, shareholders must not tender their shares to takeover artists. Baron (2005) incorporates an NGO that applies social pressure to the corporation, and derives a price for both corporate social performance and for social action by the NGO. Although the value of the firm is lower

than it would be if the firm undertook no CSR, its shares trade at a premium reflecting the utility green investors obtain from holding them.

The labor market also provides incentives for CSR. Most employees want to feel good about the company where they spend so much of their lives, and want to go home at night and 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 that many are willing to accept substantially lower salaries from firms offering socially responsible employment. The only theoretical model of this phenomenon we are familiar with is that of Brekke and Nyborg (2004), who model a job market that includes morally-motivated workers. Companies desire to attract these individuals, since it is assumed they are less likely to engage in shirking on the job. One way they can screen for these employees is 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 the abatement needed to accomplish it, 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. As economists, we are naturally reluctant to believe there are \$20 bills lying on the ground, but as business school professors we speak with enough corporate managers to realize that there is considerable waste within industry. Indeed, Leibenstein's (1966) notion of X-inefficiency refers to exactly this failure to squeeze out all waste from the production process. For example, he cites evidence from International Labor Organization (ILO) "productivity missions" in which labor productivity was frequently increased by 25% or more, even in technically advanced countries such as Israel. We do not find it hard to believe that there really are "win/win" opportunities for companies to cut emissions and costs at the same time, by reducing waste.²¹

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 Slope Hypothesis*:" businesses can reduce costs just as effectively by rooting out waste in human resources, purchasing, inbound logistics, outbound logistics, research and development, or any other business function as they can by improving environmental efficiency. At any rate, we certainly do not believe society can rely upon win/win cost reductions to solve most environmental problems, although they certainly make it less painful.

²¹ 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.

In sum, market forces---in the markets for products, capital, and labor---are increasingly powerful drivers of corporate environmental improvement. Nevertheless, there is little reason to think that all or even most environmental externalities have now been internalized by an all-knowing and all-caring market. As a result, politics and government regulation will remain key forces driving environmental improvement.

3.2 Public Politics and Environmental CSR

Collective action is typically required to solve environmental problems, since, almost by definition, environmental problems affect groups of people rather than individuals. Despite debates about the weakening of the state relative to the market, politics remains the key venue for most collective action to protect the environment.

Much of the recent research on environmental CSR can be conveniently organized under the rubric of the policy life cycle.

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 on the Identification phase of the life cycle.

3.2.2 Politicization

The Politicization stage encompasses a variety of activities. Following Peltzman (1976), 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. *Organizing costs* include the costs of gathering information on the impacts of environmental pollution, 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 the political arena and attempt to influence the political process. This category includes campaign contributions and lobbying costs. One of the most compelling aspects of environmental CSR is that it holds out the hope of economizing on both of these sets of costs.

Mobilizing Public Opinion

Building public support for any new policy initiative typically takes a considerable period of time. The mass media play a critical role in the process, though this role is just beginning to be explored using rigorous economic theory. Yu (2005) presents a model of competition between an advocacy group and an industry regarding future regulations. The novelty of his model is that he allows these groups to compete both indirectly (by attempting to influence public opinion) and directly (by lobbying to influence politicians). He finds that the two dimensions are complements. His findings also imply that the fact that environmental groups spend less on direct influence than

industry may be related not to their financial constraints, but to their greater effectiveness in public persuasion.²²

Baron (2005) presents a more structured model of informational competition between an activist and an industry, where each interest group seeks to influence public sentiment and does so by advocating its position through the news media. Society will not regulate the industry's emissions unless it obtains hard information about the seriousness of the externality created. The activist and the industry each obtain information on the seriousness of the externality, and choose whether to make it public or conceal it. The news media can conduct investigative journalism to obtain its own information, and based on that information and the information it has received from its sources, provides a news report to the public. Because the media's objective function is assumed to include an element of "journalistic responsibility" for helping citizens make collective decisions, the media has an incentive to bias its report, and the direction of bias is toward regulation. This bias serves to mitigate both the market failure by decreasing demand and a government failure by leading to regulation. The activist then has an incentive to conceal information unfavorable to its interests, whereas the industry fully reveals its information.

Although the papers just discussed provide valuable insights, given the importance of the media in mobilizing public opinion there is a need for much more economic research in this area.

Preempting Regulatory Threats

²² Yu (2005) does not model the phenomenon of "tipping points" in public opinion, which has been popularized recently by Gladwell (2000), but this may be an interesting topic for future work.

Maxwell, Lyon and Hackett (2000) present a model in which industry makes voluntary CSR investments in order to deter an advocacy group from incurring the fixed costs of entering the political fray.²³ Should this entry deterrence strategy fail, a political influence game ensues in which regulatory policy is determined endogenously through the countervailing influence expenditures of industry and the advocacy group. The authors identify conditions under which firms can profitably preempt, taking advantage of the wedge that lobbying and organization costs drive between voluntary and mandatory abatement. Lobbying costs alone may not be enough to support preemption, and thus a strictly positive level of fixed organizing costs may be required for preemption to be profitable. In either case, once preemption becomes profitable, the equilibrium level of voluntary abatement declines monotonically with consumer organizing costs. The threshold level of consumer organizing costs at which preemption becomes profitable is higher when firms act non-cooperatively than when they coordinate on voluntary abatement.

In Maxwell, Lyon and Hackett (2000), the underlying motive for CSR is a desire to avoid the high transaction costs of working within the traditional regulatory system. Interestingly, regulators may share the desire to reduce the costs of regulation, and may negotiate “voluntary agreements” with industry as a way 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.

Segerson and Miceli (1998) present a model in which a voluntary agreement is negotiated in the shadow of a threat of legislation. In the model, legislation of some pre-

²³ The political economy underpinning of the model is based on Becker’s (1983) model of influence competition.

determined stringency occurs with a given probability. The regulator is empowered to negotiate with industry, and can credibly commit to block passage of the legislation if he signs a voluntary agreement. Since the voluntary agreement is assumed to have lower transaction costs than government regulation, both industry and government benefit from signing the agreement. Glachant (2005) extends the analysis of Segerson and Miceli (1998) to allow for a legislative threat that is determined 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 is an equilibrium of the game, and that the agreement improves overall welfare.²⁴

In the developing world, there may be considerable uncertainty regarding when the regulatory authority will have the capacity to actually enforce environmental laws that are on the books. Blackman, Lyon and Sisto (2006) develop a model in which firms take this uncertainty into account, and government may wish to use a negotiated agreement with industry to induce environmental improvement earlier than would otherwise be the case. They 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 conflicts may emerge among the firms regarding how to allocate the burdens of the agreement. Unfortunately, the theoretical analysis of collective action remains incomplete. A game that requires industry coordination to cut emissions typically has a

²⁴ Glachant (2007) extends the analysis to the case where government observes industry compliance with the agreement with a detection lag. As a result, industry can get use a voluntary agreement to delay compliance with threatened legislation.

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.²⁵ Nevertheless, in the area of corporate environmentalism, Dawson and Segerson (2001) and Manzini and Mariotti (2003) have applied refinements to issues of industry negotiation of voluntary agreements.

