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Title:

Three Essays on Corporate Social Responsibility

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Acceptance Date:

2015

Series:

[UCLA Electronic Theses and Dissertations](#)

Degree:

Ph.D., [Management \(MS/PHD\) 0535UCLA](#)

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UNIVERSITY OF CALIFORNIA

Los Angeles

Three Essays on Corporate Social Responsibility

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy
in Management

by

Vanessa Cuerel Burbano

2015

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ABSTRACT OF THE DISSERTATION

Three Essays on Corporate Social Responsibility

by

Vanessa Cuerel Burbano

Doctor of Philosophy in Management

University of California, Los Angeles, 2015

Professor Marvin B. Lieberman, Co-Chair

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This dissertation explores the effect of corporate social responsibility (CSR) practices on the firm and contributes to an understanding of how CSR practices can contribute to companies' competitive advantage. In Chapter 1, I use three randomized field experiments implemented in online labor marketplaces to provide causal evidence of the effect of CSR on employee outcomes that have been shown to be critical to firm performance: salary requirements and employee performance. Workers were recruited for short-term jobs and I manipulated whether or not they received information about the employer's CSR program. I then observed the payment workers were willing to accept for the job and their performance on the job. Surveys administered at the end of the experiments gauging workers' perceptions about the received CSR information also provide insight into the distinct mechanisms through which CSR affects the different employee outcomes. This paper contributes to an understanding of

how CSR adds value to the firm and highlights the role of the employee in explaining this relationship. It also demonstrates how online labor markets can be used as settings for field experimental research in strategic management more broadly.

In Chapter 2, we examine pro bono work in the legal services industry. Using a screening model we show that law firms use pro bono engagements to gain information about associates' expected productivity as an equity partner. Using a dataset of the top 200 US law firms in 2010 we demonstrate empirical support for our model's predictions. Our findings thus suggest that the conventional wisdom that CSR practices are used to provide information about the quality of the firm to the employee is backwards; rather, we find that pro bono engagements are used to provide information about the quality of the employee to the firm.

In Chapter 3, we explore what drives firms to combine poor environmental performance with communication about positive environmental performance, resulting in "greenwashing". Although some explanation of firm greenwashing has been put forth, a comprehensive analysis of the determinants of firm greenwashing is lacking. Drawing from existing work in management, strategy, sociology and psychology, we propose a comprehensive framework that examines the external (both institutional and market), organizational and individual drivers of greenwashing and then use this framework to develop recommendations for managers, policymakers, and NGOs to decrease greenwashing.

The dissertation of Vanessa Cuerel Burbano is approved.

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Acknowledgements

Chapter 1 is funded by the Strategy Research Foundation Dissertation Grant.

Chapter 2 is a version of Burbano, VC, Mamer J, and Snyder J. 2015. How Socially Responsible Business Practices Reinforce Human Capital Strategy. Being revised for resubmission, *Strategic Management Journal*. All authors contributed equally.

Chapter 3 is an article originally published as Delmas, M and Burbano, VC. 2011. The Drivers of Greenwashing. *California Management Review* 54(1): 64-87. All authors contributed equally.

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Chapter 1: Corporate Social Responsibility and Firm Performance: Field Experimental Evidence on the Role of Employee Salary Requirements and Productivity

1. Introduction

Companies continue to invest in and place importance on corporate social responsibility (CSR).¹ Although it has been argued that CSR can be strategic (Porter, 2008; Porter and Kramer, 2006; Porter and van der Linde, 1995), whether and how firms can “do well by doing good” remains a topic of considerable debate, as an extensive amount of empirical testing of the relationship between CSR and firm performance has resulted in mixed findings (Barnett and Salomon, 2012; Margolis and Walsh, 2001, 2003; Orlitzky, Schmidt, and Rynes, 2003). An important critique of earlier studies has been that the causal chain of connection between CSR and firm performance has often been missing (Delmas and Toffel, 2008), leaving us with too little understanding of the mechanisms by which CSR affects firm performance (Margolis et al., 2009; Margolis and Walsh, 2003). Numerous studies have since expounded on the role of external stakeholders in linking CSR and firm performance. Less attention has been paid to the role of internal stakeholders, despite the importance of human capital to firm performance (e.g., Campbell et al., 2012; Huselid, Jackson, and Schuler, 1997; Koch and McGrath, 1996) and the fact that corporate CFOs, investment professionals, and CSR professionals consistently report that one of the key ways that CSR programs improve companies’ financial performance is through employees.²

¹ Governance & Accountability Institute, *Corporate ESG/Sustainability/Responsibility Reporting*, 2012.

² McKinsey and Company, *Valuing Corporate Social Responsibility: McKinsey Global Survey Results*, 2009.

Using three natural field experiments implemented in online labor marketplaces, this paper (a) provides *causal* evidence that certain CSR policies influence certain employee outcomes and (b) provides insight into distinct mechanisms by which they do so.³ Specifically, CSR influences salary requirements by acting as an informational signal about a firm's treatment of its employees and influences employee performance by generating feel good, "warm glow" utility.

I also demonstrate that higher-performing workers, who normally command higher wages, were more responsive to a corporate philanthropy program than lower-performing workers and were willing to give up their wage differential to work for a firm with a corporate philanthropy program. This elevates the strategic relevance of CSR programs, since it has been established that higher-performing workers have higher bargaining power and contribute more value to the firm (Campbell et al., 2012). It also suggests that, at the recruiting phase, firms where higher-performing recruits command a significant salary differential may benefit more from CSR programs than other firms do.

In sum, this paper contributes to the debate on the role of CSR in corporate strategy by positing mechanisms by which CSR can influence firm financial performance via a critical internal stakeholder—the employee—and by providing causal evidence of those mechanisms.

My research settings are the online labor marketplaces of two employers: a small startup company hiring on Elance (in Experiment 1) and a fictitious company hiring on Amazon Mechanical Turk (AMT) (in Experiments 2 and 3). The use of online labor marketplaces has been skyrocketing in recent years, making these research settings increasingly relevant.⁴ Indeed,

³ Institutional Review Board approval was obtained to conduct these experiments. Salary requirements (Carnahan, Agarwal, and Campbell, 2012; Larkin, Pierce, and Gino, 2010) and employee performance (Koch and McGrath, 1996; Shaw, Park, and Kim, 2013) are employee outcomes that have been shown to be critical to firm performance.

⁴ Accenture, *Trends Reshaping the Future of HR: The Rise of the Extended Workforce*, 2013.

the strategic management of online workers, independent contractors, and other non-inhouse workers will become increasingly important (Chesbrough and Teece, 2012; Gibson and Cohen, 2003; Kirkman et al., 2004).

Three attributes of these settings make them valuable for the study of the relationships of interest. First, the employers are not well-known firms, one being a startup with little Web presence at the time of the study and one being fictitious. This ensures that a worker's preconceived notions about the firm's reputation or its social responsibility do not confound the results. Second, there is no information about the socially responsible or irresponsible activities or objectives of these firms available on the Internet or elsewhere. This ensures that workers' perceptions of the firms' social responsibility cannot be influenced by information outside of the researcher's control. (For example, workers would not find out anything about either company's CSR by googling it.) Third, workers complete their work online and without interacting with each other. This reduces the likelihood of treatment-effect diffusion from the treatment group to the control group. The use of these research settings thus avoids many of the internal validity challenges that would plague similar experiments in well-known companies with non-online workers.

In each experiment, workers were hired online for short-term jobs, I manipulated whether or not the worker received information about the employer's CSR program, and then observed subsequent worker behavior. In Experiments 1 (Elance) and 2 (AMT), I show that receiving information about the firm's CSR program caused recruits to reduce their salary requirements. In Experiments 2 and 3 (both AMT), I show that receiving information about a corporate philanthropy program increased both the quantity and quality of unrequired work completed by the worker, a measure of a type of employee performance—organizational citizenship behavior.

This paper is, to my knowledge, the first to empirically demonstrate a causal effect of CSR programs on revealed (as opposed to hypothetical) employee salary requirements and productivity in a real labor-market setting.⁵ Although it has been shown that individuals rate socially responsible hypothetical employers as being more attractive (e.g., Albinger and Freeman, 2000; Backhaus, Stone, and Heiner, 2002; Greening and Turban, 2000; Turban and Greening, 1996), these studies stopped short of establishing a *revealed* preference for CSR firms when individuals make actual job choices. Establishing that prospective employees are in practice willing to pay to work for a socially responsible employer helps establish a revealed preference for CSR. Related empirical studies using observational data have mainly focused on comparing wages at nonprofit firms with wages at for-profit firms (as opposed to comparing varying social responsibility among for-profit firms) and have resulted in mixed findings (e.g., Frank, 1996; Leete, 2001), likely due to endogeneity challenges. As it could be the case that lower-performing workers self-select into nonprofit or CSR firms, resulting in lower wages at these firms (Preston, 1989), it is important to isolate a causal effect to understand the implications of CSR for the firm. Studies have found that people are hypothetically willing to give up part of what they might make in the future to work for a socially responsible firm (Montgomery and Ramus, 2011) or to participate in a firm's CSR activities (Bode and Singh, 2014), but the authors of these studies acknowledge that responses might be inflated due to social desirability. As it has been established that responses to hypothetical questions are not always consistent with the decisions made when real choices are on the line (List and Gallet, 2001)—in

⁵ In a working paper, Frank (2012) studies the effect of a social versus a nonsocial organizational mission on employee willingness to pay and finds results complementary to mine regarding the effect of CSR on employee salary requirements. This paper, unlike Frank's, studies the effect of CSR while holding the mission of the organization constant (a profit-maximizing mission). This paper also studies the effect on employee performance, which Frank's does not.

particular, with prosocial preferences and behavior (Levitt and List, 2007)—it is critical to study the relationship between CSR and employee salary requirements in real labor-market settings.

Researchers have used cross-sectional data to demonstrate an empirical relationship between CSR and employee performance (Delmas and Pekovic, 2013; Hansen et al., 2011), but have recognized the limitations of using cross-sectional data to establish causal effects. Others have used individual-level surveys to study the relationship between people’s self-reported perceptions about CSR and self-reported measures of willingness to go above and beyond in their work (Rupp et al., 2013), but have recognized that people don’t always walk their talk.

Because the subjects of my field experiments undertake their tasks naturally, unaware of the experiment, this paper combines the most attractive elements of lab experimentation and naturally occurring data—randomization and realism, respectively (List, 2009). Furthermore, subjects cannot excuse themselves from being treated, minimizing self-selection bias (List, 2009).

By demonstrating a *causal* effect of CSR on *revealed* employee behaviors that have already been shown to be critical to firm performance, this paper provides insight into the role of an internal stakeholder—the employee—in explaining the relationship between CSR and firm performance. It therefore contributes to the emerging literature on the mechanisms by which CSR influences firm performance.

The remainder of the paper is organized as follows: Section 2 summarizes the relevant literature and develops hypotheses. Section 3 describes the field experiment settings, Elance and Amazon Mechanical Turk. Sections 4, 5, and 6 summarize the design, data sample, construction, and results of Experiments 1, 2, and 3, respectively. Section 7 explores the mechanisms behind

the effect of CSR on employee behavior. Section 8 concludes and discusses implications for managers and for future research.

2. Literature Review and Hypothesis Development

2.1. Corporate Social Responsibility and Firm Performance: The Role of Stakeholders

In explaining the relationship between CSR and firm performance, the role of external stakeholders such as consumers (e.g., Casadesus-Masanell et al., 2009; Du, Bhattacharya, and Sen, 2011; Elfenbein, Fisman, and McManus, 2001; Servaes and Tamayo, 2013), regulators (e.g., Koh, Qian, and Wang, 2013), activists (e.g., Baron and Diermeier, 2007; Henisz, Dorobantu, and Nartey, 2013), the media (e.g., Luo, Meier, and Oberholzer-Gee, 2012), and capital providers (e.g., Cheng, Ioannou, and Serafeim, 2013; Ioannou and Serafeim, 2014) has been highlighted. In contrast, the role of an internal stakeholder—the employee—should be better understood, given the importance of human assets to the firm (Campbell et al., 2011; Coff, 1977).

The empirical literature using firm-level analysis to study how CSR influences firm financial performance through stakeholders faces two main challenges. First, methodological concerns such as omitted-variable bias and reverse causality (Margolis and Walsh, 2001) continue to be a problem. Indeed, stakeholders posited to be the channels through which CSR influences firm performance have been shown to influence CSR.⁶ Second, the appropriate

⁶ For example, scholars have explained that consumers, a channel identified as a mechanism by which CSR influences firm performance (Servaes and Tamayo, 2013), can influence the firm's socially responsible/irresponsible behavior (Bennett, Pierce, Snyder, and Toffel, 2013) and can influence firms to increase their socially responsible claims (McDonnell and King, 2013). Likewise, reducing regulatory and government scrutiny has been described as a mechanism by which CSR can influence performance (e.g., Koh, Qian, and Wang, 2013), but it has also been shown that community institutional pressures (Marquis, Gynn, and Davis, 2007) and government actors (Marquis and Qian, 2014) influence CSR.

measurement and specification of CSR (Waddock and Graves, 1997) has been a challenge. It has been noted that although a plethora of CSR ratings is available to researchers (Delmas, Etzion, and Nairn-Birth, 2013), even the best—those of the KLD Stats Database—are noisy aggregate measures of a firm’s true CSR (Chatterji, Levine, and Toffel, 2009). Furthermore, the aggregation of varied CSR constructs makes interpretation of results difficult and may fail to capture differential effects (Chen and Delmas, 2011; Delmas and Doctori-Blass, 2010; Mattingly and Berman, 2006; Rowley and Berman, 2000). Godfrey et al. (2009) point out opportunities to study finer-grained CSR activities to better understand how value is created for the firm.

This paper seeks to address these two major challenges by (a) focusing on specific CSR-related policies and actions rather than using aggregated CSR constructs and (b) taking a different approach and seeking to establish a *causal* relationship in the first link of the chain connecting CSR to stakeholder outcome to firm performance. The latter part of my approach draws from Du, Bhattacharya, and Sen (2011), who point out that the effectiveness of a macro-level activity such as CSR as an instrument of competitive strategy depends on the micro-level actions of individuals.⁷ My approach also speaks to the micro-foundations of strategy, an emerging subfield of strategic management research that highlights the importance of understanding how firm policies affect individual behavior and, in particular, employee behavior (Foss and Lindberg, 2013).

⁷ While Du and her colleagues focused on identifying the effect of CSR on consumer behavior, I focus on identifying its effect on two employee outcomes that have been shown to be critical to firm financial performance: salary requirements (Carnahan, Agarwal, and Campbell, 2012; Larkin, Pierce, and Gino, 2010) and performance (Koch and McGrath, 1996; Shaw, Park, and Kim, 2013).

2.2. Corporate Social Responsibility and Employee Behavior

Individuals develop perceptions of a firm's qualities by interpreting various informational signals (Fombrun and Shanley, 1990). A firm's CSR activities are among those signals with a favorable influence (Barnett, 2007; Barnett and Salomon, 2012; Waddock and Graves, 1997).

2.2.1. CSR and Prospective Employee Salary Requirements. Prospective employees have imperfect information about a firm's working conditions and treatment of its employees and thus are uncertain about how a firm would treat them once it hired them. They interpret a firm's CSR activities as a signal that the firm is trustworthy and treats the community well (Godfrey et al., 2009) and infer from this that the firm likely treats its employees well (Greening and Turban, 2000; Turban and Greening, 1996). Prospective employees therefore prefer socially responsible firms. It has been established that individuals are willing to pay more for products tied to charitable donations or other socially responsible practices (e.g., Casadesus-Masanell et al., 2009; Elfenbein, Fisman, and McManus, 2012; Elfenbein and McManus, 2010). It has also been suggested that it is prosocially oriented recruits who are attracted to CSR firms (Evans and Davis, 2011) and thus should be willing to pay a premium to work there. By contrast, a mechanism of signaling about employee treatment implies that even purely self-interested, non-prosocially oriented individuals should prefer to work with a CSR firm—everybody prefers to be treated better—and thus be willing to pay for this by accepting lower payment. This leads to the prediction:

Hypothesis 1 (H1): A CSR program makes recruits willing to accept lower payment.

2.2.2. CSR and a Treatment Effect on Employee Performance. A firm's CSR activities also signal to stakeholders whether and to what extent the firm is prosocial or “moral.”

This enables an employee to indirectly garner utility similar to the that of the “warm glow” utility (Andreoni, 1989, 1990) that can be obtained by behaving prosocially himself or herself (Barnea and Rubin, 2010). When a firm’s CSR activities signal the firm’s prosocial orientation to the outside world, this also enables an employee to indirectly garner utility similar to the “image” utility that can be obtained from having a prosocial image him or herself (Ariely, Bracha and Meier, 2009; Benabou and Tirole, 2006) Through the “warm glow,” a firm’s CSR activities in turn can help satisfy an employee’s need for a meaningful existence (Rupp et al., 2006). Drawing on social identity theory, both “warm glow” and “image” utility manifest as greater self-image and increased job satisfaction among employees. That is, when an employee of a socially responsible firm favorably compares his or her qualities—or that of his or her employer—to that of others, his or her self-image and job satisfaction increases (Ashforth and Mael, 1989; Dutton and Dukerich, 1991; Greening and Turban, 2000; Turban and Greening, 1996).

High job satisfaction (Bateman and Organ, 1983; Illies, Scott, and Judge, 2006) and the perception that an employer is trustworthy and fair (e.g., Bolino and Turnley, 2003; Niehoff and Moorman, 1993) have been identified as drivers of an important type of employee performance: organizational citizenship behavior (OCB) (Morrison, 1994; Organ, 1988), also called prosocial organizational behavior (e.g., Brief and Motowidlo, 1986). OCB includes taking on additional assignments, voluntarily assisting others at work, and otherwise going above and beyond what is formally required by the job (Bolino and Turnley, 2003). It has been shown to be critical for organizational effectiveness (Nahapiet and Ghoshal, 1998).

Since CSR influences the drivers of OCB, it should increase OCB. This mechanism by which CSR influences employee performance is a *treatment* effect of CSR on employee performance and thus differs from a selection or sorting effect channeling higher performers into

CSR firms (e.g., as suggested by Albinger and Freeman, 2000; Brekke and Nyborg, 2008). Thus, irrespective of the type of performer, CSR programs should improve a certain type of worker performance: willingness to go above and beyond what is formally required by the job.

Hypothesis 2a (H2a): A CSR program makes employees more likely to go above and beyond what is formally required by the job.

The “warm glow” utility of working for a socially responsible firm is even higher if the employee is prosocially oriented and sees value congruence with the employer (Evans and Davis, 2011). Since one of the drivers of OCB is higher for these individuals, we would expect CSR to positively influence their OCB more than the OCB of individuals who are not prosocially oriented.

Hypothesis 2b (H2b): Prosocially oriented employees are more likely to go above and beyond what is formally required by the job in response to a CSR program than employees who are not prosocially oriented.

2.2.3. Employee Participation in CSR. Scholars have established that employee participation in general affects job satisfaction (Wagner, 1994). It has also been pointed out that for employees in meaningful jobs, greater connection to the prosocial impact of their jobs improves outcomes (e.g., Grant, 2008) and that employee participation in CSR influences employee-company identification (Kim et al., 2010). By this reasoning, employees should have an even greater preference to work at a firm that elicits their participation in its CSR program than at a firm that does not and should thus be even more willing to pay to work there. Likewise,

employees should be even more willing to engage in OCB when working for a firm that elicits their CSR participation.

Hypothesis 3a (H3a): A CSR program that elicits employee participation makes recruits accept lower payment than a CSR program that does not.

Hypothesis 3b (H3b): A CSR program that elicits employee participation makes employees more likely to go above and beyond what is formally required by the job than a CSR program that does not.

3. Field Experiment Settings

The settings for the experiments used to analyze the relationships of interest are two online labor marketplaces, Elance and Amazon Mechanical Turk (AMT). The use of online labor marketplaces, also referred to as independent contractor sites, has been rising in recent years.⁸ Freelancers, contractors, and temporary workers make up an estimated 20-30% of the US workforce, up from 6% in 1989, and companies spend an estimated \$300 billion per year on contingent labor.⁹ Online independent contracting is a rapidly growing market, with eight times the number of workers registered on Elance and ODesk (the two largest sites) alone in 2013 compared to the number of workers registered on such sites in the entire decade leading up to 2013.¹⁰

⁸ Accenture, *Trends Reshaping the Future of HR: The Rise of the Extended Workforce*, 2013.

⁹ Accenture, *Trends Reshaping the Future of HR*.

¹⁰ Accenture, *Trends Reshaping the Future of HR*.

3.1. Elance

Elance is an online labor marketplace that has been identified as a promising yet underused setting for management research (Aguinis and Lawal, 2012) since small, medium-sized, and even large companies are increasingly outsourcing job functions and using websites like Elance (Needleman, 2010). There are over 500,000 businesses posting jobs on Elance and over 2.3 million registered Elance workers. According to Elance's Online Employment Report, in 2013 alone, 441,000 new businesses joined Elance, 1,214,000 new jobs were posted, 1,153,000 new freelancers joined, and freelancers earned \$285,000,000.

On Elance, employers post jobs, freelancers submit proposals including bids for those jobs, and employers select from submitted proposals to hire workers. Typical job values are in the hundreds of dollars, although there is significant variation by type of job. Elance job categories include IT and programming (37% of jobs posted), design and multimedia (23%), writing and translation (17%), administrative support (9%), sales and marketing (9%), finance and management (2%), engineering and manufacturing (2%), and legal (1%). The average hourly wage for US freelancers on Elance is \$28; this would translate into an annual income of \$56,000 (Eha, 2013).

After a job is completed on Elance, employers submit ratings and feedback, which are easily viewed on the worker's Elance page. These ratings affect the worker's overall Elance performance rating, which appears prominently on a worker's proposal. There is little recourse for undoing an unfair or particularly harsh rating and there are a number of blogs and websites concerned with how to get good and fair feedback on Elance. Given the online nature of the employer-employee relationship, there is also some concern amongst workers that employers

may not pay the agreed amount in a timely manner or at all. If the employer is unresponsive or shuts down its Elance account, there is little the worker can do to retrieve payment.¹¹ An informational signal about a potential employer's likelihood of fair or generous treatment would therefore be valuable to a prospective worker.

3.2. Amazon Mechanical Turk

Amazon Mechanical Turk (AMT) is an online labor marketplace that has been frequented by researchers as an online alternative to lab surveys and experiments where participants are aware they are participating in a research study, but has been underused as a setting in which to implement field experiments and study actual employer-employee behavior in a real labor market. Only very recently has its potential as a field experimental setting to study inputs to worker motivation and output (e.g., Chandler and Kapelner, 2013; Horton and Chilton, 2010) begun to be tapped.

On AMT, “requesters” post jobs and “workers” choose which jobs to complete for a payment set by the employer. Jobs are carried out and submitted online. AMT jobs, called HITs (an acronym for human intelligence tasks) are typically simple enough to take only a few minutes. They include such tasks as image interpretation, audio transcription, and survey completion. More complicated tasks are typically decomposed into smaller HITs. Pay can be as low as \$0.01 and rarely exceeds \$1.00. The average effective wage of an AMT worker is \$4.80 per hour (Mason and Suri, 2012). Approximately 500,000 HITs are currently available. Studies have confirmed that US AMT workers are not uncharacteristic of the US work population (Berinsky, Huber, and Lenz, 2012) and act in accordance with behavior in other online, offline,

¹¹ The employer and worker can opt to use an escrow account to ensure that the employer has the funds available to pay the worker through Elance, but not all employers use this feature and it is up to the employer to release the funds from escrow.

and lab studies (Horton and Chilton, 2010; Horton, Rand, and Zeckhauser, 2011; Paolacci, Chandler, and Ipeirotis, 2010).

After a worker completes a HIT, the requester can reject it and not pay if the work is deemed unsatisfactory. A rejection affects the worker's HIT approval rating, a score logged by AMT that indicates the proportion of a worker's previous AMT HITs that have been approved. Since employers can screen workers based on their HIT approval ratings, a high rating is important. If a worker feels unfairly treated by a requester, he or she can post about this experience on one of the numerous AMT-related blogs/websites, but there is little other recourse.

