

The Effect of Corporate Social Responsibility Investment and Disclosure on Cooperation  
in Business Collaborations

by

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A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy in Business Administration  
with a concentration in Accounting  
School of Accountancy  
College of Business  
University of South Florida

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Date of Approval:  
November 1, 2017

**Keywords:** CSR disclosure, CSR investment, Experiment, Informal controls, Signaling

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## **DEDICATION**

I would like to dedicate this dissertation to my parents. Ann and Russell Farrington, I am so thankful for your unconditional love and acceptance. Thank you for instilling in me the importance of education and a strong work ethic. Mom, thank you for your endless compassion and your irrational pride in my every accomplishment, no matter how trivial. Pops, without the hard-headed stubbornness I inherited from you, there is no way I would have made it to this point.

I would also like to dedicate this dissertation to my partner, Michael Booth. Thank you for your incredible patience, understanding, and support in the pursuit of my goals and dreams. I am so grateful that I had you by my side during this process.

## **ACKNOWLEDGMENTS**

I thank my dissertation committee chair, Dr. Patrick Wheeler, and my committee members: Dr. Uday Murthy, Dr. Mark Mellon, and Dr. Timothy Shields. I cannot express my gratitude for your understanding and compassion. I am deeply appreciative for all of your insights, feedback, and wisdom that you've generously shared with me throughout this process.

I am extremely grateful for the financial and professional assistance I received from the University of South Florida, the KPMG Foundation/PhD Project, and from Chapman University. I send many thanks to the wonderful members of the KPMG Accounting Doctoral Students Association. I want to thank all of the amazing doctoral students I've had the privilege to get to know during graduate school. I want to thank Jane Windsor for her passion, professionalism, and positivity. Lastly, I would like to thank my friends and family for their love, support, and kindness.

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## **ABSTRACT**

I experimentally examine whether disclosure of corporate social responsibility (CSR) investment facilitates cooperation in business collaborations. Business collaborations are essential for firms to maintain their competitive advantage. However, half of all ventures fail. A major reason for this high failure rate is a lack of cooperation among business collaboration partners, known as relational risk. Findings suggest that CSR disclosure leads to greater CSR investment, but does not result in an overall higher level of cooperation. However, CSR disclosure moderates the link between CSR investment and cooperation. When CSR investment is disclosed, cooperation is highest when both managers invest in CSR. Further, managers who invest in CSR are more sensitive to CSR disclosure information than managers who do not invest in CSR. Managers who invest in CSR are more cooperative when they receive a signal their partner also invested in CSR. Managers who do not invest in CSR do not attend to CSR disclosure information and are equally cooperative when partnered with a CSR investor or a non-CSR investor. Finally, when CSR investment is not disclosed, managers who invest in CSR are no more likely to cooperate than managers who do not invest in CSR. Although CSR is widespread, little is known about why managers invest in CSR or disclose CSR information. This study has implications for practitioners and academics on CSR by demonstrating a potential benefit of CSR investment and disclosure, mitigating relational risk in business collaborations.

## 1. INTRODUCTION

Corporate social responsibility (hereafter referred to as CSR) refers to a firm's integration of societal and/or environmental concerns through business practices and contributions of resources (Bhattacharya et al. 2008; Dahlsrud 2008). CSR investment and disclosure has grown rapidly over the past 20 years. Further, disclosure of CSR investment has become increasingly commonplace. To wit, in a recent PricewaterhouseCoopers survey of 1,344 CEO's in 68 countries, 74% of CEO's indicated that measuring and reporting CSR contributes to long-term success (PriceWaterhouseCoopers 2014).

CSR investment and disclosure reduces information asymmetry in capital markets and labor markets (e.g. Greening and Turban 2000; Brekke and Nyborg 2008; Dhaliwal et al. 2012). CSR investment and disclosure is associated with lower cost of capital, improved analyst forecast precision, reduced negative shocks to stock price (Dhaliwal et al. 2011; Dhaliwal et al. 2012), and improved future performance (Lys et al. 2015). CSR investment is associated with higher earnings quality (Kim et al. 2012), and conservative tax policy (Hoi et al. 2013), suggesting that CSR investment is indicative of manager's values regarding fiscal policy. Further, employee motivation and effort are higher when firms invest in and disclose CSR (Balakrishnan et al. 2011; Koppel and Regner 2014).<sup>1</sup> Findings suggest that managers may

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<sup>1</sup> Balakrishnan et al. (2011) article appeared in The Accounting Review Special Edition on Corporate Social Responsibility. However, the authors do not explicitly state that charitable donations are an operationalization of CSR.

invest in CSR and disclose CSR in response to preferences of investors, and to attract and retain employees (Martin and Moser 2016; Greening and Turban 2000).

Despite the growing prevalence of CSR investment and disclosure, there is a great deal of skepticism regarding the sincerity of CSR investment and the credibility of CSR disclosures among investors, customers, the popular press, and academics (Pope and Waeraas 2016). Many believe that firms are profiting from insincere claims of CSR and the terms “green-washing” and “CSR-washing” are becoming increasingly commonplace (Mattis 2008). Results from domestic and international surveys consistently suggest that consumers believe that CSR investment and disclosure is undertaken superficially as the basis for marketing campaigns (Katz 2008; Kanter 2009). Thus, it remains an open question how stakeholders view CSR investment and disclosure.

This study builds on the nascent CSR literature in accounting by examining the association between CSR investment, CSR disclosure, and cooperation in business collaborations. Since the early 2000’s, firms have increasingly engaged in business collaborations to access complementary competencies that would be too difficult or time consuming to develop alone (Groot and Merchant, 2000; Inkpen and Ross, 2001). Business collaborations can take many forms and can include outsourcing, joint research and development, knowledge and technology sharing, and joint marketing arrangements (De Rond 2003; Anderson and Dekker 2014). Recent survey evidence finds that 85% of respondents believe that business collaborations are essential for firm growth (Business Performance Innovation Network 2014). However, despite the popularity of business collaborations, approximately half end in failure (Gerwin 2004; Lunnan and Haugland 2008).

One cause of the high rate of failure in business collaborations is lack of cooperation, known as relational risk (Das and Teng 1998). An important determinant of cooperation in

business collaborations is organizational culture (Cartwright and Cooper 1993; Weber et al. 1996; Pothukuchi et al. 2002). Organizational culture, norms, and values comprise a firm's informal control system. Experimental research in accounting suggests that informal controls can have a significant interactive effect with formal control systems on cooperation in intrafirm work groups and intrafirm business collaborations (Towry 2003; Rowe 2004; Kelly and Presslee 2017; Coletti et al. 2005).

I experimentally examine the business collaboration setting using a strategic interaction task in which two participants simultaneously choose whether to cooperate or not cooperate. I use a single-period modified stag hunt task which operationalizes the risk involved with cooperation in business collaborations. Earnings are such that cooperation is risky but potentially wealth-maximizing, while non-cooperation is riskless. The use of a strategic interaction task answers recent calls in the accounting literature to examine CSR investment and disclosure using experimental methodologies (Martin and Moser 2012; Huang and Watson 2015). Further, using experimental economics methodology directly answers the call for the use of game theoretic methodologies to encourage cooperation and mitigate relational risk in business collaborations (Parkhe 1993).

Similar to prior experimental studies, I operationalize CSR investment as a charitable donation in which participants choose whether or not to donate a portion of their earnings from the stag hunt task to charity (e.g. Brekke et al. 2011; Balakrishnan et al. 2011; Martin and Moser 2016). I examine the effect of CSR disclosure by manipulating disclosure at two levels between-participants, Disclosure and Non-Disclosure. In the Disclosure treatment, participants are truthfully informed of whether or not their partner donated to charity. In the Non-Disclosure treatment, participants are not informed of whether or not their partner donated to charity.

Prior research posits that individuals invest in CSR because they are other-regarding, and this other-regarding preference also leads them to be more cooperative (Brekke and Nyborg 2008; Brekke et al. 2011). However, it is not clear whether a presumably other-regarding manager who invests in CSR is more likely to cooperate in business collaborations than managers who do not invest in CSR. This is because cooperation in a business collaboration is a function of a manager's preference for cooperation as well as her beliefs about her partner's preference for cooperation. I posit that CSR disclosure is a positive signal of a manager's preference for cooperation and facilitates cooperation in business collaborations.

Results suggest that managers are more likely to invest in CSR when CSR is disclosed versus when CSR is not disclosed. However, I do not find that the overall level of cooperation in business collaborations is higher when CSR is disclosure versus when CSR is not disclosed. Experimental findings provide evidence that CSR disclosure moderates the link between CSR investment and cooperation in business collaborations. Given CSR is disclosed, cooperation is highest in business collaborations when both managers invest in CSR and lowest when both managers do not invest in CSR. Further, CSR investors are more sensitive to CSR disclosure than non-CSR investors. When CSR is disclosed, CSR investors are more cooperative when partnered with a CSR investor than when partnered with a non-CSR investor. However, non-CSR investors do not attend to CSR disclosure information; non-CSR investors are no more cooperative when partnered with a CSR investor versus a non-CSR investor. Lastly, when CSR is not disclosed, managers who invest in CSR are no more cooperative than managers who do not invest in CSR. In summary, results suggest that CSR disclosure is a credible signal of a manager's propensity to cooperate and facilitates cooperation in business collaborations among CSR investors.

This study answers the call for additional accounting research on CSR investment and disclosure and contributes to the accounting literature in several ways (Martin and Moser 2012; Huang and Watson 2015). This study builds on the extant accounting research that examines the use of formal and informal control mechanisms to encourage intrafirm and interfirm cooperation (e.g. Rowe 2004; Coletti et al. 2005; Kelly and Presslee 2017). This study also contributes to accounting research examining whether CSR investment and disclosure are informative of managerial type (Balakrishnan et al. 2011; Kim et al. 2012; Hoi et al. 2013). This is the first study to examine the association between CSR disclosure, CSR investment, and cooperation in business collaborations. Results from this study contribute to the literature on business collaborations and provide experimental evidence that CSR investment and disclosure can mitigate relational risk.

In the remainder of this dissertation, I discuss the background literature in Section 2 and present the hypothesis in Section 3. In Section 4 I describe the experimental methodology used to test the hypotheses. In Section 5 I discuss the statistical analysis and report the results. The paper concludes with a discussion of the results, limitations of the study, future research, and implications in Section 6.

## **2. LITERATURE REVIEW**

This study integrates three distinct streams of literature on CSR, business collaborations, and internal controls to develop hypotheses regarding the links between CSR investment, CSR disclosure, and cooperation in business collaborations. In this section, I review the relevant findings from each of these bodies of research. First, I will define CSR and discuss findings on CSR with respect to capital markets and labor markets. Second, I review the literature on business collaborations, the setting in which I examine the role of CSR investment and disclosure. Lastly, I discuss the relevant literature on internal controls, with an emphasis on the use of organizational culture, an informal control that has been shown to facilitate both intrafirm and interfirm cooperation.

### **2.1. Corporate Social Responsibility**

CSR refers to a firm's integration of societal and/or environmental concerns through business practices and contributions of resources (Bhattacharya et al. 2008a; Dahlsrud 2008). Investments in CSR include donating to charities, abstaining from the use of child labor in developing countries, reducing harmful emissions, and involvement in employee-volunteer community projects (Auld et al. 2008; Vertigans and Idowu 2017). While CSR has grown steadily over the past 20 years, there is substantial industry, geo-political, and firm level variation. For example, companies that operate in industries that entail a degree of risk to people or the environment may be more motivated to invest in CSR to stave off criticism and avoid costly regulation. While the vast majority of CSR activities are voluntary, investments in CSR

may sometimes be mandatory. For instance, in India, large public companies are required to spend 2% of their net profits on CSR activities (Mukherjee and Bird 2016).

CSR disclosure has grown rapidly in the 2000's. Worldwide, the percentage of companies releasing a sustainability report has grown from 20% to 80% over the past five years (Gilbert 2015; Ioannou and Serafeim 2017). While CSR disclosure in the U.S. is voluntary, several foreign regulators have moved towards mandated CSR disclosure. For example, large, public companies in India, China, Denmark, Malaysia, and South Africa are required to provide CSR disclosures (Ioannou and Serafeim 2017).

The extant literature on CSR investment and disclosure is mainly focused on the link between CSR and two stakeholder groups, employees and shareholders. First, I will discuss the literature on CSR in labor markets which examines how CSR investment and disclosure affects current and potential employees. Second, I will discuss the literature on CSR in capital markets which explores the links between CSR investment, CSR disclosure, and shareholders and financial intermediaries.

My dissertation builds on these two streams of literature by examining the links between CSR investment, CSR disclosure, and cooperation in business collaborations. This is the first study to examine whether disclosure of CSR investment can benefit organizations by facilitating cooperation among business collaboration partners. This study answers the call for research in accounting that investigates the link between CSR and stakeholders constituents beyond shareholders (Moser and Martin 2012). CSR investment and disclosure is motivated by the preferences of various internal and external stakeholders (Moser and Martin 2012). Internal stakeholders include board members, executives, managers, and employees. External stakeholders include current and potential investors, financial intermediaries, creditors,



regulators, suppliers, customers, and potential employees. The reason for costly CSR investment is often explained via an indirect link with financial performance using the stakeholder view of the firm (Freeman 1984; Moser and Martin 2012). Thus, the justification for CSR investment is that while it is costly, it ultimately improves shareholder wealth through various channels, such as consumers' willingness to pay for ethically produced goods (De Pelsmacker et al. 2005), the pre-emption of regulations or sanctions (Lyon and Maxwell 2008), shareholders' willingness to invest in CSR firms (Martin and Moser 2016), and/or improved employee motivation (Koppel and Regner 2014; Bhattacharya et al. 2008b; Balakrishnan et al. 2011).

### *2.1.1. CSR and labor markets*

Disclosure of CSR investment acts as a signal in the labor market, conveying information about a firm's culture, values, and norms regarding social welfare to current and prospective employees. Experimental and field evidence suggests that CSR has a positive effect on employee motivation (Balakrishnan et al. 2011; Brekke et al. 2011; Koppel and Regner 2014) and can be a powerful tool to attract potential employees (Bhattacharya et al. 2008a; Greening and Turban 2000). Recent experimental studies find that employee contributions are positively associated with managers' investments in CSR. It is worth noting that in these studies, CSR investment is always disclosed (Balakrishnan et al. 2011; Brekke et al. 2011; Koppel and Regner 2014).

Using a modified sender-receiver trust game, Balakrishnan et al. (2011) find that managerial investments in CSR are associated with employee motivation. In the experiment, a sender (employee) receives an initial endowment and can contribute any amount of the endowment to the receiver (manager), which is automatically tripled. In the no reward treatment, the manager keeps the tripled contribution. Thus, any contributions from employees are viewed as altruistic. In the reward treatment, the manager can return any portion of the tripled

contribution to the employee. Prior to the employee's contribution to the manager, the manager commits to donate between 0% and 100% of the tripled contribution to charity. In the no reward treatment, employees' contributions increase monotonically with managers' charitable donations. In the reward treatment, employees' contributions are highest at modest levels of charitable donations (i.e. 30%). Further, findings indicate that charity importance is an important indicator of employees' reaction to managers' CSR investment. Employees who believe that giving to charity is important contribute more and are more responsive to increases in CSR investment. In summary, Balakrishnan et al. (2011) find that managers' CSR investment is positively associated with employee contributions to the firm, and this association is stronger among employees who believe that giving to charity is important.

Similar to Balakrishnan et al. (2011), Koppel and Regner (2014) use a single-period, sequential experimental economics task to examine the role of CSR investment on employee motivation. A manager-employee gift exchange task is employed in which the manager is endowed with wealth and chooses how much to contribute to the employee in the form of flat pay. The employee then decides how much costly effort to exert. The greater the effort, the greater the profit for the manager and the less the employee earns. In essence, effort is a gift the employee bestows upon the manager. Prior to determining the employee's flat pay, the manager chooses whether or not to invest in CSR by donating between 0% and 30% of her profit to charity. Koppel and Regner (2014) find that approximately half of managers donate to charity and that employees' costly effort is positively associated with the level of CSR investment. Further, when a manager donates to an employee's preferred charity, the employee exerts more effort, independent of the level of CSR investment.

My study builds on Balakrishnan et al. (2011) and Koppel and Regner (2014) in two ways. First, I extend both studies by examining whether managers' CSR investment affects the behavior of a different stakeholder group, business collaboration partners. Second, the purpose of Balakrishnan et al. (2011) and Koppel and Regner (2014) is to examine how employees react to managers' CSR investment choices, thus CSR investment is always disclosed. I examine how disclosure of CSR investment impacts cooperation between managers in business collaborations. Consequently, I examine two settings, one in which CSR is disclosed and one in which CSR is not disclosed.

While Balakrishnan et al. (2011) and Koppel and Regner (2014) demonstrate that managers' investment in CSR is positively associated with motivation and effort of current employees, CSR investment and disclosure has also been shown to be an effective mechanism to attract potential employees. Findings indicate that CSR investment and disclosure reduce information asymmetry in the labor market by acting as a signal to potential employees about what it will be like to work at the firm (Greening and Turban 2000; Brekke and Nyborg 2008; Bhattacharya et al. 2008). To wit, companies including Cisco Systems, General Electric, and Home Depot view CSR investment as an integral part of their strategy for attracting and retaining talented employees (Bhattacharya et al. 2008; Grow et al. 2005). Using hypothetical firm descriptions, Greening and Turban (2000), find that potential employees are more attracted to CSR firms than non-CSR firms. Participants rated their job pursuit intentions, probability of interview, and probability to accept a job offer higher for CSR firms than non-CSR firms. Further, survey evidence suggests that a substantial portion of the workforce is willing to be paid less to work for a company whose values match their own, and CSR investment is associated with lower wages (Nyborg and Zhang 2013).