Dawson and Segerson (2001) adopt a modeling approach developed by d'Aspremont et al. (1983) for studying cartel stability. The self-enforcing equilibrium concept used involves a multi-stage game in which firms first commit to whether or not they will be part of a sub-group of firms endeavoring to reach an agreement, and second they choose the level of action to take. The equilibrium in the game involves participation by only a subset of the total population of the industry. Firms that choose to free-ride and refuse to cut emissions earn higher profits than the firms that choose to participate in the agreement. This finding raises questions about the stability of such agreements, since each firm has incentives *ex post* to try and renegotiate the agreement, shifting a portion of its cost burden to other firms in the industry.

Manzini and Mariotti (2003) take a different approach, and assume the negotiation process requires industry consensus, that is, the regulator must ensure that his proposal is acceptable to all firms in the industry. As Manzini and Mariotti (2003) show, this essentially places all the bargaining power in the hands of the "toughest" or least efficient firm, i.e. the firm that demands the weakest abatement level. As a result, negotiations tend to produce weak environmental performance through a kind of "lowest common denominator" effect when full consensus is required of the negotiation process.

²⁵ 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 things like the Energy Star program, Natural Gas Star, Climate Challenge, etc.²⁶ These programs typically offer firms technical assistance and favorable publicity if they adopt environmentally friendly practices. Hence, we view PVPs as offering industry small “carrots” when big “sticks” are unavailable.

Lyon and Maxwell (2003) present a theoretical model of PVPs in which government offers industry a subsidy to encourage the adoption of environmentally friendly technologies. The authors find that PVPs are inherently weaker instruments than environmental taxes, because they cannot force inefficient dirty firms out of business and they deplete rather than contribute to public coffers. Furthermore, if industry believes a subsidy program is possible, it has greater incentives to lobby against an environmental tax. Nevertheless, PVPs may be useful programs when stronger measures are politically infeasible.

3.2.3 Shaping Future Regulations

Despite industry’s best efforts, not all costly environmental regulations can be preempted. Even so, environmental CSR can pay dividends by helping industry to shape the regulations that are ultimately implemented.

Lutz, Lyon and Maxwell (2000) study the role of CSR investments when regulatory standards are forthcoming. They present a model that includes a product

²⁶ See Lyon and Maxwell (2004a) for a thorough discussion of these programs.

market with green consumers as well as the imposition of regulatory standards. Disquietingly, they find that corporate environmental leadership does not necessarily have beneficial results for society. In particular, corporate leaders may commit to modest goals that influence regulators to do so as well. In the model, firms differentiate their products on environmental performance in order to relax price competition. The welfare-maximizing regulator desires to impose a minimum quality standard to prevent the brown firm from adopting too low a level of environmental quality. However, suppose the green firm sinks an investment in environmental quality that goes beyond current industry practice, but only by a modest amount. If the regulator cares about industry profits as well as environmental performance, he will weaken the minimum quality standard so as not to dissipate profits too much.

When the regulator lacks information about the costs of alternative policies, CSR can play an informational role that may be beneficial for society, as shown by Denicolo (2000). In particular, CSR in the form of adopting a high quality environmental technology can be used to induce the government to mandate the use of that technology throughout the industry. In this case the firm's voluntary adoption of the high quality technology serves as a costly signal to the regulator that the technology's adoption costs are low. Consequently the regulator, in balancing corporate profits, consumer welfare, and environmental externalities, is convinced that mandating the adoption of the high level of quality will be socially desirable. The motivation for the firm's voluntary adoption in this model is to raise its rivals' costs by inducing the regulator to mandate the high quality technology across the industry.²⁷

²⁷ The antitrust literature on raising rivals' costs, initiated by Salop and Scheffman (1983), generally considers such activities to be a form of socially undesirable non-price predation.

Denicolo's model makes two main points. First, signaling alone, even without accompanying lobbying activities, can be enough to influence regulatory decisions in a powerful way. Second, signaling increases the information available to the regulator, and allows it to make better-informed decisions. Thus, unlike traditional methods of raising rivals' costs, such as campaign contributions aimed at changing voting behavior, raising rivals' costs through signaling should not be presumed to make society worse off.²⁸ Such technology signaling may be an important driver behind the finding of, Dowell, Hart and Yeung (2000) that 60% of large multinational companies maintain a strict internal environmental standard when they create new ventures in developing countries, even though this may involve going beyond local regulatory requirements.²⁹

Of course, there are also the familiar tools of campaign contributions and lobbying, both of which frequently aim to influence future regulations. Because the literatures on these subjects are extensive and reasonably well known, however, we will not discuss them at length here. However, we believe that to the extent the concept of CSR is a useful one, it should be applied to corporate efforts to influence public policy. For example, it is all too common to hear companies describing their efforts to reduce greenhouse gas emissions, only to learn later that the same firms are lobbying intensively against any public policies to limit such emissions. Such actions are entirely legal, yet we doubt many proponents of CSR would find them socially responsible.

²⁸ Innes and Bial (2002) show how government can create incentives for firms to reveal their environmental innovations. The policy they devise involves a combination of an emissions fee, a pollution standard and a relaxed standard for "losers" in the technological race. Although it seems counterintuitive that an asymmetric standard penalizing technological innovators could be optimal, this is just what the authors demonstrate.

²⁹ Porter and van der Linde (1995) argue that properly designed environmental regulations can trigger innovations that may more than offset the costs of complying with them. This suggests that firms might want to lobby government for stringent regulations even when they do not have on hand a low-cost innovation, simply as a way to give themselves a needed kick in the pants. We are not aware of any companies that have taken such an approach, however.

To date, the relationship between CSR and corporate public affairs management has not received much attention, but this may be changing. A 2007 report on the links between public affairs and corporate responsibility was published jointly by BluePrint Partners, a major public relations firm; SustainAbility Inc., a consulting firm; and Worldwide Fund for Nature – UK. The report finds that most companies provide little or no coverage of their public affairs activities in their corporate annual reports. It goes on to 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 as part of a full view of business performance and in some cases are now driving measurement of business activity in this area.” In one of the few academic treatments of the issue, Repetto (2006) argues that major corporate public affairs decisions should be subject to approval by a standing board committee of independent directors.

When corporate influence activities are not transparent, they can have damaging social and environmental impacts. Lyon and Maxwell (2004b) study the phenomenon of “astroturf lobbying,” in which companies covertly foot the bill to create artificial “grassroots” political lobbying organizations. Building on models of costly state falsification, they find that the possibility of astroturf leads public decision-makers to become suspicious about the authenticity of the lobbying efforts to which they are subjected, and as a result the informativeness of lobbying is debased. Public welfare is also reduced. Lyon and Maxwell (2004b) show that the decision-maker would benefit by

requiring public disclosure of funds spent on astroturf lobbying, but unfortunately such a requirement was explicitly removed from the Lobbying Disclosure Act of 1995.