As in the Elance setting, an informational signal about a potential employer's likelihood of fair or generous treatment would be valuable to a prospective AMT worker. We would thus expect that information about an employer's CSR would affect prospective employees' salary requirements in both settings. Because the workers complete their work online and anonymously, the potential "image" utility mechanism that could contribute to the effect of CSR on employee willingness to go above and beyond for the firm is controlled for. An effect of CSR on OCB in this setting would thus likely be explained by the feel-good, "warm glow" mechanism.

3.3. Tradeoffs between Elance and Amazon Mechanical Turk

Both Elance and AMT offer natural labor-market contexts in which to study firm-employee (or firm-contractor) interactions. Each has pros and cons from a research perspective. When implementing field experiments on AMT, the researcher can easily ensure random assignment without any confounding exchange of information (since instructions are automated online and are thus controlled and exactly the same for all workers), whereas on Elance additional steps must be taken to ensure that there is no confounding exchange of information (since

communication can take place between the employer and freelancer before, during, and after the job). On AMT, it is easy to attract and hire many workers for a single job, whereas on Elance it is harder to do so, resulting in smaller sample sizes. Compared to AMT HITs, Elance jobs are more complex, require more time, and command higher pay, making them more representative of corporate or entrepreneurial work.

4. Field Experiment 1

4.1. Design

The first field experiment was implemented in collaboration with a startup company, UrGift.In.¹² UrGift.In advertised jobs on Elance: first, “Data Entry into Excel from Website (Top 100 Mom Blogs of 2012)” and subsequently (after the first job posting was closed), “Data Entry into Excel from Website (Directorio de Entidades...).”¹³ Each job posting noted that the job would be posted for up to two weeks and that payment would be fixed-price (as opposed to hourly).¹⁴ In the job description, interested applicants were directed to complete a prequalification survey. Prequalification surveys or tasks are sometimes required on Elance to help hiring companies filter out applicants who submit generic proposals and to help identify the applicants best suited for a particular job. During the prequalification survey, administered on an external survey site, participants were first asked a few questions related to UrGift.In’s line of business; that is, whether they had ever used Amazon, Facebook, and mobile applications before. Those who

¹² UrGift.In is a startup company, founded in June 2012, which has won entrepreneurial competitions such as MassChallenge. It uses Elance for most of its hiring. At the time of the study, there was no information available online or elsewhere about UrGift.In’s socially responsible intent or CSR programs/activities. The experiment took place in August 2013.

¹³ Although the second job description included a Spanish-language website, the job description indicated that knowledge of Spanish was not required.

¹⁴ The proposal bid amounts were set as private, so that applicants could not see the bids submitted by others. Freelancers with a premium Elance membership (which costs \$10/month) can only view the average, lowest, and highest bid amounts at any given time.

answered “no” to all three questions were informed that they did not prequalify. The rest were randomly assigned to one of two conditions: (1) a CSR treatment group, which received information about UrGift.In’s intent to be a socially responsible company and (2) a control group, which did not. (See Figure 1 for the exact messages corresponding to each condition) After receiving their messages, applicants were invited to continue with the application process and were then asked for information about their level of education and years of work experience. Lastly, they were given a prequalification code to include in their Elance proposal, which included their bid amount. UrGift.In later chose and hired one worker for each of the two job postings.¹⁵

4.2. Sample

Of the 125 people who started the prequalification survey, 17 exited before the random assignment of conditions. Of those who were randomly assigned to a control or treatment condition, 6 did not finish the survey. Of those who finished, 13 did not submit proposals on Elance. As there was no statistically significant difference between the control and treatment groups in either likelihood of finishing the prequalification survey or likelihood of submitting an Elance proposal, this suggests that selection bias due to attrition is minimal.¹⁶ Four observations were dropped because a person completed the survey more than once and saw both the treatment and the control messages. The resulting sample size is 79 observations.

¹⁵ Data was not gathered on these two workers’ performance on the job.

¹⁶ There was no significant relationship between likelihood of finishing the entire survey and treatment condition although, directionally, individuals who received the CSR message were more likely to finish the survey (0.92 for the control group, 0.98 for the CSR treatment group, $\chi^2(1)=0.55, p=0.46$). There was no significant relationship between likelihood of submitting a proposal and treatment condition although, directionally, individuals who received the CSR message were more likely to submit a proposal (0.81 for the control group, 0.91 for the CSR treatment group, $\chi^2(1)=1.99, p=0.16$).

Table 1 reports summary statistics for the sample by condition. There were no statistically significant differences between the mean characteristics listed in Table 1 for the treatment and control groups except for geographic location, suggesting that randomization was successful and that selection bias due to observables is minimal.¹⁷ Based on self-reported data gathered during the prequalification survey, 86% of the applicants in the sample have a college degree and applicants have, on average, 11 years of work experience. Based on Elance proposal data, applicants had, on average, completed 12 previous Elance jobs, earned \$119.13 per job, and received 3.8 stars (out of 5) for previous Elance jobs. Almost half are based in Asia (46%), followed by the US (35%), non-European Union Europe (6%), Central and South America (5%), the European Union (4%), and Canada (3%). Based on a classification of names and pictures from their Elance proposals, 64% of the applicants are women. The mean bid amount for the sample was \$100.75 (standard deviation \$94.4).

4.3. Variable Construction

Dependent variable. *Bid amount* is a continuous variable measured as the bid amount submitted on the Elance proposal.

Independent variable. *CSR message* is a dummy variable coded 1 if the worker received information about the company's intention to be a socially responsible company and 0 otherwise.

Control variables. Control variables were constructed from information reported by the applicants during the prequalification survey (whether the worker has a college degree and years of work experience) and from information provided by Elance for proposal submissions (all other demographic and Elance experience characteristics). *Years of work experience*, *Number of previous Elance jobs*, and *Earnings per previous Elance job* are continuous variables. *College*

¹⁷ These geographic controls are thus included in the main regressions reported in Section 4.4.

degree is a dummy variable coded 1 if the worker has a college degree and 0 otherwise. *Female* is a dummy variable. Gender was assigned based on the profile name and picture of the applicant. When gender could not be determined (because the profile name is a company name or gender-neutral name and the profile picture is a logo), this variable was coded as missing (for 5 observations). *Living in Asia* is a dummy variable coded 1 if the worker lives in Asia and 0 otherwise. *Living in US* is a dummy variable coded 1 if the worker lives in the US and 0 otherwise. *2nd job posting* is a dummy variable coded 1 if the worker submitted a proposal for the second of the two jobs posted and coded 0 if the worker submitted a proposal for the first job.

4.4. Results

Figure 2 presents the kernel density estimations of bid amount (USD) for the control and CSR treatment groups. The Kolmogorov-Smirnov and Wilson rank-sum (Mann-Whitney) tests confirm that the distributions of the control and treatment groups are statistically different ($p < 0.05$). The mean bid amount was significantly higher for the control group than for the CSR treatment group (\$130.59 vs. \$73.10, $t(77)=2.84, p < 0.01$), as was the median bid amount (\$87.67 vs. \$54.79, $\chi^2(1)=6.65, p < 0.05$), providing support for H1.

OLS regression results are reported in Table 2. The dependent variable is the bid amount in US dollars. Model 1 shows that receiving a socially responsible message resulted in a significantly lower bid amount ($\beta = -\$57.97, p < 0.01$). This represents an economically significant decrease of approximately 44% compared to the mean bid amount of the control group. Model 2 includes control variables that could influence workers' bid amounts. The coefficient on *2nd job posting* shows that whether the applicant submitted a proposal for the first or second job posted did not have a significant effect on the bid amount. This reflects the fact

that the job posts were very similar. Women submitted higher bids than men ($\beta = \$69.12, p < 0.01$). The coefficient on *College degree* is not significant, but is in the direction one would expect. Applicants with more work experience (not specific to Elance) submitted higher bids ($\beta = \$1.92, p < 0.10$), while applicants with more Elance experience (*Number of previous Elance jobs* and *Earnings per previous Elance job*) submitted slightly lower bids ($\beta = -\$0.34, p < 0.01$ and $\beta = -\$0.03, p < 0.10$, respectively). *Living in the US* and *Living in Asia* are included due to imperfect randomization of geographic location across the control and treatment groups, but the coefficients on these variables are not significant. The coefficient on *CSR* remains significant with the inclusion of these control variables ($\beta = -\$48.68, p < 0.05$), providing support for H1.

Model 3 includes as controls those variables that were shown in Model 2 to be statistically significant predictors of bid amount and also includes the interaction of *CSR* with *Female*. It demonstrates that women submitted lower bids in response to the socially responsible message than men did ($\beta = -\$60.92, p < 0.10$).

The effect of a CSR message on bid amount is robust to a log transformation of the bid amount variable (OLS regression including controls, $\beta = -0.32, p < 0.10$). This analysis suggests that people in the CSR treatment group submitted bids that were 32% lower than those of the control group. The effect of a CSR message on bid amount is robust to using Poisson—rather than OLS—regression ($\beta = -0.49, p < 0.01$), to dropping the top and bottom two percent of bids ($\beta = -\$42.66, p < 0.05$), and to dropping bids more than two standard deviations from the mean ($\beta = -\$29.54, p < 0.05$).

These results provide strong support for the prediction that a CSR program makes recruits lower their payment requirements (H1).

5. Field Experiment 2

5.1. Design

Acting as a firm, A and Z Inc., I advertised a HIT on AMT for the completion of a short survey to determine eligibility for an image-interpretation job.¹⁸ The posting indicated that workers would be paid \$0.25 to complete the eligibility questions and survey, which was estimated to take three to five minutes, and that, if deemed eligible, workers would have a chance to complete a one-minute image-interpretation job for up to \$0.30. The survey HIT and the image-interpretation job were designed to resemble other HITs encountered on AMT in terms of nature, pay, and difficulty. Once workers were hired, they were taken to an external survey site for the remainder of the study. There, they were asked a few questions which were supposedly to determine their eligibility for the task (although all participants were deemed eligible by design).

To construct a proxy for CSR treatment, workers were then randomly assigned to one of five conditions: a control group and four philanthropy treatment groups. Each group received a different message. (See Figure 3 for the message corresponding to each condition.) The degree of employee participation was varied in the four philanthropy treatment groups to test whether philanthropy programs with and without employee participation have different effects. I considered two types of participation: the first links the charitable giving amount to completion of the worker's job (compared to a generic message about the employer's charitable giving). The second solicits the worker's input through selection of or voting for the charities to receive the donation (compared to simply being informed of the charities to receive the donation). The charitable giving language was similar to that used by firms in emails or printed reports informing employees about corporate charitable giving.

¹⁸ This experiment took place in June 2011.

To construct a proxy for the reservation wage, workers were asked to indicate—in one-cent increments between \$0.00 and \$0.30—what payments they would accept for completing a one-minute image-interpretation task. They were informed that a payment in that range would be offered and that only those workers who indicated that they would accept that amount would be prompted to complete the image-interpretation job and be paid for doing so (as a bonus payment). The method used to elicit reservation wage was based on the Becker-DeGroot-Marschak (1964) method, commonly used in experimental economics to ensure incentive compatibility in responses about willingness to pay. That is, by only allowing those workers who have already indicated that they would be willing to accept the amount that is subsequently offered to complete the image-interpretation task and be paid for doing so, I ensured that workers have the incentive to report their true wage preferences.

After a wage was randomly selected and those whose reservation wage was too high were informed that they did not qualify, those whose reservation wage was low enough completed the image-interpretation job.¹⁹ All workers were then surveyed to gather information on demographic and other characteristics. Lastly, the workers were asked to answer six optional multiple-choice questions providing feedback about the job. It was explained that these were not required for payment but would be helpful to the company. Workers were paid at the end of the job.

¹⁹ The image interpretation task (interpreting cells in an image as malignant or not based on their shape/features) was designed to be similar to that of other AMT HITs.

5.2. Sample

Five hundred workers living in the United States, with HIT approval ratings of 95% or higher, were recruited on AMT for this field experiment.²⁰ Sixty-six observations were dropped due to (a) repeat IP addresses, suggesting that a worker may have participated in the experiment more than once; (b) starting but not completing the HIT; (c) irrational responses to the reservation wage question (for example, acceptance of a wage of 11 cents but not 12 cents); or (d) other indications that the worker was not paying attention to the job and clicked through the responses as quickly as possible (for example, answering that age is 0 or above 100). Only 11 individuals who did not complete the HIT exited after the random assignment of conditions and there was no statistically significant difference between the control and treatment groups in likelihood of exiting.²¹ This suggests that selection bias due to attrition is minimal. The resulting sample size is 434 workers.

Table 3 presents summary statistics for workers in the sample: demographic characteristics, AMT experience characteristics, and charitable characteristics—all self-reported. Most workers reported that they complete jobs on AMT for the purpose of earning money (67%), suggesting that payment received for AMT jobs is indeed important to workers.

There were no statistically significant differences ($p > 0.10$) between the mean demographic, AMT experience, and charitable characteristics listed in Table 3 for the CSR and control groups, suggesting that randomization was successful and that selection bias due to observables is minimal.²²

²⁰ 95% is a common cutoff in AMT job postings since employers, in an effort to ensure high-quality output, want to screen out workers who use automated programs to complete HITs.

²¹ Likelihood of finishing the HIT was 0.99 for the control group and 0.97 for the CSR treatment group; $t(240) = -1.27$, $p = 0.20$.

²² Based on independent sample t-tests. Lack of statistical significance is robust to use of chi-square tests for categorical variables.

5.3. Variable Construction

Dependent variables. *Reservation wage* is a continuous variable measured as the lowest wage each worker indicated that he or she would accept for completion of the one-minute image-interpretation task. *Answered optional questions* is a dummy variable coded 1 if the worker answered any of the optional questions and 0 otherwise. This represents extra effort put forth by the worker beyond formal job requirements and, in this context, is a proxy for a type of worker performance—organizational citizenship behavior.

Independent variables. *CSR message* is a dummy coded 1 if the worker received any type of information about the corporate philanthropy program and 0 otherwise.

Control variables. Control variables are constructed from survey answers collected at the end of the job. These include demographic control variables (including gender, age, level of education, income, political affiliation, and race); charitable characteristic control variables (including volunteer and donation history); and AMT experience control variables (including HITs per week in the last month). *Perfect HIT approval rating* is a proxy for worker performance using the rating that an AMT worker received based on his or her performance on past HITs. It is operationalized as a dummy variable equal to 1 if the worker had a HIT approval rating of 100 (the highest possible rating) and 0 otherwise. *Volunteer & donate* is a dummy variable equal to 1 if the worker volunteered with and donated to charity in the previous year and 0 otherwise.

5.4. Results

Table 4 reports mean reservation wage and likelihood of answering the optional questions for the entire AMT sample and by condition. The mean reservation wage for the entire sample was

\$0.144. As Columns 2 and 3 demonstrate, the mean reservation wage for the control group was marginally significantly higher than that of the CSR treatment group (\$0.158 vs. \$0.140, $t(164)=-1.88$, $p < 0.10$; an 11% difference). Eighty-eight percent of all workers in the sample answered the optional questions. Workers who received a philanthropy message were more likely to answer them than workers in the control group (0.89 vs. 0.80, $t(432)=-2.34$, $p < 0.05$).²³

The mean reservation wage and likelihood of answering the optional questions for workers receiving the different philanthropy messages (reported in Columns 4-7) were statistically equivalent, whether the message was general or tied to the job and whether or not it solicited input.²⁴ This contradicts the prediction that a CSR program that elicits employee participation should have an even greater effect on employee salary requirements (H3a) or productivity (H3b) than one that does not. These four CSR treatment conditions have thus been pooled under one “CSR message” condition in the analyses that follow.

Figure 4 presents the kernel density estimations of reservation wage (US cents) for the control and CSR treatment conditions. The Kolmogorov-Smirnov test suggests that the distributions of the control and treatment groups are statistically different ($p < 0.10$).

The results of several OLS regressions are reported in Table 5. Model 1 shows that receiving a philanthropy message resulted in a marginally significantly lower average reservation wage ($\beta = -\$0.018$, $p < 0.10$). This represents a decrease of about 12% compared to the control. In Model 2, demographic and other worker characteristics were included in an alternate specification as a robustness check. Workers with perfect HIT approval ratings had higher reservation wages ($\beta = \$0.023$, $p < 0.05$), while those who volunteered and donated in the past

²³ Robust to use of chi-square test.

²⁴ For reservation wage: $F(1, 431)=0.11$, $p=0.74$ that general = tied-to-HIT; $F(1,431)=0.08$, $p=0.78$ that without input = with input. For likelihood of answering the optional questions: $\chi^2(1)=0.47$, $p=0.49$ that general = tied-to-HIT; $\chi^2(1)=0.66$, $p=0.42$ that without input = with input.

year had lower reservation wages ($\beta = -\$0.018, p < 0.10$), all else equal. Coefficients on other demographic control variables (gender, age, level of education, income, race, and political affiliation) were not statistically significant ($p > 0.10$). With the inclusion of controls, a philanthropy message resulted in a marginally lower average reservation wage ($\beta = -\$0.0169, p < 0.10$). These results provide marginal support for the proposition that a CSR program will make recruits accept lower payment (H1).

Model 3 allows *Perfect HIT approval rating* to interact with CSR treatment, and demonstrates that the wage premium normally demanded by the highest performers is qualified by a large negative interaction between *Perfect HIT approval rating* and *CSR message* ($\beta = -\$0.069, p < 0.01$). Thus, receiving information about the company's corporate philanthropy program leads the highest performers to forego most of the wage premium that they otherwise require. To investigate why the highest-performing workers might exhibit a greater response to *CSR message*, I compared them to everyone else on a number of characteristics. The highest performers were more likely to indicate that they had volunteered in the previous year (50% vs. 38%, $t(376) = -2.09, p < 0.05$), suggesting that they may be more prosocial, as proposed by Brekke and Nyborg (2008). However, Model 4 demonstrates that people who volunteered and donated in the past—behaviors which are proxies for prosocial inclination—did not exhibit a differential response in reservation wage to a CSR message ($\beta = \$0.0062, p > 0.10$). This suggests that it is not prosocial inclination that is driving the differential response among high performers. Instead, an intuitive explanation is that, because the highest performers care more about their performance rating and AMT reputation than others do (since employers can screen workers in order to hire only those with high or even perfect prior performance scores), these workers are more willing to pay to work with an employer that is likely to treat them fairly and generously

and they take CSR as a signal of that. This supports the signaling explanation of why CSR should affect reservation wage. The mechanisms behind the effects of CSR on employee behavior are further explored in Section 7.

The logistic regressions exhibited in Table 6 provide insight into the drivers affecting whether workers answered the optional questions. Model 1 demonstrates that receiving a philanthropy message increased the probability of answering the optional questions ($p < 0.05$), supporting the prediction that a CSR program increases employees' organizational citizenship behavior. A marginal effects analysis provides a sense of the effect size, showing that the probability of answering the optional questions increases by 9% for workers in the CSR treatment condition compared to those in the control condition. In Model 2, I control for worker characteristics that affect the likelihood of answering the optional questions. Intuitively, whether a worker completed the image-interpretation job would likely affect his or her experience on the HIT and thus the likelihood that he or she would go above and beyond for the employer. Likewise, workers with certain demographic characteristics could be more likely to go above and beyond for an employer. Model 2 shows that workers who completed the image-interpretation job were more likely to answer the optional questions ($p < 0.10$) and that women were more likely to do so than men ($p < 0.05$). This supports the notion that women are more cooperative and altruistic than men (Hofstede, 1980). Controlling for whether or not the worker completed the image-interpretation job and for demographic characteristics does not change the fact that receiving a philanthropy message results in a higher probability of answering the optional questions ($p < 0.05$). Results are also robust to the use of OLS and to probit—rather than logit—regressions. These results support H2a. I further explore the effect of a CSR program on organizational citizenship behavior in Experiment 3.

6. Field Experiment 3

6.1. Design

Acting as a firm, A and Z Inc., I advertised a data-gathering HIT on AMT, estimated to take 5-10 minutes, for payment of \$0.50.²⁵ Hired workers were taken to an external survey site to complete the HIT. Workers were given detailed instructions for the job, which consisted of gathering weather information for 10 specified dates from a historical weather website and completing a short survey. Workers were given a sample data-entry question and were instructed to enter an answer for feedback.²⁶ To construct a proxy for CSR treatment, workers were then randomly assigned to one of two conditions: a control group and a philanthropy treatment group.²⁷ Each group received a different message (see Figure 5 for the messages). Workers then received feedback about whether their answer to the sample question was correct and what the correct answer was.

Workers were prompted to enter the 10 required data-entry points, then asked if they were willing to complete additional data-entry points, which were optional and not required for payment. Those who were willing were provided 20 more data-entry queries and could provide answers to none, some, or all of them. Workers were then surveyed to gather information on demographic and other characteristics. They were paid at the end of the job.

²⁵ The job description was titled “Gather 10 data points from a historical weather website and answer a short survey.” This study took place in August 2013.

²⁶ Sample question: “In New York City, New York on Jan 1 2010, what was the Actual Max Temperature (in Fahrenheit)?”

²⁷ Because there was no differential response to the different types of philanthropy messages in Experiment 2, I used a single philanthropy treatment group in Experiment 3.

6.2 Sample

Six hundred workers living in the United States, with HIT approval ratings of 95% or higher, were recruited on AMT for this field experiment. Thirty-two observations were dropped due to (a) repeat IP addresses, suggesting that a worker may have participated in the experiment more than once; (b) starting but not completing the HIT; (c) answering that the worker has worked for the hiring employer before.²⁸ Thirty individuals who did not complete the HIT exited after the random assignment of conditions and there was no statistically significant difference between the control and treatment groups in likelihood of exiting.²⁹ This suggests that selection bias due to attrition is minimal. The resulting sample size is 568 workers.

Table 7 presents summary statistics for workers in the sample. There were no statistically significant differences ($p > 0.10$) between the mean characteristics listed in Table 7 for the CSR and control groups, suggesting that randomization was successful and that selection bias due to observables is minimal.³⁰

6.3. Variable Construction

Dependent variables. *Completed 1+ unrequired data points* is a dummy coded 1 if the worker completed at least one unrequired data points and 0 if the worker completed none of the unrequired data points. *# unrequired data points completed* is the number of optional data points (out of 20) that the worker completed, whether or not correctly. *# unrequired optional data points correct, conditional on completing 1+* is the number of optional data points (out of 20)

²⁸ All workers whose AMT IDs were associated with a previous A and Z Inc. job were excluded from completing this job, so it is unlikely that these worker actually worked for this employer before. It is possible that a worker created a new AMT ID, however, so these observations are dropped.

²⁹ Likelihood of finishing was 0.94 for the control group and 0.96 for the CSR treatment group; $t(596) = -1.12$, $p = 0.26$.

³⁰ Based on independent sample t-tests. Lack of statistical significance is robust to use of chi-square tests for categorical variables.

that the worker completed, conditional on the worker completing at least one. These are measures of extra work output, a proxy for OCB in this context. *% unrequired data points correct* is a proxy for quality of extra work unrequired by the job, and is equal to the number of unrequired data points correct divided by the number of unrequired data points completed. *% required data points correct* is the proportion of required data points that the worker entered correctly. It is a proxy for quality of work required by the job.

Independent variables. *CSR message* is a dummy coded 1 if the worker received information about the corporate philanthropy program and 0 otherwise.

Control variables. Control variables include demographic control variables and AMT experience and performance control variables. *HIT approval rating* is a proxy for prior AMT performance and takes the values 95, 96, 97, 98, 99, or 100. *HITs per week buckets* is a proxy for prior AMT experience and is an ordinal variable with the following values: 1 if the worker completed less than 10 HITs per week in the past month, 2 if the worker completed 10-49, 3 if the worker completed 50-100, and 4 if the worker complete more than 100. *Female* is a dummy variable equal to 1 if the worker is female and 0 if the worker is male. *College degree* is a dummy variable equal to 1 if the worker has a college degree and 0 otherwise. *Volunteer & donate* is a dummy variable equal to 1 if the worker volunteered and donated to charity in the prior year and 0 otherwise, and is a proxy for prosocial inclination.