Experimental evidence suggests that CSR firms are able to attract more cooperative employees (Brekke et al. 2011). Using a three-person, repeated public goods task, Brekke et al. (2011) examine intrafirm cooperation in work teams. Potential employees can either go to work for a CSR firm by donating a fixed amount to charity, or go to work for a non-CSR firm by keeping a fixed amount for themselves. Employees decide how much of their endowment to allocate to the work team. The amount allocated to the work team is doubled and divided equally among the employees. An employee's payoff is maximized when everyone allocates the maximum amount to the work team (i.e. fully cooperate). However, the Nash equilibrium is for each employee to allocate nothing (i.e. not cooperate). Employees who choose to work for a CSR firm are more cooperative with their fellow employees and contribute more to their work team than employees who chose to work for a non-CSR firm. Further, over time cooperation remains stable among the CSR firm work teams, while it deteriorates among the non-CSR firm work teams.

Similar to Brekke et al. (2011) I also examine whether CSR investors are more cooperative than non-CSR investors. However, my study differs from Brekke et al. (2011) in several important aspects. First, the authors examine the link between CSR investment and cooperation in work teams within a single organization. While this is an important question, my study examines the links between CSR investment, CSR disclosure, and cooperation among business collaboration partners across separate organizations. This distinction is important because it is much more costly and difficult to employ formal control mechanisms to facilitate cooperation across organizations than within organizations (Das and Teng 1998). Thus, it is useful to examine alternative mechanisms to facilitate cooperation in business collaborations. Further, in my study I examine the effect of CSR disclosure, independent of CSR investment, on

cooperation. The role of CSR disclosure was not the focus of Brekke et al. (2011). Consequently, CSR disclosure is neither measured nor manipulated. As a result, it is not clear whether the results would hold in a setting in which employees' CSR investment was not disclosed. The authors posit that the link between CSR investment and cooperation is because CSR investors are other-regarding and have preferences for cooperation (Brekke and Nyborg 2008; Brekke et al. 2011). However, it is not clear whether a CSR investor would be more cooperative in a business collaboration than a non-CSR investor. This is because cooperation in business collaborations involves risk, as a partner can act opportunistically and it is difficult to use a formal control mechanisms to compel cooperation (Das and Teng 1998). Thus, cooperation in a business collaboration is a function of both a managers' preference for cooperation as well as her belief about her partner's propensity to cooperate. In the absence of CSR disclosure, it is not clear that CSR investors' beliefs about their partners' propensity to cooperate will differ from non-CSR investors.

In summary, the extant literature on CSR and the labor markets suggests that disclosure of CSR investment is an effective mechanism to motivate current employees and attract desirable employees. I build on this stream of research by examining whether disclosure of CSR investment is also an effective mechanism to facilitate cooperation between managers from separate organizations working in a business collaboration. Next, I discuss the relevant literature on CSR investment, CSR disclosure, and the capital markets.

### *2.1.2. CSR and capital markets*

Recent archival studies in accounting provide evidence that CSR investment and disclosure can reduce information asymmetry in capital markets. CSR disclosure is associated with a lower cost of capital, improved analyst forecast precision, and reduced negative shocks to

stock price (Dhaliwal et al. 2011; Dhaliwal et al. 2012). Dhaliwal et al. (2011) find that CSR disclosure is positively associated with the cost of equity capital in the prior year and negatively associated with the cost of equity capital in the subsequent year. The authors' findings are consistent with the notion that managers disclose CSR in an effort to provide information about long-term sustainability to investors to reduce the cost of equity capital.

Dhaliwal et al. (2012) examine the relationship between CSR disclosure and analyst forecast accuracy across 31 countries. The authors find that CSR disclosure increases transparency and is associated with greater financial analysts forecast accuracy. The increase in analyst forecast precision following CSR disclosure is stronger in more stakeholder oriented countries, where managers are more influenced by non-shareholder constituents such as employees, consumers, and communities. Findings from Dhaliwal et al. (2011; 2012) suggest that disclosure of CSR investment provides incremental information to shareholders and financial intermediaries. Consistent with stakeholder theory, results from Dhaliwal (2012) suggest that managers' CSR disclosure and investment decisions are influenced by non-shareholder constituents.

Dhaliwal et al. (2011; 2012) measure CSR disclosure as the issuance of a voluntary stand-alone electronic or hard-copy CSR report. Dhaliwal et al. (2011) control for CSR investment based on third-party, CSR performance ratings from the KLD STATS database. KLD STATS is a data set with annual ratings of the environmental, social, and governance performance of U.S. companies. Starting from 1991, KLD STATS rated approximately 650 companies every year. KLD expanded its coverage to include the largest 1,000 U.S. companies in 2001 and the largest 3,000 U.S. companies in 2003, based on market capitalization. KLD STATS provides strength and concern ratings from multiple indicators along seven dimensions:

corporate governance, community relations, diversity, employee relations, environment, human rights in non-U.S. operations, and product. In addition, KLD STATS also issues concern ratings for companies with operations in the alcohol, gambling, tobacco, firearms, military contracting, and nuclear power industries. There is variation in how CSR investment is measured using the KLD STATS data set. However, a widely accepted methodology is to create a CSR Score by calculating total strengths less total concerns in KLD's five social dimensions: community, diversity, employee relations, environment, and product (Johnson and Greening 1999; Chatterji et al. 2009).

Archival evidence also suggests that managers who invest in CSR are fiscally responsible (Kim et al. 2012; Hoi et al. 2013). Kim et al. (2012) find that CSR investment is linked to higher earnings quality. CSR firms are less likely to manage earnings through discretionary accruals, manipulate real operating activities, or be subject of an SEC investigation (Kim et al. 2012). Further, findings suggest that there is an inverse relationship between CSR investment and tax aggressiveness (Hoi et al. 2013). Managers who engage in irresponsible CSR activities are more likely to engage in tax-sheltering activities, have greater discretionary/permanent book-tax differences, more uncertain tax positions, and their tax positions are likely supported by weaker facts and circumstances. These results are consistent with the notion that CSR investment is indicative of organizational culture and values which permeate managerial decision making across various domains. Kim et al. (2012) and Hoi et al. (2013) measure CSR investment based on KLD STATS ratings. Given the research questions, neither study examines CSR disclosure, either in terms of a stand-alone CSR report or integrated CSR disclosure within financial reports.

Lys et al. (2015) find that disclosure of CSR investment is a credible signal of future firm performance. The authors posit that managers' are more likely to invest in CSR when they

expect strong future performance, as they expect to have greater operational slack to take on special projects. Namely, the positive correlation between current CSR investment and change in return on assets and change in cash flow from operations are due to an omitted variable, managers' private information about future performance.

Lys et al. (2015) measure CSR investment and CSR disclosure for approximately 6,000 firm-year observations from 2002 until 2010. CSR investment is calculated based on evaluations from the Thomson Reuters ASSET4 database which provides comprehensive CSR data for firms in the Russell 1000. ASSET4 provides environmental, social, and governance information on over 250 key performance indicators and over 750 data points per firm for over 5,000 companies. The primary measure of CSR investment used by Lys et al. (2015) is the CSR Score produced by ASSET4, which includes social and environmental factors and excludes financial performance or corporate governance factors. The authors also use two alternate specifications of the CSR Score that either only include social factors or environmental factors. Lys et al. (2015) measure CSR disclosure using three separate CSR disclosure definitions, (1) whether a company issues a stand-alone CSR report, (2) whether the CSR report is audited by ASSET4, and (3) whether the CSR report uses the Global Reporting Initiative (GRI) framework, a set of standardized guidelines that enable greater transparency on environmental and social performance.

Despite the growing body of research on CSR in accounting, the empirical evidence of an association between CSR and firm performance is inconclusive. In a recent review of CSR accounting literature published over the past decade in 13 top accounting journals, Huang and Watson (2015) cite three main reasons why evidence of a link between CSR and performance is mixed. First, viewing CSR from a shareholder wealth-maximizing perspective can be difficult. It



is important to understand the determinants of CSR, which vary for firms and will affect the CSR-performance link (Moser and Martin 2012). For instance, if firms invest in CSR for non-wealth maximizing reasons, such as managerial altruism or in response to stakeholder preferences for societal benefits, there would be a potential negative CSR-performance relation (Balakrishnan et al. 2011; Martin and Moser 2016).

Second, both CSR and performance are multi-dimensional constructs that are difficult to capture using archival data (Huang and Watson 2015; Chandler 2017). Further, CSR investment differs dramatically across firms. The datasets archival researchers rely upon to measure CSR use different methodologies to measure CSR investment and have a very low degree of correlation, ranging from 0.13 to 0.52, which suggests low convergent validity (Chatterji et al. 2015).<sup>2</sup> In addition, studies tend to measure the effect of CSR on outcomes such as share price variability or short-term profitability, both of which may not be suitable outcome measures for CSR investment which often involves multi-period, long-term capital investments (e.g. converting a production facility from fossil fuel to solar). However, a meta-analysis of 52 studies finds that CSR investment is more highly correlated with ROE and ROA, accounting-based measures of performance, than with share price, a market-based measure of performance (Orlitzky et al. 2016).

Third, evidence suggests that there may be a fundamental endogeneity problem when examining the effect of CSR investment on performance (Huang and Watson 2015). Recent research suggests that there may be a reverse causality between CSR investment and performance; such that CSR investment is a consequence, rather than a determinant, of financial performance (Lys et al. 2015).

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<sup>2</sup> Chatterji et al. (2015) measure the correlation among six major social raters, KLD STATS, ASEET4, Calvert, FTSE4Good, DJSI, and Innovest.

I propose an experimental investigation into a potential performance benefit of CSR investment and disclosure that is difficult to isolate using archival data. In particular, I examine the links between CSR investment, CSR disclosure, and cooperation among managers in business collaborations. While each methodology has its strengths and weaknesses, a benefit of using experimental methodology is that it builds on the existing archival research while avoiding many of the drawbacks described above (Huang and Watson 2015; Moser and Martin 2012; Peteraf 1993). First, it avoids the issues of measuring CSR using low validity measures. Second, it allows for control of potential reverse causation between CSR and performance. Third, I am able to examine how a construct that is difficult to identify using archival data, managerial motives for investing in CSR, affects cooperation in collaborative environments. Fourth, using a controlled experiment allows me to isolate CSR investment from CSR disclosure to examine the potential moderating effect of CSR disclosure on the link between CSR investment and cooperation in business collaborations. Lastly, in a laboratory environment cooperation between business collaboration partners, is observable. In the real world, it is often difficult, if not impossible to determine whether partners cooperate.

Next, I discuss recent experimental accounting studies that examine how CSR investment and disclosure impact shareholders. Experimental evidence suggests that CSR disclosure leads to greater investment and improved stock valuations (Elliott et al. 2014; Martin and Moser 2016). Elliott et al. (2014) find that investors incorporate CSR disclosure information into their estimates of firms' fundamental value. Positive CSR performance information results in higher estimates of fundamental value, while negative CSR performance information leads to lower estimates of fundamental value. Interestingly, the magnitude of this effect is significantly diminished when investors explicitly attend to CSR disclosures. The authors conclude that CSR

disclosures may unintentionally influence estimates of fundamental value when investors do not explicitly assess CSR performance information.

In a related study, Martin and Moser (2016) examine a setting in which managers make a CSR investment decision and a voluntary CSR disclosure decision. Findings indicate that investors respond favorably to disclosure of CSR investment, even when it has a negative impact on future cash flows. Martin and Moser (2016) posit that managers' invest in CSR and disclose CSR in response to investors' preferences for CSR. My study is similar to Martin and Moser (2016) in that I also examine CSR investment and disclosure. However, in my study CSR disclosure is exogenous. While this is an abstraction, it allows me to measure the effect of CSR disclosure independent of CSR investment. Further, I extend their study by examining the effects of CSR investment and disclosure on a different stakeholder constituent, business collaboration partners.

### *2.1.3. Credibility of CSR*

As discussed earlier, CSR investment and disclosure reduces information asymmetry in labor markets and capital markets. CSR disclosure can act as a signal to current and potential employees about the culture and values of the organization leading to greater employee motivation and cooperation among current employees, enabling firms to attract potential employees (e.g. Greening and Turban 2000; Brekke and Nyborg 2008; Balakrishnan et al. 2011). Further, CSR investment is associated with higher earnings quality (Kim et al. 2012) and conservative tax policy (Hoi et al. 2013). In addition, CSR investment and disclosure is associated with lower cost of capital, improved analyst forecast precision, reduced negative shocks to stock price (Dhaliwal et al. 2011; Dhaliwal et al. 2012), and higher future financial performance (Lys et al. 2015).

However, among investors, customers, popular press, and academics there is a great deal of cynicism and skepticism regarding the sincerity of CSR investment and the credibility of CSR disclosure (Pope and Waeraas 2016). Many believe that firms are profiting from insincere claims of CSR and the terms “green-washing” and “CSR-washing” are becoming increasingly commonplace (Mattis 2008). Results from domestic and international surveys consistently suggest that consumers believe that CSR investment and disclosure are undertaken superficially as the basis for marketing campaigns (Katz 2008; Kanter 2009).

A salient example of “CSR-washing” is the recent Volkswagen scandal. In 2015 it was revealed that Volkswagen intentionally installed software in 11 million diesel-powered vehicles. As a result of the scandal, Volkswagen agreed to either repurchase the “dirty” diesel cars sold in the U.S. or give cash payouts to owners who would prefer to have their vehicles fixed. To date the scandal has cost the automaker \$30 billion (Riley 2017). Meanwhile, the firm’s 2014 sustainability report painted a very different picture of the firm. Volkswagen stated their strategic goal was to be the most sustainable automotive company in the world by integrating climate risk, resource scarcity, digitization, and social equity into its corporate strategy (The Volkswagen Group 2014). While the Volkswagen scandal is an extreme case, it is not uncommon for firms to misrepresent their CSR investments. In 2009, EasyJet claimed air travel on one of their planes had a smaller carbon footprint than driving a Toyota Prius hybrid car (Pearce 2009). In 2005 British Airways began a highly publicized campaign to offset carbon emissions. Two years later the airline admitted to offsetting less than 0.1% of the 27 million tons of emissions produced during the two-year campaign (Davies 2007).

While firms often engage in questionable CSR investment and misleading CSR disclosure, a substantial number of firms fully integrate CSR investment and disclosure into their

strategy and operations. For these firms, CSR disclosure is a reliable representation of organizational culture and values. For instance, at that at the other end of the spectrum from Volkswagen are socially conscious firms like Toms Footwear and Patagonia. Toms Footwear was founded on the principle of socially conscious capitalism, pioneering the buy one / give one business model. For each pair of shoes Toms Footwear sells, the firm donates a pair to children in need. To date, the company has given away more than 75 million pairs of new shoes. Patagonia, an environmentally conscious clothing brand for outdoor enthusiasts fully integrates sustainability into their business model. For instance, in November, 2016 the company donated 100% of their \$10 million Black Friday sales to grass roots organizations that benefit the environment. The firm integrates social responsibility into their supply chain and uses organic, pesticide-free cotton for their clothing. Patagonia even publishes books and produces films that promote sustainability and environmental protection.

Given the nature of CSR investment, it is often difficult to determine, ex ante, whether CSR disclosure is reliable. Thus, it is an open question as to whether or not disclosure of CSR investment will act as a credible signal of managers' preferences for cooperation. Next, I discuss business collaborations, the setting in which I examine CSR investment and disclosure.

## **2.2. Business Collaborations**

Rapidly changing and expanding global markets, deregulation, and technological advancements have greatly increased competitive pressures. The current market conditions make it difficult for firms to remain dominant by relying on internal competitive advantages (Ring and Van De Ven 1992; Yoshino and Rangan 1995; Nooteboom 2004). Recent survey evidence finds that 85% of respondents believe that business collaborations are essential for firm growth (Business Performance Innovation Network 2014). One way for firms to prosper in the hyper-

competitive, dynamic marketplace is through business collaborations with other firms. Business collaborations allow firms to remain nimble and adaptable by accessing complementary strengths that would be too costly or time consuming to develop alone (Bleeke and Ernst 1995; Groot and Merchant 2000; Inkpen and Ross 2001).

Business collaborations are organizational structures that fall between internalization (i.e. internal development or merger and acquisition) and market exchange. Business collaborations can take the form of a variety of cooperative arrangements, including enhanced supplier relationships, technology exchanges, joint production, joint marketing and promotion, distribution agreements, and research and development agreements (Alter and Hage 1993; Anderson and Sedatole 2003; Das and Teng 2000). Strategy research suggests that firms seek a strategic fit between their internal characteristics (strengths and weaknesses) and their external environment (opportunities and threats) to maximize firm value. Both transaction cost economics and the resource-based view of the firm provide explanations for how managers make these ownership decisions.

In transaction cost economics, the organization is viewed as homogenous and ownership decisions are seen as a function of the external environment. Managers' organizational decisions are based on minimizing the sum of transaction costs and production costs (Coase 1937; Parkhe 1993). Transaction costs are incurred from activities necessary for exchange, while production costs are costs incurred from coordinating activities in-house, such as learning, organizing, and managing production. Managers choose internalization when production costs are low and transaction costs are high. Managers choose market exchange when production costs are high and transaction costs are low. Business collaborations are sought when transaction costs and production costs are intermediate.