3.2.4 Deflecting Monitoring and Enforcement

Even after regulations are promulgated, they are unlikely to have much impact on corporate behavior unless government actively enforces the law, which requires costly monitoring and enforcement activity. In practice, enforcement agencies are chronically underfunded, which means that officials must carefully allocate their enforcement resources. As a result, companies (or individual plants) viewed by regulators as socially responsible are likely to be monitored less frequently. Harrington (1988) argued that regulators can leverage their limited 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. Maxwell and Decker (2006) present a model in which a firm voluntarily sinks an investment in pollution control that lowers its marginal cost of abatement. They show that if the investment can be verified by the regulator, then it is optimal for the regulator to divert enforcement efforts toward other firms in the industry.³⁰

3.3. Private Politics and Environmental CSR

In this section we review the theoretical literature on voluntary corporate environmental actions involving firm interactions with environmental non-governmental

³⁰ Sam and Innes (2007) find empirical support for this theory with respect to toxic waste emissions.

organizations (NGOs). Recalling our discussion of the Policy Life Cycle in Section 2, there are two general situations in which firms may interact with NGOs regarding corporate social responsibility. First, firms may interact with NGOs if NGOs desire a change in the firms' CSR efforts. In this case the NGO-Firm relationship can be described as adversarial in that the NGO attempts to force the firm to undertake costly CSR actions that it wishes to resist. Second, firms may ally themselves with NGOs in an effort to enhance the credibility of their CSR claims to the public, to government, and perhaps their own employees.

NGO support of the firm's CSR activities may take place early or late in the policy life cycle. Early support can take place if the NGO assists firm efforts to preempt either a legislative threat or the NGO's own threat of harm. In working with the firm at the early stage of the policy life cycle the NGO makes the calculation that the firm's voluntary actions (while possibly falling short of those it would have to take under legislation or under the NGO's own threat) represent a better deal, in terms of costs and benefits, than it expects to get from either engaging in the legislative process or by invoking its threat, both of which are costly to the NGO. Later support can take place if the firm, having suffered from the NGO's threat, decides to adopt additional CSR activities.³¹

NGO threats concerning firm activities generally arise when legislation is blockaded. Frustrated with the legislative process, NGOs have increasingly turned to the marketplace as a point of leverage to induce greater CSR activities. In the remainder of this section we will discuss first the literature on adversarial NGO-firm interactions,

³¹ NGOs may also assist firms in compliance with regulation although these compliance activities would generally not fall into the category of CSR.

focusing on the nature of the NGO threat and how the NGO chooses its corporate targets. We will then turn to papers that highlight the role of NGOs as potential allies in CSR.

NGOs as adversaries

David Baron has coined the term “private politics” to refer to direct engagement between NGOs and corporations over environmental and social issues as opposed to engagement translated through government institutions (public politics). In this literature NGOs are prominent actors and as such their objectives and strategies are highlighted to a greater degree than in the public politics literature, where the demands of NGOs are translated through government actors.

Adversarial NGO/firm engagement occurs as an alternative to entering the legislative game. Perhaps due to the rise of the Internet, NGOs now experience significantly lower internal and external communication costs. The former significantly 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 significantly lowers the costs of informing the public about objectionable corporate activities, and bringing about coordinated public actions such as boycotts of targeted firms and or individuals.

In the realm of private politics, an NGO decides to target a firm so as to induce it to undertake environmental or social change. The NGO’s goal is not assumed to be welfare maximization and may perhaps be best thought of as the optimization of environmental services subject to constraints. The overriding constraint NGOs face is the support of the general public as this support is the source of the NGO’s power.

Mitigation of the objectionable activity is assumed to be costly to the firm; otherwise the NGO would simply need to request the change in order to have the firm comply. Thus, the firm has an incentive to resist the NGO's demands. In order to induce compliance with its demands the NGO may offer the firm a reward for its compliance and/or threaten harm for non-compliance. As mentioned above, the firm might at this point decide to self-regulate by taking voluntary actions in order to avoid the threatened level of harm, which may or may not involve the active participation of the NGO.³² NGO participation in firm self-regulatory efforts may be thought of as the provision of the reward. NGO rewards usually take the form of public recognition and endorsement of the mitigation efforts undertaken by the firm.

If the firm fails to concede to the NGO's demand, the NGO will attempt to deliver its threatened harm. This harm may take the form of producing and disseminating negative propaganda about the targeted firm's corporate image, 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 in order 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 totally 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.

³² Pargal and Wheeler (1996) find that Indonesian industrial plants located in poor, less educated areas are about 15.4 percent more water pollution-intensive than similar plants located in relatively affluent, well-educated areas.

Within this general setting, several issues regarding corporate and NGO strategies have been studied. Baron (2001) examines how differing firm objectives may affect behaviors in this setting. He models an NGO campaign against a target whose motivation might be profit maximization, altruism, or avoiding harm. He shows that actions viewed as altruistic may in fact be undertaken by profit-maximizing firms as a strategic action in their battle with the NGO. In doing so, Baron highlights the notion of strategic CSR and shows that it may be indistinguishable from CSR that arises from altruistic corporate behavior.

Baron and Diermeier (2007) focus on the targeting strategies of NGOs, and corporate responses to the strategies. Firms may be targeted with the offer of a reward or the threat of harm that manifests itself as a boycott of the offending firm or firms. In the model, it is uncertain whether the boycott will succeed, and the severity of the boycott threat depends on this likelihood. This, in turn, depends crucially on the degree of public participation and the cost the firm faces in complying with the NGO's demand. As the cost of complying with the NGO's demand rises, the firm will fight harder during the boycott, reducing the likelihood of its success.

From this basic setup, the authors derive several implications regarding NGO targeting strategies. They find that the NGO will prefer 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).³³ Interestingly, this result suggests that NGOs will not necessarily target the worst social or environmental offenders, as these

³³ Eesley and Lennox (2005) find empirical support for targeting strategies. Specifically they find firms that are more consumer-oriented, financially sound, and heavier polluters are more likely to be targets of environmentally-oriented stakeholder actions.

firms may be the most intransigent. Indeed firms that have undertaken some CSR activities voluntarily as a means to motivate employees or raise corporate morale can find themselves as targets of NGOs who seek even greater levels of CSR and may view such firms as weaker targets. The NGO will prefer to target firms sequentially rather than targeting multiple firms or an entire industry 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.

The NGO prefers to deliver harm rather than rewards. Harm decreases the level of the targeted activity while rewards tend to increase it, contrary to the objective of the NGO. Potential targets have two strategies to deflect the NGO. First, potential targets can opt to self-regulate if the NGO can commit not to retarget the firm after self-regulation takes place. Such commitment ability may arise if self-regulation makes the pursuit of an alternative firm more desirable. Second, potential targets have an incentive to develop a reputation for being tough, so as to cause NGOs to target alternative (weaker) firms. The authors note that 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. Finally, the author's note that since activism produces a public good it is subject to free-riding and thus will generally be under provided by the public.

Baron (2006b) studies competition between a profit-maximizing firm and a "morally managed" firm that is committed to mitigating its pollution externality to the

socially optimal level. Green consumers view the latter's product to be of higher quality, and it commands a higher price. Baron shows that the morally managed firm has less incentive to resist the NGO's demand than does the profit-maximizing firm, *ceteris paribus*, since any pollution mitigation undertaken by the morally managed firm carries the positive externality of further differentiating the two products, allowing prices to rise.

Although the morally managed firm will undertake the socially optimal level of mitigation, an NGO may target it for further reductions. The NGO's goal is complete mitigation of the externality and therefore it is not fully satisfied with the mitigation goal of the morally managed firm. The power of the NGO arises from the donations it receives from the public. Baron shows that the better is the NGO at turning its resources into pressure, the more likely it is to target the profit-maximizing firm. An NGO that is inefficient at translating resources into pressure will prefer to target the morally managed firm. Considering the activities of the profit-maximizing firm, Baron finds that it may engage in preemptive strategic CSR to deflect the NGO or, if targeted, it may engage in CSR as part of the bargaining to halt the NGO's campaign.