6.4. Results

Figure 6 presents the kernel density estimations for the measures of work performance with statistically different distributions (Kolmogorov-Smirnov test, $p < 0.10$): *# unrequired data points completed* and *# unrequired data points completed, conditional on completing at least one*.

Table 8 presents summary statistics for these measures of worker performance. Although the likelihood of completing at least one unrequired data point was statistically equivalent for the control and treatment groups ($t(561)=-0.54, p > 0.10$), the treatment group completed more total optional data points ($t(563)=-2.01, p < 0.05$ for # unrequired data points completed; $t(220)=-3.05, p < 0.01$ for # unrequired data points completed, conditional on completing 1+). The treatment group also completed these unrequired data points more accurately ($t(139)=-2.28, p < 0.05$). The mean percent of required data points correct was statistically equivalent for the control and treatment groups ($t(565)=-0.14, p > 0.10$).

The results of several regressions exploring the drivers of the different measures of performance are reported in Table 9.³¹ Models 1 and 2, reporting logistic regression results, show that receiving a philanthropy message did not affect the likelihood of completing at least one unrequired data point, although the coefficient of interest is positive ($\beta = 0.09, p > 0.10$ and $\beta = 0.17, p > 0.10$, respectively). Females were 14% more likely to complete unrequired data points than men, according to a marginal effects analysis ($\beta = 0.59, p < 0.01$). Models 3 and 4, reporting OLS regression results, show that receiving information about the corporate philanthropy program positively affected the number of unrequired data points completed. Model 3 shows that workers in the CSR treatment group completed 26% more optional data points than the control group ($\beta = 1.49, p < 0.05$). Model 4 shows that, even controlling for demographics, prior performance, and prior experience, receiving a CSR message caused workers to complete more of the unrequired data points ($\beta = 1.81, p < 0.05$). This provides support for H2a. Women were more likely to complete extra work ($\beta = 2.84, p < 0.01$), supporting once again the notion that women are more cooperative and altruistic than men (Hofstede, 1980) and thus are more

³¹ The direction and significance of the coefficients of the variables of interest are robust to the use of Poisson—rather than OLS—regressions. OLS regression results are reported in this paper because of their ease of interpretation. Poisson regression results are available from the author upon request.

likely to engage in OCB (Organ and Ryan, 1995). Prior performance, prior experience, and prior education factors were not predictive of this measure of extra-role performance ($p > 0.10$). Model 5 shows that individuals who volunteered and donated in the past year completed less unrequired data points, all else equal ($\beta = -2.63, p < 0.05$), but completed directionally more unrequired data points in response to a CSR program ($\beta = 2.67, p = 0.14$).

Models 6, 7 and 8 explore the effect of a corporate philanthropy program on individuals who completed at least one of the unrequired data points. Models 6 and 7 show that information about a corporate philanthropy program caused workers who completed at least one unrequired data point to complete a higher number of them ($\beta = 2.68, p < 0.01$ and $\beta = 2.82, p < 0.01$, respectively). This represents an increase of about 19% compared to the control group. Model 7 shows that women completed more data points than men ($\beta = 1.82, p < 0.10$), and that workers with higher AMT scores completed fewer unrequired data points correctly ($\beta = -0.86, p < 0.05$). Individuals who volunteered and donated were more responsive to CSR treatment than those who did not volunteer and donate ($\beta = 5.50, p < 0.01$), supporting H2b.

Models 8 and 9 show that CSR treatment additionally caused an increase in accuracy on the extra data points completed ($\beta = 0.04, p < 0.05$ without controls and $\beta = 0.05, p < 0.05$ with controls). This represents an increase of 4% compared to the control. Models 11 and 12 show that accuracy on the required data points completed, a measure of in-role performance, was not affected by CSR treatment ($\beta = 0.00, p > 0.10$). Instead, the marginal differences in percent of required data points correct seem to be explained by prior AMT performance (HIT approval rating; $\beta = 0.01, p < 0.10$), prior AMT experience ($\beta = 0.01, p < 0.05$), and having a college degree ($\beta = 0.02, p < 0.10$).

Taken as a whole, the results in Table 9 provide strong support that a corporate philanthropy program made employees more likely to go above and beyond what was formally required by the job (H2a) and provide support that this effect was even greater for prosocially oriented employees (H2b).

7. How CSR Affects Employee Salary Requirements and OCB

To explore the mechanisms driving the effect of receiving information about CSR on different behavioral outcomes, I analyzed self-reported survey data collected from the CSR treatment groups (who received information about the firm's corporate philanthropy program) at the end of experiments 2 and 3.³² Participants in the CSR treatment groups were asked to indicate their agreement with a series of statements, using a five-point Likert scale with 1 being "Strongly Disagree" and 5 being "Strongly Agree." Table 10 presents summary statistics of workers' responses. Almost half of the workers in each experiment interpreted the charitable giving program as a positive signal about the employer's likely treatment of its employees (an index comprised of statements 1 through 3 in Experiment 2 and statements 1 and 2 in Experiment 3). Just over half of the workers indicated that learning about the charitable giving program made them feel good about themselves while working with this employer. Just under a quarter of the workers responded that the charitable giving program was an indication that the employer had excess profits. About a third of the workers indicated that working with this employer was a way for them to donate to charity.

³² Such data was not collected for Experiment 1.

To further explore the mechanisms driving individuals' behavioral responses to information about the corporate philanthropy program, Table 11 presents OLS regression results of the main dependent variables of interest on binary statement variables (equal to 1 if the individual "Agreed" or "Strongly Agreed" with the statement and 0 otherwise).³³ Demographic characteristics are included as controls in the presented regression results. Model 1 suggests that interpretation of the corporate philanthropy program as a signal about the employer's likely treatment of its employees was highly correlated with a decrease in reservation wage ($\beta = -3.29$, $p < 0.05$). This is in line with a signaling theory argument for how CSR can positively influence prospective employees' behavior before they are hired. A feel good or "warm glow" mechanism does not appear to affect this behavior ($p > 0.10$). By contrast, a feel good or "warm glow" mechanism does appear to drive much of the positive effect on employee behavior *after* employees are hired, as we would expect (in Model 2, $\beta = 3.31$, $p < 0.05$). Interestingly, interpretation of the corporate philanthropy program as a signal about the employer's likely treatment of its employees was negatively correlated with the number of unrequired data points completed (in Model 2, $\beta = -3.08$, $p < 0.05$). This suggests (a) that workers who are less certain about whether their employer treats its workers well (for example, by not unfairly rejecting the HIT to avoid paying) may do extra work to increase their chances of being treated well and (b) that the signaling mechanism could actually work to the employer's detriment after employees have been hired.

Agreement that working for the employer is a way to donate to charity was marginally correlated with the number of unrequired data points completed ($\beta = 2.71$, $p < 0.05$), suggesting that some of the effect on extra work completed could be due to workers feeling that they are

³³ Although agreement with these statements was not exogenous in this study, the relationships presented give insight into the mechanisms likely driving participants' behavioral response to CSR.

indirectly donating their time to charity by putting forth extra effort for an employer that donates to charity; here is an alternate mechanism for the observed effect of CSR on willingness to do extra work. In both Models 2 and 3, interpretation of the CSR message as an indication that the employer has excess profits was uncorrelated with reservation wage and number of unrequired data points completed, suggesting that employee behavior was not negatively affected by this perception of CSR in either experiment ($p > 0.10$).

8. Discussion and Conclusions

This paper provides causal empirical evidence that CSR decreases job seekers' salary requirements and increases employees' willingness to go above and beyond for the firm in a labor-market setting that is becoming increasingly relevant to strategic management. The finding that individuals have a willingness to pay to work with socially responsible employers supports the argument that prospective employees have a preference for working with socially responsible employers not only in hypothetical situations but *when actual job decisions are on the line*. The finding that a philanthropic giving program resonated even more strongly with higher-performing workers, making them willing to give up the wage differential they otherwise demanded, elevates the strategic relevance of CSR programs, since it has been established that higher-performing workers have higher bargaining power and contribute more value to the firm (Campbell et al., 2012). It also suggests that firms where higher-performing recruits command a significant wage differential may benefit by this mechanism more than other firms.

I provide evidence of a treatment effect of a CSR program on employee performance, a mechanism distinct from those put forth in the formal theoretical literature where it has been suggested, for example, that there is a labor-market screening effect of CSR with implications for

employee performance (e.g., Brekke and Nyborg, 2008; Burbano, Mamer, and Snyder, 2014). It suggests that, irrespective of the type of performer, CSR programs can motivate workers to go above and beyond for the firm.

My findings are consistent with an informational signaling theory explanation for how CSR affects recruits' salary requirements and with a "warm glow" explanation for how CSR affects employees' OCB. The finding that interpretation of a firm's CSR program as a signal of its likely treatment of employees was positively correlated with reduced reservation wage but negatively correlated with willingness to complete extra work unrequired for payment suggests that there may be value-creating and value-destroying tradeoffs in reducing uncertainty about how well an employer treats its employees. Future work could explore this tradeoff. Future work could also further explore the "image" utility mechanism through which CSR could affect OCB, as this paper's settings controlled for this mechanism.

This paper's findings complement those of the behavioral economics literature that has studied how a task's meaningfulness affects work effort and reservation wage (e.g., Ariely et al., 2008; Chandler and Kapelner, 2013) and how prosocial or mission-induced motivation affects principal-agent problems and work effort. (For a survey of economic theories on prosocial behavior generally, see Meier, 2007; for a review of the effects of prosocial motivation on principal-agent problems and work effort, see Delfgaauw and Dur, 2008.) Empirical papers have more recently assessed whether prosocially motivated effort (for example, where student workers are told that donations will be made to charity as a function of their work effort or performance) differs from effort that is not prosocially motivated, but have come up with mixed findings (e.g., Fehler and Kosfeld, 2014; Hossain and Li, 2014; Tonin and Vlassopoulos, 2010). My findings suggest that firm-level CSR policies which are independent of workers' effort or performance

may induce motivational effects similar to those of linking workers' effort or performance to a prosocial outcome. Future work could explore how these effects differ.

Similarly, related empirical work in organizational behavior has provided evidence that making the impact of meaningful work (such as public service work) more salient increases effort and improves performance (for a summary, see Michaelson, Pratt, Grant, and Dunn, 2014). It has been pointed out that this literature has demonstrated the effects of the meaningfulness *of* work rather than the effects of meaningfulness *at* work (Michaelson et al., 2014). My findings suggest that CSR policies, which could be an input to meaningfulness *at* work, may induce motivational effects similar to the effects of the meaningfulness *of* work.

The methodology used in this paper—random assignment of firm-level conditions through natural field experiments implemented in online marketplaces—can help establish causality when studying other relationships relevant to strategic management, particularly if employee outcomes are the dependent variable. Furthermore, as the strategic management of online virtual workers, independent contractors, and other non-inhouse workers becomes increasingly important (Chesbrough and Teece, 2012; Gibson and Cohen, 2003; Kirkman et al., 2004), these research settings will become even more relevant in their own right.

From a practical perspective, this paper suggests that managers involved in recruiting and hiring should highlight their firms' corporate philanthropy programs and socially responsible intent, particularly in firms where higher-performing recruits command a significant salary differential. It furthermore suggests that dissemination of this information in print (for example, in recruiting documents and presentations at career fairs) can be effective. This paper suggests that when managing virtual employees and short-term contractors, sharing information about a firm's CSR programs can make the employer more attractive to the employee, can influence the

salary that employees are willing to accept (and likely reduce the likelihood that higher salaries than those offered will be demanded by more qualified applicants), and can motivate employees to go above and beyond in their work. Offering or paying lower wages could then have negative employee-performance consequences for the firm; such tradeoffs are not explored in this paper.³⁴ Likewise, whether CSR's benefits to the firm—in the form of increased attractiveness to recruits, a willingness to accept lower payment, and increased OCB—outweigh the potential costs of the CSR programs and activities themselves is outside the scope of this paper.³⁵

A notable limitation of any field experiment is its generalizability. AMT HITs are not characteristic of typical full-time jobs. Elance jobs, albeit much more typical of “regular” jobs in large firms, are nevertheless managed and completed online, which is not the typical employer-employee relationship. Although this paper's findings are not directly generalizable to firms where employees work in-house and for a longer time, the theoretical underpinnings of the relationship between CSR and employee outcomes suggest that the effects may be even greater for more ordinary workers. If the informational signal CSR provides about a potential employer's likely treatment of its employees is valuable to prospective employees in a context where the employee-employer relationship will be short-lived and distant, it may be even more valuable when the employee-employer relationship will be longer-lasting and less distant. If employees feel good about—and generate “warm glow” utility from—working with a socially responsible firm for a short time, we might expect that employees working with a socially responsible firm for a longer time, or working where the CSR activity is more integrated with the company's business, would experience similar or even greater “warm glow” utility.

³⁴ It has been shown that, in some cases, wage can be negatively associated with employee effort (Fehr and Goette, 2007), which would reduce this concern.

³⁵ There are additional benefits to be garnered from CSR through its impact on other stakeholders.

Furthermore, one mechanism through which CSR would likely influence employee behavior in a more traditional employer-employee relationship—the “image” utility mechanism—was controlled for in this paper. It has been posited that CSR influences employee utility through perceived external prestige (Kim et al., 2010) and that individuals are motivated by public recognition and awareness of their own prosocial behavior (Ariely, Bracha, and Meier, 2009; Benabou and Tirole, 2006) and, by extension, of their employer’s prosocial behavior. We can extrapolate that the effects could be even greater were the employee not working anonymously, as this paper’s subjects were. Of course, these speculative extrapolations of existing theory are not tested in this paper. There is an opportunity for future research to empirically study how the effects found in this paper vary by the degree of integration of the employer-employee relationship. My findings are more easily generalizable to the strategic management of “virtual” human assets—a type of employee that is becoming increasingly important (e.g., Chesbrough and Teece, 2012; Gibson and Cohen, 2003; Kirkman et al., 2004)—through the use of online independent contractor sites. This paper suggests that these virtual employees respond to employers’ social responsibility and suggests the relevance of future research into such workers’ non-extrinsic motivations.

Another limitation of this study is its simple operationalization of CSR. By design, each experiment used one type of CSR (socially responsible intent in the Elance study and corporate philanthropy in the AMT study) to prevent problems associated with aggregating varied CSR constructs in empirical research (Chatterji and Levine, 2006; Chatterji et al., 2009). But that means the findings may not be easily generalized to CSR programs that are more interrelated and complex. It has been suggested that the positive effects of CSR should be even greater the more integrated a company’s CSR is with its business practice (Du, Bhattacharya, and Sen, 2007;

Porter and Kramer, 2006). Furthermore, the lack of a differential effect on reservation wage between a charitable giving program that involves employee participation and one that does not, as found in Experiment 2, may not apply to programs that involve employees in a more personal manner (for example, corporate charity days or employee volunteer programs). The bar for finding an effect in this study was high, given the context.

The effects of the CSR programs in this study suggest that further analysis of CSR programs—for example, analyzing the efficacy of other types of CSR and whether multiple CSR activities act as substitutes or complements—may be a fruitful direction for future research. Although my AMT study was limited to US workers, participants in the Elance study were geographically diverse. There are future opportunities to study how the effects identified in this paper vary by the geographic origin and location of the workers.

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Figures

**Figure 1. Message received, by condition
Experiment 1 (Elance)**

Control group	CSR treatment group
<p>We are processing your answers to determine whether we would like to invite you to continue with the application process...</p> <p>Click on "continue" after the button appears at the bottom right of this page.</p> <p>This should take approximately 10 seconds.</p>	
	<p>Meanwhile, we would like to tell you about the goals of our company.</p> <p>We seek to be a company that not only provides an excellent service to our consumers, but also which has a positive impact on the <i>broadier community</i> and on the <i>environment</i>.</p> <p>We hope that you share these goals and will support us in our efforts to be a <i>socially responsible company</i>.</p>

**Figure 2. Kernel densities of bid amount (USD), by condition
Experiment 1 (Elance)**

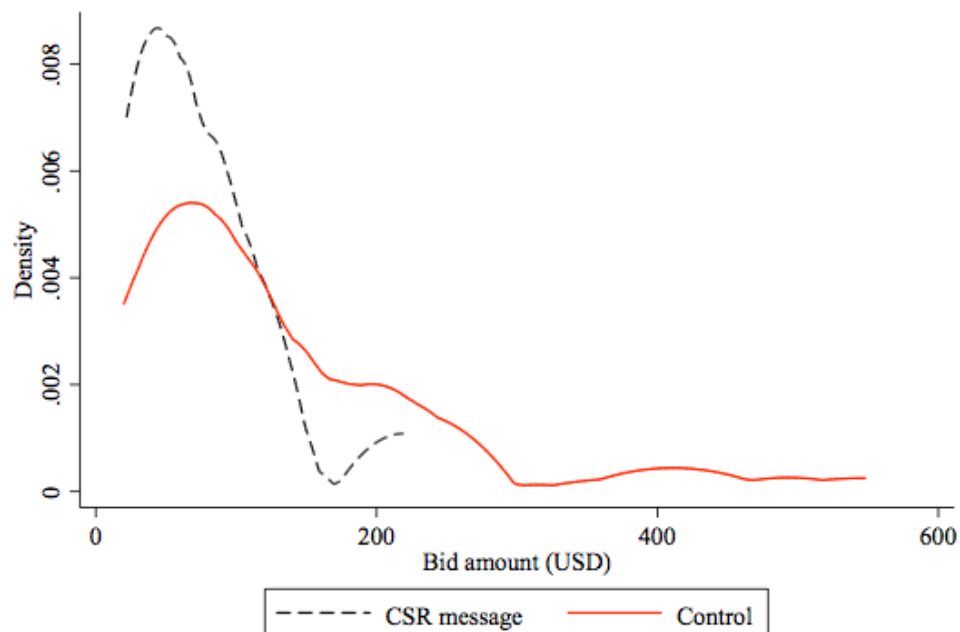


Figure 3. Message received, by condition
Experiment 2 (AMT)

Control group	Philanthropy treatment groups			
(1)	General message without input (2)	General message with input (3)	Tied-to-job message with input (4)	Tied-to-job message without input (5)
<p>We are processing your answers to determine whether you are eligible for the image interpretation task. Click on "continue" after the button appears at the bottom right of this page. This should take approximately 15 seconds. Thank you for your patience.</p>				
	<p>In the meantime, we'd like to tell you about one of our philanthropic programs.</p> <p><u>Charitable Giving Program</u></p> <p>We have a longstanding tradition of giving back to the communities where our workers live and work.</p>			
		We like to involve our workers in our philanthropic work whenever possible, and seek to support charities that reflect our workers' personal causes and interests.		
	In 2011, we donated 1% of our profit to 5 charities		With this goal, we will donate \$0.10 to a charity when you finish this HIT.	
	In 2012, we will continue to identify nonprofit organizations that contribute to the well-being of our broader community. The recipients of our 2011 donations were:	based on votes from our employees. Please select the nonprofit charity below that you would most like to receive a donation in 2012. 2012 donation funds will be distributed according to the percent of employee votes for each organization.	Please select the nonprofit charity below to receive this donation.	One of the below five charities, selected at random, will receive the donation.
	<p>The American Red Cross enables communities to prepare for and respond to natural disasters. The Boys and Girls Clubs of America enables young people to reach their potential. The Cancer Research Institute supports and coordinates lab and clinical efforts towards the treatment, control and prevention of cancer. The Global Hunger Project works towards the sustainable end of hunger and poverty. The Greenpeace Fund increases public awareness and understanding of environmental issues.</p>			

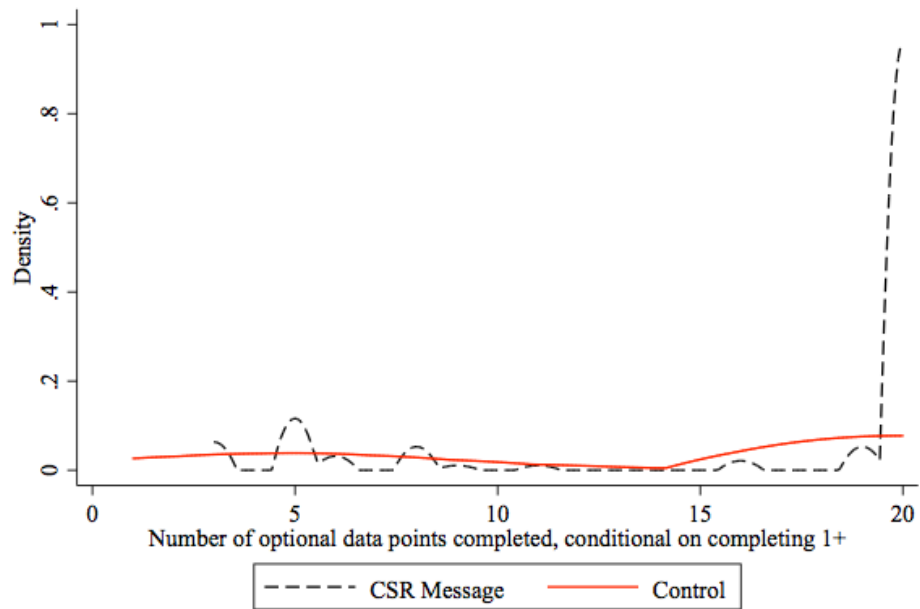
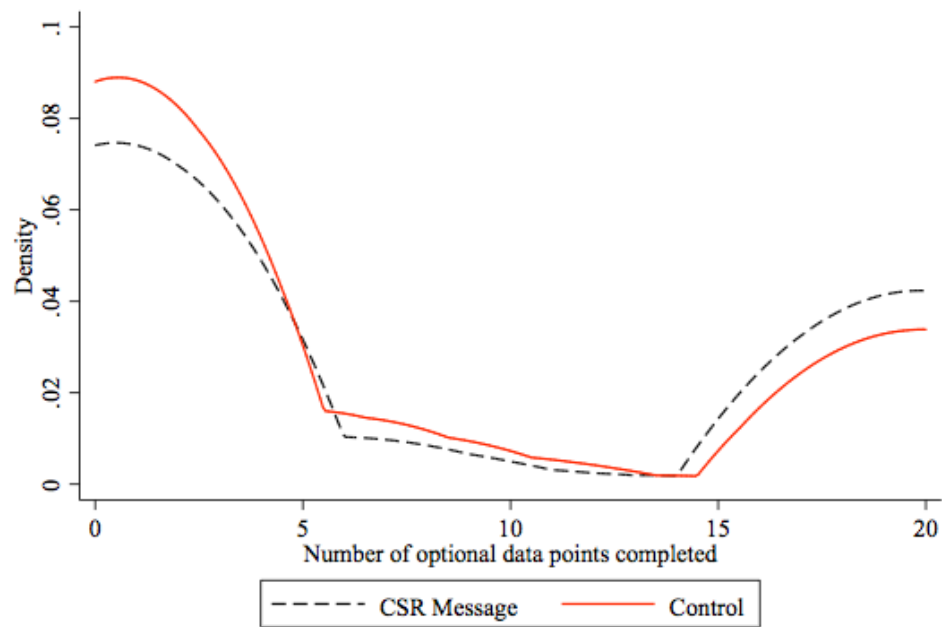
**Figure 4. Kernel densities of reservation wage, by condition
Experiment 2 (AMT)**



Figure 5. Message received, by condition
Experiment 3 (AMT)

Control group (1)	Philanthropy treatment group (2)
	<p>We are processing your answer. Click on "continue" after the button appears at the bottom right of this page. This should take approximately 15 seconds. Thank you for your patience.</p>
	<p>In the meantime, we would like to tell you about one of our philanthropic programs.</p> <p><u>Charitable Giving Program</u></p> <p>We have a longstanding tradition of giving back to the community.</p> <p>In 2012, we donated 1% of our profit to charities doing important work in our community.</p> <p>In 2013, we will continue to identify the nonprofit organizations that contribute to the well-being of the broader community.</p> <p>The recipients of our 2012 donations were:</p> <p>The American Red Cross enables communities to prepare for and respond to natural disasters.</p> <p>The Boys and Girls Clubs of America enables young people to reach their full potential.</p> <p>The Cancer Research Institute supports and coordinates lab and clinical efforts towards the treatment, control and prevention of cancer.</p> <p>The Global Hunger Project works towards the sustainable end of hunger and poverty.</p> <p>The Greenpeace Fund increases public awareness and understanding of environmental issues.</p>

**Figure 6. Kernel densities of measures of worker performance, by condition
Experiment 3 (AMT)**



Tables

**Table 1. Worker characteristics: summary statistics, by condition
(randomization balance)
Experiment 1 (E lance)**

	Control	CSR Treatment	p-value of null that difference of means equals 0
College degree	0.87 (0.34)	0.85 (0.36)	0.85
Years work experience	11.45 (8.26)	9.76 (7.97)	0.35
Female	0.69 (0.47)	0.58 (0.50)	0.30
Number of previous Elance jobs completed	7.36 (20.46)	16.40 (46.90)	0.28
Earnings per previous Elance job (USD)	94.62 (197.65)	141.85 (511.81)	0.60
Performance on previous Elance jobs (out of 5 stars)	3.53 (2.19)	3.99 (1.76)	0.44
Living in US	0.46 (0.51)	0.26 (0.45)	0.07
Living in Asia	0.34 (0.48)	0.56 (0.56)	0.05
Living in Central or South America	0.08 (0.27)	0.02 (0.16)	0.34
Living in Non-EU Europe	0.05 (0.23)	0.07 (0.26)	1.00
Living in EU	0.03 (0.16)	0.05 (0.22)	1.00
Living in Canada	0.00 (0.00)	0.05 (0.22)	0.50

Means are reported with standard deviations in parentheses in Columns 1 and 2.