In transaction cost economics, a manager's ownership decisions are viewed as a function of cost minimization, while under the resource-based view of the firm, the ownership decision is based on value maximization (Das and Teng 2000; Eisenhardt and Schoonhoven 1996). Under the resource-based view of the firm, organizations are heterogeneous and ownership decisions are a function of the internal characteristics (Peteraf 1993). Valuable firm resources are usually scarce, imperfectly imitable, and often lack direct substitutes. When resources cannot be efficiently obtained through market exchange or internalization, managers must share or exchange the resources via business collaboration. Market exchange may not be possible when resources are mingled with other resources or embedded in organizations, and thus not perfectly tradable. Internalization may not be feasible when redundant or unwanted resources are comingled with valuable resources. Further, even when resources are separable, redundant resources may not be able to be disposed of without a loss due to asset specificity. Consistent with a resource-based view of the firm, business collaborations allows managers access to precisely the resources that are needed, while minimizing redundant resources.

Based on a transaction cost economics and a resource-based view, the benefits of business collaborations are that they allow partners to combine the technologies, skills, relationships, and resources of each firm to reduce costs, mitigate strategic risk, expand scale, and create access to new markets (Anderson and Sedatole 2003). However, despite these benefits, approximately half of business collaborations fail (Gerwin 2004; Lunnan and Haugland 2008). Two well-known scholars in the area of business collaborations, T.K. Das and Bing-Sheng Teng, identify two reasons for the high failure rate of business collaborations, relational risk and performance risk.

Relational risk refers to the risk that partners do not cooperate (Das and Teng 1998; 2000). One reason for the high rates of failure is that partners must invest significant levels of physical or human capital and coordinate joint activities to be successful (Kanter 1994; Doz 1996). Das and Teng (1998, 492) define cooperation as “honest dealing, commitment, fair play, and complying with agreements.” Non-cooperation “is exemplified by cheating, shirking, distorting information, misleading partners, providing substandard products or services, and appropriating partners' critical resources” (Das and Teng 1998, 492). Given business collaborations involve partnerships across separate firms, it is difficult for firms to anticipate, monitor, and compel cooperation. This is an important issue, since cooperation can be difficult to achieve in business collaborations because there is tension between a manager's desire to pursue her own self-interest and her desire to cooperate.

Aside from relational risk, there are several factors that may negatively affect business collaboration performance. Collectively, these factors are referred to as performance risk. Performance risk encompasses strategic risk faced by all firms and is not unique to business collaborations. Performance risk is due to factors such as intensified rivalry, new substitutes or market entrants, shifts in demand, unfavorable regulatory policies, or lack of partner competence (Das and Teng 2001). While performance risk is an important issue faced by all firms, the focus of this study is relational risk, which is unique to business collaborations. In particular, explore of whether disclosure of CSR investment mitigates relational risk and facilitates cooperation in business collaborations.

### **2.3. Internal Controls**

Management accountants help to design and implement formal control systems to facilitate operational and strategic initiatives (Hornigren et al. 2015). Formal control systems



include explicit mechanisms and procedures such as profit planning, capital budgeting, and performance measurement and evaluation. Informal control systems are unwritten and implicit, and are comprised of shared norms, culture, values, and group identification. While management accountants are mainly tasked with formal control systems, it is important for management accountants to be cognizant of informal controls systems. This is because formal and informal control systems often have an interactive effect on managerial behavior and decision making (Towry 2003; Rowe 2004; Kelly and Presslee 2017). Further, formal control systems can affect informal control systems (Coletti et al. 2005; Mulder et al. 2006).

While my study is focused on interfirm cooperation in a collaborative environment, it is worth noting that informal controls, in the form of team identity, can be useful in facilitating cooperation in intrafirm environments (Towry 2003; Rowe 2004; Kelly and Presslee 2017). Using a modified prisoner's dilemma strategic interaction task, Towry (2003) examines the interactive effects of formal controls (i.e. monitoring) and informal controls (i.e. team identity) on communication and effort in work teams. Strong team identity is found to enhance communication in work teams. Under a formal peer-to-peer monitoring system, communication facilitates cooperation and enhances effort. However, under a formal peer-to-supervisor monitoring system, communication facilitates collusion and erodes effort. Results suggest that the efficacy of formal control systems may be dependent upon informal controls.

Kelly and Presslee (2017) also examine the interactive effects of formal controls and informal controls on work team performance. The authors examine performance on a decoding task in four-person groups under a small winner proportion tournament versus large winner proportion tournament. In the small winner proportion tournament the top performer wins a large reward. In the large winner proportion tournament the top three performers win small rewards.

An informal control, group identity, is manipulated as either strong or moderate. A slogan guessing game was used to create a strong (moderate) group identity. Prior to the experimental task, all participants in a session competed in a slogan guessing game. In the strong group identity treatment, manipulated between sessions, participants were first assigned to their groups and played as a group against other participant-groups. Participants remained in the same groups during the experimental task. In the moderate group identity treatment, participants competed individually in the slogan guessing game against all other individual participants in the experimental session. After completing the slogan guessing game, participants were then assigned to groups for the experimental task. Results indicate that strong group identity increases other-regarding preferences which is negatively associated with competitiveness which decreases performance, and this effect is stronger under the large winner proportion tournament versus the small winner proportion tournament. In summary, increasing group identity has a detrimental effect on performance under the large winner proportion tournament, but not under the small winner proportion tournament.

Experimental evidence suggest that informal control systems can have a positive, additive effect on formal control systems (Rowe 2004). Cooperation is highest in cross-functional teams when formal controls and informal controls both reinforce team identity. Participants in four-person work teams were either provided with unit-level accounting reports that only report individual payoffs or with process-level accounting reports that summarize payoffs for all four team members. Further, team structure was manipulated as either distributed, where each member was located in a separate room or face-to-face where team members sat at the same table. No communication was permitted in either treatment. Cross-functional work team cooperation is highest when work teams receive process-level reports in a face-to-face team

structure. The combination of team-focused accounting reports and face-to-face structure leads to higher levels of trust which is positively associated with collectivism which increases cooperation.

Research provides mixed evidence regarding the effect of formal controls on cooperation in business collaborations. Colletti et al. (2005) find that formal control systems encourage cooperation in business collaborations by enhancing trust among work partners. The authors conduct a psychology-based experiment in which a participant, in the role of manager, reads a scenario and either cooperates and makes a hypothetical investment in a joint project or does not cooperate and makes a hypothetical investment in an individual project. In the formal control system treatment, a consultant can make an unannounced visit. If the consultant determines the manager underinvested in the joint project, the manager is penalized. In the no formal control system treatment, there is no monitoring or penalty for underinvestment into the joint project. In the presence of a formal control system, managers are more cooperative. Further, the formal control system enhances the informal control system. Observers rate the managers in the formal control system treatment as more trustworthy than managers in the no formal control system treatment. In the second experiment, the authors employ a repeated prisoner's dilemma task to operationalize the business collaboration setting. Managers decide whether or not to cooperate by either investing in the joint project or in the individual project. Again, in the formal control system treatment a consultant may make an unannounced visit. If the manager contributed to the joint project she receives a bonus. In the no formal control system treatment, there is no monitoring. After 20 rounds, the formal control system is removed. The authors find that cooperation and trust are greater under the formal control system even after monitoring is

removed. Similar to first experiment, the formal control system enforced the informal control system and facilitated a culture of trust and cooperation.

However, it is not clear whether formal control systems enhance or erode trust. Mulder et al. (2006) find that formal control systems erode trust. Mulder et al. (2006) perform a series of experiments using a modified four-person public goods task, similar to the one described in Brekke et al. (2011) to measure cooperation and trust in work teams. Findings indicate that a formal control system that penalizes non-cooperation erodes trust. Although cooperation is higher under the formal control system, trust in others is lower. Individuals are more suspicious of their partners' motivation for cooperating and have less trust that others are internally motivated to cooperate.

In a business collaboration where partner output is unobservable and difficult to enforce, it is not cost effective to rely on formal control systems to encourage cooperation. I examine whether disclosure of CSR investment can act as a mechanism to foster cooperation by enhancing managers' belief that their partner is internally motivated to cooperate. This issue is related to research that examines whether managers who share the same organizational culture are more likely to cooperate in business collaborations. Next, I discuss the relevant findings from this stream of literature.

Organizational culture primarily relates to common beliefs and norms in organizational practices and behaviors (Hofstede et al. 1990; Pothukuchi et al. 2002). Cultural differences between organizational partners is a major factor that can influence the outcome of a business collaboration (Cartwright and Cooper 1993; Weber et al. 1996). For example, Pothukuchi et al. (2002) conclude that organizational culture is more important than national culture in determining joint venture success between Indian and non-Indian firms. Further, in a study of 52

mergers and acquisitions from the mid-1980s, Weber et al. (1996) find that a mismatch in organizational culture negatively influences cooperation among top managers.

Organizational culture can affect cooperation in business collaborations through three avenues. First, organizational culture affects tenure and promotion decisions, resulting in a skewed set of managers who are responsible for collaborations (Hambrick et al. 2001). Second, individuals prefer to work for a firm where there is a congruence between their own beliefs and values and the firm's espoused culture, norms, and values (Morley 2007). Third, an organizational culture serves to reinforce and communicate the set of managerial behaviors that are appropriate, expected, and rewarded and the set of managerial behaviors that are inappropriate, frowned upon, and punished.

### **3. HYPOTHESIS DEVELOPMENT**

Hypotheses are developed based on theoretical and empirical evidence from the CSR, business collaboration, and internal control literatures. Hypotheses 1 and 2 examine the effect of CSR disclosure on managers' CSR investment and cooperation choices. Hypotheses 3 and 4 compare cooperation across business collaborations dependent on managers' CSR investment choices, controlling for CSR disclosure.

Hypothesis 1 predicts that CSR investment is higher when CSR is disclosed than when CSR is not disclosed. In a setting in which CSR investment is not disclosed there are no potential signaling benefits to facilitate cooperation among partners. Thus, managers' only motivation for investing in CSR can be explained by individual preferences for CSR. However, when CSR is disclosed managers may invest in CSR for two non-mutually exclusive reasons. First, they may invest in CSR due to preferences for CSR. Second, managers may invest in CSR to signal their willingness to cooperate to their business collaboration partners. Even though CSR investment is costly, managers are better off investing in CSR when the incremental benefit from increased cooperation exceeds the incremental cost of CSR investment. Thus, when CSR is disclosed a sub-set of managers who do not have preferences for CSR may choose to invest in CSR as a mechanism to facilitate cooperation.

However, it is not entirely clear whether CSR disclosure will lead to higher levels of CSR investment. Managers may not view CSR investment as a credible signal of preferences for cooperation. Further, CSR disclosure could inhibit CSR investment among managers who have preferences for CSR, but do not want to appear as though they are investing in CSR for self-

serving reasons. In other words, CSR disclosure may impede CSR investment among managers who would prefer to invest in CSR when the investment cannot be used for their economic benefit. Despite the uncertainty regarding the effect of CSR disclosure on CSR investment, I predict that the motivating effects of CSR disclosure will outweigh any potential mitigating effects on CSR investment. This leads to the first hypothesis, stated as follows.

**H1:** CSR investment is higher when CSR is disclosed versus when CSR is not disclosed.

Hypothesis 2 predicts that managers are more cooperative when CSR is disclosed than when CSR is not disclosed. As discussed in the literature review, informal control systems are unwritten and implicit, and are comprised of shared norms, culture, values, and group identification. In a business collaboration where partner input is unobservable and difficult to enforce, it is not cost effective to rely solely on formal control systems to encourage cooperation (Das and Teng 1998). Empirical evidence suggests that informal controls can facilitate intrafirm cooperation (Towry 2003; Rowe 2004; Kelly and Presslee 2017). Further, evidence from field studies suggests that informal controls in the form of shared values among managers is a major factor that can influence the outcome of business collaborations (Cartwright and Cooper 1993; Weber et al. 1996).

Cooperation in business collaborations involves risk, as a partner can act opportunistically and it is difficult to use formal control mechanisms to compel cooperation (Das and Teng 1998). Thus, cooperation in a business collaboration is a function of both a managers' preference for cooperation as well as her beliefs about her partner's willingness to cooperate. I posit that disclosure of CSR investment is a credible signal regarding a manager's propensity to

cooperate. Thus, CSR disclosure reduces uncertainty regarding a partners' preference for cooperation and facilitates cooperation. This leads to the second hypothesis, stated as follows:

**H2:** Cooperation in business collaborations is higher when CSR is disclosed versus when CSR is not disclosed.

Next, I examine cooperation in business collaborations when CSR is disclosed. Given cooperation in business collaborations involves risk but is mutually beneficially, a manager is likely to cooperate with a partner she believes will also cooperate. Prior studies posit that managers who invest in CSR are other-regarding and have a preference for cooperation (Brekke and Nyborg 2008; Brekke et al. 2011). However, in these studies CSR investment is always disclosed. Consistent with the prior literature, I posit that CSR investors have a preference for cooperation *conditional* on the belief that their partner also has a preference for cooperation. This is because cooperation in business collaborations involves risk, as a partner can act opportunistically and it is difficult to use formal control mechanisms to compel cooperation (Das and Teng 1998). Thus, cooperation in a business collaboration is a function of both a managers' preference for cooperation as well as her beliefs about her partner's willingness to cooperate. I posit that disclosure of CSR investment is a credible signal regarding a manager's propensity to cooperate. Thus, managers who invest in CSR are more likely to cooperate conditional on CSR disclosure.

I argue that disclosure of CSR investment may or may not be indicative of one's other-regarding preferences, but it is a credible signal of one's cooperativeness. Thus, I predict that a manager who invests in CSR will revise her beliefs about their partner's likelihood of cooperating dependent on her partner's CSR investment choice, and adapt her behavior



accordingly. Given CSR investment is disclosed, a CSR investor is more likely to cooperate with a CSR investor than with a Non-CSR investor.

However, it is not clear whether a Non-CSR investor will behave differently when she is partnered with a CSR investor versus a Non-CSR investor when CSR is disclosed. In Non-CSR investor / Non-CSR investor collaborations, managers may view CSR investment as a dead cost and see themselves and their partners as wealth maximizers. Given that cooperation is wealth maximizing, Non-CSR investors may be more cooperative when partnered with Non-CSR investors than when partnered with CSR investors. Alternatively, Non-CSR investors may view CSR investors as more cooperative in general, versus conditionally cooperative, and may be more likely to cooperate when partnered with a CSR investor.<sup>3</sup> In this setting, it is not clear how Non-CSR investors will behave when partnered with Non-CSR investors versus CSR investors.

The CSR investment choice results in the following four potential Manger 1 / Manager 2 collaborations: CSR investor / CSR investor, CSR investor / Non-CSR investor, Non-CSR investor / CSR investor, and Non-CSR investor / Non-CSR investor. Hypothesis 3 compares the level of cooperation in CSR investor / CSR investor collaborations relative to the other three collaborations, as follows.

**H3:** When CSR is disclosed, cooperation in business collaborations is highest when both managers invest in CSR.

Next, I examine a setting in which CSR investment is not disclosed. Prior studies posit that managers who invest in CSR are other-regarding and have a preference for cooperation

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<sup>3</sup> Using backward induction, if a Non-CSR investor believes CSR investors are conditionally cooperative, she will not cooperate with a CSR investor. Suppose the Non-CSR Investor expects a CSR investor to cooperate when partnered with a CSR investor and to not cooperate when partnered with a Non-CSR investor. Then the best strategy is for a Non-CSR investor to not cooperate when partnered with a CSR investor.

(Brekke and Nyborg 2008; Brekke et al. 2011). However, in these studies CSR investment is always disclosed. I posit that a CSR investor is no more cooperative than a Non-CSR investor in the absence of CSR disclosure. As explained in the discussion of Hypothesis 3, in a business collaboration, a manager's decision to cooperate is jointly determined by her preference for cooperation and by her beliefs about his partner's cooperativeness. Based on the notion that CSR investors are conditional cooperators, in the absence of CSR disclosure I do not expect that CSR investors will be more likely to cooperate than Non-CSR investors. This leads to the final hypothesis, stated as follows.

**H4:** When CSR is not disclosed, managers who invest in CSR are no more likely to cooperate in business collaborations than managers who do not invest in CSR.

Combined, the hypotheses predict the following pattern of results. CSR disclosure is predicted to increase CSR investment and cooperation among business collaboration partners. Further, CSR disclosure is predicted to moderate the link between CSR investment and cooperation in business collaborations. When CSR is disclosed, cooperation is predicted to be higher among CSR investors / CSR investors business collaborations. However, when CSR is not disclosed, CSR investors are not predicted to be more cooperative than non-CSR investors.

## 4. EXPERIMENTAL METHOD

### 4.1. Experimental Design

A 2 (CSR Disclosure) x 2 (CSR Investment) x 4 (Part) x 10 (Round) mixed factorial design is employed to test the hypotheses. CSR Disclosure (Disclosure/Non-Disclosure) is manipulated between participants and held constant across all four parts. CSR Investment (CSR Investment/Non-CSR Investment) is a measured variable, measured at the start of each of the four parts. The experiment is repeated for 40 rounds with random assignment after each round, divided into four parts of ten rounds each. Thus, Part and Round are within-subject factors. The purpose of this study is to explore the signaling effect of CSR disclosure. Thus, I control for reputation, a potential confound, with random assignment after each round.

### 4.2. Stag Hunt Task

I operationalize a business collaboration as a strategic interaction using the stag hunt task in which two managers simultaneously make decisions whether they will cooperate or not cooperate. This methodology builds on prior experimental accounting research that uses strategic interaction tasks to examine cooperation in business collaborations and work teams (e.g. Towry 2003; Rowe 2004; Coletti et al. 2005). As illustrated in Figure 1, managers' earnings are jointly determined by the simultaneous choice of whether to cooperate or not cooperate. If both managers cooperate, they each earn 7 francs.<sup>4</sup> If both managers do not cooperate, they each earn

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<sup>4</sup> Throughout experiment, earnings are expressed in experimental currency termed francs. Participants are informed that francs will be converted to cash at a rate of two francs to one US dollar.