Building on Baron (2001), Innes (2006) investigates short- and long-term boycotts. 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. Innes considers the decision of an NGO regarding which of two firms to target in an asymmetric duopoly, or whether to target both firms. Each firm can produce only with a brown or an environmentally friendly, but costly, green technology. The goal of the NGO is to have the targeted firm adopt the green technology. Firms may preempt a boycott by adopting

the green technology. The model illustrates equilibria in which both short-term and long-term boycotts may arise. The larger firm can face a short boycott while the small firm can face a sustained boycott. Innes shows that a short-term boycott can arise if, at the initial stage of the game, firms face uncertainty over the NGO's targeting strategy. Given the possibility that it may not be targeted, each firm may resist adopting the green technology. If the larger of the two firms is boycotted, it immediately concedes and adopts the green technology, so the boycott is only short-term. However, the smaller firm may still resist adopting the green technology, even if it is targeted. Nevertheless, the NGO may sustain the boycott because it serves to shift some consumption away from the small firm towards the good produced via the green technology.

Sinclair-Desgagne and Gozlan (2003) and Lyon and Maxwell (2006) consider the role of NGOs in promoting information disclosure. Sinclair-Desgagne and Gozlan model a firm's decision to release information when faced with an NGO that assesses the environmental quality of the firm and may initiate a boycott of the firm if it believes that the firm is of low quality. The firm chooses to release information of either high or low precision, with costs increasing in precision.³⁴ The authors find that if the NGO is predisposed to believe that the firm is of high quality, then the firm is more likely to release less accurate information, while if the opposite is true the firm will have an incentive to release more detailed information. Both pooling and separating equilibria exist. In a separating equilibrium, the high quality firm releases information in such detail that the low quality firm will not bother to mimic. In a pooling equilibrium, the NGO

³⁴ In their model, a more accurate report means that if the stakeholder chooses to investigate, it incurs a higher cost of investigation but is more likely to obtain accurate information regarding the firm's environmental activities.

must conduct its own investigation to determine whether the firm's environmental activities are safe.

Lyon and Maxwell (2006) develop a model that highlights one of the difficulties firms encounter as they attempt to engage in CSR. Their model of information disclosure is based on the observation that NGOs target firms for perceived hypocritical behavior, which NGOs have labeled greenwash. For example, the report *Don't Be Fooled: The Ten Worst Greenwashers* of 2003 discusses BP's "On the Street" advertising campaign.

"'On the Street' is only selectively honest. The ads mention BP's solar power and clean fuel initiatives, but fail to mention other important initiatives. For example, during 2003, BP made an 'ultradeep' petroleum discovery off the coast of Angola, launched an oil products terminal in the expanding market of Guangdong, China, and acquired a 50% stake in Russia's third-largest oil and gas business. Contrary to the focus of 'On the Street,' BP's innovations and investments are by no means limited to environmental endeavors."³⁵

Lyon and Maxwell define greenwash as the act of disclosing or promoting activities with environmental benefits while at the same time suppressing information about activities that generate environmental harms. In their model, a manager may find it optimal to suppress information about environmental failures because doing so enhances the company's stock price. Suppressing information is not equivalent to admitting failure because there is a positive probability that the manager may not know the environmental impact of all of the company's activities. In the model, reports of CSR activities may prompt the NGO to audit the firm. If the NGO finds that the company has suppressed negative environmental information it will attempt to punish the company by labeling it a greenwasher in the popular press or encouraging consumers to boycott the firm's products. The authors show that firms with moderate environmental reputations are the

³⁵ Johnson (2003), p. 14.

most likely to greenwash. In addition, when NGOs increase the expected penalty for greenwashing, firms may respond by reducing rather than increasing their disclosures.³⁶

This paper highlights the fact that NGOs may target firms based on corporate communication about environmental performance rather than actual performance. Lyon and Maxwell note that there may be several factors motivating NGOs to punish corporate greenwash including perceived hypocrisy, the fear that the public may be fooled into supporting the firm, and the possibility that attacking higher profile firms may enhance NGO fund raising efforts. We can add to this list Baron and Diermeier's (2007) observation that NGOs may view firms that promote their CSR efforts as softer targets than intransigent firms.

NGO as allies

Most environmental CSR activities involve changes to a firm's production process. Consequently, when viewed through the lens of CSR, a corporation's goods can be classified as credence goods. A credence good is a good 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 through increased prices or sales, or possibly even through heightened employee morale, public recognition is necessary. While some firms may have reputations that allow their statements to be fully believed by the public, this is likely to be the exception rather than the rule. Consequently, firms often need to seek third party verification of their CSR activities. For this purpose, NGOs make excellent potential corporate allies, since their credibility with

³⁶ Lyon and Kim (2006) provide empirical evidence of greenwashing by firms in the electric utility sector.

the public is much higher. For example, one recent poll found that 55% of Americans trust NGOs, while less than 30% trust CEOs of major corporations.³⁷

NGOs can use their credibility with the public to certify the existence of environmental or socially beneficial process changes. Much of the literature in this area 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.³⁸

Feddersen and Gilligan (2001) establish conditions under which NGO communications about CSR activities are credible, and investigate when these communications will induce firms to undertake CSR activities that raise the perceived quality of their products. They develop a game theoretic model of incomplete information in which an NGO randomly inspects one of two duopoly firms that produce imperfect substitutes. The firms choose to produce their product using either a brown or a more costly, but environmentally friendly, green technology. Consumers cannot determine the production technology used before or after purchase. The assumed goal of the NGO is to diminish the impact of production on the environment, and this gives its report credibility. Based on its inspection, the NGO delivers a report to the public about the environmental quality of the production process being used by the firm. A green report is credible since the report will cause a shift in consumption to the greener firm, something the NGO wants. Interestingly, because of its objective, the NGO will fail to deliver positive news about a firm that is producing with the green technology if it believes the rival is also using the green technology. Failing to deliver a report under these

³⁷ See <http://www.euractiv.com/en/pa/ngos-top-public-trust-ratings-poll-shows/article-134675>

³⁸ In the latter case it is generally assumed that NGO reputation ensures that their communications with the public are credible.

circumstances will lower overall consumption (because consumers also care about the impact of production on the environment). Thus, the presence of the NGO can never induce both firms to adopt the green technology, but equilibria exist in which one firm will adopt the green technology, something that would never be done absent the NGO.

Further complications arise when NGO certification and government minimum quality standards may both be present in the marketplace. Heyes and Maxwell (2004) model an environmental NGO that seeks to reduce pollution externalities by setting a voluntary labeling standard. The label is awarded to firms that abate to a level equal to, or beyond, the standard.³⁹ In addition, government may set a minimum quality standard. The authors find that if the NGO's label is seen as an alternative to government regulation, then its very existence will raise industry resistance to the government's minimum quality standard, effectively lowering it due to enhanced industry opposition.⁴⁰ However, if the NGO's label is seen as a complement to government regulation, then industry will support their co-existence.

Summary

The literature on private politics, while fairly new, provides some interesting insights into the roles NGOs can 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. Baron's recent work on moral management points out that NGOs will

³⁹ Since abatement is costly, no firms abate beyond the standard.