In Column 3, chi-squared test results are reported for College degree, Female, Living in US, and Living in Asia.

Independent sample t-test results are reported for Years work experience, Number of previous Elance jobs completed, Earnings per previous Elance job, and Performance on previous Elance jobs. Fisher exact tests results are reported for Living in Central or South America, Living in Non-EU Europe, Living in EU, and Living in Canada. Statistical significance is robust to the use of alternate statistical tests.

Earnings per previous Elance job includes an outlier of \$3289.80. Without this outlier, mean earnings per previous job for the CSR treatment group is \$63.15 (std. dev. \$90.87), which remains statistically equivalent to that of the control group ($t(76)=0.91$, $p=0.37$).

N=79, except for Female (N=74) and Performance on previous Elance jobs (N=45).

**Table 2. Results of OLS regressions for bid amount (USD)
Experiment 1 (Elance)**

	Model 1	Model 2	Model 3
CSR message	-57.97*** (21.26)	-48.68** (21.45)	-9.23 (16.44)
Female		69.12*** (22.98)	97.32*** (31.98)
(CSR message) x (Female)			-60.92* (33.27)
2nd job posting		1.13 (26.08)	
College degree		23.66 (21.07)	
Years of work experience		1.92* (1.10)	1.56 (0.99)
Earnings per previous Elance job (USD)		-0.03* (0.02)	-0.02 (0.12)
Number of previous Elance jobs		-0.34*** (0.11)	-0.27*** (0.08)
Living in US		12.69 (31.36)	
Living in Asia		28.24 (24.15)	
Constant	131.42*** (19.67)	34.00 (32.57)	54.43*** (17.10)
N	79	74	74

Estimated coefficients of OLS regressions are reported, with robust standard errors in parentheses.

The dependent variable is bid amount in US dollars.

Significant at 10%, **significant at 5%, *** significant at 1%.

**Table 3. Worker characteristics: summary statistics
Experiment 2 (AMT)**

	Mean	Standard deviation
<i>Demographic characteristics</i>		
Female (Y=1, N=0)	0.45	0.50
Age	30.00	10.55
College degree (Y=1, N=0)	0.50	0.50
Income (<\$30K=1, \$30-60K=2, >\$60K=3)	1.86	0.82
White (Y=1, N=0)	0.80	0.40
Black (Y=1, N=0)	0.08	0.27
Hispanic (Y=1, N=0)	0.05	0.21
Asian (Y=1, N=0)	0.12	0.33
Pacific islander (Y=1, N=0)	0.01	0.10
Other race/ethnicity (Y=1, N=0)	0.01	0.08
Democrat (Y=1, N=0)	0.44	0.50
Republican (Y=1, N=0)	0.14	0.34
Independent (Y=1, N=0)	0.32	0.47
Other political affiliation (Y=1, N=0)	0.10	0.30
<i>AMT experience characteristics</i>		
HITs per week in the last month (<10 = 1, 10-49=2, 50-100=3, >100=4)	2.30	1.02
HIT approval rate (between 95 and 100)	98.62	1.33
HIT approval rate of 100 (Y=1, N=0)	0.29	0.45
Primary reason complete HITs on AMT (Y=1, N=0):		
"The money I earn on MTurk is my primary source of income."	0.13	0.34
"The money I earn on MTurk is not my primary source of income, but is the main reason I complete HITs on MTurk."	0.54	0.50
"It is a productive use of my free time."	0.29	0.45
"It is fun."	0.04	0.20
<i>Charitable characteristics</i>		
Donated money to a charity or nonprofit in 2011 (Y=1, N=0)	0.53	0.50
Volunteered with charity or nonprofit in 2011 (Y=1, N=0)	0.41	0.49
Donated and volunteered in 2011 (Y=1, N=0)	0.27	0.44

N=434 except for HIT approval rate, for which N=378

Table 4. Mean reservation wage and likelihood of answering optional questions, by condition
Experiment 2 (AMT)

	Entire sample	No phil. message (control)	Any phil. message	General phil. message without input	General phil. message with input	Tied-to-job phil. message without input	Tied-to-job phil. message with input
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Reservation wage	14.4 (8.8)	15.8 (8.1)	14.0 (8.9)	14.9 (8.8)	14.2 (8.9)	14.2 (8.8)	13.5 (9.2)
Answered optional questions	0.88 (0.33)	0.80 (0.40)	0.89 (0.31)	0.91 (0.29)	0.91 (0.29)	0.91 (0.31)	0.86 (0.34)
N	434	92	342	87	74	87	94

Means are reported with standard deviations in parentheses.

Reservation wage is reported in US cents.

Answered optional questions is a dummy variable coded 1 if the worker answered any of the optional questions, 0 otherwise.

Table 5. Results of OLS regressions for reservation wage
Experiment 2 (AMT)

	Model 1	Model 2	Model 3	Model 4	Model 5
CSR message	-1.83* (0.97)	-1.69* (1.09)	0.54 (1.29)	-1.87 (1.20)	-0.65 (1.18)
Female		-0.89 (0.90)	-0.53 (0.97)	-0.89 (0.90)	-0.54 (0.97)
Perfect HIT approval rating		2.30** (1.00)	6.93*** (1.68)	2.31** (1.00)	7.00*** (1.70)
(CSR message) x (Perfect HIT approval rating)			-6.27*** (2.06)		-6.36*** (2.09)
Volunteer & donate		-1.80* (1.05)	-1.79 (1.08)	-2.28 (1.88)	-2.70 (1.85)
(CSR message) x (Volunteer & donate)				0.62 (2.24)	1.17 (2.22)
Constant	15.80*** (0.85)	15.61*** (1.13)	14.79*** (2.68)	15.75*** (1.22)	15.09*** (2.78)
Worker demographics	No	Yes	Yes	Yes	Yes
N	434	378	378	378	378

Estimated coefficients of OLS regressions are reported, with robust standard errors in parentheses.

The dependent variable is reservation wage in US cents.

*Significant at 10%, ** significant at 5%, *** significant at 1%.

**Table 6. Results of logistic regressions for answered optional questions
Experiment 2 (AMT)**

	Model 1	Model 2
CSR message	0.73** (0.32)	0.80** (0.35)
Completed image interpretation job		0.71* (0.37)
Female		0.79** (0.37)
Constant	1.41*** (0.26)	-0.40 (0.91)
Worker demographics	No	Yes
N	434	434

Estimated coefficients of logistic regressions are reported, with robust standard errors in parentheses.

The dependent variable is a dummy variable coded 1 if the worker answered any of the optional questions, 0 otherwise.

***Significant at 10%, **Significant at 5%, *** significant at 1%.

**Table 7. Worker characteristics: summary statistics
Experiment 3 (AMT)**

	Mean	Standard deviation
<i>Demographic characteristics</i>		
Female (Y=1, N=0)	0.44	0.50
Age	30.29	10.16
College degree (Y=1, N=0)	0.50	0.50
Income (<\$30K=1, \$30-60K=2, >\$60K=3)	1.93	0.81
White (Y=1, N=0)	0.76	0.43
Black (Y=1, N=0)	0.08	0.27
Hispanic (Y=1, N=0)	0.06	0.23
Asian (Y=1, N=0)	0.14	0.34
Pacific islander (Y=1, N=0)	0.01	0.07
Other race/ethnicity (Y=1, N=0)	0.01	0.10
Democrat (Y=1, N=0)	0.43	0.50
Republican (Y=1, N=0)	0.15	0.36
Independent (Y=1, N=0)	0.33	0.47
Other political affiliation (Y=1, N=0)	0.08	0.28
<i>AMT experience characteristics</i>		
HITs per week in the last month (<10 = 1, 10-49=2, 50-100=3, >100=4)	2.82	1.04
HIT approval rate (between 95 and 100)	98.95	1.06
Primary reason complete HITs on AMT (Y=1, N=0):		
"The money I earn on MTurk is my primary source of income."	0.15	0.36
"The money I earn on MTurk is not my primary source of income, but is the main reason I complete HITs on MTurk."	0.57	0.50
"It is a productive use of my free time."	0.26	0.44
"It is fun."	0.02	0.16
<i>Charitable characteristics</i>		
Donated money to a charity or nonprofit in 2012 (Y=1, N=0)	0.53	0.50
Volunteered with charity or nonprofit in 2012 (Y=1, N=0)	0.31	0.46
Donated and volunteered in 2012 (Y=1, N=0)	0.23	0.43

N=568, except for HIT approval rate, for which N=544

Table 8. Mean worker performance measures, by condition
Experiment 3 (AMT)

	Entire sample	No philanthropy message (control)	Philanthropy message (treatment)
	(1)	(2)	(3)
Completed 1+ unrequired data points	0.42 (0.49)	0.41 (0.49)	0.44 (0.50)
N	568	281	287
# Unrequired data points completed	6.57 (8.88)	5.82 (8.46)	7.31 (9.23)
N	568	281	287
# Unrequired data points completed, conditional on completing 1+	15.49 (6.89)	14.10 (7.51)	16.78 (5.60)
N	241	116	125
% Unrequired data points correct	0.95 (0.15)	0.93 (0.20)	0.97 (0.07)
N	241	116	125
% Required data points correct	0.92 (0.16)	0.91 (0.16)	0.92 (0.16)
N	568	281	287

unrequired data points correct includes only those who answered at least one of the unrequired data points.

**Table 9. Regression results
Experiment 3 (AMT)**

Regression Type:	Logistic		OLS									
Dependent variable:	Likelihood of completing 1+ unrequired data points		# Unrequired data points completed (out of 20)			# Unrequired data points completed , conditional on completing 1+ (out of 20)			% Unrequired data points correct		% Required data points correct	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 7	Model 8	Model 9	Model 11	Model 12
CSR message	0.09 (0.17)	0.17 (0.18)	1.49** (0.74)	1.81** (0.75)	1.18 (0.88)	2.68*** (0.88)	2.82*** (0.91)	1.63 (1.00)	0.04** (0.02)	0.05** (0.02)	0.00 (0.01)	0.00 (0.01)
Female		0.59*** (0.18)		2.84*** (0.78)	2.78*** (0.78)		1.82* (0.94)	1.69* (0.94)		-0.01 (0.02)		0.01 (0.01)
Volunteer & donate		-0.22 (0.21)		-1.32 (0.86)	-2.63** (1.09)		-1.39 (1.08)	-4.27** (1.74)		0.00 (0.02)		0.00 (0.02)
(CSR message) x (Volunteer & donate)					2.67 (1.71)			5.50*** (2.08)				
HIT approval rating		0.01 (0.08)		-0.40 (0.38)	-0.50 (0.38)		-0.86** (0.35)	-0.97** (0.34)		0.00 (0.01)		0.01* (0.01)
HITs per week buckets		-0.13 (0.08)		-0.28 (0.75)	-0.30 (0.36)		0.51 (0.43)	0.67 (0.43)		-0.00 (0.01)		0.01** (0.01)
College degree		-0.03 (0.18)		-0.24 (0.76)	-0.30 (0.76)		-0.13 (0.89)	0.13 (0.89)		0.01 (0.02)		0.02* (0.01)
Constant	-0.35*** (0.12)	-0.23 (0.52)	5.82*** (0.50)	7.44*** (2.37)	8.21*** (2.43)	14.09*** (0.70)	15.89*** (2.36)	15.46*** (2.41)	0.93*** (0.02)	0.95*** (0.05)	0.91*** (0.01)	0.79*** (0.05)
Other demographics	No	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	No	Yes
N	568	544	568	544	544	241	233	233	241	233	568	544

Estimated coefficients of regressions are reported, with robust standard errors in parentheses.

*Significant at 10%, ** significant at 5%, *** significant at 1%.

**Table 10. Survey responses regarding perception about CSR message: summary statistics
Experiments 2 and 3 (AMT)**

	Experiment 2			Experiment 3		
	Mean Likert response	Standard deviation	% Strongly agreed or agreed	Mean Likert response	Standard deviation	% Strongly agreed or agreed
(1) "The charitable giving program was a signal to me that this employer is trustworthy"	3.27	1.01	0.46	3.33	0.89	0.46
(2) "The charitable giving program was a signal to me that this employer is not greedy"	3.44	0.96	0.55	3.46	0.86	0.51
(3) "The charitable giving program was a signal to me that the employer will pay the bonus amount promised in exchange for the image interpretation task"	3.28	0.99	0.45	-	-	-
(4) Index that charitable giving program was a signal about the employer's likely treatment of employees (average of above responses)	3.33	0.86	0.49	3.39	0.79	0.49
(5) "Learning about the charitable giving program made me feel good about myself while working with this employer"	3.52	0.99	0.59	3.40	0.90	0.51
(6) "The charitable giving program indicated to me that this employer has excess profits"	2.80	0.99	0.24	2.80	0.90	0.23
(7) "I have been wanting to donate to charity - working with this employer is a way for me to do this"	3.02	1.09	0.35	3.01	1.01	0.34

N = 342 for Experiment 2. N = 287 for Experiment 3.

This sample includes only individuals in the CSR treatment groups in each experiment.

Likert responses reflect a 5-pt scale with 1 being "Strongly disagree" and 5 being "Strongly agree."

**Table 11. Exploring mechanisms: OLS regression results
Experiments 2 and 3 (AMT)**

Dependent variable:	Reservation wage (Experiment 2)	# unrequired data points completed (Experiment 3)
	Model 1	Model 2
CSR is signal about treatment of employees	-3.29** (1.50)	-3.08** (1.47)
CSR makes me feel good about myself	-0.96 (1.27)	3.31** (0.23)
Working for CSR employer is a way for me to donate	-0.97 (1.12)	2.71* (1.38)
CSR indicates employer has excess profit	1.46 (1.10)	-1.60 (1.33)
Constant	17.86*** (2.67)	4.05 (3.49)
Worker demographics	Yes	Yes
N	342	287

Estimated coefficients of OLS regressions are reported, with robust standard errors in parentheses.

Samples include only individuals in the CSR treatment groups in each experiment.

*Significant at 10%, ** significant at 5%, *** significant at 1%.

Chapter 2: How Socially Responsible Business Practices Reinforce Human Capital Strategy

1. Introduction

One of the most important challenges in the strategic management of human capital is identifying employees' strengths and weaknesses in order to place them in positions where they will succeed and benefit the firm. Although observing a worker's performance in his or her current job can be relatively straightforward, it is often difficult to know whether a worker will succeed in a new position with different responsibilities (Peter and Hull, 1969; Lazear, 2004). In this paper, we posit a theory that socially responsible business practices can be used by a firm to gain proprietary information about employee quality and we provide evidence for how they do this. Our argument relies on the fact that many socially responsible business practices, such as pro bono services, are charitable projects which are closely related to the firm's for-profit activities and are undertaken by teams of junior-level employees. On these projects, junior employees are given a level of responsibility to which they are not normally accustomed and from which senior management can observe their performance in undertaking more senior roles. Our core theoretical insight is that, the more highly a firm values information about future employee quality, the more we would expect to see it engaged in socially responsible projects as a means of learning more about an employee's potential. This paper identifies and analyzes the correlation between the human capital strategy and the pro bono activities of large US law firms. In many law firms, pro bono activities are a significant component of lawyers' work. Interviews with lawyers at top US law firms suggest that an important benefit to the firm of pro bono engagements is the work experience that participating junior lawyers gain from these

engagements, since they are often given responsibilities on pro bono cases that would go to more senior lawyers on comparable for-profit cases.²⁹ A junior lawyer's work on pro bono and for-profit cases alike is assessed during performance reviews. Work on pro bono cases is particularly informative of a junior lawyer's potential given the "stretch" roles these engagements allow. We posit that these stretch roles are of particular benefit to firms with a human capital strategy of promoting a higher proportion of associates to partner than other comparable firms do.³⁰ In firms where the vast majority of associates will not be promoted it is more profitable to have associates work billable hours now rather than engage them in non-billable activities to assess their future performance in roles they will probably never have. In firms where promotion is more likely, those with a higher partner-to-associate ratio, we would expect to see more pro bono engagement.

We propose a formal screening model in the spirit of Farber and Gibbons (1996) and Gibbons and Waldman (1999) to elucidate the role of pro bono activities. In our model, a profit-maximizing firm must decide whether or not to promote an associate to partner, but cannot directly observe the extent to which this associate is "partner material." The firm uses a signal about the associate's performance to date to estimate her expected surplus as a partner and promotes her if this signal exceeds a threshold. Our theory supposes that pro bono engagements improve the accuracy of the signal (the correlation between the signal and the associate's future surplus). The model predicts that the level of pro bono activity will be increasing in the partner-

²⁹ Based on interviews with partners, associates, recruiting managers, and human capital management representatives at top-20 law firms.

³⁰ We observe that, despite having similar per-partner profitability, there is significant variation in the ratio of partners to associates at top US law firms. This is an important structural difference between firms that influences mentorship opportunities, competition among associates, and recruits' and associates' perceptions about the likelihood of promotion to partner. For potential and current associates, comparable law firms with higher partner-to-associate ratios are considered to be more nurturing workplaces with higher promotion potential.

to-associate ratio.

To test the model's main prediction, we analyze the top 200 firms in the US legal services industry in 2010.³¹ We use firm-level linear regression analysis to demonstrate a positive relationship between average pro bono hours per lawyer and the ratio of partners to associates, controlling for firms' structural, size, and profitability characteristics.³² These findings are robust to various specifications in the measurement of pro bono activity. The model also predicts that this relationship is moderated by another aspect of human capital strategy: whether the firm has a single-tier partnership structure. Single-tier and multi-tier partnership structures are two of the human capital strategies used by law firms. In a single-tier partnership structure, the conventional model, all partners are equity partners. In a multitier partnership structure, partners are divided into equity partners and non equity partners. Non equity partnership can be a step towards equity partnership, with the firm retaining the option to make the individual an equity partner. Our data shows that for firms with a high partner-to associate ratio, those using a multi-tier partnership structure do less pro bono than those using a single-tier partnership structure. In a single-tier hierarchy the decision to promote an associate is clearly a crucial one, as it is difficult to undo. In single-tier hierarchies where many individuals are being considered for partner, firms have strong incentives to invest more in pro bono engagements in order get a better sense of the candidate's potential. For firms with a low partner-to-associate ratio, multi-tier and single-tier partnerships engage in similarly low levels of pro bono activities. Our model and empirical analysis, taken together with the primary and secondary industry

³¹ There has been a rather substantial literature on the legal services industry in strategy, economics, and organizational behavior. A non comprehensive list includes studies focused on the issue of survival (Phillips, 2002), employee mobility (Campbell et al., 2012), employee hiring (Sauer, 1998; Rider et al., 2013), social status (Rider, 2013), and specialization (Garicano and Hubbard, 2007). See Baker and Parkin (2006) for further references on this extensive literature.

³² While a panel-data approach would be ideal, the lack of variation over time in many of the firm structure variables necessitates a cross-sectional approach.

research, provides strong evidence for a relationship between pro bono activity and law firms' human capital management strategies.

Our paper proceeds as follows: Section (2) provides a brief literature review, (3) describes the legal services industry, (4) outlines our theory and hypotheses, (5) describes the data and empirical results, and (6) concludes, offering examples from other industries which suggest that this phenomenon is found beyond the legal services industry.

2. Prior Literature

The enormity of the literature linking CSR and corporate financial performance (CFP) has already fueled well over a dozen literature surveys (Margolis and Walsh, 2003). The primary conclusion of this literature is that evidence in favor of a link between CSR and CFP is mixed (Waddock and Graves, 1997; Orlitzky et al., 2003; Margolis et al., 2007; Kitzmueller and Shimshack, 2012). This link has been challenging to establish for numerous reasons, including difficulty in measuring CSR (Chatterji et al., 2009), difficulty in specifying the correct measure of CFP (Margolis and Walsh, 2003), issues of empirical specification (McWilliams and Siegel, 2000; Barnett and Salomon, 2006; Barnett and Salomon, 2012), problems of endogeneity (Garcia-Castro et al., 2010), and omitted variables bias (Ullmann, 1985). Barnett (2007) concluded “that after more than thirty years of research, we cannot clearly conclude whether a one-dollar investment in social initiatives returns more or less than one dollar in benefit to the shareholder.” In response to these difficulties, scholars more recently have asked what factors explain the variation in socially responsible business practices across firms; examples include agency (Johnson and Greening, 1999; Brammer and Millington, 2008; Hong et al., 2013), competition (Snyder, 2010; Bennett et al., 2013), private politics and stakeholder pressure

(Baron, 2001; Hillman and Keim, 2001; Freeman et al., 2004; Sen et al., 2006; Delmas and Toffel, 2008; Soule et al., 2013), access to finance (Graves and Waddock, 1994; Cheng et al., 2013), and mitigating risk (Godfrey et al., 2009; Minor and Morgan, 2011; Koh et al., 2013).

Much of the early work on CSR and human capital asked whether socially responsible business practices were more attractive to potential employees. A series of studies (Gatewood et al., 1993; Riordan et al., 1997; Turban and Greening, 1997; Montgomery and Ramus, 2011) used survey questionnaires to rank the attractiveness of firms given the firm's levels of profitability and CSR. These studies consistently found that potential employees prefer socially responsible employers. Furthermore, Albinger and Freeman (2000) show that job seekers with many options are more likely to prefer socially responsible firms. Backhaus et al. (2002) show that job seekers do not find all dimensions of CSR equally attractive; environmental issues, community relations, employee relations, diversity, and product issues are the most important. Greening and Turban (2000) used a randomized experiment to confirm that CSR activities resonate with employees and to show that the effect is heterogeneous across potential employees. For example, firms that rank high on gender equity issues are more attractive to women than men. While the literature shows that employees prefer more socially responsible companies, contrary to neoclassical economic theory there is little evidence to suggest that firms offer lower wages in exchange for a socially responsible workplace. Multiple studies find that when controlling for individual characteristics, there is no wage differential between the for-profit and not-for-profit sector (Goddeeris, 1988; Leete, 2001; Ruhm and Borkoski, 2003; Frye et al., 2006).³³

To our knowledge, we are the first to propose socially responsible business activities as a

³³ Nevertheless, Delmas and Pekovic (2012) show that firms that adopt the ISO 14001 management standard have higher labor productivity than those that do not.

mechanism through which firms can gain proprietary information about employee quality.³⁴ In contrast to the prior literature, we show how CSR can be used to strategically ameliorate information asymmetries about worker quality.