5 francs. If one manager cooperates and the other does not, the cooperator earns 0 francs and the non-cooperator earns 5 francs. Thus, non-cooperators are guaranteed to earn 5 francs, regardless of their partners' choice. However, cooperators earn either 7 francs or 0 francs, depending on their partners' choice. The stag hunt payouts provides strategic tension. On one hand, a manager's highest payoff occurs when she cooperates and her partner also cooperates. On the other hand, a manager's lowest payoff occurs when she cooperates and her partner does not.

|           |               | Manager 2 |               |
|-----------|---------------|-----------|---------------|
|           |               | Cooperate | Not Cooperate |
| Manager 1 | Cooperate     | 7 , 7     | 0 , 5         |
|           | Not Cooperate | 5 , 0     | 5, 5          |

**Figure 1: Stag Hunt Earnings**

Earnings are expressed in experimental currency termed francs. Earnings are converted to US Dollars at an exchange rate of two francs to one US Dollar.

The payout structure in the stag hunt task represents the fundamental aspects of a business collaboration. First, managers can either cooperate and expend resources towards joint production or not cooperate and expend resources towards individual production. Second, due to synergies, the sum of joint production exceeds the sum of individual production.<sup>5</sup> Third, a necessary condition for successful joint production is that both managers cooperate. Thus, if a manager invests resources to cooperate and her partner does not, her return is zero. In summary, a manager either maximizes or minimizes her return when she cooperates dependent on her partner's choice.

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<sup>5</sup> The sum of joint production, 14 francs (7 francs + 7 francs), exceeds the sum of individual production, 10 francs (5 francs + 5 francs).

Given the payout structure in the stag hunt task, cooperation is jointly determined by each manager's preference for cooperation as well as her beliefs about her partner's preference for cooperation. Suppose Manager 1 believes her partner (Manager 2) will cooperate with probability  $p$ , and not cooperate with probability  $1 - p$ . Manager 1's payoff from cooperation is  $7p + 0(1 - p) = 7p$ . Manager 1's payoff from non-cooperation is  $5p + 5(1 - p) = 5$ . Manager 1 is indifferent between cooperation and non-cooperation when the payoffs from both options are equal; in other words when  $7p = 5$  or  $p = 5/7$ . Thus, Manager 1 will cooperate when she believes the probability Manager 2 will cooperate,  $p$  is greater than  $5/7$ , and Manager 1 will not cooperate when  $p$  is less than  $5/7$ . Since the payoffs are symmetrical, Manager 2 will also cooperate when  $p$  is greater than  $5/7$ , and not cooperate when  $p$  is less than  $5/7$ .

Language throughout the experiment is kept neutral. Using non-contextual labels mitigates demand effects from roleplaying or hypothesis guessing while maintaining the strategic tensions present in actual business collaborations (Bowlin et al. 2015). As detailed in the experimental instrument in Appendix A and the screen shots in Appendix B, all participants view the game through the perspective of Player 1, labeled "Me." A participant's partner, Player 2, is labeled "Partner". As described in Figure 2, the main dependent variable  $Cooperate_{i,r}$  is an indicator variable equal to one (zero) if participant  $i$  chooses to cooperate (not cooperate) in round  $r$ . The terms cooperation and non-cooperation are never used in the experiment. Participants either chose "Top" or "Bottom" and after each round, participants are informed whether their partner chose "Left" or "Right."

| <b>Variable Name</b>                   | <b>Variable Definition</b>   |
|--|--|
| <i>Altruism<sub>i</sub></i>            | Ranges in value from 20 to 100. Higher values represent greater levels of altruism;  |
| <i>AltruismDum<sub>i</sub></i>         | A indicator variable equal to one if participant <i>i</i> 's score is greater than the mean (median) score for <i>Altruism<sub>i</sub></i> , and zero otherwise;       |
| <i>CharitySatisfaction<sub>i</sub></i> | Ranges in value from one to four. Higher values represent greater satisfaction with the charity options;   |
| <i>Cooperate<sub>i,r</sub></i>         | An indicator variable equal to one (zero) if participant <i>i</i> chooses to cooperate (not cooperate) in round <i>r</i> , where $r = (1, 2, 3, \dots, 40)$ ;          |
| <i>CooperateCount<sub>i</sub></i>      | Ranges in value from zero to 40. Number of times participant <i>i</i> chooses to cooperate across 40 rounds;   |
| <i>CSRInvest<sub>i,t</sub></i>         | An indicator variable equal to one (zero) if participant <i>i</i> chooses to donate (not donate) to charity in part <i>t</i> , where $t = (1, 2, 3, 4)$ ;              |
| <i>CSRInvestCount<sub>i</sub></i>      | Ranges in value from zero to four. Number of times participant <i>i</i> chooses to donate to charity across four parts;  |
| <i>CSRPreference<sub>i</sub></i>       | Ranges in value from one to ten. Higher values represent stronger preferences for corporate social responsibility;   |
| <i>CSRValues<sub>i</sub></i>           | Ranges in value from one to 15. Higher values represent more positive beliefs regarding people who donate to charity;  |
| <i>CSRValuesDum<sub>i</sub></i>        | A indicator variable equal to one if participant <i>i</i> 's score is greater than the mean (median) score for <i>CSRValues<sub>i</sub></i> , and zero otherwise;      |
| <i>Disclosure<sub>i</sub></i>          | Indicator variable equal to one (zero) if participant <i>i</i> is randomly assigned to the Disclosure (Non-Disclosure) treatment;                                      |
| <i>PartnerCSRInvest<sub>-i,t</sub></i> | An indicator variable equal to one (zero) if a participant's partner <i>-i</i> chooses to donate (not donate) to charity in part <i>t</i> , where $t = (1, 2, 3, 4)$ ; |
| <i>Prosocial<sub>i</sub></i>           | An indicator variable equal to one (zero) if participant <i>i</i> is classified as prosocial (proself);  |
| <i>Gender<sub>i</sub></i>              | An indicator variable equal to one (zero) if participant is female (male);   |
| <i>Risk<sub>i</sub></i>                | Ranges in value from one to five. Higher values represent preferences for greater risk;  |
| <i>Session<sub>i</sub></i>             | A class variable that ranges in value from A to D. Participants in Sessions A and B (C and D) were randomly assigned to the Disclosure (Non-Disclosure) treatment.     |

**Figure 2: Variable Definitions**

### 4.3. Participants

Undergraduate students from a private university who voluntarily chose to participate were recruited for a single experimental session. A maximum of twenty-four participants were recruited for each experimental session. The participant pool is similar to prior literature using a strategic interaction task (e.g. Towry 2003; Rowe 2004; Bogaert et al. 2008). I also follow prior literature and use student participants as proxies for managers (e.g. Coletti et al. 2005; Balakrishnan et al. 2011; Martin and Moser 2016).

### 4.4. Procedures

The experiment was implemented in a computer lab using networked computers. At the beginning of the experimental session, participants sat at individual computers with privacy screens. I introduced myself, obtained verbal consent, and informed participants that if anyone had a question or an issue during the experimental session, to raise their hand. Throughout the experimental session, I watched the participants from an adjoining room through one-sided glass.

Participants first read instructions about the experimental procedures. Participants were informed that they will perform the stag hunt task for multiple rounds divided into four parts and that they will remain anonymous throughout the entire experimental session. Further, participants were informed of how their cash payout will be determined. Participants read the instructions and completed an instruction quiz.

After completing the stag hunt task participants complete a virtual coin toss and a post-experimental questionnaire. At the start of each of the four parts, participants make a charity donation choice, as described below. Participants are informed that if they provide an email address the administrator will email a copy of the receipt for the charitable donations. This

option is provided to reinforce to participants that the charities actually receive cash donations. Lastly, participants receive their cash payouts and leave.

#### 4.5. Charitable Donations

Consistent with prior experimental studies, CSR investment is operationalized as charitable donation (Balakrishnan et al. 2011; Brekke et al. 2011; Koppel and Regner 2014; Martin and Moser 2016). A charitable donation was chosen to capture CSR investment for several reasons. Charitable donations are recognized as a type of CSR in academia. To illustrate, charitable donations are included in the Auld et. al (2008) taxonomy of seven categories of CSR. Further, charitable donations have been used to capture CSR investment in various strategic interaction settings, including a public goods task (Brekke et al. 2011), the gift exchange task (Koppel and Regner 2014), and the trust task (Balakrishnan et al. 2011).

In practice, firms often donate resources to charity, either in the form of cash or through gifts-in-kind. In order to gauge the frequency of corporate charitable donations among U.S. companies, I examined charitable giving among the 2017 Fortune 100 companies. The Fortune 100 companies represent the 100 largest US corporations in terms of revenue and account for a total of \$7.4 trillion in revenue. For each Fortune 100 company I conducted an online search of the company name and the term “charitable giving” and/or “charity donation.”

Of the Fortune 100 companies, 91% disclose some form of charitable giving on their website.<sup>6</sup> Several firms have separate foundations that manage the organization’s charitable giving. Common forms of charitable donations are employee matching programs, grants for non-profits, long-term partnerships with non-profits, and emergency disaster relief. Firms that have

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<sup>6</sup> Freddie Mac, number 20 on the 2017 Fortune 100 list, is excluded from the analysis because their charitable donation policy is regulated by the US Congress. Freddie Mac was placed into conservatorship by the federal government in 2008 in response to the mortgage crisis.



an employee matching program match employees' charitable donations to qualifying non-profit organizations up to a maximum amount. For example, Lockheed Martin matches employee donations to colleges and universities up to \$10,000 per year. In 2016 Boeing donated \$18 million and Verizon donated \$9.6 million to charities through their employee matching programs.

The majority of Fortune 100 companies report that they provide funding to non-profits through grant programs. For instance, in 2016 American Express provided \$36 million in grants to non-profits in leadership, historic preservation, and community services. Other companies have developed long-term partnerships with national non-profits. Lowe's has worked with Habitat for Humanity for over a decade and report \$20 million in cash and in-kind product donations between 2003 and 2013. Several companies provide as-needed donations to charities that provide disaster relief. For example, several companies donated to charities such as the Red Cross in response to hurricanes Harvey and Irma which affected Texas, Louisiana, and Florida in August and September of 2017. Delta Airlines, HCA Holdings, Marathon Petroleum, and Sysco each donated \$1 million and Apple donated \$10 million to aid in response to hurricanes Harvey and Irma.

It is worth noting that two of the nine companies that do not report charitable donations on their websites are Berkshire Hathaway and Facebook. Berkshire Hathaway had a very unique charitable giving program. Shareholders were allocated \$8 per share to donate to the charity of their choice. The program was terminated after a decade when various Berkshire Hathaway subsidiaries were boycotted due to shareholders' donations to charities with controversial political views. However, Forbes calculates that Warren Buffett, the CEO of Berkshire Hathaway has donated at least \$9.5 billion of his own shares of Berkshire Hathaway to the Bill &

Melinda Gates Foundation (Peterson-Withorn 2017). Similarly, Mark Zuckerberg, the CEO of Facebook has pledged that he will donate 99% of his net worth, approximately \$45 billion, in his lifetime (Brandom 2015).

While the overwhelming majority of large US corporations donate to charities, the level of corporate charitable donations is relatively small. In 2015, total U.S. corporate donations of \$18.55 billion accounted for only 5% of all charitable donations and represent only 1.1% of corporate after-tax profits (Giving USA Foundation 2017). I also measure the level of charitable giving using the variable *COM-str-A* from the KLD STATS database. The variable *COM-str-A* is equal to one if a company has consistently given over 1.5% of trailing three-year net earnings before taxes to charity, or has otherwise been notably generous in its giving. Between 2001-2010, the most recent 10-year time span with data for *COM-str-A*, 2.35% of company-year observations indicate strong charitable giving. In summary, it appears as though the vast majority of large US corporations include charitable donations as part of their CSR activities. However, the overall level of charitable donations is relatively low. Given that relatively small charitable donations are often used in practice, it is reasonable to expect that disclosure of a substantial charitable donation would be interpreted as a credible form of CSR investment.

At the start of each part, participants chose whether or not to donate 10% of their cash payout from that part to charity. Participants are informed that if they donate to charity the amount will be doubled by the administrator. CSR investment is operationalized as a dichotomous variable. This is an abstraction, as in the real world there is variation in the level of charitable giving. The lack of variation in charitable donations limits the generalizability of the results. However, the purpose of the study is to examine whether disclosure of CSR investment is a credible signal of managers' propensity to cooperate. Evidence suggests that higher levels of

charitable donations are positively associated with stronger responses (Balakrishnan et al. 2011; Koppel and Regner 2014; Martin and Moser 2016). In my experimental setting, CSR investment is equal to the lowest level of charitable donations from prior studies, biasing away from finding a result.

As shown in Figure 2 the main independent variables in the study are  $CSRInvest_{i,t}$  and  $PartnerCSRInvest_{-i,t}$ .  $CSRInvest_{i,t}$  is equal to one (zero) if participant  $i$  chooses to donate (not donate) to charity in part  $t$ .  $PartnerCSRInvest_{-i,t}$  is equal to one (zero) if participant  $i$ 's partner  $-i$  chooses to donate (not donate) to charity in part  $t$ .

If a participant chose to donate to charity she then selected one organization from the following seven options: American Humane Association, American Red Cross, Amnesty International, Habitat for Humanity, Sierra Club, Susan G. Komen for the Cure, and Wounded Warrior Project. The options are visible to participants before they chose whether or not to donate to charity. In addition, a brief description of each charity is provided. The charities were selected to cover a wide variety of missions and service areas. The charities are highly ranked by Charity Navigator and/or Charity Watch. Charity Navigator ranks over 8,000 non-profits based on their financial health and their accountability and transparency. Charity Watch, formerly known as the American Institute of Philanthropy, provides grade ratings and financial performance measures for approximately 6,000 major U.S. charities and has been in operation for over 25 years. The first five charities listed above were provided to participants in two pilot studies. On average, participants in the two pilot studies rated their satisfaction with the five charities as 3.40 out of four, with three indicating somewhat satisfied and four indicating very satisfied. The Susan G. Komen for the Cure and Wounded Warrior Project were added to the list of charities based on suggestions provided by participants in the two pilot studies.

Two pilot studies were conducted using students from a private western university who voluntarily choose to participate in a single experimental session. Participants in the pilot studies had similar demographics to the participants in the main experiment. Participants from the pilot studies were not eligible to participate in the further experimental sessions. The main purpose of the pilot studies was to ensure the experimental task and methodologies were well understood by the student participants. Further, data from the pilot studies was used to determine if the charity options were satisfactory.

#### 4.6. CSR Disclosure

The CSR disclosure environment is manipulated between participants at two levels, Disclosure and Non-Disclosure. In the Disclosure treatment, participants are truthfully informed of whether their partner invested in CSR or not. Participants are aware that their choice to donate or not donate to charity will be communicated in every round to their partner via the label “Donor” or “Non-Donor” next to “Partner” on the screen, as shown in Appendices A and B. In the Non-Disclosure treatment, participants are not informed of whether their partner invested in CSR. Participants in the Non-Disclosure treatment are aware that their charity donation choice will not be communicated to their partners. In the Non-Disclosure treatment, the label “Donor” or “Non-Donor” does not appear next to “Partner,” as shown in Appendices A and B. The Disclosure treatment is manipulated between-participants. Thus, participants in the Disclosure (Non-Disclosure) treatment, remain in the same treatment for the entire experimental session.

Similar to CSR investment, CSR disclosure is dichotomous. As described in Figure 2, the independent variable  $Disclosure_i$  is an indicator variable equal to one (zero) if participant  $i$  is randomly assigned to the Disclosure (Non-Disclosure) treatment. In the real world, there is a substantial degree of variation in CSR disclosure. In the experimental laboratory, CSR disclosure

manipulation is stark and simplified. The benefit of this simplification is that it controls for myriad potential confounds.

#### 4.7. **Feedback**

At the start of each of the four parts, participants choose whether or not to donate 10% of their payout from that part to charity. Next, participants perform the stag hunt task for ten rounds, with random assignment to another partner after each round. As shown in Appendix B, the following information is provided at the end of each round in the History frame: part, round, participant's charity donation choice (i.e., Donor or Non-Donor), partner's charity donation choice (in the Disclosure treatment only), participant's decision (i.e., Top or Bottom), partner's decision (i.e., Left or Right), francs earned by the participant, and francs earned by the participant's partner. Information is provided after each round and information for all rounds played up to that point remains on the screen in the History frame.

#### 4.8. **Post Experimental Questionnaire and Payouts**

A virtual coin flip based on Eckel and Grossman's (2002) series of five 50/50 gambles is used to elicit participants' risk preferences. Empirical evidence suggests that while a simplified risk preference measures are coarser than more cognitively difficult measures due to broader categorization, they are less noisy (Chetan et al. 2010). Further, a simpler risk preference measure has lower noise and equal predictive accuracy as a complex measure for low numeracy individuals (Chetan et al. 2010). As shown in Appendices A and B, participants decide between five gambles increasing in risk. Participants are then informed of the outcome of the virtual coin flip and the points they've earned. Measuring risk preferences enables me to minimize the effect of individual differences using the variable  $Risk_i$ , a covariate that ranges in value from one to five based on the gamble selected. Higher values represent preferences for greater risk. Risk

preferences are likely to affect behavior in the stag hunt task since cooperation involves risk, while non-cooperation is riskless.