⁴⁰ The reasoning is simple. Since the NGO seeks to set a higher but voluntary labeling standard, its label benefits industry by allowing higher quality producers to better distinguish themselves while not forcing lower quality producers to exit the industry, something a minimum quality standard would do.

desire more CSR than even morally managed firms are likely to undertake voluntarily. Therefore, morally managed firms are not immune to NGO threats, and may in some case represent more attractive targets than profit maximizing rivals. The second line of research shows how NGOs can be corporate allies in some CSR activities, verifying and using their reputations to endorse 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

Our discussion to this point has focused primarily on positive analysis illuminating the various roles corporate environmental improvement can play as a part of overall corporate non-market strategy. In this section we summarize what the theoretical literature has to say about the social desirability of CSR in the environmental arena. 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 effects with strategic, profit-driven CSR. We consider first the effects of CSR in a pure market setting, then we turn to the context of traditional public politics, distinguishing between its 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

Bagnoli and Watts (2003) studied the social welfare implications of market-driven corporate greenery, using a model with only two types of goods: a brown good and a green good.⁴¹ (This is essentially like assuming quality levels 0 and 1.) They find that the market usually under-provides the public good, because even if market pricing reflects private benefits from purchasing a green good, it does not reflect the benefits to society at large. This finding provides a rationale for regulatory standards, even with a growing number of green consumers.⁴²

4.1.2 Welfare Effects of Strategic CSR in the Political Arena

Preempting Regulation

In the model of Maxwell, Lyon and Hackett (2000), corporate self-regulation is socially beneficial when it preempts government regulation. This is because self-regulation avoids the costly process of working through the government regulatory process. Of course, when consumer organizing costs are high, firms may be able to preempt regulation with a very modest amount of voluntary abatement, which might be much less than would have been imposed by government. Poorer environmental performance, however, must be weighed against the reductions in regulatory and legislative costs when abatement is voluntary rather than mandatory. In fact, the authors show that the regulatory savings more than outweigh any reduced environmental performance. The basic idea is that giving consumers some abatement for "free"

⁴¹ They interpret the green good as a brown good "linked" to the provision of a public good

⁴² Bagnoli and Watts do find certain cases where the market can over-provide the public good. This occurs when the brown good is provided by a firm with market power, while the green good is provided by a competitive industry. In this case, the high price of the brown good can cause an inefficiently large number of consumers to shift toward the brown good, and over-provision of the public good is possible.

strengthens consumers' position in the influence game---if it is actually played: they obtain a higher level of total abatement (voluntary plus mandatory) at a lower political cost. Hence, if consumers allow themselves to be preempted, they must be even better off than they would have been had they fought the influence game. Thus, if preemption occurs, one can presume that both firms and consumers are better off than if consumers had fought to impose standards on an industry that undertook no voluntary abatement.

Segerson and Miceli (1998) reach a similar conclusion for negotiated agreements between industry and government. Since the negotiated agreement involves lower transaction costs than does government regulation, society benefits from such an agreement, even if the amount of environmental improvement is less than would have occurred under regulation.

In both of the foregoing articles, enforcement of firms' commitments is assumed to be costless and fully effective. Glachant (2007) presents a model in which this is not the case, and where there is a lag before government detects that a company has failed to deliver on its environmental commitment. Nevertheless, he finds that voluntary agreements can improve social welfare under certain conditions, namely when Congress is highly sensitive to lobbying pressure (which implies that government regulation is likely to be highly imperfect) and industry and the regulator do not discount the future too heavily (so that a firm's failure to deliver under the voluntary agreement can be corrected through subsequent legislation without causing society too much harm).

Overall, these papers indicate that corporate CSR is likely to be socially beneficial when it substitutes for government regulation.

Shaping Regulations

Lutz, Lyon and Maxwell (2000) show that the sometimes substantial delays in standard setting which follow Congressional directives can be damaging to welfare. The delays in setting minimum efficiency standards for air conditioners and water heaters came to almost three years, while delays for new National Emission Standards for Hazardous Air Pollutants requirements under the Clean Air Act Amendments stretched to a decade, and delays for effluent guidelines required by the Clean Water Act were even longer. Delays of these magnitudes allow industry leaders ample time to reposition their product lines and influence the regulator's minimum quality standard. By making a sunk investment that pre-commits the firm, a quality leader can constrain the regulator's subsequent choices in a way that increases the firm's profits but makes society worse off.

In contrast, the signaling model of Denicolo (2000) reminds us that the pre-commitment associated with corporate environmentalism does not necessarily have negative effects on regulatory outcomes. It can play a useful role by providing credible information to regulators, e.g. demonstrating by example 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, conveying information that traditional lobbying cannot. This information provision function can enhance overall social welfare, in contrast to the harmful effects of pre-commitment in the quality leadership model of Lutz, Lyon and Maxwell (2000). Nevertheless, 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 a portion of the regulated industry, then signaling via corporate environmentalism may make society worse off.

Deflecting Enforcement

Maxwell and Decker (2006) showed that if environmental investments lower the marginal cost of compliance effort, then such investments---if observable by the regulator---serve as a credible commitment by the firm to improve its compliance rate. Thus, if the regulator observes such investments, it rationally reallocates its resources away from monitoring the firm and toward other productive uses. Nevertheless, despite the fact that regulatory responsiveness conserves on regulatory resources, a shift to a responsive regime might not be socially desirable unless it is coupled with a revision of the existing penalty structure for violations. Otherwise, there is a chance that regulatory responsiveness will actually induce too much environmental investment, from a social perspective, as the firm exerts excessive effort trying to avoid being fined. Thus, a shift to a responsive regime should be undertaken as part of a broader re-evaluation of environmental policy, rather than as an isolated act.

4.1.2 Welfare Effects of Strategic CSR in Private Politics

As mentioned earlier, the literature on private politics includes both studies of NGO campaigns against corporations, and studies of NGO endorsements of corporations. The former part of this literature has thus far focused on developing positive theories of NGO campaigns, and has few welfare results to report. However, the literature on NGO endorsements does have some interesting welfare implications, which we discuss below.

Feddersen and Gilligan (2001) show that under certain conditions, NGO communications about CSR activities are credible, and encourage firms to sell environmentally friendly products that they would not offer otherwise. A key point is that the NGO's report is credible, since if consumers know a product is green, the report will cause a shift in consumption toward the greener firm, something the NGO wants. Although the NGO can never induce both firms to adopt the green technology, it can have the socially beneficial effect of inducing one firm to adopt the green technology. In this model, the NGO's activities never reduce social welfare.

Heyes and Maxwell (2004) find that NGO intervention in the market does not necessarily enhance social welfare. In their model, an environmental NGO seeks to reduce pollution externalities by setting a voluntary labeling standard, but in a setting in which government regulation is also possible. The authors investigate the social welfare performance of the labeling scheme as compared to that of a minimum quality standard set by a social welfare maximizing government regulator subject to political pressures. They find that social welfare is higher under the minimum quality standard, and that existence of the NGO's label intensifies industry's resistance to the minimum quality standard, effectively weakening the standard due to enhanced industry opposition. Thus, the NGO standard is socially damaging if it substitutes for the government standard. However, if industry is unable to block the minimum quality standard, then the NGO's label enhances social welfare.

As mentioned above, the literature on NGO campaigns against corporations has not produced welfare results. In fact, we suspect that general welfare results from this literature are unlikely to be forthcoming. Each encounter between a firm and an NGO is

organized around a specific demand, and there is no guarantee that demands made by an NGO are welfare-enhancing. Arguably NGOs attempt to maximize environmental quality, so their demands are likely to move society toward a better environment. Nevertheless, NGOs suffer from agency problems and the need to meet short-term fundraising goals, which mean that welfare-maximizing outcomes are not assured.