3. The Legal Services Context

3.1. Pro Bono

Pro bono work is defined by The American Lawyer as legal services provided to those who could not otherwise afford them.³⁵ For example, many top 200 law firms have represented indigent individuals in criminal appeals, post-conviction proceedings in death penalty cases, legal matters for nonprofit clients, children's rights, civil rights, community economic development, and human rights issues.³⁶

Average pro bono hours per lawyer increased by more than 65% between 2000 and 2008, although it has declined since the recession of 2008.³⁷ In 2011, average hours fell to the lowest level in more than three years, with the percentage of lawyers who completed more than 20 hours of pro bono work dropping to 44%.³⁸ Interviews with recruiting and human capital management representatives at top law firms³⁹ indicate that pro bono nevertheless remains

³⁴ Brekke and Nyborg (2008) apply a self-selection model to the context of CSR, proposing that potential employees with higher moral motivation who are also more productive will self-select into socially responsible firms with lower wages rather than non-socially-responsible firm with higher wages. Thus, the authors posit that CSR firms passively screen potential recruits. Their paper is theoretical, however, and does not provide empirical evidence for their claim.

³⁵ 2011 *American Lawyers Pro Bono Survey*. Time spent by lawyers on bar association work, on boards of nonprofit organization, or on non-legal work for charities is not considered pro bono work.

³⁶ *Vault Guide to the Top 100 Law Firms*, 2008 Edition. Cravath, Swaine & Moore and Latham Watkins are representative firms.

³⁷ "Pro Bono Report 2012: Under Construction," *The American Lawyer*, June 27, 2012.

³⁸ Ibid.

³⁹ Our fieldwork is based on confidential interviews with partners, associates, recruiting managers, and human capital management representatives at top-20 law firms. Understandably, none of the interviewed lawyers were willing to speak on the record about internal organizational issues.

important to potential new recruits and current associates. Over 100 law firms have signed on to the “Law Firm Pro Bono Challenge,” an aspirational minimum standard of pro bono service posed to firms with 50 or more attorneys. Signatories to the Challenge target a pro bono commitment of between 3% and 5% of annual billable hours, which constitutes an average of 60 to 100 hours per attorney per year. Many firms that have signed on to the Challenge use it as a goal for their pro bono practices, although not every firm that accepts the Challenge meets its goals every year. Some firms require pro bono hours of their lawyers while others do not.

The management of pro bono programs varies by firm, but most often there are lawyers spending part of their time managing pro bono activities and a pro bono committee overseeing the whole program.⁴⁰ A pro bono committee or pro bono coordinator makes the decision as to whether the firm will take on a pro bono matter. The process of assigning pro bono cases to lawyers tends to be similar to that of for-profit cases. Whether or not a lawyer is staffed on a case depends on such factors as timing, case workload, and the expertise or experience required.

An important benefit to the associates is the experience gained from pro bono cases.⁴¹ In particular, pro bono cases give associates the opportunity to take on roles and responsibilities characteristic of more senior lawyers on for-profit cases. Pro bono cases are often viewed by associates as a chance to take on a stretch role or learn a new skill. For example, an associate at a top-ten US law firm completed six pro bono depositions by herself in her first year, whereas

⁴⁰ “Pro Bono Report 2012: Under Construction,” *The American Lawyer*, June 27 2012.

⁴¹ The number of billable hours logged is an important performance metric for lawyers. Approximately half of law firms that give their lawyers billable hours credit for pro bono work have a maximum number of pro bono hours that will be credited, while half do not cap the number of hours that count towards billable hours. The most commonly reported maximum is 50 hours, reported by 51% of offices surveyed by the Association for Legal Career Professionals (NALP), followed by 100 hours, reported by 20% of offices. Importantly, regardless of the number of pro bono hours counted towards billable hours, supervisors’ assessments of a lawyer’s performance on every pro bono case are included as part of the lawyer’s formal overall performance evaluation. Source: “A Look at Associate Hours and at Law Firm Pro Bono Programs,” *NALP Bulletin*, April 2010, available at <http://www.nalp.org/july2009hoursandprobono>.

deposition experience usually begins in the third year at this firm.⁴² Another associate at a top twenty US law firm stated that pro bono projects can be particularly attractive to the top tier of talent as a means to getting into the courtroom more quickly or gaining experience that sets one apart from one's peers.⁴³ Senior associates staffed on a pro bono case often take on responsibilities characteristic of partners on for-profit cases. For example, at Akin Gump Strauss Hauer & Feld, "associates are expected to take primary responsibility for all aspects of the [pro bono] case, including all court appearances and client contact."⁴⁴ Pro bono engagements thus not only provide associates with the opportunity to take on and learn from stretch roles, but also let the firm's managing partners see how the associates perform in these roles without the risk of disappointing or losing a paying client if the associate does not meet expectations.⁴⁵

3.2. Partner-to-Associate Ratio

Given its service-oriented nature, much of a law firm's value offering is derived from its human capital - the work of its employees. Employee management strategies, which influence employee satisfaction and productivity, are thus critical. The legal services industry as a whole is characterized by long hours, but there are great differences in lawyer satisfaction and in perception about how well lawyers are treated amongst law firms. For example, McKee Nelson, Vault Guide's top law firm to work for, has been described as "a...place that values and recognizes the individual and fundamentally wants to develop the potential of each associate"⁴⁶

⁴² Based on an interview with an associate at a top-10 US law firm in 2012.

⁴³ Based on an interview with an associate at a top-20 US law firm in 2012.

⁴⁴ *Vault Guide to Law Firm Pro Bono Programs*. 2007 edition.

⁴⁵ Based on interviews with partners, associates, recruiting managers, and human capital management representatives at Top 20 law firms.

⁴⁶ *Vault Guide to the Top 100 Law Firms*, 2008 edition.

whereas Wilson Elser Moskowitz Edelman & Dicker has been described as a “sweatshop law firm”⁴⁷ where “work hours/conditions...[are] objectionable.”⁴⁸

One important human capital management and structural difference among firms is the partner-to-associate ratio. Firms with higher partner-to-associate ratios are considered to be more nurturing of their associates and are considered to have higher promotion potential. For example, an article about Wachtell, Lipton, Rosen and Katz on Top-Law-Schools.com,⁴⁹ a source often frequented by law students, points to the fact that the firm has the highest partner-to-associate ratio in its peer group (1:1.4) as lending credibility to the firm’s recruiting claim that associates are hired with the expectation that they are capable of becoming partners. The article furthermore states that this ratio makes it possible for new associates to be mentored by and work closely with partners. Indeed, interviews with law students and junior associates at top law firms confirmed that the partner-to-associate ratio is an important distinction across firms that influences a firm’s attractiveness to recruits and the work satisfaction of its associates.⁵⁰

3.3. Partnership Structure

Another differentiating human capital management strategy amongst law firms is partnership structure. The most common multitier partnership structure equity partners from nonequity partners. The American Lawyer and National Law Journal define equity partners as those who file a Schedule K-1 tax form (required by the IRS for the reporting of a “partner’s share” of income, deductions, credits, and so on) and receive no more than half of their compensation as

⁴⁷ Top-Law-Schools.Com online forum, posting on October 24, 2010.

⁴⁸ Vault.com Career Discussions page, posting on December 18, 2007.

⁴⁹ “Wachtell, Lipton, Rosen & Katz LLP,” published February 2011, available at <http://www.top-law-schools.com/wachtell-lipton-rosen-katz.html>.

⁵⁰ Based on interviews with law students at top-20 law schools and junior associates at top-20 law firms in 2012.

salary. Nonequity partners are those who receive more than half their compensation as salary. Essentially, nonequity partners are afforded the partner title but are not full participants in the firm's profits. Because the title "partner" is given to both equity and nonequity partners, the distinction is typically difficult for clients or outsiders (and often even nonpartners within the firm⁵¹) to ascertain.

Law firms have been increasingly adopting multitier partnership structures. Approximately two-thirds of law firms represented in the 2009-2010 NALP Directory of Legal Employers reported having a multi-tier partnership structure, compared with fewer than half in 2001 and just over one-third in 1995.⁵² The multitier partnership structure is most prevalent in larger firms; 78% of firms with 251-500 lawyers and 74% of firms with 501-700 lawyers reported having a multitier partnership structure, compared to one-half of smaller firms.⁵³

The conventional explanation for the existence of the nonequity partnership structure is that it allows "rainmaking" equity partners to maintain a larger proportion of the profits while still keeping partners with weaker sales skills. However, evidence does not support the notion that equity partners make more money in a two-tiered partnership. It appears that single-tier partnership firms are the most profitable.⁵⁴ This is likely largely driven by the fact that the list of firms that remain single-tier partnerships includes many of the most prestigious firms, such as Cravath, Swaine & Moore; Wachtell, Lipton, Rosen & Katz; and Sullivan & Cromwell.

The nonequity partner position is often given to a senior associate who the firm believes adds value but is not yet ready for a promotion to equity partner. The firm may not be sure that

⁵¹ Based on interviews with partners and Associates at top-20 law firms.

⁵² "Partnership Tiers and Tracks," *NALP Bulletin*, February 2010, available at <http://www.nalp.org/feb10partnershiptiers>.

⁵³ Ibid.

⁵⁴ Based on simple correlation and OLS regression analyses of firms in the 2011 ALM 200 database.

this value will prove profitable enough to justify an equity partnership.⁵⁵ The position is also often occupied by partners who want to work part time or are older and no longer generating much business.⁵⁶ To address the potential shirking problem of partnership the two-tiered partnership structure also allows the firm to de-equitize those partners who cannot justify their portion of the firm's profits.

4. A Model of Firm Pro Bono as Employee Screening

4.1. Motivation

Our approach to modeling the economics of pro bono activity stands in sharp distinction to the approach of Brekke and Nyborg (2008), who offer an equilibrium model of the decisions of firms to engage in socially responsible activities. In their model, workers who derive utility from associating with a firm that engages in socially responsible activities exert more effort (are less likely to shirk) when effort cannot be directly observed. The authors go on to show that firms that engage in socially responsible activities and offer lower wages and firms that do not engage in socially responsible activities and pay higher wages can coexist in equilibrium. Socially responsible activities (in Brekke and Nyborg's work, paying for pollution reduction technology) coupled with lower wages screens for more productive workers.

Our premise is that an incentive for the firm to engage in pro bono activities is to learn more about the employees who perform them. In our model, workers get no direct benefit from

⁵⁵ "Two Tier or Not Two-Tier? The Equity Partnership Dichotomy," BCG Attorney Search, available at <http://www.bcgsearch.com/article/60531/Two-Tier-or-Not-Two-Tier-The-Equity-Partnership-Dichotomy/>.

⁵⁶ Some lawyers may be more attracted to multitier partnership firms if they like the option of becoming a non-equity partner; for example, to hold the prestige of the title and ensure a long-term career in a law firm without the pressure of producing revenue in the way equity partners are expected to do. Others seeking to become equity partners may be less attracted to multi-tier firms because the path to equity partner is more elusive. Instead of promotion from associate to equity partner after eight to ten years, a typical partner-track timeframe in single-tier partnership firms, multi-tier partnership firms can promote associates to non-equity partner during that same timeframe, with equity partnership to be considered down the road. This makes the path to equity partnership in these firms longer and less defined. Source: Ibid.

pro bono activities and firms use these activities to screen for imperfectly observable qualities in associates (their potential productivity as partners).

We provide context for our data with a simple model of the firm's decision to promote an employee from the associate level to the equity partner level. We use this formal model as a way to clearly draw the connection between the firm's human capital strategy and pro-bono practices (Adner et al., 2009). We take as fixed and exogenous two salient features of the firms in our data set: size (associates hired per year) and 'leverage ratio' (a term commonly used in the legal services industry to denote the ratio of equity partners to associates and nonequity partners). We posit that these two elements of firm structure are dictated by the firm's main lines of business, its history and past practice, and local competition. With this assumption, it must be true that, in steady state, each firm promotes a fixed fraction of its associates to partner (to fill vacancies left by partners who retire), although the promotion probability will be different for firms with different leverage ratios. Like Gibbons and Waldman (1999), we think of a worker in the firm as progressing through a sequence of 'periods' (in our case, years) in one of two job categories - associate and partner - and focus on the internal decision to promote an associate to partner. But unlike Gibbons and Waldman, we take the value of an employee to derive not from learning, but from information revealed during his or her tenure as an associate. Like Levin and Tadelis (2005), we make the distinction between associates who are paid a wage (assumed to be the same at all firms), and equity partners, who are paid a share of the firm's profits. Consistent with this viewpoint, we assume that the firm acts to maximize the expected surplus available to partners. However, unlike Levin and Tadelis, we focus on the internal decision to promote an associate to partner rather than on the decision to hire associates from an external labor market. To more closely focus on the information value of pro bono activity, we assume that the

unobserved characteristic partially revealed through pro bono activities is idiosyncratic to the firm and the employee; hence, the promotion decision has no strategic implication. This is in contrast to Bernhardt (1995), for example, in whose model promotion may signal to other firms the value of a particular employee. While our restriction may seem limiting, it is consistent with the observation that law firms promote partners from within more often than they recruit partners from outside.

4.2. The Model

The firm has two classes of workers whom we shall call 'associates' (equivalent to nonequity partners) and 'partners' (equivalent to equity partners). Each year, k candidates are hired as first-year associates. Employees remain in the associate position for n_A years. At the end of his or her n_A^{th} year as associate, an employee is either promoted to partner (with probability α) or let go. Once promoted, the new partner remains with the firm for n_P years and then retires. Tenures as associate and as partner are the same for all firms in the industry. Each worker's promotion outcome is independent. The firm is in 'steady state' after $n_A + n_P$ years; that is, the distribution of the number of partners in the firm does not change after year $n_A + n_P$. The steady-state number of associates in the firm is kn_A and the number of partners is a random variable equal to the number of associates promoted to partner over the last n_P years - a binomial random variable representing the number of successes in kn_P trials with each trial having independent probability of success α . The expected number of partners per associate is given by r , where $r = \alpha kn_P / kn_A = \alpha(n_P/n_A)$ and reflects the production technology of the firm. We assume that r (and hence α) is exogenously determined and varies from firm to firm, depending on factors such as the location, history, and main lines of business. Our model of firm profits is very simple: we

assume that the profit available for division amongst the partners is equal the revenue derived from engagements less the cost of the associates needed to complete the engagements. There are no fixed costs and all out-of-pocket expenses are proportional to the cost of associates. Each partner brings an amount of business that generates a profit to the partnership (revenue less the cost of associates needed to complete the work) exclusive of the cost of pro bono activity. We call Θ the “productivity” of a partner. Before promotion to the partner level, Θ is a random variable.

The key decision for the firm is to choose which associates to promote to partner. We assume that associates, when hired, are identical as far as observable characteristics and are paid the same wage at each firm in the industry (an assumption supported by the data⁵⁷). Associates differ in their potential to become productive partners. The characteristic that makes an associate a productive partner is not directly observable in advance by the firm or by the associate; it is idiosyncratic to the pairing of associate and firm. At the end of an associate’s n_A^{th} year of employment, the firm bases its promotion decision on the information it has obtained about him or her so far. If promoted, the new partner’s annual contribution to profit (equivalent to the productivity of a partner) is Θ , a normal random variable⁵⁸ with mean $\mu_\theta > 0$ and variance σ_θ^2 . The firm’s information about the associate’s future productivity is represented by an unbiased signal S that is jointly normally distributed with Θ , (*i.e.* $E(S|\Theta) = \Theta$); we denote the variance of S

⁵⁷ Salary data from the *2012 Vault Guide to the Top 100 Law Firms* and interviews with recruiting representatives at top-20 law firms support this assumption.

⁵⁸ We allow for the possibility that a tragically bad choice of partner could lead to a negative net revenue.

by σ_θ^2 and the correlation between Θ and S by $\rho \geq 0$.⁵⁹ The expected productivity of an associate with a signal of $S = s$ when promoted to partner is

$$E(\Theta|S = s) = \mu_\theta \left(1 - \rho \left(\frac{\sigma_\theta}{\sigma_S} \right) \right) + \rho \frac{\sigma_\theta}{\sigma_S} s$$

and the distribution of Θ , given $S = s$, is normal with mean $\left(1 - \rho \left(\frac{\sigma_\theta}{\sigma_S} \right) \right) + \rho \frac{\sigma_\theta}{\sigma_S} s$ and variance $\sigma_\theta^2(1 - \rho^2)$ (see, for example, Thomasian, 1969, pp. 463). The effect of pro bono activity is to increase ρ . The firm seeks to maximize the expected discounted annual surplus available to partners. To maintain constant expected leverage, it must promote a constant fraction of its associates. Because expected productivity is non decreasing in the signal, the optimal policy for the firm is to promote those associates whose signal value falls in the upper α^{th} percentile (which we denote ξ_α) of the signal distribution. The resulting conditional expected annual profit is $E(\Theta|S > \xi_\alpha)$. We make use of the fact that $E(\Theta|S > x) = E[E(\Theta|S)|S > x]$ to establish

$$\begin{aligned} E(\Theta|S > \xi_\alpha) &= E[E(\Theta|S)|S > \xi_\alpha] \\ &= E \left[\mu_\theta \left(1 - \rho \frac{\sigma_\theta}{\sigma_S} \right) + S \rho \frac{\sigma_\theta}{\sigma_S} | S > \xi_\alpha \right] \\ &= \mu_\theta \left(1 - \rho \frac{\sigma_\theta}{\sigma_S} \right) + \rho \frac{\sigma_\theta}{\sigma_S} E(S|S > \xi_\alpha). \end{aligned}$$

For a normal random variable with mean μ and variance σ^2 (details are contained in the appendix), and denoting the standard normal density and cumulative distribution by $\phi(x)$ and

⁵⁹ One way to construct such a signal is to let $S = \Theta + \varepsilon$, where ε is a normal random variable with mean 0 and variance σ_ε independent of Θ , reflecting the “noise” in the firm’s understanding of the associate’s future surplus. Improvements in the firm’s information correspond to decreases in σ_ε . The resulting correlation between signal and Θ is $\sqrt{\frac{\sigma_\theta^2}{\sigma_\theta^2 + \sigma_\varepsilon^2}}$

$\Phi(x)$ respectively

$$E(X|X > x) = \mu + \sigma \frac{\phi\left(\frac{x-\mu}{\sigma}\right)}{1-\Phi\left(\frac{x-\mu}{\sigma}\right)}$$

Hence

$$\begin{aligned} E(\Theta|S > \xi_\alpha) &= \mu_\theta \left(1 - \rho \frac{\sigma_\theta}{\sigma_s}\right) + \rho \frac{\sigma_\theta}{\sigma_s} \left[\mu_\theta + \sigma_s \left(\frac{\phi\left(\frac{\xi_\alpha - \mu_s}{\sigma_s}\right)}{1 - \Phi\left(\frac{\xi_\alpha - \mu_s}{\sigma_s}\right)} \right) \right] \\ &= \mu_\theta + \rho \sigma_\theta \left[\frac{\phi\left(\frac{\xi_\alpha - \mu_s}{\sigma_s}\right)}{1 - \Phi\left(\frac{\xi_\alpha - \mu_s}{\sigma_s}\right)} \right]. \end{aligned}$$

Promoting all associates whose signals fall in the upper α -percentile of the signal distribution assures that $\frac{\xi_\alpha - \mu_\theta}{\sigma_s} \equiv z_\alpha$, where z_α is the upper α percentile of the standard normal distribution.

The expected annual revenue per partner can be written as

$$E(\Theta|S > \xi_\alpha) = \mu_\theta + \rho \sigma_\theta \left(\frac{\phi(z_\alpha)}{1 - \Phi(z_\alpha)} \right) \quad (1)$$

This last expression can be further simplified by noting that $1 - \Phi(z_\alpha) = \alpha$ to yield:

$$E(\Theta|S > \xi_\alpha) = \mu_\theta + \rho \sigma_\theta \left(\frac{\phi(z_\alpha)}{\alpha} \right) \quad (2)$$

Pro Bono Activity

The effect of pro bono activities is to increase ρ , which by (1) increases the expected revenue per partner. Let η denote the annual pro bono days per associate and w the daily wage of an associate. Rewriting (1), the expected profit per partner, exclusive of the costs of pro bono activities, $\bar{\Theta}(\eta, \alpha)$, is

$$\bar{\Theta}(\eta, \alpha) = E(\Theta | S > \xi_\alpha) = \mu_\theta + \rho\sigma_\theta \left(\frac{\phi(z_\alpha)}{\alpha} \right) \quad (3)$$

We shall assume that $\rho(\eta)$ is strictly concave increasing in η .⁶⁰

The firm is run for the benefit of the partners, with the objective of maximizing the expected annual surplus available to them. We shall assume that the cost to the firm of pro bono activity is equal to the cost of the associate time consumed by the activity. This may be thought of either as the opportunity cost of the profit forgone when associates are not billing their hours to other clients or as the cost of the additional associate time that must be purchased to replace the time of associates supporting pro bono activities. At any time after $n_A + n_P$, the profit $\tilde{\Pi}(\eta, \alpha)$ of a firm that hires k associates per year, promotes them to partner with probability α and allows η days per year per associate of pro bono work is the sum of the profits generated by the firm's partners, where each partner contributes profit Θ_i

$$\tilde{\Pi}(\eta, \alpha) = \sum_{i=1}^{kn_P} \Theta_i 1_{S_i > \xi_\alpha} - kwn\eta n_A.$$

Taking expectations and applying (3) yields

$$\Pi(\eta, \alpha) = E [\tilde{\Pi}(\eta, \alpha)] = \alpha kn_P \bar{\Theta}(\eta, \alpha) - kwn_A \eta \quad (5)$$

The optimal level of pro bono activity per associate satisfies the first-order condition

$$\frac{\partial \pi}{\partial \eta} = kn_P \alpha \frac{\partial \bar{\Theta}}{\partial \eta} - kwn_A = kn_P \alpha \rho'(\eta) \sigma_\theta \frac{\phi(z_\alpha)}{\alpha} - kwn_A = 0, \quad (6)$$

⁶⁰ An explicit construction yielding a concave increasing $\rho(\eta)$ can be obtained from the example of footnote 31. If we think of the signal as the average observed performance over several independent pro bono engagements, and that the number of engagements per associate is proportional to the pro bono time allowed per associate, then a natural specification of the signal

correlation is $\rho(\eta) = \sqrt{\frac{\sigma_\theta^2}{\sigma_\theta^2 + \sigma_\varepsilon^2(\eta)}}$ where $\sigma_\theta^2(\eta) = \sigma_\theta^2 / (\eta_0 + \eta)$. This specification yields an increasing concave ρ .

which simplifies to

$$\rho'(\eta) = \frac{wn_A}{n_P \sigma_\theta \phi(z_\alpha)}. \quad (7)$$

The concavity of $\rho(\eta)$ assures us that there is at most one solution to (6) and that any such solution is optimal. This solution does not depend on k , the size of the firm.

Proposition 1. *Suppose that $\alpha < 0.5$ and, $\partial \Pi(0, \alpha) / \partial \eta > 0$, then $\eta^*(\alpha)$, the level of pro bono activity per associate that maximizes per-partner profits, is increasing in α . On the other hand, if $\alpha > 0.5$, then $\eta^*(\alpha)$, is decreasing.*

Proof. Suppose that $\alpha < 0.5$. Then $z_\alpha > 0$ and is strictly decreasing in α (approaching 0 as α approaches 0.5). Hence $\phi(z_\alpha)$ is strictly increasing in α . Hence the righthand side of (7) is strictly decreasing in α . The result follows because concavity of ρ assures that the lefthand side of (7) is strictly decreasing in η and hence $\eta^*(\alpha)$ is increasing in α . The conclusion for the case in which $\alpha > 0.5$ follows similarly.

We can characterize a firm for which $\alpha < 0.5$ as 'selective'. When a firm is selective, then the information obtained from pro bono activities and the selectivity of the firm act as substitutes ($\eta(\alpha)$ is increasing). Hence a decrease in selectivity (an increase in α) causes the optimal level of pro bono activity to increase. For firms that are not selective, the opposite holds true. When all of the firms in the labor market are selective, cross-sectional samples should reveal more pro bono activities associated with less selective firms. This yields our first testable hypothesis:

Hypothesis 1: The level of pro bono activity per lawyer increases as the ratio of partners to associates increases.