After completing the stag hunt task, participants provided demographic information (e.g. age, gender, year). Participants then answer a two-item measure of CSR preferences and a three-item measure of CSR values using a Likert scale from one (strongly disagree) to five (strongly agree). CSR preferences are measured with the following two items: Companies should take actions to help society; I prefer to work for a company that takes actions to help society. The variable  $CSRPreference_i$  is equal to the sum of the two CSR preference items and ranges in value from one to ten, with higher values representing greater preferences for CSR.  $CSRPreference_i$  was pre-tested in the two pilot studies and is highly correlated with CSR investment, operationalized as a charity donation choice ( $r = 0.448, p = 0.002$ , not tabulated). CSR values are measured with the following three items: I share the same values with people who donate to charity; People who donate to charity care about others; People who donate to charity are cooperative.  $CSRValues_i$  is equal to the sum of the three CSR values items and ranges in value from one to fifteen, with higher values representing stronger beliefs regarding others who donate to charity.

Participants completed two additional measures of individual differences. A nine-item scale is used to measure social value orientation via a series of hypothetical payouts for oneself and another person (Van Lange et al. 1997). Based on the responses, a dichotomous variable  $Prosocial_i$  is calculated, where  $Prosocial_i$  is equal to one (zero) if the participant is classified as prosocial (proself). A 20-item psychometric measure of altruism is administered (Rushton et al. 1981). Altruism is measured using a frequency scale from one (never) to five (very often) for 20 different activities, as shown in Appendix A. The variable  $Altruism_i$  is equal to the sum of the 20

Altruistic items and ranges in value from 20 to 100, with higher values representing stronger altruism.

Participants are informed which round was randomly selected from each of the four parts and their total payout is calculated. The cash payout amount is hyperlinked. If a participant clicks on the hyperlink, they are provided with information about how much of their payout is from the stag hunt task and how much is from the virtual coin flip. Participants are also informed of any charity donation that will be made on their behalf. The charity donation amount is also hyperlinked to provide detailed information on how the total charity donation is calculated. The payout screen also includes the option for participants to provide an email address so they can receive a copy of the receipt for the charitable donations. This option is provided to ensure participants understand that charities will actually receive the donations.

At end of computerized experiment, the laboratory manager informed participants that the experiment was complete and asked that they stay seated. The laboratory manager called each participant by first name only and payed each participant in cash. After the experimental sessions concluded, I made the online charity donations and emailed receipts to the participants who provided an email address.

## **5. RESULTS**

### **5.1. Participants Demographics**

Participants received a cash payout for their participation. On average, participants were paid \$18.12, including a \$7.00 show-up fee for less than one hour of their time. The experiment took an average of 37 minutes to complete. Participants in the Disclosure treatment earned an average of \$16.68. Participants in the No Disclosure treatment earned an average of \$19.50.

In total, 94 students participated. There were 38 males (40.4 percent) and 56 females (59.6 percent). Students were similar on background characteristics such as age, year, and education. On average, they were 19.0 years old and had taken 3.2 college-level business and/or economics courses. 35.1 percent were freshman, 42.6 percent were sophomores, 12.8 percent were juniors, and 9.6 percent were seniors.

### **5.2. Instruction Comprehension and Manipulation Check**

To ensure participants attended to the onscreen instructions, they were required to spend at least 30 seconds on each of the nine instruction screens before they could proceed to the next screen. Participants were then required to complete a quiz. One of the quiz questions contained the following manipulation check question: In each round you will be able to see whether or not your partner chose to donate to charity and your partner will be able to see whether or not you chose to donate to charity. In the Disclosure (Non-Disclosure) treatment, the correct answer is True (False). If participants answered a quiz question incorrectly, they were informed that the



answer was incorrect, given a hint, and prompted to answer the question again. Participants were required to answer all quiz questions correctly in order to proceed to the experimental task.

At the end of the experiment, participants completed a post-experimental questionnaire. As part of the post-experimental questionnaire, participants rated the clarity of the instructions on a scale of one (very confusing) to four (very clear). The mean instruction clarity rating is 3.83 out of four, indicating that on average, participants clearly understood the experimental instructions.

### 5.3. Operationalization of CSR Investment

CSR Investment is operationalized as a donation to charity. Participants chose whether or not to donate to charity at the start of Part One (rounds 1 – 10), Part Two (rounds 11 – 20), Part Three (rounds 21 – 30), and Part Four (rounds 31 – 40). As explained in the experimental methodology section, a charitable donation choice is used to capture the construct of CSR investment. To test for construct validity, I examine whether  $CSRPreference_i$ , an individual difference variable that measures preferences for CSR, is correlated with participants' CSR investment choice. Table 1 presents descriptive statistics.  $CSRPreference_i$  ranges in value from one to ten. As shown in Table 1, the mean value for  $CSRPreference_i$  is 8.60, indicating relatively strong CSR preferences.

CSR investment is captured using the indicator variable  $CSRInvest_{i,t}$ , an indicator variable equal to one (zero) if participant  $i$  chooses to donate to charity in part  $t$ , where  $t$  equals one through four.  $CSRInvest_{i,t}$  is converted from a dichotomous variable with one observation per participant-round to  $CSRInvestCount_i$ , a continuous variable with one observation per participant.  $CSRInvestCount_i$  is calculated by counting the number of times a participant chooses to donate to charity in across Part One through Part Four. Thus, values for  $CSRInvestCount_i$

**Table 1: Descriptive Statistics, Mean (sd)**

|                                   | Disclosure    |               |              | Non-Disclosure |              |               | Grand Total   |
|-----------------------------------|---------------|---------------|--------------|----------------|--------------|---------------|---------------|
|                                   | Session       |               | Total        | Session        |              | Total         |               |
|                                   | A             | B             |              | C              | D            |               |               |
| Number of participants            | 22            | 24            | 46           | 24             | 24           | 48            | 94            |
| <i>CSRInvestCount<sub>i</sub></i> | 2.41 (1.76)   | 1.71 (1.60)   | 2.04 (1.70)  | 1.38 (1.50)    | 1.58 (1.50)  | 1.48 (1.49)   | 1.76 (1.61)   |
| <i>CooperateCount<sub>i</sub></i> | 19.09 (10.18) | 14.08 (8.48)  | 16.48 (9.57) | 35.29 (4.86)   | 7.92 (4.30)  | 21.60 (14.56) | 19.10 (12.57) |
| <i>CSRPreference<sub>i</sub></i>  | 8.91 (1.27)   | 8.54 (1.35)   | 8.72 (1.31)  | 8.42 (1.35)    | 8.54 (1.47)  | 8.48 (1.40)   | 8.60 (1.35)   |
| <i>CSRValues<sub>i</sub></i>      | 10.73 (2.03)  | 10.83 (2.10)  | 10.78 (2.04) | 10.88 (1.62)   | 10.38 (2.83) | 10.63 (2.29)  | 10.70 (2.16)  |
| <i>Prosocial<sub>i</sub></i>      | 0.73 (0.46)   | 0.79 (0.41)   | 0.76 (0.43)  | 0.63 (0.49)    | 0.67 (0.48)  | 0.65 (0.48)   | 0.70 (0.46)   |
| <i>Altruism<sub>i</sub></i>       | 54.23 (8.31)  | 54.96 (10.40) | 54.61 (9.36) | 51.21 (9.01)   | 52.63 (9.64) | 51.92 (9.25)  | 53.23 (9.35)  |
| <i>Risk<sub>i</sub></i>           | 2.68 (1.39)   | 2.71 (1.37)   | 2.70 (1.36)  | 3.21 (1.64)    | 2.83 (1.55)  | 3.02 (1.59)   | 2.86 (1.48)   |

Cash Payout indicates cash payment made to participants, including a \$7.00 show-up fee.

Charity Donation indicates average charity donation amount made by participants who chose to donate to charity, including the administrator match.

Variable Definitions

|                                     |   |
|-------------------------------------|---|
| <i>Altruism<sub>i</sub></i>         | Ranges in value from 20 to 100. Higher values represent greater levels of altruism;                                     |
| <i>CooperateCount<sub>i,r</sub></i> | Ranges in value from zero to 40. Number of times participant <i>i</i> chooses to cooperate across 40 rounds;            |
| <i>CSRInvestCount<sub>i</sub></i>   | Ranges in value from zero to four. Number of times participant <i>i</i> chooses to donate to charity across four parts; |
| <i>CSRPreference<sub>i</sub></i>    | Ranges in value from one to ten. Higher values represent stronger preferences for corporate social responsibility;      |
| <i>CSRValues<sub>i</sub></i>        | Ranges in value from one to 15. Higher values represent more positive beliefs regarding people who donate to charity;   |
| <i>Prosocial<sub>i</sub></i>        | An indicator variable equal to one (zero) if participant <i>i</i> is classified as prosocial (proself);                 |
| <i>Risk<sub>i</sub></i>             | Ranges in value from one to five. Higher values represent preferences for greater risk.                                 |

range from zero to four, with higher values representing more frequent CSR investment. As reported in Table 1, participants donate to charity an average of 1.76 out of four times. Spearman rank correlation coefficients are reported in Table 2. Results suggest that individual preferences for CSR are positively correlated with CSR investment ( $r = 0.265$ ,  $p = 0.010$ ), indicating that the choice to donate to charity is a reasonable proxy for CSR investment.<sup>7</sup>

Participants rated their satisfaction with the charity options on a scale of one (very dissatisfied) to four (very satisfied). The mean charity satisfaction rating is 3.28, indicating that on average, participants were satisfied with the charity options. Participants who invested in CSR donated an average of \$1.42 of their own payout to charity, which was doubled by the administrator. In total, \$123.75 was donated to the seven charities, including the administrator match. The percentage of charity donations made to each charity are as follows: 16.4% to American Humane Association, 14.6% to American Red Cross, 11.5% to Amnesty International, 18.8% to Habitat for Humanity, 14.0% to Sierra Club, 15.8% to Susan G. Komen for the Cure, and 9.1% to Wounded Warrior Project. Of the 94 students who participated in the experiment, 33 (35.1%) requested a receipt for the charitable donations be emailed to them.

#### 5.4. Descriptive Statistics

Two experimental sessions were conducted for the Disclosure treatment (Sessions A and B) and two experimental sessions were conducted for the Non-Disclosure treatment (Sessions C and D). Descriptive statistics are reported by session in Table 2. The sessions were relatively balanced, with 22, 24, 24, and 24 participants in Sessions A, B, C, and D, respectively. On average, participants chose to invest in CSR 1.76 times.  $CooperateCount_i$  is a continuous

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<sup>7</sup> Throughout the paper, reported correlations are based on a single observation per participant versus one observation per participant-round. This methodological choice was made to reduce bias towards finding a significant correlation between variables of interest.

**Table 2: Spearman Rank Correlation Coefficients (p-values)**

|                                   | <i>CSRInvest<br/>Count<sub>i</sub></i> | <i>Cooperate<br/>Count<sub>i</sub></i> | <i>Disclosure<sub>i</sub></i> | <i>Prosocial<sub>i</sub></i> | <i>Altruism<sub>i</sub></i> | <i>CSRPreference<sub>i</sub></i> | <i>CSRValues<sub>i</sub></i> | <i>Risk<sub>i</sub></i> | <i>Gender<sub>i</sub></i> |
|-----------------------------------|--|--|-------------------------------|------------------------------|-----------------------------|----------------------------------|------------------------------|-------------------------|---------------------------|
| <i>CSRInvestCount<sub>i</sub></i> | 1.000                                  | -0.025<br>(0.812)                      | 0.176*<br>(0.090)             | 0.162<br>(0.119)             | -0.027<br>(0.797)           | 0.265***<br>(0.010)              | 0.161<br>(0.122)             | 0.129<br>(0.214)        | 0.131<br>(0.207)          |
| <i>CooperateCount<sub>i</sub></i> |  | 1.000                                  | -0.205**<br>(0.048)           | -0.107<br>(0.306)            | -0.090<br>(0.387)           | 0.016<br>(0.882)                 | 0.069<br>(0.511)             | 0.263**<br>(0.011)      | -0.112<br>(0.284)         |
| <i>Disclosure<sub>i</sub></i>     |  |  | 1.000                         | 0.126<br>(0.227)             | 0.145<br>(0.164)            | 0.088<br>(0.397)                 | 0.037<br>(0.726)             | -0.110<br>(0.291)       | -0.018<br>(0.867)         |
| <i>Prosocial<sub>i</sub></i>      |  |  |                               | 1.000                        | 0.126<br>(0.225)            | 0.115<br>(0.268)                 | -0.014<br>(0.890)            | -0.045<br>(0.665)       | 0.032<br>(0.758)          |
| <i>Altruism<sub>i</sub></i>       |  |  |                               |                              | 1.000                       | 0.093<br>(0.371)                 | 0.141<br>(0.175)             | -0.229**<br>(0.026)     | -0.003<br>(0.980)         |
| <i>CSRPreference<sub>i</sub></i>  |  |  |                               |                              |                             | 1.000                            | 0.230<br>(0.026)             | 0.052<br>(0.618)        | 0.203**<br>(0.049)        |
| <i>CSRValues<sub>i</sub></i>      |  |  |                               |                              |                             |                                  | 1.000                        | -0.013<br>(0.901)       | 0.108<br>(0.302)          |
| <i>Risk<sub>i</sub></i>           |  |  |                               |                              |                             |                                  |                              | 1.000                   | -0.194*<br>(0.060)        |
| <i>Gender<sub>i</sub></i>         |  |  |                               |                              |                             |                                  |                              |                         | 1.000                     |

Number of participants = 94  
Number of observations = 94

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

#### Variable Definitions

|                                   |   |
|-----------------------------------|---|
| <i>Altruism<sub>i</sub></i>       | Ranges in value from 20 to 100. Higher values represent greater levels of altruism;   |
| <i>CooperateCount<sub>i</sub></i> | Ranges in value from zero to 40. Number of times participant <i>i</i> chooses to cooperate across 40 rounds;                      |
| <i>CSRInvestCount<sub>i</sub></i> | Ranges in value from zero to four. Number of times participant <i>i</i> chooses to donate to charity across four parts;           |
| <i>CSRPreference<sub>i</sub></i>  | Ranges in value from one to ten. Higher values represent stronger preferences for corporate social responsibility;                |
| <i>CSRValues<sub>i</sub></i>      | Ranges in value from one to 15. Higher values represent more positive beliefs regarding people who donate to charity;             |
| <i>Disclosure<sub>i</sub></i>     | Indicator variable equal to one (zero) if participant <i>i</i> is randomly assigned to the Disclosure (Non-Disclosure) treatment; |
| <i>Prosocial<sub>i</sub></i>      | An indicator variable equal to one (zero) if participant <i>i</i> is classified as prosocial (proself);                           |
| <i>Gender<sub>i</sub></i>         | An indicator variable equal to one (zero) if participant is female (male);  |
| <i>Risk<sub>i</sub></i>           | Ranges in value from one to five. Higher values represent preferences for greater risk.   |

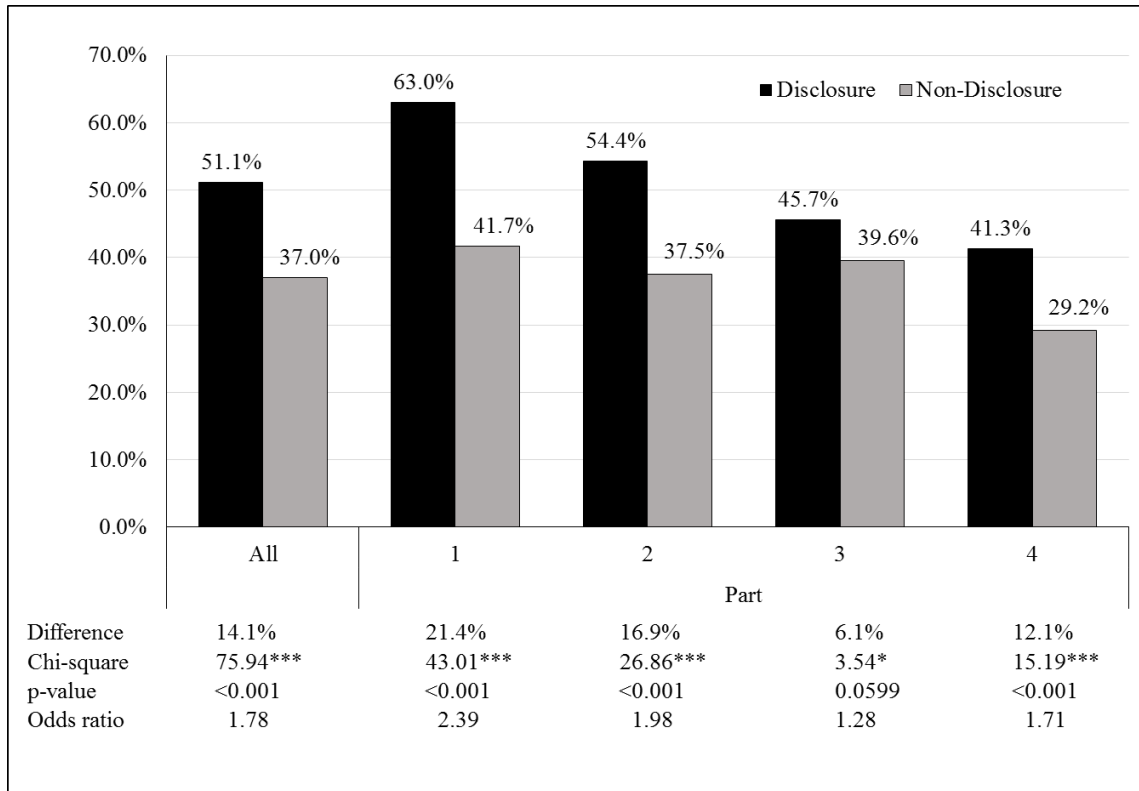
variable equal to the count of times a participant chooses to cooperate across forty rounds and ranges in value from zero to 40. The mean value for *CooperateCount<sub>i</sub>* equals 19.10, indicating that on average, participants cooperate almost half of the time.