As an example, consider Shell Oil's disposal of its Brent Spar oil storage platform.⁴³ In 1991 the company decided that the facility had reached the end of its useful life, and had to determine whether to dispose of the platform in the deep sea or to tow it on land and dispose of it there. A study by scientists at the University of Aberdeen recommended deep sea disposal, and Shell proposed this course of action to the British government, which approved it. Greenpeace, however, argued that there was considerable oil remaining in the Brent Spar, and that land disposal was preferable; the organization mounted a high-visibility campaign against Shell. Although it was soon shown that Greenpeace had vastly overstated the amount of oil in the platform, the campaign resulted in a boycott of Shell gasoline in Germany, the Netherlands and Denmark, with sales down by 20-30%. German Chancellor Helmut Kohl publicly criticized Shell for its plans for deep-sea disposal.

Eventually, Shell capitulated to the external pressure, and towed the platform ashore. Yet British scientists later wrote in the journal *Nature* that deep-sea disposal was probably environmentally preferable, and a representative of the Worldwide Fund for Nature publicly expressed the same view. According to Mahon (2002), Greenpeace's motives in this case were not simply to do the best thing for the environment.

⁴³ Our discussion here borrows heavily from the case "Shell, Greenpeace, and Brent Spar," pp. 115-119 in Baron (2006).

“Unfortunately for Shell, Greenpeace was looking for an issue to revive its sagging donations and membership base. Greenpeace took this issue and ran with it, and clearly outmaneuvered Shell in the marketplace of ideas.”

The Brent Spar example shows there is no reason to assume all NGO campaigns necessarily result in environmental gains, much less improvements in overall social welfare. Whether a given campaign is socially beneficial or not is likely to depend upon the state of fundraising competition between NGOs, and the extent of agency problems experienced by particular NGOs. Thus, we view further research into the industrial organization of NGOs, and the theory of the NGO, as important steps toward a better understanding of the welfare effects of private politics.

4.2 Welfare Effects of Non-Strategic CSR

The economic literature on morally-motivated CSR is much smaller than that on strategic CSR, and it has focused on developing coherent positive economic analyses rather than welfare assessments. As mentioned in the Introduction, 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 assumes shareholders are motivated solely by the desire to maximize money earnings from their investments. Second, he assumes 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 assumes that the invisible hand of the

marketplace functions effectively in the political realm as well, as hoped so fervently by James Madison and the other founding fathers. When these assumptions fail, 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.

Graff Zivin and Small (2005) relax the first and second of Friedman's implicit assumptions, and develop a formal model of morally-motivated CSR, with the goal of understanding how corporate altruism affects firm valuations. They assume that investors gain utility both from personal consumption and from making donations to worthy causes, and that corporations compete with non-profits in the charitable donations market. From this perspective, a share in a "responsible" firm is a charity-investment bundle. They show that when individuals view corporations and not-for-profits as equally competent suppliers of charity-related "warm glow," small changes in firms' social policies induce exactly offsetting changes in individuals' portfolio choices. There is no effect on firm valuations, and no change in the aggregate supply of good works. When a sizable fraction of investors prefer corporate philanthropy over direct charitable giving, however, perhaps in order to avoid taxation of corporate profits, firm valuations are maximized by following social policies that involve strictly positive levels of corporate altruism.

The model of Graff Zivin and Small (2005) implies that altruistic CSR can be welfare-enhancing if companies have economies of scope in bundling profit-making activities with charitable giving. It is hard to assess how important such scope economies are likely to be in practice, but it seems plausible that they may exist, especially in the

environmental domain. Since corporations are directly responsible for many negative impacts on the environment, it stands to reason that they are best able to mitigate those impacts.

Baron (2007) extends the analysis of Graff Zivin and Small (2005), and shows that although CSR firms trade at a discount to other firms, it is the entrepreneurs who create these firms that bear the cost, not ordinary shareholders. He also shows that the presence of CSR entrepreneurs increases aggregate social giving. In addition, he shows that CSR firms may be vulnerable to takeover attempts by individuals concerned only with profit maximization, thus establishing a role for socially-oriented mutual funds.

The other key assumption in Friedman's argument is that the political marketplace is workably competitive, and hence 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 would appear to reinforce the arguments in favor of environmental CSR, though we are not aware of any formal economic analysis of this issue.

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, the literature has shown that 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 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.

Finally, even in the domain of altruistic CSR, it is not clear in general whether corporate efforts enhance overall social welfare. The literature suggests that altruistic CSR can be welfare-enhancing if companies have economies of scope in bundling charitable actions with profit-making ones. However, as Friedman argued, if there are no such scope economies, and if the political marketplace and the market for charitable giving are workably competitive, then altruistic CSR may be socially wasteful. Whether these markets are competitive or not is an empirical question, the results of which need to be incorporated into future theoretical work.

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

With regard to strategic CSR oriented towards public politics, we would highlight three areas in need of more work. First, most of the existing literature assumes CSR actions are commitments made under full information, and hence ignores issues of the credibility of corporate environmental disclosure. In particular, the issue of corporate greenwash requires more theoretical exploration. How does the disclosure of environmental information affect demands for environmental regulation by NGOs and the public? Is it possible for companies to preempt regulatory threats with actions that are highly visible but not environmentally substantial? If so, exactly what is the nature of the information transmission process that allows for such outcomes? What are the welfare effects of preemption via greenwash?

A second area needing further attention is the incorporation of corporate political activity into an overarching framework for CSR. Is it socially responsible for companies to lobby against mandatory climate change regulation? For subsidies that encourage environmentally damaging activities? Is it socially responsible for companies to fund candidates that oppose the internalization of environmental externalities? To fund “junk

science” intended only to sow seeds of doubt in the public debate? Is it socially responsible for firms to support legislation that raises rivals’ costs of addressing environmental concerns?

A third area needing greater attention is the role of environmental CSR in developing countries. In these nations, basic environmental legislation is often lacking, or, if on the books, is often poorly enforced. 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. Given the rapid economic growth in the developing world, the importance of these issues is sure to grow in coming years.

Strategic CSR and Private Politics

Turning to strategic CSR that is driven by private politics, many questions remain open. First, we need a better understanding of how NGOs and companies compete for public opinion. Although there have been some initial forays into this topic, much remains to be done. The topic of corporate greenwash, in particular, needs more analysis. Why do NGOs seem to respond more angrily toward what they perceive as greenwash by companies with some green credentials (e.g., British Petroleum) than they do to almost total lack of interest by some other companies (e.g., Exxon-Mobil)? How does the public respond to competing public advertisements by companies and NGOs? Can corporate greenwash serve to forestall or weaken NGO campaigns?

Second, what are the welfare effects of CSR that is driven by NGO campaigns? Are there any generalizations that can be made about when such campaigns enhance social welfare? An improved understanding of this issue will probably require better models of the “theory of the NGO,” which is quite undeveloped relative to the theory of the firm. Even if one accepts that the objective function of an environmental NGO is to maximize environmental quality, we need to understand the conditions under which its fundraising constraints and internal agency problems may lead it to pursue campaigns that could reduce social welfare, and possibly even environmental quality itself. These issues cannot be fully understood, however, without placing the NGO within the context of the other NGOs with which it competes for financial resources and public support. Thus, ultimately, a deeper understanding of CSR will involve creating an “industrial organization of NGOs,” a topic to which we return below.