Firms vary in their partnership structure; some are multitier (with both equity and nonequity partners) while others are single-tier (all partners are equity partners). In multitier firms, there is less value to the improved signal received from pro bono engagements. First of all, if the firm expects the signal to be noisy, borderline cases can be promoted to nonequity partner. Second, there is less downside to making an incorrect promotion decision since partners can be de-equitized. Viewed within the framework of our simple model of the firm, if we treat nonequity partners as additional associates, this amounts to allowing the ratio n_A/n_P to fall. Inspection of (7) reveals that increasing n_A/n_P decreases $\eta(\alpha)$. Since the value of a more accurate signal of an associate's partner potential from pro bono engagements is less valuable to the firm in these cases, we have the following hypothesis:

Hypothesis 2: The relationship between pro bono activity and the ratio of partners to associates is moderated by partnership structure, with multitier partnership firms engaging in less pro bono activity than single-tier partnership firms.

4.3. Discussion

The model makes a number of simplifying assumptions. First, we take as fixed and exogenous the number of lawyers and the leverage ratio (ratio of associates plus nonequity partners to equity partners), resulting in a policy in which a constant fraction of associates is promoted to partner in each firm. This assumption is consistent with anecdotes from law students and lawyers alike, who have indicated that the promotion rate is not considered to vary greatly over time. We also assume that the salaries of associates are the same for each firm. Interviews with lawyers and salary data from the *2012 Vault Guide to the Top 100 Law Firms* confirm that associate salaries are indeed lock-step by years in the firm and are homogenous within - and to a

large extent across - top law firms.⁶¹

We model the firm's productivity or profit as derived entirely from the productivity of partners less pro bono expenditures. Hence, when associates are up for promotion to partner, the key distinction between them is their potential to become effective partners. We believe this follows naturally from our model's focus on the promotion juncture between associate and partner. The productivity of the associate prior to our timeframe of focus only enters into our model as part of the signal received by the firm regarding the associate's expected discounted future annual net surplus as a partner.

Of course, our stylized model omits factors that might influence a firm's promotion strategy and pro bono strategy, such as a firm's profitability and its region of operation. We turn to the data to evaluate the hypotheses derived from the model.

5. Data and Empirical Approach

We use two datasets of the top-200 revenue-grossing US law firms in 2010. The Am-Law200 database includes data on firm characteristics such as structure, size, and profitability. The second dataset, gathered from the American Lawyers Pro Bono Survey, includes information about firms' pro bono work. We use a firm identifier to merge these two datasets. 174 of the 200 top revenue-grossing firms provided data for the Pro Bono Survey.

Table 1 provides summary statistics for our sample. The primary measure of firm pro bono activity - our dependent variable - is the average number of pro bono hours per lawyer in 2010. We also consider an alternative measure: percent of lawyers with more than 20 hours of pro bono work in 2010. *Submitted Pro Bono Survey* is a binary indicator equal to one if the firm

⁶¹ Based on interviews with partners, associates, recruiting managers, and human capital management representatives at top-20 law firms and on interviews with law students at top-50 law schools.

submitted a Pro Bono Survey and equal to zero otherwise. Pro bono work is defined as legal services provided to those who could not otherwise afford them and is based on US offices only.⁶² Work done by paralegals or summer associates is not included, nor is time spent on bar association work, on boards of nonprofit organizations, or on nonlegal work for charities.⁶³ Table 1 includes measures of time spent on pro bono work,⁶⁴ firm size (number of lawyers), firm profitability (net income and profit margin), and firm structure - namely the partner-to-associate ratio (where nonequity partners are included as associates) and nonequity partnership structure (a binary indicator of whether or not the firm has a nonequity partner structure).⁶⁵

Our primary independent variable is the partner-to-associate ratio.

6. Results

Table 2 contains the tests of our primary hypotheses that a high-promotion-probability strategy is correlated with more pro bono work.

All models in Table 2 are estimated via linear regression with robust standard errors. In Column (1), we show that, absent any controls, there is no statistically significant relationship between *Log (Partner : associate ratio)* and *Average pro bono hours per lawyer*. While obviously concerning at first blush, it is important to remember that firm profitability is a first-order omitted variable. The correlation coefficient between *Log (Profits per partner)* and *Log (Partner-to-associate ratio)* is -0.54, which is extremely strong. Figures 1 and 2 illustrate this

⁶² American Lawyer's Pro Bono Survey.

⁶³ American Lawyer's Pro Bono Survey.

⁶⁴ While having the amount of time associates spent on pro bono work would be ideal, it is widely held in the industry that most pro bono work is done by associates rather than by partners (http://www.dcbbar.org/for_lawyers/resources/publications/washington_lawyer/september_2004/president.cfm).

⁶⁵ Twenty-three firms did not fill out the Pro Bono Survey.

issue and show examples of why conditioning on *Log (Profits per partner)* is critical.

As is shown in Figure 1, firms can achieve similar profit per partner with different partner-to-associate ratios. While similarly profitable, Munger, Tolles, & Olson is a firm where many of the associates can reasonably expect to become partners while Curtis, Mallet-Prevost, Colt, & Mosle have very few partners per associate.⁶⁶ In Figure 2, we condition on *Log (Profits per partner)* by measuring the residual of the linear regression implied in Figure 1 as the independent variable on the x-axis. In this case, Munger, Tolles, & Olson is on the righthand side of Figure 2 since, conditional on *Log (Profits per partner)*, it has a much higher partner-to-associate ratio, as seen in Figure 1. Likewise Curtis, Mallet-Prevost, Colt, & Mosle are on the lefthand side of Figure 2 because it has a much lower than expected *Log (Partner-to-associate ratio)* as seen in Figure 1. Figure 2 shows that, conditional on *Log (Profits per partner)*, there is a strong and statistically positive relationship between *Average per lawyer pro bono hours* and *Log (Partner-to-associate ratio)*. The reason that Column (1) of Table 2 shows a non-result is that the partner-to-associate ratio is so tightly correlated with *Log (Profits per partner)* and that *Log (Profits per partner)* is so strongly positively related to *Average per lawyer pro bono hours*.

Columns (2) and (3) show that, once conditional on *Log (Profits per partner)*, the effect of *Log (Partner-to-associate ratio)* is positively correlated with *Average per lawyer pro bono hours*. This holds when including controls for profit margin, nonequity partnership structure, number of lawyers, and region fixed effects.⁶⁷ In Column (3), a one-standard-deviation increase in *Log (Partner-to-associate ratio)* leads to approximately 25 more pro bono hours per lawyer. Column (4) allows the variable nonequity structure to interact with *Log (Partner-to-associate*

⁶⁶ Hermalin (1994) demonstrates this point formally.

⁶⁷ The 10 different regions are Washington DC, Mid-Atlantic, Midwest, New England, New York, South, Southwest, West Coast, National, and International.

ratio). The negative coefficient on the interaction term indicates that the correlation between *Log (Partner-to-associate ratio)* and *Average per lawyer pro bono hours* is diminished in firms that have a nonequity partnership structure, supporting Hypothesis 2. Intuitively, when firms are able to retain borderline partners and also retain partnership human capital strategy - the informational value of the pro bono activity is diminished. Columns (5) through (8) present a robustness checks of our results, using an alternate measure of firm pro bono work: *Percent of lawyers with more than 20 hours of pro bono*. Columns (5) through (8) are broadly consistent with Columns (1) through (4), providing further support for the positive association between the partner-to-associate ratio and pro bono activity.

7. Conclusions

This paper uses multiple methodological approaches - a formal model and empirical analysis, supported by primary and secondary industry research - to show that firms may use socially responsible business practices such as pro bono services to gain proprietary knowledge about expected employee quality in a new position. We demonstrate that a firm's pro bono strategy can thus complement its human capital strategy. In particular, we find that firms with higher partner-to-associate ratios engage in more pro bono activity and that this relationship is moderated by partnership structure, with multitier partnership firms engaging in less pro bono work than single-tier partnership firms do.

While the theoretical, empirical, and industry evidence are all consistent with this novel finding, our analysis has some weaknesses. Our empirical findings are conditional correlations and not causal evidence. To achieve definitive results, one would need to leverage some type of

natural experiment in which organizational structure or the demand for information about future employee quality exogenously changes.

We see broad patterns consistent with our theory in other industries, although they are not systematically documented. In medicine, for instance, less-experienced doctors gain new experience by providing services to patients who cannot afford treatment (Gawande, 1999). Likewise, junior management consultants often gain stretch-role experience by working on pro bono consulting projects. At many top business schools, MBA students gain consulting experience by working for nonprofits. Success on these projects is often a key component of a newly minted management consultant's resume. Opportunities remain for fruitful research on socially responsible business practices in other human-capital-intensive industries.

8. Appendix

Lemma 1. *Suppose that S and Θ are random variables on some probability space (Ω, F, P) and that $E(\Theta|S)$ is well defined. Then, if $P(S > s) > 0$,*

$$E(\Theta|S > s) = E[E(\Theta|S)|S > s].$$

Proof. Let G_Θ denote the smallest sigma-field containing the sets $\{\omega | \Theta(\omega) > t\}$. This is the sigma-field of sets of Ω “generated” by the random variable Θ . Define G_S similarly. Because Θ and S are random variables defined on (Ω, F, P) , $G_\Theta \subseteq F$ and $G_S \subseteq F$. The conditional expectation of Θ given G_S , $E[\Theta|G_S]$, is a G_S measurable function on (Ω, F, P) such that, for any set $A \in G_S$, $E(\Theta 1_A) = E(E(\Theta|G_S) 1_A)$.

It follows from the definition of conditional expectation, that, for any set $A \in F$ with $P(A) > 0$, $E[\Theta|A] = \frac{E(\Theta 1_A)}{P(A)}$. Denote by A_s the set $\{\omega | S(\omega) > s\}$; by assumption, $P(A_s) > 0$.

$$E[\Theta|S > s] = \frac{E[\Theta 1_{A_s}]}{P(A_s)} = \frac{E[E(\Theta 1_{A_s}|S)]}{P(A_s)} = \frac{E[E(\Theta|S) 1_{A_s}]}{P(A_s)} = E[E(\Theta|S)|A_s] = E[E(\Theta|S)|S > s]$$

The second equality holds because for any two random variables, X and Y , if $E[XY]$ is well defined, then $E[E[XY]] = E[X]$. The third equality holds because $A_s \in G_S$.

Lemma 2. Suppose that Z is normally distributed with mean 0 and variance 1. Then

$$E(Z|Z > z) = \frac{\phi(z)}{1-\Phi(z)}$$

Proof. We have

$$E(Z|Z > z) = \frac{E(Z1_{\{Z>z\}})}{P(Z>z)} = \frac{\int_z^\infty x\phi(x)dx}{1-\Phi(z)} = \frac{\int_z^\infty x(1/\sqrt{2\pi})e^{-x^2/2}dx}{1-\Phi(z)}.$$

First suppose $z \geq 0$. Make the substitution $u = x^2/2$; hence, $du = xdx$ and, as x goes from z to ∞ , u goes from $z^2/2$ to ∞ , yielding

$$\begin{aligned} \int_z^\infty x(1/\sqrt{2\pi})e^{-x^2/2} dx &= \int_{z^2/2}^\infty (1/\sqrt{2\pi})e^{-u} du \\ &= (1/\sqrt{2\pi})e^{-z^2/2} = \phi(z). \end{aligned} \tag{8}$$

For $z < 0$,

$$\begin{aligned} \int_z^\infty x\phi(x)dx &= \int_z^{-z} x\phi(x)dx + \int_{-z}^\infty x\phi(x)dx \\ &= \int_{-z}^\infty (1/\sqrt{2\pi})x\phi(x)dx = \phi(-z) = \phi(z). \end{aligned}$$

Where the second equality follows from the symmetry of the standard normal distribution about

0, $\phi(x) = \phi(-x)$; hence, $(-x)\phi(-x) = -x\phi(x)$ and so $\int_z^0 x\phi(x)dx = -\int_0^{-z} x\phi(x)dx$,

ensuring that $\int_z^{-z} x\phi(x)dx = \int_z^0 x\phi(x)dx + \int_0^{-z} x\phi(x)dx = -\int_0^{-z} x\phi(x)dx + \int_z^{-z} x\phi(x)dx = 0$.

The third inequality follows from (8) because $-z \geq 0$.

Lemma 3. *If X is normally distributed with mean μ and variance σ^2 , then*

$$E[X|X > x] = \mu + \sigma \frac{\phi\left(\frac{x-\mu}{\sigma}\right)}{1-\Phi\left(\frac{x-\mu}{\sigma}\right)}$$

Proof. We know that $(X - \mu)/\sigma$ has a standard normal distribution; hence, X has the same distribution (and hence, the same mean and variance) as the random variable $\sigma Z + \mu$. Thus,

$$\begin{aligned} E(X|X > x) &= E[\sigma Z + \mu | \sigma Z - \mu > x] \\ &= \mu + \sigma E\left[Z \mid Z > \frac{x-\mu}{\sigma}\right] \end{aligned}$$

The lemma now follows on applying Lemma 2.

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Figures

Figure 1: Profits Per Partner is Associated with Lower Partner-to-Associate Ratios

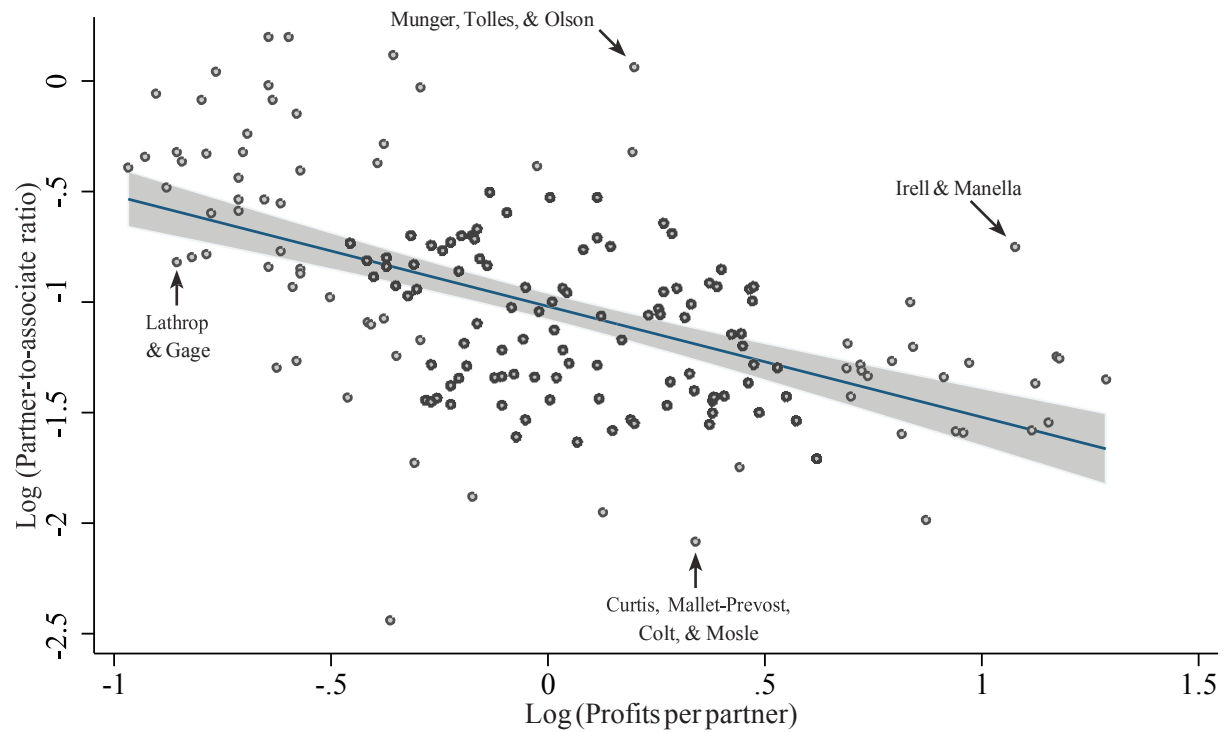
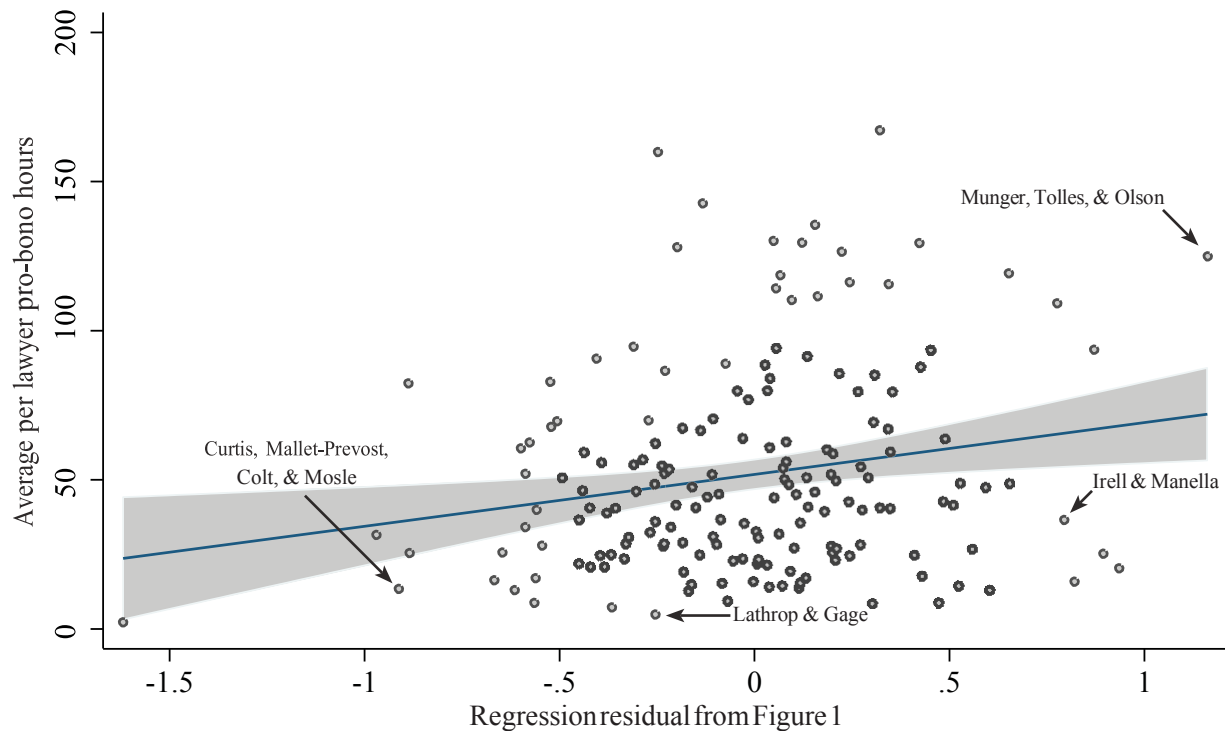


Figure 2: Conditional on Performance, Firms with Higher Partner-to-Associate Ratios do More Pro Bono



Note: Data comes from the 2011 *American Lawyer* survey. In Figure 2, the x-axis is the residual of the single-variable regression shown in Figure 1. This is done to show the impact of the partner-to-associate ratio conditional on profits per partner. For example, in Figure 1, relative to the expectation implied by the regression line, Irell & Manella has a markedly higher partner-to-associate ratio. As a consequence, in Figure 2, Irell & Manella fall in the rightmost portion of the x-axis. Figure 2 provides the intuition for why controlling for firm profitability is critical in Table 2. See paper for further details.

Tables

Table 1: Summary Statistics

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
Average pro bono hours per lawyer	174	51.43	33.66	2.2	167.1
Percentage of lawyers with more than 20 pro bono hours	174	.42	.20	.03	.96
Partner-to-associate ratio	200	.43	.24	.09	1.41
Log (Partner-to-associate ratio)	200	-.97	.50	-2.43	.34
Profits per partner (in millions of dollars)	200	1.10	.67	.38	4.35
Log (Profits per partner (in millions of dollars))	200	-.06	.54	-.98	1.47
Nonequity partnership structure	200	.84	.37	0	1
Profit margin	200	.37	.09	.12	.68
Log (Profit margin)	200	-1.01	.25	-2.12	-.39
Lawyers	200	568.40	499.28	138	3738
Log (Lawyers)	200	6.10	.66	4.93	8.23

Note: Data comes from the 2011 *American Lawyer* survey of the top 200 firms in terms of gross revenues. Data on pro bono hours comes from a supplemental survey to the 2011 *American Lawyer* survey. 87% of the *American Lawyer* top 200 submitted the pro bono survey.

Table 2: The Association between Partner-to-Associate Ratios and Pro Bono Intensity

Independent variables	Dependent variable: Average pro bono hours per lawyer				Dependent variable: Percentage of lawyers with more than 20 pro bono hours			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log (Partner-to-associate ratio)	-5.29 (5.73)	17.10 (6.05)***	48.59 (12.97)***	61.48 (14.12)***	-.02 (.04)	.07 (.04)*	.29 (.09)***	.37 (.09)***
Log (Profits per partner (in millions of dollars))		37.22 (5.73)***	57.26 (10.72)***	54.13 (10.23)***		.16 (.04)***	.29 (.08)***	.27 (.08)***
Nonequity partnership structure			-6.10 (7.10)	-25.62 (12.01)**			-.00 (.04)	-.12 (.06)**
Log (Partner-to-associate ratio) * Nonequity structure				-22.67 (11.08)**				-.14 (.06)**
Log (Profit margin)			-55.79 (22.44)**	-44.98 (22.88)*			-.35 (.16)**	-.28 (.17)*
Log (Lawyers)			20.59 (4.77)***	20.45 (4.68)***			.12 (.03)***	.12 (.03)***
Region fixed effects	No	No	Yes	Yes	No	No	Yes	Yes
Number of observations	174	174	174	174	174	174	174	174
R ²	.01	.24	.43	.44	.00	.12	.31	.33

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% confidence levels, respectively.

The Drivers of Greenwashing

Magali A. Delmas
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More and more firms are engaging in greenwashing, misleading consumers about their environmental performance or the environmental benefits of a product or service. The skyrocketing incidence of greenwashing can have profound negative effects on consumer and investor confidence in green products. Mitigating greenwashing is particularly challenging in a context of limited and uncertain regulation. This article examines the external (both institutional and market), organizational and individual drivers of greenwashing and offers recommendations for managers, policymakers, and NGOs to decrease its prevalence. (Keywords: Corporate Social Responsibility, Environmental Policy, Green Marketing, Greenwashing)

The consumer and capital markets for green products, services, and firms have been expanding rapidly in the last decade. The consumer market for green products and services was estimated at \$230 billion in 2009 and predicted to grow to \$845 billion by 2015.¹ At the start of 2010, professionally managed assets utilizing socially responsible investing strategies, of which environmental performance is a major component, were valued at \$3.07 trillion in the U.S., an increase of more than 380 percent from \$639 billion in 1995.² More companies are now communicating about the greenness of their products and practices in order to reap the benefits of these expanding green markets. Green advertising has increased almost tenfold in the last 20 years and nearly tripled since 2006.³ As of 2009, more than 75 percent of S&P 500 companies had website sections dedicated to disclosing their environmental and social policies and performance.⁴ At the same time, more and more firms are engaging in greenwashing, misleading consumers about firm environmental performance or the environmental benefits of a product or service. Over 95 percent of products surveyed by TerraChoice in 2008/2009 committed at least one of the TerraChoice “Seven Sins of Greenwashing.”⁵

The skyrocketing incidence of greenwashing can have profound negative effects on consumer confidence in green products, eroding the consumer market for green products and services.⁶ Likewise, greenwashing can negatively affect

investor confidence in environmentally friendly firms, eroding the socially responsible investing capital market. Greenwashing also entails some risks when consumers, non-government organizations (NGOs), or government entities question firms' claims. For example, Green Mountain Power Corporation was targeted by several environmental groups for allegedly using polluting combustion technologies

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for their renewable energy sources, which they marketed as "green energy."⁷ Likewise, corporations have faced lawsuits for engaging in environmental false advertising. For example, Honda settled a class action suit for false and misleading statements regarding the fuel efficiency of a hybrid vehicle.⁸ Why, then, do firms engage in greenwashing despite these risks? The current state of lax and uncertain regulation is a key driver of greenwashing.