## 5.5. Test of Hypotheses

### 5.5.1. *The Effect of CSR Disclosure on CSR Investment*

Hypothesis 1 predicts that CSR investment is higher when CSR is disclosed than when CSR is not disclosed. When CSR is disclosed, participants may invest in CSR for two non-mutually exclusive reasons. They may invest in CSR due to their individual preferences for CSR. Additionally, participants may invest in CSR to signal their willingness to cooperate to their partner. Even though CSR is costly, participants earn \$6.30 if they both invest in CSR and cooperate versus \$5.00 if they do not invest in CSR and do not cooperate. In the CSR Disclosure treatment, some participants may view the cost of investing in CSR as a signaling cost.

As shown in Figure 3, consistent with Hypothesis 1, participants invest in CSR 51.1% of the time in the Disclosure treatment versus 37.0% of the time in the Non-Disclosure treatment ( $\chi^2 = 75.94, p < 0.001$ ). The odds a participant will invest in CSR are 1.78 times higher when CSR investment is disclosed versus when CSR investment is not disclosed. Participants make a CSR investment decision at the start of Parts One, Two, Three, and Four. Two interesting patterns are evident across the four parts. First, CSR investment decreases over time in both the Disclosure and Non-Disclosure treatments. Second, CSR investment is always higher in the Disclosure treatment than in the Non-Disclosure treatment. In Parts One, Two, and Four this difference is highly significant ( $p < 0.001$ ). In Part Three, the difference is marginally significant ( $p = 0.056$ ). In summary, results support Hypothesis 1, CSR investment is higher when CSR is disclosed versus when CSR is not disclosed.



**Figure 3: CSR Investment Frequency**

Number of participants = 94

Number of observations = 376

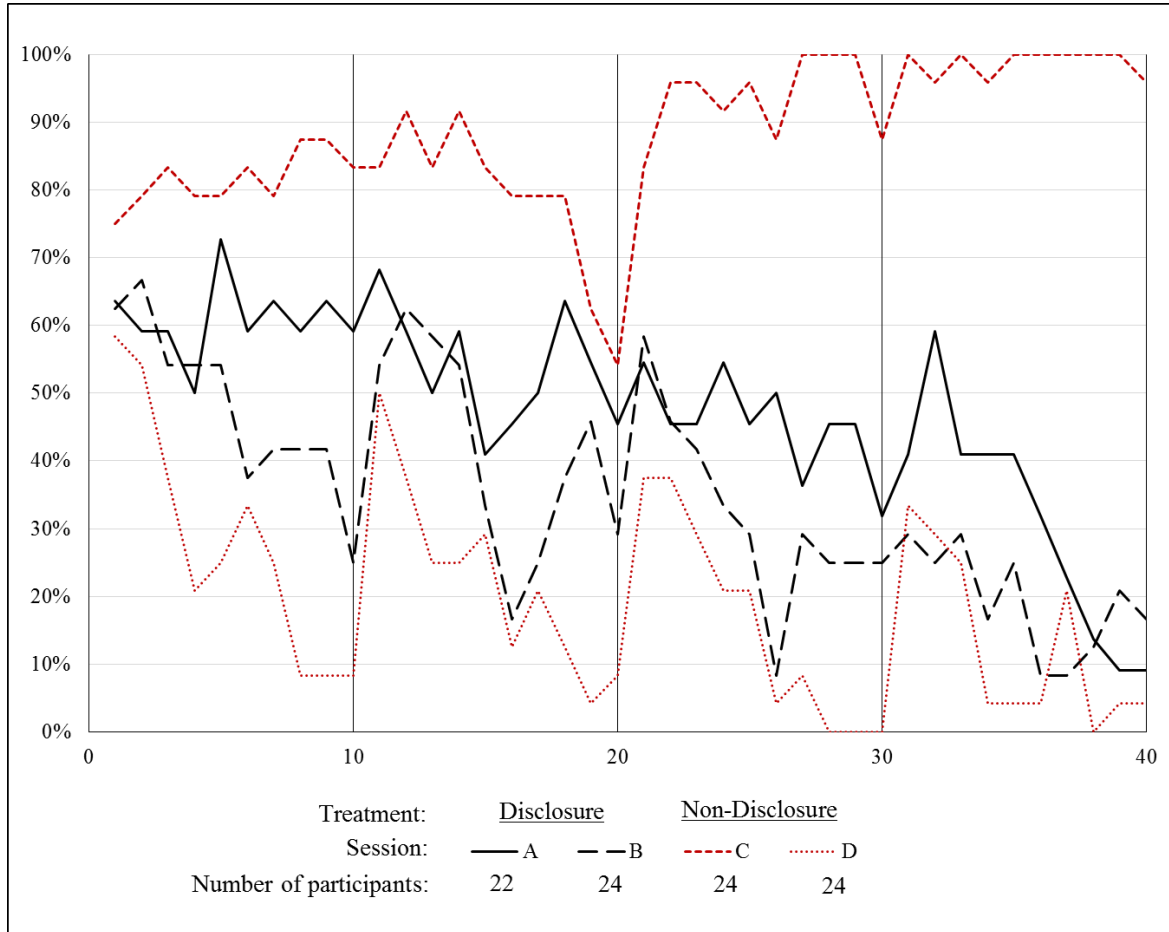
\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

CSR Investment frequency is equal to the count of  $CSRInvest_{i,t}$  equals one observations; where  $CSRInvest_{i,t}$  is an indicator variable equal to one (zero) if participant  $i$  chooses to donate (not donate) to charity in part  $t$ ; where  $t = (1, 2, 3, 4)$ .

### 5.5.2. The Effect of CSR Disclosure on Cooperation

Hypothesis 2 predicts that managers are more cooperative when CSR is disclosed than when CSR is not disclosed. As shown in Figure 4, cooperation in the two Disclosure treatment sessions (Sessions A and B) is higher than in one of the Non-Disclosure sessions (Session D), but lower than the other Non-Disclosure session (Session C). Further, cooperation deteriorates over time in three of the four experimental sessions. In the first five rounds participants cooperate approximately 60% of the time. In Sessions A, B, and D there is a strong decline in cooperation

over time and by the last five rounds, the frequency of cooperation is approximately 10%. In Session C, the participants converge to the payoff-dominant strategy, with 99% of participants cooperating in the final five rounds.



**Figure 4: Cooperation by Round, Frequency**

Cooperation frequency is equal to the count of  $Cooperate_{i,r}$  equals one observations in each round by session; where  $Cooperate_{i,r}$  is an indicator variable equal to one (zero) if participant  $i$  chooses to cooperate (not cooperate) in round  $r$ , where  $r = (1, 2, 3, \dots, 40)$ .

It is important to note that the stag hunt task has two pure strategy equilibria, mutual cooperation (i.e. the payoff dominant strategy) and mutual non-cooperation (i.e. the risk dominant strategy), and one mixed strategy equilibrium, in which each participants cooperate



with probability  $p$  and do not cooperate with probability  $1 - p$ .<sup>8</sup> I predict that in the Disclosure treatment, CSR investment is a credible signal of cooperativeness and will help to establish a convention of cooperation among CSR investors. However, in the Non-Disclosure treatment, there is no opportunity for signaling. Thus, when there are multiple equilibria, equilibrium analysis fails to predict which, if any equilibria will emerge. Experience teaches participants to play either the risk-dominant action or the payoff-dominant action (e.g. Rankin et al. 2000; Bosworth 2013). The pattern of results seen in the Non-Disclosure treatment is consistent with prior studies which demonstrate variance across experimental sessions in terms of converge to the payoff dominant equilibria, the risk dominant equilibria, or neither (e.g. Battalio et al. 2001).

Hypothesis 2 predicts that the overall level of cooperation will be higher when CSR investment is disclosed. Table 3 reports the frequency of cooperation,  $Cooperate_{i,r}$ , an indicator variable equal to one (zero) if participant  $i$  chooses to cooperate (not cooperate) in round  $r$ . Contrary to predictions, the frequency of cooperation is higher when CSR investment is not disclosed versus when CSR investment is disclosed (54.0% versus 41.2%,  $\chi^2 = 61.845$ ,  $p < 0.001$ , not tabulated). Further, as reported in Table 1, the mean level of cooperation,  $CooperateCount_i$  in the Disclosure treatment and the Non-Disclosure treatment are 16.48 and 21.60, respectively. Results suggest that cooperation is higher in the Non-Disclosure treatment than in the Disclosure treatment ( $t\text{-stat} = 2.01$ ,  $p = 0.048$ , not tabulated). Preliminary findings do not support Hypothesis 2.

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<sup>8</sup> Participants would converge upon the mixed strategy equilibrium when they are indifferent between the payoffs from mutual cooperation and mutual non-cooperation. As described in the experimental design, given the payouts in my dissertation, the indifference point is  $p = 5/7$ . So the mixed strategy equilibrium in my task is where participants cooperate with 71% probability and do not cooperate with 29% probability. Note that the payoffs from the mixed strategy are (\$5, \$5). Any unilateral deviation from the mixed strategy equilibrium gives the deviator the same payoff of \$5, so she can't do strictly better by deviating.

As shown in Table 3, the frequency of cooperation in the two Disclosure sessions A and B is 47.7% and 35.2%, respectively. The frequency of cooperation in the two Non-Disclosure sessions C and D is 88.2% and 19.8%, respectively. Given the differences in cooperation in sessions within the same Disclosure treatment, I compare the level of cooperation,  $CooperateCount_i$  across the two Disclosure (Non-Disclosure) sessions. As reported in Table 1, on average, the level of cooperation in the Disclosure treatment Sessions A and B is 19.09 and 14.08, respectively. This difference is marginally significant ( $t\text{-stat} = 1.41, p = 0.076$ , not tabulated). On average, the level of cooperation in the Non-Disclosure treatment Sessions C and

**Table 3: Cooperation Frequency (Observations)**

|                  |                  | Disclosure |        |         | Non-Disclosure |        |         |             |
|------------------|------------------|------------|--------|---------|----------------|--------|---------|-------------|
|                  |                  | Session    |        | Total   | Session        |        | Total   | Grand Total |
|                  |                  | A          | B      |         | C              | D      |         |             |
|                  |                  | n = 22     | n = 24 | n = 46  | n = 24         | n = 24 | n = 48  | n = 94      |
| <b>Manager 1</b> | <b>Manager 2</b> |            |        |         |                |        |         |             |
| CSR Investor     | CSR Investor     | 57.3%      | 49.4%  | 54.7%   | 83.0%          | 21.0%  | 45.5%   | 51.5%       |
|                  |                  | (330)      | (162)  | (492)   | (106)          | (162)  | (268)   | (760)       |
|                  | Non-CSR Investor | 52.0%      | 30.0%  | 39.7%   | 85.3%          | 19.7%  | 52.9%   | 46.3%       |
|                  |                  | (200)      | (248)  | (448)   | (224)          | (218)  | (442)   | (890)       |
|                  | Total            | 55.3%      | 37.6%  | 47.6%   | 84.6%          | 20.3%  | 50.1%   | 48.7%       |
|                  |                  | (530)      | (410)  | (940)   | (330)          | (380)  | (710)   | (1,650)     |
| <b>Manager 1</b> | <b>Manager 2</b> |            |        |         |                |        |         |             |
| Non-CSR Investor | CSR Investor     | 42.0%      | 31.9%  | 36.4%   | 88.9%          | 19.7%  | 54.8%   | 45.5%       |
|                  |                  | (200)      | (248)  | (448)   | (224)          | (218)  | (442)   | (890)       |
|                  | Non-CSR Investor | 28.7%      | 34.8%  | 32.7%   | 90.9%          | 19.3%  | 57.2%   | 48.1%       |
|                  |                  | (150)      | (302)  | (452)   | (406)          | (362)  | (768)   | (1,220)     |
|                  | Total            | 36.3%      | 33.5%  | 34.6%   | 90.2%          | 19.5%  | 56.3%   | 47.0%       |
|                  |                  | (350)      | (550)  | (900)   | (630)          | (580)  | (1,210) | (2,110)     |
| <b>All</b>       |                  | 47.7%      | 35.2%  | 41.2%   | 88.2%          | 19.8%  | 54.0%   | 47.7%       |
|                  |                  | (880)      | (960)  | (1,840) | (960)          | (960)  | (1,920) | (3,760)     |

Cooperation is calculated as the frequency of  $Cooperate_{i,r}$  equals one observations.  $Cooperate_{i,r}$  is an indicator variable equal to one (zero) if participant  $i$  chooses to cooperate (not cooperate) in round  $r$ , where  $r = (1, 2, 3, \dots, 40)$ ;

Participants are classified as a CSR investor (Non-CSR investor) if  $CSRInvest_{i,t}$  equals one (zero).  $CSRInvest_{i,t}$  is an indicator variable equal to one (zero) if the participant  $i$  chooses to donate to charity in part  $t$ ; where  $t = (1, 2, 3, 4)$ .

D is 35.29 and 7.92, respectively. This difference is highly significant ( $t\text{-stat} = 20.66$ ,  $p = <0.001$ , not tabulated).<sup>9</sup>

Next, I discuss multivariate tests of Hypothesis 2. Given there is a significant difference in the cooperation across sessions, I estimate the following regression model:

$$\text{CooperateCount}_i = \alpha_0 + \alpha_1 \text{Disclosure}_i + \alpha_2 \text{Session}_i + \alpha_3 \text{Risk}_i + \varepsilon \quad (1)$$

As shown in Table 2, risk preferences are highly correlated with the cooperation ( $r = 0.263$ ,  $p = 0.011$ ). Thus,  $\text{Risk}_i$  is included in the model. A positive and significant  $\alpha_1$  would provide support for H2. However, given the univariate results,  $\alpha_1$  is most likely negative. Table 4 presents the empirical results. Consistent with the univariate results,  $\alpha_1$  and  $\alpha_2$  are negative. The effect of CSR Disclosure is marginally significant ( $t\text{-stat} = -1.82$ ,  $p = 0.072$ ). Further,  $\text{Session}_i$  is negative and highly significant ( $t\text{-stat} = -4.283$ ,  $p < 0.001$ ). As predicted, risk preferences are positively associated with cooperation ( $t\text{-stat} = 1.982$ ,  $p = 0.013$ ).<sup>10</sup> Combined, the univariate and multivariate results suggest that CSR disclosure does not lead to an overall higher level of cooperation. Together, univariate and multivariate results do not provide support for Hypothesis 2.

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<sup>9</sup> I examined whether the convergence to the payoff dominant strategy equilibria in Session C and the risk dominant strategy in Session D were, at least partially explained by systematic differences in stable, individual variables across sessions (altruism, social value orientation, CSR values, risk preferences, and gender). I find that there are no significant differences in individual difference variables across the Non-Disclosure treatments.

<sup>10</sup> I also conducted regression analysis with all of the covariate variables in this study (altruism, social value orientation, and CSR values). The covariates were not statistically significant in the analyses. A discussion of the covariates is included in the Additional Analysis section.

**Table 4: Multivariate Test of Cooperation by Disclosure (H2)**

$$CooperateCount_i = \alpha_0 + \alpha_1 Disclosure_i + \alpha_2 Session_i + \alpha_3 Risk_i + \varepsilon \quad (1)$$

| Explanatory Variables         | Pred. Sign | Coefficient | Std. Error | t-stat | p-value |
|-------------------------------|------------|-------------|------------|--------|---------|
| <i>Intercept</i>              |            | 26.325***   | 3.887      | 6.77   | <0.001  |
| <i>Disclosure<sub>i</sub></i> | +          | -4.202*     | 2.307      | -1.82  | 0.072   |
| <i>Session<sub>i</sub></i>    | 0          | -4.283***   | 1.035      | -4.14  | <0.001  |
| <i>Risk<sub>i</sub></i>       | +          | 1.982**     | 0.781      | 2.54   | 0.013   |
| Adj. R <sup>2</sup>           |            | 0.244       |            |        |         |
| Number of participants        |            | 94          |            |        |         |
| Number of observations        |            | 94          |            |        |         |

Table 4 presents the results of a regression model employed to examine cooperation.

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Variable Definitions:

|                                   |  |
|-----------------------------------|--|
| <i>CooperateCount<sub>i</sub></i> | Ranges in value from zero to 40. Number of times participant <i>i</i> chooses to cooperate across 40 rounds;   |
| <i>Disclosure<sub>i</sub></i>     | Indicator variable equal to one (zero) if participant <i>i</i> is randomly assigned to the Disclosure (Non-Disclosure) treatment;                                  |
| <i>Risk<sub>i</sub></i>           | Ranges in value from one to five. Higher values represent preferences for greater risk;  |
| <i>Session<sub>i</sub></i>        | A class variable that ranges in value from A to D. Participants in Sessions A and B (C and D) were randomly assigned to the Disclosure (Non-Disclosure) treatment. |

### 5.5.3. Cooperation when CSR is Disclosed

Hypothesis 3 posits that when CSR investment is disclosed, cooperation is highest among CSR investor / CSR investor collaborations. As shown in Table 3, CSR investors cooperate 54.7% of the time when they are partnered with CSR investors versus 39.7% of the time when they are partnered with Non-CSR investors ( $\chi^2 = 20.99, p < 0.001$ , not tabulated). When CSR investment is disclosed, the odds a CSR investor will cooperate are 1.8 times as high when she is partnered with a CSR investor versus when she is partnered with a non-CSR investor. When CSR investment is disclosed, Non-CSR investors are less cooperative than CSR investors (47.6%. versus 34.6%,  $\chi^2 = 32.06, p < 0.001$ , not tabulated). Further, unlike CSR investors, Non-

CSR investors do not alter their behavior based on their partner's CSR investment choice. There is no difference in Non-CSR investors' propensity to cooperate with either a CSR investor or a Non-CSR investor (36.4% versus 32.7%,  $\chi^2 = 1.32$ ,  $p = 0.251$ , not tabulated).