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. If the public political process is blockaded, NGOs must devise clever dynamic strategies in the domain of private politics. 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? The one with the most influence over its supply chain? Under what conditions can private politics transform an entire industry? How is public opinion affected by corporate acquiescence to an NGO campaign? Can a shift in public opinion cause a cascade effect that leads to new performance norms in the industry?

Fourth, we need a better understanding of cooperative relationships between firms and NGOs. Although this point has not been recognized in the literature, it is notoriously difficult to enforce any sort of “contract” between a firm and an NGO. As a result, firms and NGOs may need to develop long-term relationships in order to build a foundation of credibility with one another. This is a topic that has received no theoretical attention as of yet. To what extent does the inability to write enforceable contracts limit the usefulness of corporate/NGO partnerships? In the context of a long-term relationship, can corporate CSR build up a reputation for a firm that buys it some protection from NGO attacks when accidents occur?

Fifth, there is a need for more theoretical work that links the domains of public and private politics. In many cases, public political entry is not blockaded; it is merely costly. In this case, private political actions may pave the way for more effective NGO efforts in the public political arena. More research is also needed into the identification phase of the policy life cycle, another area that links the public and private political domains. How do issues come to light? What is the role of NGOs in this process? In a related vein, 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? Is there scope for NGO campaigns to influence corporate lobbying activities?

Sixth, as we alluded to above, work on CSR activities motivated by private politics ultimately requires a better developed theory of the NGO, and of the industrial organization of NGOs. There should be much room to borrow from the well-developed

theories of the firm and of industrial organization. Given the ability to build upon these existing literatures, these are two areas we expect to grow rapidly in coming years.

Non-Strategic CSR

Theoretical work on morally-motivated or altruistic CSR is still in its early stages. We see two areas in particular need of further work. One of these 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? We expect that the environment is an aspect of social performance in which firms may well have comparative advantages, but more research is needed before this can be asserted with confidence.

A second area has to do with the welfare effects of morally-motivated CSR. The existing literature is almost entirely positive in orientation, and there is a clear need for welfare-oriented analyses. 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. Although there have been a few papers relaxing the first two of these assumptions, we believe it will be very 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 morally-motivated CSR. How would a morally-motivated firm behave in the political arena? Would it lobby for mandatory climate regulations even if it were heavily reliant on energy from fossil fuels?

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 increasingly important institutions for addressing social and environmental issues, 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*.

Bibliography

- Arora, Seema and Subhashis Gangopadhyay. 1995. "Toward a Theoretical Model of Voluntary Overcompliance," *Journal of Economic Behavior and Organization*, Vol. 28, No. 3, pp. 289-309(21).
- Bagnoli, Mark and Susan G Watts. 2003. "Selling to Socially Responsible Consumers: Competition and The Private Provision of Public Goods," *Journal of Economics & Management Strategy*, 12 (3), 419–445.
- Barnea, Amir, Robert Heinkel, and Alan Kraus, "Green Investors and Corporate Investment." *Structural Change and Economic Dynamics*, forthcoming.
- Baron, David P. and John A. Ferejohn. 1989. "Bargaining in Legislatures," *The American Political Science Review*, Vol. 83, No. 4, pp. 1181-1206.
- Baron, David P. 1994. "Electoral Competition with Informed and Uninformed Voters," *The American Political Science Review*, Vol. 88, No. 1, pp. 33-47.
- Baron, David P. 2001. "Private Politics, Corporate Social Responsibility, and Integrated Strategy," *Journal of Economics and Management Strategy*, 10: 7-45.
- Baron, David P. 2005. "Competing for the Public through the News Media," *Journal of Economics and Management Strategy*, 14: 339-376.
- Baron, David P. 2006a. *Business and Its Environment*, Fifth Edition. Upper Saddle River, NJ: Pearson/Prentice Hall.
- Baron, David P. 2006b. "The Positive Theory of Moral Management, Social Pressure, and Corporate Social Performance," Working Paper, Stanford University.
- Baron, David P. 2007. "Corporate Social Responsibility and Social Entrepreneurship," *Journal of Economics and Management Strategy*, 16: 683-718.
- Baron, David P. and Daniel Diermeier. 2007. "Strategic Activism and Nonmarket Strategy," *Journal of Economics and Management Strategy*, 16: 599-634.
- Becker, Gary S. 1983. "A Theory of Competition Among Pressure Groups for Political Influence," *Quarterly Journal of Economics*, 98: 371-400.
- Beloe, Seb, Julia Harrison and Oliver Greenfield. 2007. *Coming In From the Cold: Public Affairs and Corporate Responsibility*. Research Report. BluePrint Partners, SustainAbility, Inc. and WWF-UK.
- Bernheim, D. and Winston, M., 1986. "Menu Auctions, Resource Allocation and Economic Influence," *Quarterly Journal of Economics*, Vol. 101, pp. 1-31.

Blackman, Allen, Thomas P. Lyon and Nicholas Sisto. 2006. "Voluntary Environmental Agreements when Regulatory Capacity is Weak," *Comparative Economic Studies*, 48: 682-702.

Brekke, Kjell Arne and Karine Nyborg. 2004. "Moral Hazard and Moral Motivation: Corporate Social Responsibility as Labor Market Screening," Working paper, Ragnar Frish Center, University of Oslo.

Crawford, Vincent and Joel Sobel. 1982. "Strategic Information Transmission," *Econometrica*, Vol. 50, No. 6 (Nov., 1982), pp. 1431-145.

d'Aspremont, C.A., A. Jacquemin, J.J. Gabszewicz and J.A. Weymark (1983), "On the Stability of Collusive Price Leadership," *Canadian Journal of Economics*, 16(1): 17-25.

Dawson, Na Li and Kathleen Segerson. 2001. "Voluntary Agreements with Industries: Participation Incentives with Industry-Wide Targets," in E. Orts and K. Deketelaere, *Environmental Contracts: Comparative Approaches to Regulatory Innovation in the United States and Europe*. Boston: Kluwer Law International.

Denicolò, Vincenzo. 2000. "A Signalling Model of Environmental Overcompliance," FEEM Working Paper No. 77.2000. Available at SSRN: <http://ssrn.com/abstract=249274>

Dowell, Glen, Stuart Hart and Bernard Yeung. 2000. "Do Corporate Global Environmental Standards Create or Destroy Market Value?," *Management Science*, Vol 46: pp 1059-1074.

Easley, Chuck and Mike Lenox. 2006. "Secondary Stakeholder Actions and the Selection of Firm Targets," working paper, Duke University.

Elhauge, Einer. 2005. "Corporate Managers' Operational Discretion to Sacrifice Profits in the Public Interest," in Bruce L. Hay, Robert N. Stavins, and Richard H.K. Vietor, editors, *Environmental Protection and the Social Responsibility of Firms*, Washington, DC: RFF Press.

Feddersen, Timothy J and Thomas W Gilligan. 2001. "Saints and Markets: Activists and the Supply of Credence Goods." *Journal of Economics & Management Strategy* 10 (1), 149-171.

Frank, Robert H. 2003. *What Price the Moral High Ground? Ethical Dilemmas in Competitive Environments*, Princeton University Press.