A handful of authors have begun to make headway in defining the phenomenon of greenwashing,⁹ empirically demonstrating the incidence of greenwashing,¹⁰ describing its effects on consumers¹¹ and on firms,¹² and making suggestions as to how to address it.¹³ Although some explanation of firm greenwashing has been put forth,¹⁴ a comprehensive analysis of its determinants is lacking, and as a result there are few tools available to managers or policymakers seeking to mitigate greenwashing. We aim to fill this void by developing a framework that examines the institutional, organizational, and individual drivers of greenwashing and then use this framework to develop recommendations for how to decrease firm greenwashing.

We define greenwashing as the intersection of two firm behaviors: poor environmental performance and positive communication about environmental performance. Since the drivers of firm environmental performance are well understood,¹⁵ we treat it as fixed and focus on firm communication about environmental performance. That is, we describe the drivers that lead firms with poor environmental performance ("brown" firms) to communicate positively about their environmental performance. Given the shorter time frame required for a firm to alter communications about its environmental performance than for a firm to change it, our analytical focus on the drivers that lead brown firms to communicate positively about environmental performance while holding firm performance constant is not only useful for analytical tractability, but is also true to shorter-term strategic decisions of managers in these firms.

To identify the drivers of greenwashing, we draw from existing work in management, strategy, sociology, and psychology that has studied and established factors that can influence firm and individual behavior under various circumstances. Our framework organizes the drivers of greenwashing into three levels: external, organizational, and individual. External drivers include pressures from both non-market actors (regulators and NGOs) and market actors (consumers, investors, and competitors). The current regulatory environment is the key driver of greenwashing. Regulation of greenwashing is extremely limited in the U.S. and enforcement of such regulation is highly uncertain. In addition, variation in regulation across countries and complexity regarding appropriate jurisdiction of

cross-country practices contribute to a particularly uncertain regulatory environment for multinational corporations. The regulatory context is a critical direct driver of greenwashing due to the limited punitive consequences. The external market drivers of greenwashing include consumer and investor demand for green products, services, and firms. Organizational-level drivers include firm incentive structure and ethical climate, effectiveness of intra-firm communication, and organizational inertia. Such organizational-level drivers can become more pronounced in a lax regulatory context as firms face little incentive to put structures and processes in place to alter organizational tendencies. Individual-level drivers include narrow decision framing, hyperbolic intertemporal discounting and optimistic bias. These cognitive tendencies become more salient and have a greater effect on individual decision making under conditions of uncertainty and limited or imperfect information, to which the current regulatory environment contributes.

We provide recommendations for managers, policymakers, and NGOs to decrease the incidence and severity of greenwashing in practice. More stringent, enforced regulation of greenwashing would serve as the most direct means to reduce it. However, given that effective implementation of more stringent regulation would be challenging due to a lack of clarity about what constitutes green behavior and confusion surrounding the correct use of green adjectives such as “biodegradable” and “all-natural,” and it could even have the unintended consequence of decreasing firms’ use of otherwise helpful green claims. Given these challenges, it is unlikely that there will be significant regulatory change in the near future. However, there are important ways that managers, policymakers, and NGOs can work towards decreasing the incidence of greenwashing in the current regulatory context. These include increasing the transparency of environmental performance, increasing knowledge about greenwashing, and effectively aligning intra-firm structures, processes, and incentives. Indeed, we consider the roles of managers and NGOs to be critical to reduce greenwashing in the current regulatory context.

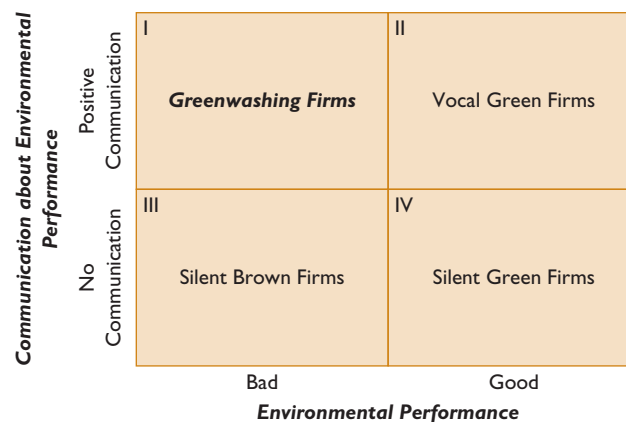
What Is Greenwashing?

Greenwashing is the act of misleading consumers regarding the environmental practices of a company (firm-level greenwashing) or the environmental benefits of a product or service (product-level greenwashing).¹⁶ An example of firm-level greenwashing is General Electric’s “Ecomagination” campaign, which advertised the company’s work in the environmental arena while it simultaneously lobbied to fight new clean air EPA requirements. An example of product-level greenwashing is that of LG Electronics and its mis-certified Energy Star refrigerators. Energy Star, a government-backed third party eco-label indicating that a product meets a set of energy efficiency guidelines, certified many of LG Electronics’ refrigerator models. It was discovered, however, that ten of the certified LG refrigerator models had listed erroneous energy usage measurements on their labels and did not actually meet the efficiency standards required to earn the certification.¹⁷ More work has been done to categorize and quantify product-level than firm-level greenwashing. For example, Gillespie identifies “ten signs of greenwash,” ranging from “fluffy language” (words or terms with no clear

meaning such as “eco-friendly”) to “outright lying” (totally fabricated claims or data).¹⁸ The TerraChoice Group categorizes product-level greenwashing into “seven sins.” These sins range from the “sin of the hidden tradeoff” (committed by suggesting a product is green based on an unreasonably narrow set of attributes without attention to other environmental issues) to the “sin of fibbing” (which is committed by making false environmental claims).¹⁹ The other sins are the sin of no proof, sin of vagueness, sin of irrelevance, sin of lesser of two evils, and sin of worshipping false labels.

A greenwashing firm engages in two behaviors simultaneously: poor environmental performance and positive communication about its environmental performance. A firm’s environmental performance can be considered to fall along a spectrum. For simplicity, we can bucket firms into one of two environmental performance categories: poor environmental performers (called “brown” firms) or good environmental performers (called “green” firms). Noting that it would be counterproductive for a firm to actively communicate negatively about its bad environmental performance, and that brown firms will thus choose to either remain silent about their bad environmental performance or try to represent their bad environmental performance in a positive light, we can consider firms as falling along a communication spectrum ranging from no communication on one end to increasing degrees of positive communication on the other end. Firms that positively communicate about their environmental performance, through marketing and public relations (PR) campaigns for example, can be described as “vocal” firms while those that do not communicate about their environmental performance can be described as “silent” firms. Thus, firms with good environmental performance that positively communicate about their environmental performance can be described as “vocal green firms” (quadrant II in Figure 1 below) while those that do not communicate about their environmental performance can be described as “silent green firms” (quadrant IV). Among brown firms, we describe those not communicating about their

FIGURE 1. A Typology of Firms based on Environmental Performance and Communication



environmental performance as “silent brown firms” (quadrant III). Brown firms that positively communicate about their environmental performance are the firms of interest in this discussion, namely, “greenwashing firms” (quadrant I).

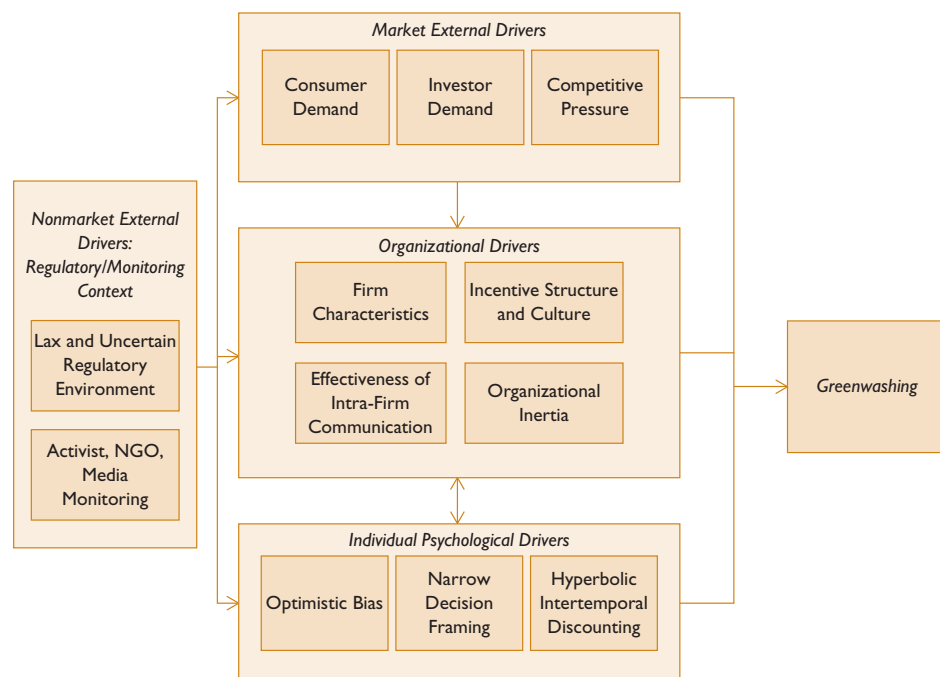
There are two paths by which a non-greenwashing firm can become a greenwashing firm (and vice versa). First, a vocal firm can alter its environmental performance. That is, it can move from quadrant II to quadrant I in Figure 1. Second, a brown firm can alter communication about its environmental performance. That is, it can move from quadrant III to quadrant I in Figure 1.

The Drivers of Greenwashing

To simplify our discussion, we treat firm environmental performance as fixed and focus on firm communication about environmental performance. That is, we focus on the determinants of the vertical axis of Figure 1, on which the literature is sparse, and leave out of our analysis determinants of the horizontal axis of Figure 1, on which the management literature is rich. We thus describe the drivers that lead *brown* firms to *communicate positively about their environmental performance* (see Figure 2).

Our framework draws from institutional theory, which emphasizes the importance of regulatory, normative, and cognitive factors in shaping firms’ decisions to adopt specific organizational practices.²⁰ The regulatory context is a critical external institutional driver of firm greenwashing. Institutional factors alone cannot

FIGURE 2. Drivers of Greenwashing



explain differing strategies among firms, however.²¹ Market external factors are important drivers of greenwashing. Key firm characteristics, incentive structure and ethical climate, effectiveness of intra-firm communication, and organizational inertia play important roles in moderating a firm's reaction to external drivers. In addition, individual-level psychological and cognitive factors influence managers' decision-making processes and thus influence how external drivers translate into motivation for action. The regulatory context indirectly affects the other drivers of greenwashing by affecting the availability and reliability of information about firm greenwashing and environmental performance accessed by consumers, investors, and managers themselves, and by contributing to an environment of uncertainty surrounding implications for engaging in greenwashing.

Non-Market External Drivers: The Regulatory and Monitoring Context

Lax and Uncertain Regulatory Environment

Regulation of greenwashing in the U.S. is extremely limited, and enforcement of such regulation is highly uncertain from the perspective of firms. The only portion of a firm's greenwashing activities that is subject to federal regulation is product or service advertising that falls under Section 5 of the FTC Act. The U.S. Federal Trade Commission (FTC) is empowered to apply Section 5 of the FTC Act to environmental marketing claims by prohibiting unfair or deceptive acts or practices. If the FTC finds that an advertiser violated Section 5, it can issue a cease and desist order to the violator, and if the violator does not stop the practice, the FTC may issue a fine of up to \$10,000 or up to one year in prison.²² The FTC Act also establishes criminal liability if the violation is committed with the intent to defraud or mislead. The FTC has indeed investigated and charged companies for environmental claims under Section 5 of the FTC Act, but these charges have been few and far between. According to the FTC website, such environmental cases totaled 37 from 1990 to 2000, zero from 2000 to 2009, and five in 2009.²³ Thus, despite the existence of this regulation, enforcement has been limited.

Furthermore, from the perspective of firms, it is uncertain whether their environmental claims are likely to result in an FTC charge. Some FTC cases have been relatively straightforward, such as that against PerfectData Corp in 1993, which challenged "ozone friendly" and "contains no ozone depleting CFCs" claims for an aerosol cleaning product containing ozone depleting chemicals. Other FTC cases have been less straightforward, however. For example, the FTC charged Kmart in 2009 for making false and unsubstantiated claims that its American Fare brand disposable plates were biodegradable. Although the plates may have been biodegradable in compost, the FTC alleged that the defendants' products are typically disposed in landfills, incinerators, or recycling facilities, where it is impossible for waste to biodegrade within a reasonably short period of time. The FTC has acquiesced that, by these standards, even a piece of produce might not be biodegradable in a landfill within a reasonably short period of time.²⁴ This case points to the uncertainty that firms face regarding the applicability of Section 5 to their environmental claims. As definitions of green terms such as "biodegradable" and "all-natural" remain unclear, firms will continue to face uncertainty regarding whether the FTC would construe their environmental claims as

deceptive acts. At the state level, some states such as California have attempted to promulgate their own environmental advertising claims regulations, but states have not put forth regulation more stringent than that of the FTC. Given the limited history of FTC charges, firms likely perceive the risk of being punished by the FTC for engaging in greenwashing practices as low probability on average; as such, the current U.S. regulatory context does little to deter greenwashing.

U.S. multinational firms operating in countries outside the U.S. are also subject to the regulations of the host countries in which they operate. In some countries, including most developing countries, there is no regulation of environmental claims; for countries with such regulation, regulatory standards vary depending on the country. International equivalents of the U.S. FTC include the Advertising Standards Authority (ASA) in the UK, the Australian Competition and Consumer Commission (ACCC), and the Canadian Standards Association (CSA). The CSA and Canadian Competition Bureau released “Environmental Claims: A Guide for Industry and Advertisers” in 2008, which requires companies to provide support for their environmental claims and discourages the use of vague claims such as “green.” Misleading advertising by a corporation is punishable by fines, product seizure, and imprisonment. In the UK, the Department for Environment, Food and Rural Affairs (DEFRA) issued guidelines similar to those of the FTC and CSA, and which also take into account the international standard of environment claims, the ISO 14021. The ISO 14201 is an international standard developed by the International Organization for Standardization, which specifies requirements for self-declared environmental claims. It lists terms commonly used in environmental claims, gives qualifiers for their use, and describes a general evaluation and verification methodology. Adherence to these standards is voluntary, although a handful of countries such as Australia, France, and Norway have backed the ISO 14201 with enforceable fines and penalties. Indeed, the variation in regulation across countries and complexity regarding which practices are legally subject to which countries’ regulation contributes to a highly uncertain context of greenwashing regulation for multinational corporations.

In addition, the U.S. government does not currently mandate corporate disclosure of environmental practices, with a few exceptions such as toxic releases. Mandatory disclosure of environmental practices and third-party auditing of such information would make it more difficult for brown firms to get away with greenwashing, even if greenwashing practices themselves were not regulated, since consumers, investors, and NGOs would be able to compare a firm’s communications with reliable information about the firm’s environmental practices. The current state of voluntary disclosure of environmental information by firms does little, however, to deter greenwashing.

Activist, NGO, and Media Pressure

Given the limited formal regulation of greenwashing, uncertainty about enforcement in the U.S., and lack of international consistency of such regulation, activist groups and NGOs—along with and through the media—currently play a critical role as informal monitors of firm greenwashing. By campaigning against and spreading information about incidents of greenwashing, these organizations work towards holding brown firms accountable.

Greenpeace's "stopgreenwash" site includes articles about greenwashing firms and SourceWatch's site maintains a list of greenwashing case studies. Sites such as goodguide.com and EWG's Skin Deep Cosmetics Database provide information on product-level environmental characteristics that consumers can access to inform their purchasing decisions.

Activist and NGO-led campaigns against greenwashing firms can have a much wider reach than informational websites. For example, the Coastal Alliance for Aquaculture Reform of Vancouver, British Columbia, successfully used a campaign strategy to reduce ocean pollution from salmon farms that used floating nets. The Alliance targeted a retailer (Safeway) that sold farmed salmon because of the company's proclaimed policy of being a good environmentalist and corporate citizen.²⁵ The group took out a large advertisement in the *New York Times* featuring dead seals and salmon feces under the heading "Ingredients for Extinction," playing on Safeway's "Ingredients for Life" advertising campaign. The case of Safeway demonstrates that a firm's active communication about green or socially responsible practices can lead to more intense activist, NGO, and media attention. Another example is the boycott led by activists and NGOs against Green Mountain for marketing energy sources that used polluting combustion technologies as "green energy."²⁶ Activists' and NGOs' access to consumers and the public has increased through use of Twitter and Facebook, YouTube campaign videos, and other internet-based platforms. These platforms have significantly decreased the costs and time required to share information. Green activists and environmentally oriented nonprofits on the lookout for greenwashing thus have an easy, inexpensive means to spread information about and campaign against greenwashing incidents.

Activists, NGOs, and the media provide a threat of public exposure for greenwashing, which likely deters some brown firms from positively communicating about their environmental performance. As consumers, the public, and investors become more interested in environmental issues, environmental activist groups become more powerful and can exert more influence and pressure on companies. Members of the media are also more likely to report on issues of greenwashing as these stories become more likely to capture reader interest. The increased interest in environmental issues has thus strengthened the role that activist groups and the media can play in punishing firms for greenwashing or in deterring firms from greenwashing in the first place. However, given the limited formal regulation and enforcement of greenwashing, NGOs and the media can only bring about reputational damage to greenwashing firms. The threat of exposure would have much more of a deterrent impact on greenwashing if there were legal ramifications for being "caught" and exposed. This would require more stringent and enforced formal regulation of greenwashing.

Market External Drivers: Consumer, Investor, and Competitor-Induced Incentives

In addition to the "nonmarket" external context, market external drivers (including consumer demand, investor demand, and competitive pressure) are critical to understanding why some brown firms choose to greenwash. Brown firms face pressure from both consumers and investors to appear to be

environmentally friendly and thus face incentives to communicate positively about their environmental performance, particularly as there are few legal or regulatory ramifications for doing so. All else being equal, the greater the perceived consumer and investor pressure for environmentally friendly firms, the more likely a brown firm is to greenwash.²⁷

The competitive landscape is also a critical part of the market environment in which a brown firm faces the decision of whether to communicate positively about its environmental performance. Organizations tend to model themselves after similar organizations in their industry that they perceive to be more legitimate or successful, and research has shown that this applies to the adoption of green practices.²⁸ This suggests that some firms might be communicating about supposed green practices for fear of falling behind their rivals who have already begun to do so. For example, UBS adopted a more progressive policy on climate change after an internal report was compiled demonstrating that the company lagged behind its competitors in publically committing to help mitigate global warming.²⁹ Thus, as positive communication about green practices becomes more and more common within an industry or group of competitors, a brown firm in that industry or competitive group is more likely to positively communicate about its environmental practices and greenwash.

Limited greenwashing regulation and uncertain enforcement of this regulation influences and interacts with the market external-level drivers, specifically consumer and investor demand. Consumers cannot be confident that, if a brown firm were to falsely communicate about its environmental practices, it would be caught and punished for doing so. As noted, if greenwashing practices continue to go unchecked by regulation, it is possible that green consumers will become increasingly cynical about green claims, eroding the market for green products and services. Similar to the case of consumers, it is challenging for investors and funds following Socially Responsible Investing (SRI) or environmental assessment strategies to correctly assess firms on these dimensions when there is a lack of verifiable information available to them.³⁰ Just as rampant, unchecked greenwashing could erode the consumer market for green practices and services in the future, and it could also erode the capital market for socially responsible investing.

Organizational-Level Drivers

While external drivers combine to create an environment that incentivizes brown firms to greenwash, they are not interpreted within a vacuum. Organizational-level drivers—including firm characteristics, incentive structure and ethical climate, effectiveness of intra-firm communication, and organizational inertia—mediate and influence the way that firms respond to the external drivers.

Firm Characteristics

Firm-level characteristics (such as size, industry, profitability, lifecycle stage, and particular resources and competencies) undoubtedly influence the overall strategies available to a firm, the costs and benefits associated with any particular action, and the degree to which a firm experiences external pressures.

The expected benefits to brown firms of positively communicating about environmental performance include increased access to green consumers and investors. Such potential benefits vary with basic firm characteristics. Consumer products firms likely face greater levels of consumer pressure to appear to be environmentally friendly than service firms or firms in non-consumer products industries. Likewise, large, publically traded firms tend to be the focus of analysis by the SRI community; as such, these firms likely face greater levels of investor pressure than smaller, private firms.

The expected costs to brown firms of positively communicating about environmental performance—that is, the likelihood and costs associated with being caught for greenwashing—also vary with basic firm characteristics. Consumer products firms are most subject to product-level regulation under Section 5 of the FTC act. Consumer products firms are also most likely to be targets of campaigns seeking to garner public outrage due to greenwashing, although the increasing use of social media sites and viral ad campaigns to garner support for a wide range of issues has increased the potential for such scrutiny to be applied to a wider range of firms. Larger firms with well-known brands are more likely to be subjected to activist and media scrutiny because they are more likely to garner public attention.³¹ Also more likely to be targeted by activists and NGOs are firms belonging to industries that are renowned for poor environmental performance, such as the oil and utilities industries. Indeed, oil and utilities companies commonly top lists such as Greenpeace's Top Greenwashers list. More-profitable firms with higher margins are better able to withstand bottom-line shocks from reputational damage for being "caught" by NGOs for greenwashing than less-profitable firms with lower margins. They can also more easily incur fines by the FTC for deceptive environmental product claims, as well as litigation costs of being sued for such claims.

Incentive Structure and Ethical Climate

In addition, it has been shown that firm incentive structure and ethical climate can be determinants of firm ethical behavior.³² Unethical behavior has been described as behavior that has a harmful effect on others and is either illegal or morally unacceptable in the larger community.³³ As such, we can draw from existing literature on incentives and ethical climate as drivers of unethical behavior to further inform our understanding of why a brown firm might engage in greenwashing.

It has been demonstrated that incentives that reward managers for attainment of arbitrary financial goals often results in unethical behavior.³⁴ Such incentives have been purported to explain General Electric's defrauding of the government on a missile-warhead contract in 1985.³⁵ Likewise, incentives to reward on-time performance and punish late performance have been claimed to directly contribute to unethical behavior by Eastern Airlines in 1990 that resulted in indictments for falsification of maintenance records.³⁶ Incentives to reach arbitrary marketing or PR quotas, particularly quotas for communications that portray the firm in an environmentally friendly or socially responsible light, would increase the likelihood that a brown firm would greenwash. Indeed, such incentives could drive

managers to take short cuts in validating the truth to their communications messages or cause managers to “look the other way” if they have reason to question the validity of certain communications messages.

Somewhat related to incentive structure is ethical climate. Organizational behavior scholars describe a firm’s ethical climate as composed of organizational members’ shared perceptions and beliefs that certain ethical reasoning or behaviors are expected norms for decision making.³⁷ The ethical climate of an organization can be categorized as consisting of one of three basic types of moral judgment: in an egoistic climate, company norms support the satisfaction of self-interest; in a benevolent climate, company norms support maximization of overall well-being; and in a principled climate, company norms support following abstract principles independent of situational outcomes such as external legal mandates or internal codes of ethics.³⁸ Unethical behavior has been shown to occur more frequently in organizations or organizational subunits in which egoistic (rather than benevolent or principled) ethical climates dominate.³⁹ Although the theory contends that predominant ethical climates tend to be intractable and difficult to change, studies nevertheless point to the effectiveness of implementing ethical codes and other explicit firm standards of conduct to reduce unethical behavior, even within dominantly egoistic climates.

As greenwashing is an example of unethical behavior, it is more likely to occur among brown firms with egoistic, rather than benevolent or principled, ethical climates. Firms with ethics codes and explicit firm standards of conduct in place are less likely to greenwash. To the extent that such codes or standards explicitly include directives about the importance of truthful communication and representation of firm behavior, they would diminish the likelihood of greenwashing by a brown firm.