Univariate results provide strong preliminary support for H3. When CSR investment is disclosed, the level of cooperation is highest among collaborations between CSR investors. To further test H3, I estimate the following logistic regression model clustered at the participant level with participant as the repeated measure in the Disclosure treatment:

$$\begin{aligned} \text{Prob}(\text{Cooperate}_{i,t}) = & \alpha_0 + \alpha_1 \text{CSRInvest}_{i,t} + \alpha_2 \text{PartnerCSRInvest}_{-i,t} \\ & + \alpha_3 \text{CSRInvest}_{i,t} * \text{PartnerCSRInvest}_{-i,t} + \alpha_4 \text{Risk}_i \end{aligned} \quad (2)$$

H3 predicts a positive interactive effect of  $\text{CSRInvest}_{i,t} * \text{PartnerCSRInvest}_{-i,t}$  in the Disclosure treatment. Panel A of Table 5 presents results of the logistic regression model estimated in the Disclosure treatment. The main effect of CSR investment,  $\text{CSRInvest}_{i,t}$  is positive and highly significant ( $z\text{-score} = 3.03$ ,  $p = 0.002$ ). The main effect of partner CSR investment,  $\text{PartnerCSRInvest}_{-i,t}$  is not significant ( $z\text{-score} = 0.79$ ,  $p = 0.429$ ). The main variable of interest, the interaction term,  $\text{CSRInvest}_{i,t} * \text{PartnerCSRInvest}_{-i,t}$  is positive and significant ( $z\text{-score} = 2.36$ ,  $p = 0.018$ ).  $\text{Risk}_i$  is positively associated with cooperation ( $z\text{-score} = 2.09$ ,  $p = 0.036$ ).<sup>11</sup> These results suggest that CSR investors are more cooperative than Non-CSR investors. Further, when CSR investors are partnered with a CSR investors they are even more cooperative. In summary, univariate and multivariate results support H3 and suggest that when CSR is disclosed, the most cooperative collaborations are between CSR investors.

To further investigate H3, I examine the level of cooperation failure and success within business collaborations when CSR investment is disclosed. Given both partners must cooperate

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<sup>11</sup> I also conducted logistic regression analysis with all of the covariate variables in this study (e.g. demographics, social value orientation, altruism, etc.). The covariates were not statistically significant in the analyses.

to achieve the payoff dominant equilibria, cooperation failure is defined as a business collaboration in which either no partner cooperated or one partner cooperated. Cooperation success is therefore defined as a business collaboration in which both partners cooperate. Empirical results are presented for the Disclosure treatment sessions A and B in Figure 5, Panels A and B. Consistent with earlier findings, cooperation success is highest among CSR investor / CSR investor collaborations. In Session A, CSR investor / CSR investor collaborations are successful 34% of the time versus 26% for CSR investor / Non-CSR investor collaborations and 8% for Non-CSR investor / Non-CSR investor collaborations. In Session B, CSR investor / CSR investor collaborations are successful 26% of the time versus 11% for CSR investor / Non-CSR investor collaborations and 17% for Non-CSR investor / Non-CSR investor collaborations.

**Table 5: Multivariate Tests of Cooperation by CSR Investment (H3 and H4)  
Panel A: Disclosure Treatment**

$$\text{Prob}(\text{Cooperate}_{i,r}) = \alpha_0 + \alpha_1 \text{CSRInvest}_{i,t} + \alpha_2 \text{PartnerCSRInvest}_{i,t} + \alpha_3 \text{CSRInvest}_{i,t} * \text{PartnerCSRInvest}_{i,t} + \alpha_4 \text{Risk}_i \quad (2)$$

| Explanatory Variables   | Pred. Sign | Coefficient | Std. Error | z-score | p-value |
|---|------------|-------------|------------|---------|---------|
| <i>Intercept</i>  |            | -1.83556*** | 0.442      | -4.15   | <0.001  |
| <i>CSRInvest<sub>i,t</sub></i>                                  | +          | 0.6657***   | 0.220      | 3.03    | 0.002   |
| <i>PartnerCSRInvest<sub>i,t</sub></i>                           | +          | 0.1243      | 0.157      | 0.79    | 0.429   |
| <i>CSRInvest<sub>i,t</sub> * PartnerCSRInvest<sub>i,t</sub></i> | +          | 0.5251**    | 0.222      | 2.36    | 0.018   |
| <i>Risk<sub>i</sub></i>   | +          | 0.2950**    | 0.141      | 2.09    | 0.036   |
| Number of participants  |            | 46          |            |         |         |
| Number of observations  |            | 1,840       |            |         |         |
| Wald $\chi^2$   |            | 47.32       |            |         |         |
| p-value   |            | <0.0001     |            |         |         |

Table 5 Panel A presents the results of a repeated measures logistic regression model employed to examine cooperation in the Disclosure treatment.

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Variable Definitions:

|                           |  |
|---------------------------|--|
| $Cooperate_{i,r}$         | An indicator variable equal to one (zero) if participant $i$ chooses to cooperate (not cooperate) in round $r$ , where $r = (1, 2, 3, \dots, 40)$ ;          |
| $CSRInvest_{i,t}$         | An indicator variable equal to one (zero) if the participant $i$ chooses to donate to charity in part $t$ , where $t = (1, 2, 3, 4)$ ;                       |
| $PartnerCSRInvest_{-i,t}$ | An indicator variable equal to one (zero) if a participant's partner $-i$ chooses to donate (not donate) to charity in part $t$ , where $t = (1, 2, 3, 4)$ ; |
| $Risk_i$                  | Ranges in value from one to five. Higher values represent preferences for greater risk.  |

**Panel B: Non-Disclosure Treatment**

$$\text{Prob}(Cooperate_{i,r}) = \alpha_0 + \alpha_1 CSRInvest_{i,t} + \alpha_2 PartnerCSRInvest_{-i,t} + \alpha_3 CSRInvest_{i,t} * PartnerCSRInvest_{-i,t} + \alpha_4 Risk_i \quad (2)$$

| Explanatory Variables                       | Pred. Sign | Coefficient | Std. Error | z-score | p-value |
|---|------------|-------------|------------|---------|---------|
| <i>Intercept</i>                            |            | 0.3175      | 0.822      | -0.39   | 0.699   |
| $CSRInvest_{i,t}$                           | 0          | 0.0033      | 0.220      | 0.02    | 0.988   |
| $PartnerCSRInvest_{-i,t}$                   | 0          | -0.0260     | 0.176      | -0.15   | 0.883   |
| $CSRInvest_{i,t} * PartnerCSRInvest_{-i,t}$ | 0          | -0.0483     | 0.280      | -0.17   | 0.863   |
| $Risk_i$                                    | +          | 0.3010      | 0.240      | 1.25    | 0.210   |
| Number of participants                      |            | 46          |            |         |         |
| Number of observations                      |            | 1,840       |            |         |         |
| Wald $\chi^2$                               |            | 47.32       |            |         |         |
| p-value                                     |            | <0.0001     |            |         |         |

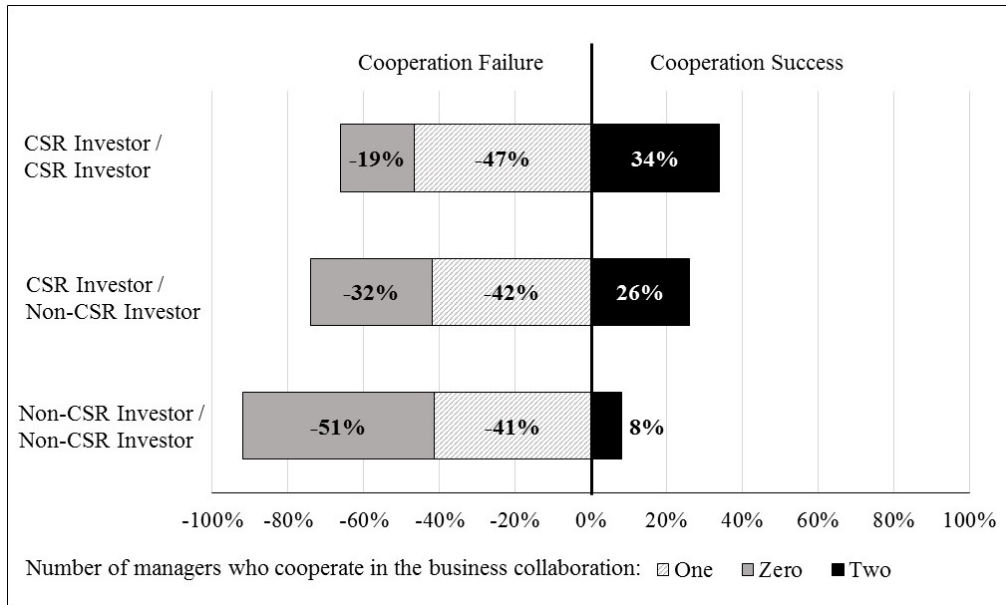
Table 5 Panel B presents the results of a repeated measures logistic regression model employed to examine cooperation in the Non-Disclosure treatment.

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Variable Definitions:

|                           |   |
|---------------------------|---|
| $Cooperate_{i,r}$         | An indicator variable equal to one (zero) if participant $i$ chooses to cooperate (not cooperate) in round $r$ , where $r = (1, 2, 3, \dots, 40)$ ;             |
| $CSRInvest_{i,t}$         | An indicator variable equal to one (zero) if participant $i$ donates (does not donate) to charity in part $t$ , where $t = (1, 2, 3, \dots, 40)$ ;              |
| $PartnerCSRInvest_{-i,t}$ | An indicator variable equal to one (zero) if a participant's partner $-i$ donates (does not donate) to charity in part $t$ , where $t = (1, 2, 3, \dots, 40)$ ; |
| $Risk_i$                  | Ranges in value from one to five. Higher values represent preferences for greater risk.   |

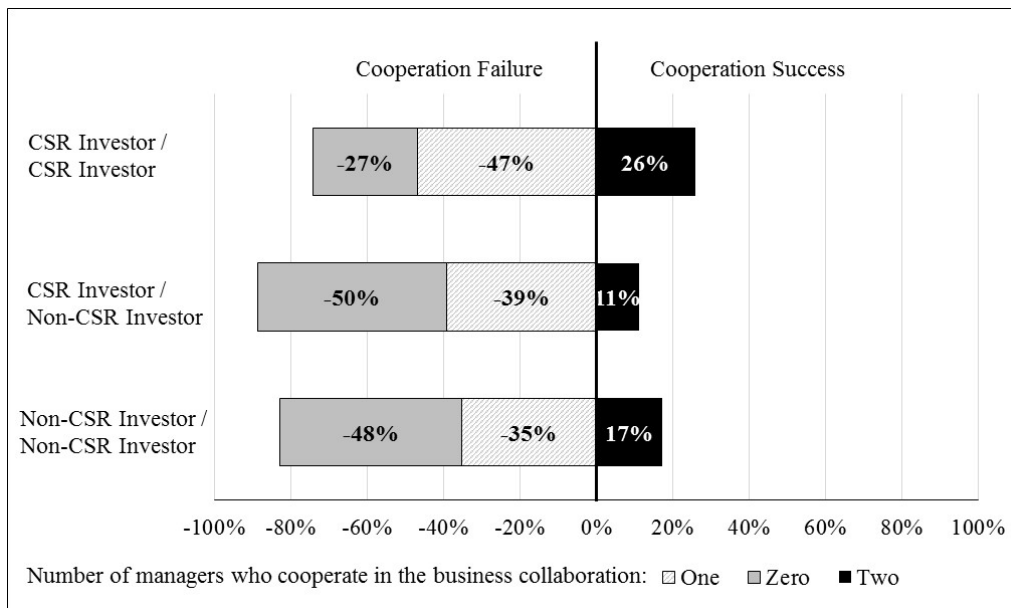
Results suggest that disclosure of CSR investment is an effective signaling mechanism that facilitates cooperation in business collaborations. When CSR investment is disclosed, the odds of cooperation success are 2.3 times higher when both partners invest in CSR versus when one or both partners does not invest in CSR ( $\chi^2 = 47.58, p < 0.001$ , not tabulated).



**Figure 5: Cooperation in Business Collaborations**  
**Panel A: Disclosure Treatment – Session A**

Number of participants = 22, Number of observations = 440

Participants are classified as a CSR investor (Non-CSR investor) if  $CSRInvest_{i,t}$  equals one (zero).  $CSRInvest_{i,t}$  is an indicator variable equal to one (zero) if the participant  $i$  chooses to donate to charity in part  $t$ ; where  $t = (1, 2, 3, 4)$ .

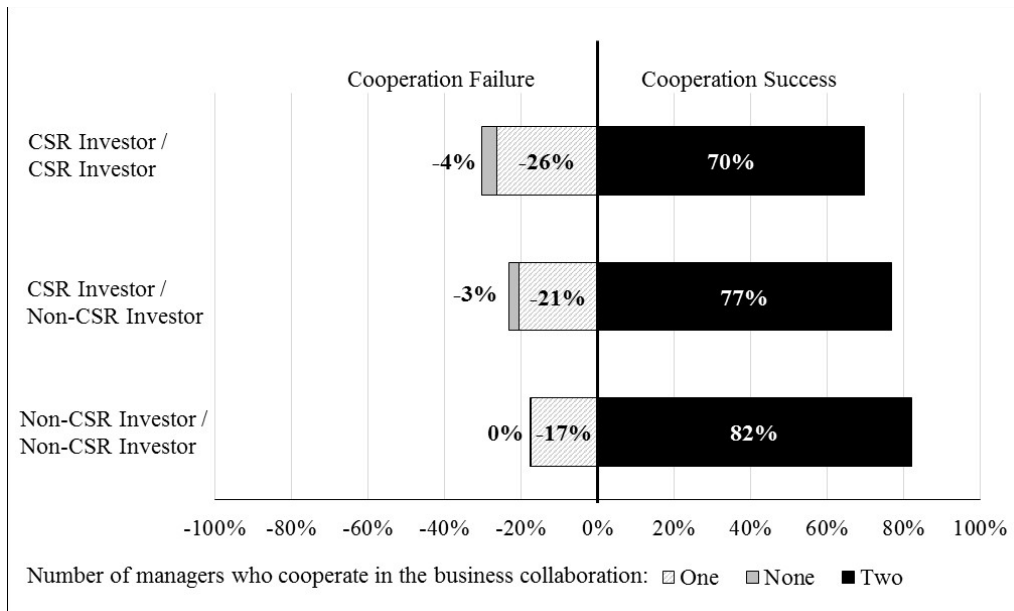


**Panel B: Disclosure Treatment – Session B**

Number of participants = 24, Number of observations = 480

Participants are classified as a CSR investor (Non-CSR investor) if  $CSRInvest_{i,t}$  equals one (zero).  $CSRInvest_{i,t}$  is an indicator variable equal to one (zero) if the participant  $i$  chooses to donate to charity in part  $t$ ; where  $t = (1, 2, 3, 4)$ .

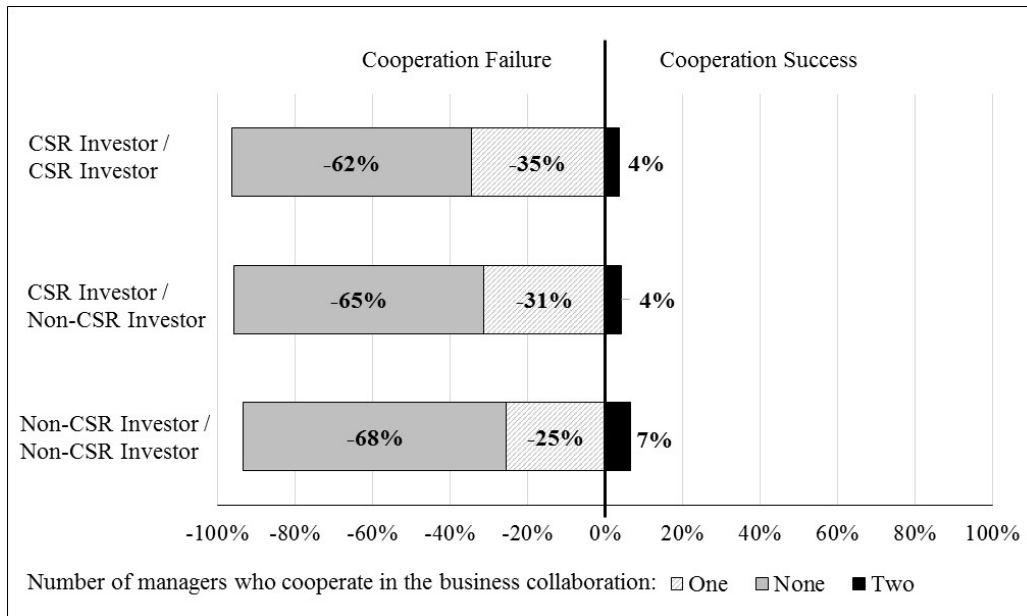




**Panel C: Non-Disclosure Treatment – Session C**

Number of participants = 24, Number of observations = 480

Participants are classified as a CSR investor (Non-CSR investor) if  $CSRInvest_{i,t}$  equals one (zero).  $CSRInvest_{i,t}$  is an indicator variable equal to one (zero) if the participant  $i$  chooses to donate to charity in part  $t$ , where  $t = (1, 2, 3, 4)$ .