Friedman, Milton. 1970. "The Social Responsibility of Business is to Increase Profits," *The New York Times Magazine*, September 13th, New York, The New York Times.

Fudenberg, Drew and Jean Tirole. 1991. *Game Theory*. Cambridge, MA: The MIT Press.

Glachant, Matthieu. 2005. "Voluntary agreements in a rent seeking environment," in: E. Croci (Ed.), *Handbook on Environmental Voluntary Agreements*, Kluwer Academic Publishers, Dordrecht, Holland, pp. 49–66.

Glachant, Matthieu. 2007. "Non-binding Voluntary Agreements," *Journal of Environmental Economics and Management*, 54: 32-48.

Gladwell, Malcolm. 2000. *The Tipping Point*. New York: Back Bay Books.

Graff Zivin, Joshua and Arthur Small. 2005. "A Modigliani-Miller Theory of Altruistic Corporate Social Responsibility," *Topics in Economic Analysis and Policy*, Volume 5, Issue 1, Article 10.

Grossman, Gene M. and Elhanan Helpman. 2001. *Special Interest Politics*. Cambridge, MA: The MIT Press.

Harbaugh, Rick, John W. Maxwell and Beatrice Roussillon. 2006. "The Groucho Effect of Uncertain Standards." Kelley School of Business Working Paper. Available at SSRN: <http://ssrn.com/abstract=948538>

Harrington, Winston. 1988. "Enforcement Leverage When Penalties are Restricted," *Journal of Public Economics*, 37: 29-53.

Hay, Bruce, Robert N. Stavins, and Richard H.K. Vietor, editors. 2005. *Environmental Protection and the Social Responsibility of Firms*, Washington, DC: RFF Press.

Heinkel Robert, Alan Kraus, and Josef Zechner, 2001, "The Effect of Green Investment on Corporate Behavior," *Journal of Financial and Quantitative Analysis*, 36(4): 431-449.

Heyes, Anthony G. and John W. Maxwell. 2004. "Private vs. public regulation: political economy of the international environment," *Journal of Environmental Economics and Management*, Vol. 48, No. 2, pp. 978-996.

Innes, Robert and Joseph J. Bial. 2002. "Inducing Innovation in the Environmental Technology of Oligopolistic Firms," *Journal of Industrial Economics*, 50: 265-287.

Robert Innes. 2006. "A Theory of Consumer Boycotts under Symmetric Information and Imperfect Competition," *The Economic Journal*, 116 (511), 355–381.

Johnson, Geoff. 2003. *Don't Be Fooled: The Ten Worst Greenwashers of 2003*, Boston, MA: Earthday Resources for Living Green. Available at <http://www.thegreenlife.org/dontbefooled.html>.

Krishna, Vijay and John Morgan. 2001. "A Model of Expertise," *The Quarterly Journal of Economics*, Vol. 116, No. 2, pp. 747-775

Lohmann, Suzanne. 1993. "A Signalling Model of Informative and Manipulative Political Action," *American Political Science Review*, Vol. 87, No. 2 (Jun., 1993), pp. 319-333.

Leibenstein, Harvey. 1966. "Allocative Efficiency vs. X-Efficiency," *American Economic Review*, 56: 392-415.

Mahon, John F. 2002. "Corporate Reputation: Research Agenda using Strategy and Stakeholder Literature," *Business and Society*, 41: 415-445.

Manzini, Paola and Marco Mariotti. 2003. "A Bargaining Model of Voluntary Environmental Agreements," *Journal of Public Economics*, 87: 2725-2736.

Lutz, Stefan, Thomas P. Lyon and John W. Maxwell. 2000. "Quality Leadership when Regulatory Standards are Forthcoming," *Journal of Industrial Economics*, v. 48, no. 3, pp. 331-348.

Lyon, Thomas P. and Eun-Hee Kim. 2007. "Greenhouse Gas Reductions or Greenwash? The DOE's 1605b Program," Working Paper, Stephen M. Ross School of Business, University of Michigan.

Lyon, Thomas P. and John W. Maxwell. 2003. "Self-Regulation, Taxation, and Public Voluntary Environmental Agreements," *Journal of Public Economics*, v. 87, pp. 1453-1486.

Lyon, Thomas P. and John W. Maxwell. 2004a. *Corporate Environmentalism and Public Policy*, Cambridge: Cambridge University Press.

Lyon, Thomas P. and John W. Maxwell. 2004b. "Astroturf: Interest Group Lobbying and Corporate Strategy," *Journal of Economics and Management Strategy*, 13(4), pp. 561-598.

Lyon, Thomas P. and Maxwell, John W. 2006. "Greenwash: Corporate Environmental Disclosure under Threat of Audit" Ross School of Business Paper No. 1055 Available at SSRN: <http://ssrn.com/abstract=938988>

Maxwell, John W., Thomas P. Lyon and Steven C. Hackett. 2000. "Self-Regulation and Social Welfare: The Political Economy of Corporate Environmentalism," *Journal of Law and Economics*, v. 43, no. 2, pp. 583-618.

- Maxwell, John W. and Christopher Decker. 2006. "Voluntary Environmental Investment and Regulatory Responsiveness," *Environmental and Resource Economics*, 33: 425-439.
- McCubbins, Mathew D., Roger G. Noll, Barry R. Weingast. "Administrative Procedures as Instruments of Political Control," *Journal of Law, Economics, & Organization*, Vol. 3, No. 2 (Autumn, 1987), pp. 243-277.
- Niskanen, W.A. 1971. *Bureaucracy and Representative Governments*, Chicago, Aldine-Atherton Press.
- Noll, R. G. 1985. *Regulatory Policy and the Social Sciences*. Berkeley, University of California Press.
- Pargal, Sheoli and David Wheeler, "Informal Regulation of Industrial Pollution in Developing Countries: Evidence from Indonesia," *Journal of Political Economy*, 1996, 104(6): 1314-1327.
- Peltzman, Sam. 1976. "Toward a More General Theory of Regulation," *Journal of Law and Economics*, 19: 211-240.
- Porter, Michael E. and Claas van der Linde. 1995. "Toward a New Conception of the Environment-Competitiveness Relationship," *Journal of Economic Perspectives*, 9: 97-118.
- Repetto, Robert. 2006. "Best Practice in Internal Oversight of Public Affairs," Working Paper 200601, Yale School of Forestry and Environmental Studies.
- Sam, Abdoul and Robert Innes. 2007. "Voluntary Pollution Reductions and the Enforcement of Environmental Law: An Empirical Study of the 33/50 Program," Working Paper, University of Arizona.
- Segerson, Kathy and Thomas Miceli. 1998. "Voluntary Environmental Agreements: Good or Bad News for Environmental Protection," *Journal of Environmental Economics and Management*, Vol. 36, No. 20, pp. 109-130.
- Shaked, Avner and John Sutton. 1982. "Relaxing Price Competition through Product Differentiation," *Review of Economic Studies*, 49: 3-13.
- Sinclair-Desgagne, Bernard and Estelle Gozlan. 2003. "A theory of environmental risk disclosure," *Journal of Environmental Economics and Management*, Vol. 45, pp. 377-393.
- Stigler, George. 1971. "The Theory of Economic Regulation," *Bell Journal of Economics and Management Science*, 2: 3-21.

Yu, Zhihao. 2005. "Environmental Protection: A Theory of Direct and Indirect Competition for Political Influence," *Review of Economic Studies*, 72: 269-286.