Organizational Inertia

Management literature has increasingly recognized organizational inertia as a factor that influences and explains firm behavior.⁴⁰ Organizational inertia is the strong persistence of existing form and function that underlies and hampers strategic change. Organizational inertia is more likely to be prevalent in larger, older firms than in smaller, newer firms.⁴¹ Thus, organizational inertia could explain a lag naturally occurring between a manager’s declaration of green intent and implementation of this intent, or between a CEO’s declaration of commitment to greening the company and the rest of the company’s alteration of structure and processes to truly green the company.⁴² This disconnect could be particularly prevalent in firms that are transitioning between CEOs or during mergers and acquisitions. For example, BP’s chief executive, Bob Dudley, may have engaged in greenwashing partly due to organizational inertia. He was criticized by the media for doing “little but talk about improving safety since he took the reins” of BP after taking over for Tony Hayward in the wake of the Macondo well explosion.⁴³ It is possible that, despite his intent to change processes and procedures to improve BP’s safety, such changes took longer than anticipated to implement due to organizational inertia.

Effectiveness of Intra-Firm Communication

Another relevant internal firm characteristic is effectiveness of intra-firm communication. Internal transfers of knowledge within a firm are often sticky or difficult to achieve, and suboptimal internal transfer of knowledge can help to explain firm behavior such as less innovation.⁴⁴ Suboptimal transfers of knowledge within a firm could also help explain inadvertent greenwashing by brown firms, suggesting that firms with ineffective communication between marketing/PR departments and product development, production, or packaging departments are more likely to greenwash, all else being equal. For example, a marketing or PR department could overstate the greenness of a product due to a miscommunication or lack of communication with a product development department, packaging department, or suppliers of a product's components.

Organization scholars have analyzed factors that inhibit knowledge sharing among subunits such as the lack of direct relationships and extensive communication between people from different subunits. In the product innovation literature focused on knowledge dissemination, it is argued that close and frequent interaction between R&D and other functions leads to project effectiveness.⁴⁵ Applying this concept to the context of greenwashing, we can hypothesize that a lack of frequent and close interactions between intra-firm divisions such as marketing and product development can act as an important driver of greenwashing.

Effectiveness of intra-firm communication, as well as firm incentive structure and ethical climate, are also affected by the regulatory context. In a lax regulatory context, there is little incentive for firms to ensure that organizational characteristics such as incentive structures and ethical climate are aligned to minimize greenwashing, or to put processes in place to improve effectiveness of intra-firm communication in order to decrease the likelihood that firms will greenwash.

Individual-Level Psychological Drivers

Leaders and individuals play an important role in explaining firm behavior. The psychology, behavioral decision theory, and behavioral economics literature contends that tendencies such as narrow decision framing, hyperbolic intertemporal discounting, and optimistic bias become more salient and have a greater effect on individual decision making under conditions of uncertainty and limited or imperfect information, often referred to as bounded rationality.⁴⁶ The current regulatory environment contributes to the conditions of bounded rationality. Indeed, the uncertain enforcement of firm greenwashing regulation as well as a lack of standardization in relevant host country regulation contribute to uncertainty about the negative consequences of greenwashing. In addition, employees, managers, and firm leaders have limited tools and information to evaluate firm greenwashing activities (although some progress has been made in establishing criteria with which to evaluate product and service advertising greenwashing—e.g., TerraChoice's Seven Sins of Greenwashing⁴⁷ framework). As managers in a brown firm deciding whether to communicate positively about environmental performance are making this decision in a context of uncertainty and imperfect information, we can infer that these managers are likely to exhibit these psychological tendencies. The

regulatory context is therefore an indirect driver of firm greenwashing in that it exacerbates the individual-level drivers of greenwashing, namely, narrow decision framing, hyperbolic intertemporal discounting, and optimistic bias.

Narrow decision framing, sometimes called narrowing bracketing, is the tendency to make decisions in isolation.⁴⁸ An example of narrow bracketing is the statistical fact that consumption does not adjust downward when people receive bad news about future income shocks such as losing their job.⁴⁹ Decision makers within a firm may decide today to communicate about the greenness of a product or firm without adequately considering what is required to implement this in the future, resulting in greenwashing down the road. Or a decision maker or firm leader may focus on the short-term gains from greenwashing without adequately weighing the long-term potential negative effects on loss of reputation. To mitigate this tendency, psychology and behavioral scholars note that maintenance of a broader decision frame can be influenced by how performance is evaluated.⁵⁰ The tendency toward narrow decision framing can thus be moderated with an appropriately aligned incentive structure.

Another cognitive tendency that could lead to greenwashing is hyperbolic intertemporal discounting. Psychologists have concluded that discount functions are hyperbolic; that is, characterized by a relatively high discount rate (impatient) over short horizons and a relatively low discount rate (patient) over long horizons.⁵¹ This function has been used in psychological studies of temptation, self-control, and procrastination, and it has been applied to analyze consumption and savings decisions. Hyperbolic discounting generates what is often referred to as dynamic inconsistency, or preference reversals. Hyperbolic consumers, for example, exhibit a gap between their long-run goals and their short-run behavior. They will not achieve their desired level of “target savings” because short-run preferences for instantaneous gratification undermine efforts to implement patient long-run plans. In the context of cognitive factors that could lead to firm greenwashing, when a decision as to whether to communicate about firm environmental performance is being made today, a manager or firm leader could choose to communicate actively about the environmental sustainability and social responsibility of the firm with an intention to bear the costs to implement green practices in the future. When the future becomes today, so to speak, the decision maker once again acts impatiently and chooses to greenwash.

Optimistic bias, the tendency for individuals to over-estimate the likelihood of positive events and under-estimate the likelihood of negative events, may also contribute to greenwashing. Optimistic bias arises in part because forecasts of future outcomes are often anchored on plans and scenarios of success rather than on past results.⁵² Pervasive optimistic biases can take three main forms: unrealistically positive self-evaluation, unrealistic optimism about future events and plans, and an illusion of control.⁵³ A survey of new entrepreneurs about their chances of success and the chances of success for enterprises similar to theirs demonstrates this bias: 80% perceived their chances of success as 70% or better, and 1/3 described their chances of success as 100%. These chances of success were uncorrelated to objective predictors of success such as college education, prior supervisory experience, and initial capital. Yet the mean chance of success they attributed

to a business like theirs was 59%.⁵⁴ Decision makers may over-estimate the likelihood of the positive results of greenwashing, namely, gaining green market share and attracting capital from SRI investors, and under-estimate the likelihood of negative events resulting from greenwashing such as being caught by the FTC, facing consumer litigation, or receiving negative media or NGO scrutiny. This could increase the likelihood that a decision maker within a brown firm would choose to communicate positively about firm environmental performance and thereby greenwash.

Managerial and Policy Recommendations

Greenwashing regulation currently applies only to miscommunication about product or service environmental performance; there is no regulation for miscommunicating about firm environmental performance. Regulation of firm-level greenwashing would certainly increase punitive consequences and deter brown firms from positively communicating about their firm's environmental performance. In practice, however, difficulty in measuring and assessing the degree of firm-level greenwashing makes this a daunting regulatory challenge.

From Figure 1, we observe that there are two paths to decrease greenwashing. One is for vocal firms to improve firm environmental performance. That is, firms could move from quadrant I to quadrant II in Figure 1 (from greenwashing firms to vocal green firms). The second path is for brown firms to stop positively communicating about environmental performance. That is, firms could move from quadrant I to quadrant III in Figure 1 (from greenwashing firms to silent brown firms). Managers, policymakers, and NGOs can enable and incentivize brown firms to stop communicating positively about environmental performance, namely, they can decrease the incidence of greenwashing by improving the transparency of firm environmental performance, by facilitating and improving knowledge about greenwashing, and by effectively aligning intra-firm structures, processes, and incentives. Such a multi-stakeholder approach could be effective in reducing greenwashing in the current regulatory context. Our recommendations are summarized in Table 1.

Increase Transparency of Environmental Performance

Increased transparency about firm environmental performance would decrease brown firms' incentives to engage in greenwashing, even in the current regulatory context. It has also been demonstrated that firms themselves benefit from increased transparency about environmental performance in the form of less unsystematic stock market risk.⁵⁵ Such transparency could be achieved through both mandated and voluntary corporate disclosure of firm-level environmental performance, and policymakers, NGOs, and managers should play central roles in such an endeavor.

Mandate Disclosure of Environmental Performance

There are successful examples of mandatory environmental information disclosure policies in the U.S., including the Emergency Planning and Community

TABLE I. Recommendations to Decrease Positive Communication by Brown Firms
(continued on next page)

Recommendations		Implementation by Stakeholders
Increase Transparency of Environmental Performance	Mandated Disclosure	<p>Policymakers</p> <ul style="list-style-type: none"> ▪ Mandate annual disclosure of firm level environmental performance metrics ▪ Mandate disclosure of product environmental characteristics ▪ Verify reporting or collaborate with NGOs to do so <p>NGOs</p> <ul style="list-style-type: none"> ▪ Aggregate and diffuse environmental performance information
	Voluntarily Disclosure	<p>Policymakers and NGOs</p> <ul style="list-style-type: none"> ▪ Extend/create new ecolabels for a broader range of product characteristics, while standardizing/collaborating to reduce consumer confusion <p>Managers</p> <ul style="list-style-type: none"> ▪ Voluntarily disclose firm and product environmental performance ▪ Share best practices, collaborate with other firms, NGOs, government
Facilitate and Improve Knowledge about Greenwashing	Gather and Share Information about Greenwashing Incidents	<p>NGOs</p> <ul style="list-style-type: none"> ▪ Continue to leverage internet-based venues to reach broad audiences to call out greenwashing firms ▪ Collaborate amongst NGOs to reduce consumer confusion re sites and blogs providing info re greenwashing
	Reduce Regulatory Uncertainty	<p>Policymakers</p> <ul style="list-style-type: none"> ▪ FTC to explicitly communicate types of actions that will be considered to violate Section 5 of the FTC Act ▪ Research consumer understanding of green terminology to inform Green Guides <p>NGOs</p> <ul style="list-style-type: none"> ▪ Facilitate adoption of uniform international standards for advertising and environmental disclosure regulation
Effectively Align Intra-firm Structures, Processes and Incentives	Improve Information Related to Environmental Communication Decisions	<p>Managers</p> <ul style="list-style-type: none"> ▪ Increase centralization of decisions regarding environmental communication ▪ Institute standards and requirements for internal gathering and sharing of information on environmental performance indicators with Communications and PR divisions ▪ Share information among firms regarding best practices ▪ Carefully assess flexibility and speed with which firm can implement change ▪ Keep in mind tendency to over-estimate likelihood of positive events and act impatiently in the short-term

TABLE I. Recommendations to Decrease Positive Communication by Brown Firms
(continued from previous page)

Recommendations	Implementation by Stakeholders
Provide Ethical Leadership and Training	Managers <ul style="list-style-type: none"> Provide ethics courses and training to inform employees of the risks of greenwashing and how to avoid it CEO to emphasize ethical behavior and honest communication
Align Employee Incentives	Managers <ul style="list-style-type: none"> Eliminate perverse incentives, e.g., environmental communication counts Reward employees for identification of greenwashing claims Punish employees involved in contributing to greenwashing

Right-to-Know Act of 1986, a federal policy that mandated disclosure of toxic release inventory information. State policies such as those of California that require new vehicles to be labeled with a global warming score and that require electric utility companies to disclose their fuel mix and pollution discharge statistics to consumers are also examples of mandatory environmental information disclosure policies.⁵⁶ Such mandatory disclosure policies have facilitated the monitoring of environmental performance indicators by NGOs and interested consumers and investors, and they have also succeeded in changing firms' internal reporting mechanisms.⁵⁷ Mandated disclosure of a broader range of indicators of firm environmental performance and management practices would help decrease the incidence of greenwashing. Indeed, mandatory annual environmental reporting similar to those of numerous European countries including Australia, France, Spain and the Netherlands would significantly improve environmental performance transparency in the United States. Studies have found that introduction of mandatory environmental performance reporting in Australia in 1998 significantly improved reporting.⁵⁸ Likewise, mandatory disclosure of product-level environmental performance indicators similar to that of the product-level nutritional content mandated by the FDA would improve the availability and reliability of product-level environmental information for consumers and NGOs looking to hold firms accountable for their environmental communications at the product level; as well as force managers to be aware of the environmental "content" of their products. Mandated disclosure without monitoring the truthfulness of reporting could lead to incentives for firms to lie about or exaggerate their environmental performance. As such, verification or occasional auditing of reporting would be a necessary complement to mandated corporate disclosure. To the extent that the verification process itself were made transparent, consumers and the public would have greater confidence in the reported information.

In an environment of mandatory corporate disclosure of environmental performance information, NGOs can play an important role as information aggregators

and disseminators. Likewise, NGOs can use the disclosed information to identify the good and bad environmental performers and share this information with the public, thus pressuring poor environmental performers to improve their environmental performance. Scorecard.goodguide.com is an example of a website that aggregates information on toxic chemical releases and enables interested individuals to easily discover the worst polluters by region. By making this information easily accessible by the public, the site helps hold firms accountable for their toxic chemical release performance.

Promote Voluntary Disclosure of Environmental Performance

In areas where disclosure of environmental performance is not mandatory—namely, all product-level environmental performance metrics and most firm-level environmental performance metrics—NGOs, some government entities, and managers can play an important role in promoting voluntary disclosure of environmental performance information. Voluntary product-level environmental performance information has been and should continue to be facilitated by NGO and government-sponsored ecolabels, while managers can facilitate disclosure of voluntary product and firm-level environmental performance information by their firms. As voluntary disclosure of environmental performance gains momentum, more firms will be incentivized to voluntarily disclose information about environmental performance.

NGO-sponsored ecolabels such as Green Seal and government-sponsored eco-labels such as the Department of Energy's Energy Star label and the USDA Organic label play an important role in informing consumers about products that meet certain environmental standards.⁵⁹ An extension of such ecolabels (or creation of new third-party ecolabels applied to a broader range of products and product characteristics) would provide consumers with more verified, reliable product-level environmental information. Whenever possible, policymakers and NGOs should work together to centralize and standardize ecolabeling processes in order to increase the credibility of eco-labels and reduce consumer confusion from the proliferation of different ecolabels. With limited consumer understanding about the differences between such labels, firms have the incentive to stamp products with their own supposed ecolabels or with logos similar to existing third-party ecolabels. SC Johnson, for example, settled class action lawsuits that challenged its Greenlist logo, a propriety image the company put on its products that met internal standards for less-harmful products.⁶⁰ This is a form of greenwashing referred to as "the sin of worshipping false labels" by TerraChoice. Standardizing and streamlining the ecolabels would improve consumer recognition and understanding and thus reduce the incentive for firms with a brown product to positively communicate about the environmental characteristics of the product by using proprietary or knock-off ecolabels. The Design for the Environment ecolabel is an example of government entities and NGOs working together, as the program is run by the Department of Energy but is implemented with input and collaboration from a number of NGOS, including the Sierra Club and NSF.⁶¹

Managers in non-greenwashing firms can voluntarily and transparently disclose information about environmental performance. Research has shown that

transparency about environmental performance can be beneficial to firms by enhancing stakeholders' perceptions of such firms, even when liabilities are disclosed.⁶² A prime example of this is the case of Patagonia and its Footprint Chronicles, an online portal where consumers can trace the impact of Patagonia products along each step of the supply chain. In full disclosure, Patagonia shares "the bad," "the good," and "what they think" (an environmental cost-benefit analysis and information about how they will improve). As Patagonia's founder puts it: "we put the bad things up front and admit our shortcomings."⁶³ Despite deepening global recession, Patagonia sales reached \$315 million in 2008, the year the Footprint Chronicles launched (up from \$270 million the year before).⁶⁴ In 2009, Yvon Chouinard was named one of *US News and World Report's* "America's Best Leaders."⁶⁵

Managers can also share best practices and collaborate with other firms, NGOs, and government entities to share information about internal structures, processes, and incentive systems that enable them to monitor and improve their firm's environmental performance and ensure that they do not greenwash. The collaboration between Wal-Mart and Patagonia to create the Sustainable Apparel Coalition with the goal of working together to develop an industry-wide supply chain index that measures water and energy use, greenhouse gas emissions, and waste is an example of collaboration and sharing of best practices among firms. The coalition has expanded and now includes such entities as Levi Strauss & Co., Li & Fung, Marks & Spencer, Nordstrom, Otto Group, and REI as well as the Environmental Protection Agency. This coalition is thus also a prime example of collaboration between firms and government agencies to improve environmental performance and decrease greenwashing along the supply chain. The collaboration between the Environmental Defense Fund and Wal-Mart to reduce greenhouse gas emissions and identify other opportunities for environmental performance improvements is another example of how firms can partner with NGOs to assess and improve their environmental focus. In addition, firms should collaborate with objective third parties to certify the environmental characteristics of their products. The use of third-party certified ecolabels sponsored by government entities or NGOs is an example of this. The extension of collaborations between firms, NGOs, and government entities to include sharing of best practices and standards-setting with respect to *communication* about environmental performance, not just environmental performance, would further decrease the incidence of greenwashing.

Facilitate and Improve Knowledge about Greenwashing

In the current regulatory context, the FTC sheds light on some cases of greenwashing, but many incidents of greenwashing go unpunished by the FTC. Increased and more coordinated sharing of information about cases of greenwashing helps to punish firms for engaging in the practice and deters some brown firms from communicating positively about environmental performance due to fear of reputational damage. NGOs continue to play a critical role as monitors and information providers given the current lax regulatory context. Policymakers and NGOs are key to reducing information uncertainty and improving firm understanding about the punitive consequences of greenwashing.

Gather and Share Information about Incidents of Greenwashing

NGOs have been stepping up to play the roles of monitors and information providers given the context of limited regulatory oversight of firm environmental performance and communication. TerraChoice has made important forays in informing consumers about the high incidence of product greenwashing and in helping consumers identify product greenwashing through its Sins of Greenwashing reports. NGOs should continue to make such information available to consumers, and should also work to help consumers identify firm-level greenwashing behavior (in addition to product-level greenwashing behavior). NGOs should continue to use internet-based venues such as viral videos and social media sites to reach a broad public audience and to place pressure on greenwashing firms. Although the information being provided by NGOs fills an important void, NGOs should be aware that the proliferation of NGO-sponsored websites and blogs could contribute to consumer confusion. Thus, NGOs should increase collaboration among themselves in order to reduce consumer confusion in differentiating between and interpreting the various NGO-sponsored sites and blogs providing information about environmental performance. NGOs could also increase collaboration with socially responsible investors to identify the environmental performance information of interest to this stakeholder group. This would enable an NGO or group of NGOs to gather and provide this information to the socially responsible investor community, helping to address the lack of verifiable information available to socially responsible investors and mediate one of the drivers incentivizing brown firms to positively communicate about their environmental performance.

Reduce Regulatory Uncertainty

More explicit communication by the FTC about the types of greenwashing actions that will be pursued as a violation of Section 5 would help decrease regulatory uncertainty. The FTC's Green Guides currently provide guidance for firms regarding environmental marketing claims, including examples of good green product and service advertisements and qualifying claims to include in advertisements, and it is a step in the right direction. The FTC should continue to conduct research and hold workshops to inform its understanding about consumer interpretation and understanding of green terminology used in environmental advertising, and it could collaborate with NGOs in these types of workshops. The UK Department for Environment, Food and Rural Affairs (DEFRA)'s Green Claims Guidance report was based partly on research it commissioned to understand how consumers interpret green phrases.⁶⁶ NGOs could also play a role in facilitating adoption of uniform international standards for disclosure and advertising regulation, which would help reduce the regulatory uncertainty faced by multinational corporations.

Effectively Align Intra-firm Structures, Processes, and Incentives

Managers can take steps to counteract the organizational and individual-level drivers that can lead to greenwashing. They can alter firm structures, institute processes and procedures, and provide incentives and training to address

these drivers. Furthermore, managers can be cognizant of the tendency for individual-level psychological tendencies to cloud optimal decision making, particularly when information is limited and repercussions are uncertain, and keep in mind that organizational inertia can make change slow to implement.

Improve Information Related to Environmental Communication Decisions

Increased centralization of decisions related to environmental communication would reduce the potential for greenwashing resulting from ineffective intra-firm communication. For example, increasing the sustainability officer or department's oversight to other divisions and geographic offices would reduce the likelihood that a lack of communication between, for example, marketing, product development, and supply chain management divisions within and across countries results in greenwashing. The institution of standards and requirements for internal gathering and sharing of information on environmental performance indicators from product design and manufacturing divisions with communications and PR departments and between country offices would also improve the effectiveness of intra-firm communication and decrease the likelihood of greenwashing. Adoption of ISO 14001, the G3.1 Guidelines (a core element of the Global Reporting Initiative's Sustainability Reporting Framework) or other such established standards would also facilitate sharing of relevant information. Likewise, managers could look to leading firms for best practices regarding institution of internal information gathering and sharing processes. When planning to implement such procedural and structural changes, managers should keep in mind the tendency of organizations to exhibit organizational inertia and should thus carefully assess the flexibility and speed with which their organization can change to achieve desired goals. A series of incremental changes within existing structures and processes may be more feasible to implement effectively in the short term than a radical structural or procedural change. Likewise, when engaging in strategic analysis and planning of firm environmental performance and communication goals, managers should keep in mind the cognitive tendency to over-estimate the likelihood of positive events and to act impatiently in the short term.

Provide Ethical Leadership and Training for Employees

Managers could seek to mold their firm's ethical climate by implementing ethics courses or training that is specifically designed to inform employees about the risks to the firm of greenwashing. Likewise, managers could institute ethical codes and explicit firm standards to diminish the likelihood of unethical behavior. Encouraging a culture of open communication and collaboration between employees and divisions would also facilitate effective intra-firm communication. The role of the CEO and firm leaders in setting the ethical climate and culture of the firm is particularly important. For example, in 2008, the CEO of Wal-Mart, Lee Scott, told an audience, "We're not green," setting the stage for a degree of modesty in the retailer's communication about environmental performance and recognition that it needed to improve.⁶⁷ The company has since made improvements to its environmental footprint, but has not over-communicated about these

improvements. The retailer's Frito-Lay SunChips campaign about the solar power behind its chip plant has been described as "proud, but not overly boastful about saving the world."⁶⁸

Align Employee Incentives

The adjustment and alignment of employee incentives is an important means to reducing the likelihood of greenwashing. Perverse incentives to eliminate would include, for example, rewarding marketing department employees for incorporation of environmental messages into communications by counting the number or reach of such marketing products without regard to the accuracy of such claims. Managers could also reward employees for identification of greenwashing claims or punish employees during their performance reviews for playing a role in a greenwashing incident. This would encourage employees to decrease the tendency to make decisions in isolation that could result in greenwashing.

Conclusion

The prevalence of greenwashing has skyrocketed in recent years; more and more firms have been combining poor environmental performance with positive communication about environmental performance. Greenwashing can have profound negative effects on consumer and investor confidence in green products and environmentally responsible firms, making these stakeholders reluctant to reward companies for environmentally friendly performance. This, in turn, increases the incentives for firms to engage in environmentally detrimental behavior, which has been shown to create negative externalities and thus negatively affect social welfare. For managers, regulators, and NGOs who seek to implement policies or take actions to decrease the incidence of greenwashing, it is critical to understand the factors that drive greenwashing in the first place in order to determine how best to counteract them. A simple framework that organizes drivers into external-level drivers (the regulatory and monitoring context, as well as market drivers), organizational-level drivers, and individual-level drivers sheds light on why many brown firms choose to greenwash (Figure 2).

Limited and imperfect information about firm environmental performance, as well as uncertainty about regulatory punishment for greenwashing, contribute to greenwashing. Indeed, cognitive tendencies such as narrow decision framing, hyperbolic intertemporal discounting, and optimistic bias are heightened as individuals make decisions based on increasingly limited or imperfect information, and as uncertainty increases. Regulators and NGOs can thus take actions to improve the availability of information and decrease uncertainty about punishment for engaging in greenwashing to moderate these cognitive tendencies. At the same time, managers can adjust incentives and take steps to counter these individual-level cognitive tendencies as well as the organizational-level drivers of greenwashing. Our recommendations emphasize that a multi-stakeholder approach including managers, policymakers, and NGOs could be effective to reduce greenwashing in the current regulatory context by improving the

transparency of firm environmental performance, by facilitating and improving knowledge about greenwashing, and by effectively aligning intra-firm structures, processes and incentives.

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