**Panel D: Non-Disclosure Treatment – Session D**

Number of participants = 24, Number of observations = 480

Participants are classified as a CSR investor (Non-CSR investor) if  $CSRInvest_{i,t}$  equals one (zero).  $CSRInvest_{i,t}$  is an indicator variable equal to one (zero) if the participant  $i$  chooses to donate to charity in part  $t$ , where  $t = (1, 2, 3, 4)$ .

#### 5.5.4. Cooperation when CSR is Not Disclosed

Hypothesis 4 posits that when CSR investment is not disclosed, CSR investors are no more likely to cooperate in business collaborations than Non-CSR investors. As shown in Table 3, on average, CSR investors cooperate *less* frequently than Non-CSR investors when CSR investment is not disclosed (50.1% versus 56.3%,  $\chi^2 = 6.79$ ,  $p = 0.009$ , not tabulated). Further, Non-CSR investor / Non-CSR investor collaborations have the highest level of cooperation and CSR investor / CSR investor collaboration have the lowest level of cooperation (57.2% versus 45.5%,  $\chi^2 = 10.84$ ,  $p < 0.001$ , not tabulated). Based on the univariate results, I fail to reject the null H4.

To further test H4, I estimate the following logistic regression model clustered at the participant level with participant as the repeated measure in the Non-Disclosure treatment:

$$\begin{aligned} \text{Prob}(\text{Cooperate}_{i,r}) = & \alpha_0 + \alpha_1 \text{CSRInvest}_{i,t} + \alpha_2 \text{PartnerCSRInvest}_{-i,t} \\ & + \alpha_3 \text{CSRInvest}_{i,t} * \text{PartnerCSRInvest}_{-i,t} + \alpha_4 \text{Risk}_i \end{aligned} \quad (2)$$

H4 predicts a non-significant main effect for  $\text{CSRInvest}_{i,t}$  and  $\text{PartnerCSRInvest}_{-i,t}$ , and a non-significant interactive effect of  $\text{CSRInvest}_{i,t} * \text{PartnerCSRInvest}_{-i,t}$  in the Non-Disclosure treatment. Panel B of Table 5 presents results of the logistic regression model estimated in the Non-Disclosure treatment. Neither the main effects of  $\text{CSRInvest}_{i,t}$  and  $\text{PartnerCSRInvest}_{-i,t}$ , nor the interaction term,  $\text{CSRInvest}_{i,t} * \text{PartnerCSRInvest}_{-i,t}$  is significant. These results suggest that when CSR investment is not disclosed, CSR investors are no more cooperative than Non-CSR investors. In summary, based on univariate and multivariate results, I fail to reject the null H4.

Contrary to expectations,  $\text{Risk}_i$  is also not significant.<sup>12</sup> Additionally, I examine the level of business collaboration cooperation failure and success when CSR investment is not disclosed.

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<sup>12</sup> I also conducted logistic regression analysis with all of the covariate variables in this study (e.g. demographics, social value orientation, altruism, etc.). The covariates were not statistically significant in the analyses.

Empirical results are presented for the Non-Disclosure treatment sessions C and D in Figure 5, Panels C and D. As discussed earlier, Session C converged to the payoff-dominant equilibria, which is evidenced by the high rates of collaboration success across the three collaboration categories. Conversely, Session D converged to the risk-dominant equilibria, hence the almost negligible rates of cooperation success across all collaboration categories.

Hypothesis 4 posits that the relative rate of cooperation success will not be higher for CSR investor / CSR investor collaborations in Non-Disclosure treatment. In Session C, CSR investor / CSR investor collaborations are successful 70% of the time versus 77% for CSR investor / Non-CSR investor collaborations and 82% for Non-CSR investor / Non-CSR investor collaborations. In Session D, CSR investor / CSR investor collaborations are successful 4% of the time versus 4% for CSR investor / Non-CSR investor collaborations and 7% for Non-CSR investor / Non-CSR investor collaborations. Collaboration success is lowest in the CSR investor / CSR investor collaborations and highest in the Non-CSR investor / Non-CSR investor collaborations. It is interesting to note that this pattern of cooperation success in the Non-Disclosure treatment is the opposite of the pattern of results in the Disclosure treatment. When CSR not disclosed, the odds of cooperation success are 1.4 times higher when both partners are Non-CSR investors than when one or both of the partners is a CSR investor ( $\chi^2 = 12.89, p < 0.001$ , not tabulated).

In summary, results suggest CSR disclosure increases CSR investment, but it does not lead to overall higher levels of cooperation in business collaborations. However, CSR disclosure is an effective signal of manager's propensity to cooperate. When CSR is disclosed, the highest level of cooperation is between CSR investor / CSR investor collaborations and the lowest level

of cooperation is between Non-CSR investor / Non-CSR investor collaborations. When CSR is not disclosed, CSR investors are no more likely to cooperate than Non-CSR investors.

## 6. ADDITIONAL ANALYSIS

Three individual difference variables are measured in the study (Rushton 1981), altruism, social value orientation (Messick and McClintock 1968), and CSR values. Although the individual difference variables were not significant covariates in the multivariate hypotheses tests, I conduct additional analysis to examine whether the individual difference variables are associated with CSR investment and/or cooperation.

### 6.1. Altruism

Altruism is measured using the 20-item Rushton Altruism Scale (Rushton et al. 1981). Participants self-report how frequently they've completed various acts on a scale of one (never) to four (very often). Items include: I have given directions to a stranger; I have let a neighbor whom I didn't know too well borrow an item of some value to me (a dish, tools, etc.); I have offered to help a handicapped or elderly stranger across a street. The variable  $Altruism_i$  ranges in value from 20 to 100. The Altruism Scale has an internal consistency reliability of  $\alpha = 0.89$  (Rushton et al. 1981). Further, validity of the scale is demonstrated by the high level of correlation between self-reported altruism scores and peer rated altruism scores ( $r = .56, p < 0.001$ ) (Rushton et al. 1981). Lastly, the Rushton Altruism Scale is correlated positively with various scales measuring similar variables such as social responsibility, social interest, and emotional empathy ( $r = .59, p = .010$ ) (Rushton et al. 1981).

Two modifications were made to the scale items. The first question originally asked if the participant had ever pushed a stranger's car out of the snow. The question was changed to

whether the participant had ever helped a stranded motorists by stopping or calling for help. This modification was made because it rarely snows in the geographic area in which the experiment was administered. The second modification was to change item 15 from asking whether the participant had bought charity Christmas cards to holiday cards out of cultural and religious considerations.

## 6.2. Social Value Orientation

Social value orientation, a preference that affects behavior in strategic dilemmas, was first introduced over 50 years ago by Messick and McClintock (1968). Social-value orientation refers to other-regarding versus self-regarding preferences and is an important determinant of cooperative motives, strategies, and choices in social interactions (Bogaert et al. 2008). The two fundamental social-value orientations are prosocial and proself. Prosocials are concerned with maximizing outcomes for themselves and others and seek win-win situations. Proselfs are concerned with maximizing their own outcomes (Bogaert et al. 2008). Based on a review of the social value orientation literature, 46% of the experimental population are prosocial, 50% are proself, and the remainder are unclassified (Au and Kwong 2004).

Prosocials have a stronger sense of social responsibility and concern for others than proselfs (Bogaert et al. 2008). The vast majority of prosocials are conditional cooperatives who value maximizing joint outcomes and equality of outcomes.<sup>13</sup> The term conditional implies that prosocials cooperate in social dilemmas when they believe that their partner will also cooperate. Thus, prosocials are very sensitive to signals of cooperativeness, as this validates their

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<sup>13</sup> 98% of prosocials are conditional cooperators, while 2% are altruists (Au and Kwong 2004). Altruists are more concerned with a positive outcome for others than for themselves and are likely to remain cooperative even when their partner is non-cooperative.

expectation that their cooperation will be reciprocated and reduces their fear of being exploited (Bogaert et al. 2008).

In contrast to prosocials, proselfs are concerned with maximizing their own outcomes. The two main categories of proselfs are individualists and competitors (Au and Kwong 2004). Individualists are concerned with maximizing their own outcomes and have little or no concern for others' outcomes. Like individualists, competitors strive to maximize their own outcomes. However, competitors also seek relative advantage over others and view social dilemmas as win-lose situations (Bogaert et al. 2008). Since proselfs are generally non-cooperative, they are not particularly sensitive to signals of cooperativeness.

Social value orientation has substantial ecological validity in predicting behaviors in real world situations. For instance, McClintock and Allison (1989) sent letters to undergraduate students requesting they commit to volunteer to a worthy cause in the following semester. Among the students who responded, the prosocials pledged to donate more hours than proselfs. Prosocial commuters prefer commuting by public transportation when other commuters were expected to go by public transportation, while proselfs only prefer public transportation when others are expected to commute by car (Van Vugt et al. 1995).

In summary, prosocials are other-regarding and are less likely to act opportunistically in collaborative environments than proselfs (Balliet et al. 2009; Brekke and Nyborg 2008). In my setting, this implies that prosocials are more likely to invest in CSR and will be more sensitive to CSR disclosure than proselfs. As shown in Appendix A, social value orientation is measured using a set of nine hypothetical payouts between oneself and another person.

### 6.3. CSR Values

There is no validated scale that measures CSR Values. Therefore, I included the following three items to capture the elements of CSR values that are relevant for this study. As shown in Appendix A, the items are as follows: I share the same values with people who donate to charity ( $CSRValues1_i$ ); People who donate to charity care about others ( $CSRValues2_i$ ); People who donate to charity are cooperative ( $CSRValues3_i$ ). Participants respond on a scale of one (Strongly Disagree) to five (Strongly Agree). The three items are highly correlated with one another;  $CSRValues1_i$  and  $CSRValues2_i$  ( $r = 0.4756, p < 0.001$ , not tabulated),  $CSRValues1_i$  and  $CSRValues3_i$  ( $r = 0.5752, p < 0.001$ , not tabulated),  $CSRValues2_i$  and  $CSRValues3_i$  ( $r = 0.6261, p < 0.001$ , not tabulated). For sake of parsimony, I create a single measure,  $CSRValues_i$  equal to the sum of the three items. Scores for  $CSRValues_i$  range from one to 15. A Cronbach's alpha was computed to assess the internal consistency of  $CSRValues_i$ . The  $CSRValues_i$  measure ( $\alpha = 0.79$ ) was deemed adequately reliable for this sample.

As discussed in the prior section, results indicate that CSR investors are more likely to cooperate with CSR investors than with non-CSR investors when CSR is disclosed. The reason for this relationship is that CSR investors are posited to believe that other CSR investors share their values and have a propensity to cooperate. The CSR values scale measures the strength of these beliefs. Next, I test whether the individual difference variables are associated with CSR investment and/or cooperation.

### 6.4. Analysis of Individual Differences

As shown in Table 1, the mean  $Altruism_i$  score is 53.23 out of 100. The mean score for  $Prosocial_i$  is 0.70, indicating that 70% of participants are categorized as prosocial and 30% are categorized as prosel. The proportion of prosocials in my study is higher than the average level



of prosocials in the experimental population (Au and Kwong 2004). The mean *CSRValues<sub>i</sub>* score is 10.70 out of 15, indicating relatively high CSR values. Since these are individual difference variables, the mean scores should be relatively stable across treatments. Consistent with this expectation mean *Altruism<sub>i</sub>* (54.61 versus 51.92, *t-stat* = 1.40, *p* = 0.1643, not tabulated) and *CSRValues<sub>i</sub>* (10.78 versus 10.63, *t-stat* = -0.35, *p* = 0.7262, not tabulated) scores do not differ in the Disclosure treatment versus the Non-Disclosure treatment. However, there are more prosocials in the Disclosure treatment than in the Non-Disclosure treatment (76.1% versus 64.6%,  $\chi^2 = 59.45$ , *p* < 0.001, not tabulated).

The individual difference variables appear to capture independent constructs. As shown in Table 2, *Altruism<sub>i</sub>* is not correlated with *Prosocial<sub>i</sub>* (*r* = 0.126, *p* = 0.225). *CSRValues<sub>i</sub>* is not correlated with either *Altruism<sub>i</sub>* (*r* = 0.141, *p* = 0.175) or *Prosocial<sub>i</sub>* (*r* = -0.014, *p* = 0.890). The Cronbach's alpha ( $\alpha = 0.22$ ), indicates an unacceptable level of internal consistency among the three individual difference variables. However, *CSRValues<sub>i</sub>* is correlated with *CSRPreference<sub>i</sub>*, an individual difference variable that measures participants' preferences for CSR. Given these constructs are similar, it is not surprising that the variables are correlated.

Contrary to expectations, the individual difference variables are not correlated with CSR investment: *Altruism<sub>i</sub>* (*r* = -0.027, *p* = 0.797), *Prosocial<sub>i</sub>* (*r* = 0.162, *p* = 0.119), *CSRValues<sub>i</sub>* (*r* = 0.161, *p* = 0.122). Neither are they correlated with cooperation *Altruism<sub>i</sub>* (*r* = -0.090, *p* = 0.387), *Prosocial<sub>i</sub>* (*r* = -0.107, *p* = 0.306), *CSRValues<sub>i</sub>* (*r* = 0.069, *p* = 0.511). To further examine whether individual differences are associated with participants' choices, vis-à-vis CSR investment and cooperation. I estimate the following logistic regression model clustered at the participant level with participant as the repeated measure by Disclosure treatment to examine CSR investment:

$$\text{Prob}(CSRInvest_{i,t}) = \alpha_0 + \alpha_1 AltruismDum_i + \alpha_2 Prosocial_i + \alpha_3 CSRValuesDum_i \quad (3)$$

Where  $AltruismDum_i$  is an indicator variable equal to one if a participant's score is greater than the mean (median) score for  $Altruism_i$ , and zero otherwise.  $CSRValuesDum_i$  is an indicator variable equal to one if a participant's score is greater than the mean (median) score for  $CSRValues_i$ , and zero otherwise. Indicator variables are used in lieu of continuous variables to facilitate interpretation of the logistic regression results.

The model is poorly specified in the Disclosure treatment (Wald  $\chi^2 = 4.81$ ,  $p = 0.304$ ) and the Non-Disclosure treatment (Wald  $\chi^2 = 4.66$ ,  $p = 0.324$ ). The individual differences variables are not statistically significant in either the Disclosure treatment or the Non-Disclosure treatment. Given the lack of statistical significance, results are not tabulated.

Next, I examine whether individual differences are associated with cooperation. I estimate the following logistic regression model clustered at the participant level with participant as the repeated measure by Disclosure treatment:

$$\text{Prob}(Cooperate_{i,r}) = \alpha_0 + \alpha_1 AltruismDum_i + \alpha_2 Prosocial_i + \alpha_3 CSRValuesDum_i \quad (4)$$

The model is poorly specified in the Disclosure treatment (Wald  $\chi^2 = 3.48$ ,  $p = 0.330$ ) and the Non-Disclosure treatment (Wald  $\chi^2 = 1.84$ ,  $p = 0.607$ ). The individual differences variables are not statistically significant in either the Disclosure treatment or the Non-Disclosure treatment. Given the lack of statistical significance, results are not tabulated.

Lastly, I examine whether prosocials CSR investors more sensitive to CSR disclosure than proself CSR investors. When CSR investment is disclosed, prosocial CSR investors cooperate 56.0% of the time when partnered with CSR investors versus 39.3% of the time when partnered with non-CSR investors ( $\chi^2 = 21.81$ ,  $p < 0.001$ , not tabulated). The odds of a prosocial CSR investor cooperating are twice as high when she is partnered with a CSR investor versus a

non-CSR investor. Conversely, proself CSR investors do not attend to CSR disclosure. When CSR investment is disclosed, proself CSR investors are equally likely to cooperate when partnered with a CSR investors versus a non-CSR investor (49.5% versus 42.6%,  $\chi^2 = 0.72$ ,  $p = 0.398$ , not tabulated). These results are consistent with notion that prosocials are conditional cooperators and are more sensitive to signals of their partners' propensity to cooperate than proselfs.

## 7. CONCLUSION

Despite the prevalence of CSR, we know very little about why managers invest in CSR and disclose CSR activities. Using a strategic interaction task, I experimentally examine the links between CSR investment, CSR disclosure, and cooperation in business collaborations. The use of a controlled laboratory experiment allows me to manipulate CSR disclosure. While this is an abstraction, it allows me to measure the effect of CSR disclosure on CSR investment and cooperation in business collaborations.

Business collaborations can be a strong source of competitive advantage, allowing partners to combine the technologies, skills, relationships, and resources to reduce costs and mitigate strategic risk, expand scale, and create access to new markets (Anderson and Sedatole 2003). Despite these benefits, approximately half of these ventures fail (Gerwin 2004; Lunnan and Haugland 2008). One of the main reasons for the high rate of failure is a lack of cooperation, known as relational risk (Das and Teng 1998; 2000). Business collaborations require partners to invest significant levels of physical or human capital and coordinate joint activities to be successful (Kanter 1994; Doz 1996). I examine whether disclosure of CSR investment can facilitate cooperation in business collaborations. This is an important issue, since business collaborations are an important driver of growth and competitiveness and cooperation can be difficult to achieve because there is tension between managers' desire to pursue what is in the firm's best interest and their desire to cooperate and it is difficult for firms to anticipate, monitor, and compel cooperation in business collaborations.

I operationalize the collaborative environment as a single-period, strategic interaction stage hunt task where two managers simultaneously make decisions whether they will cooperate or not cooperate. The parameters of the stag hunt task operationalize the strategic tension in business collaborations. On one hand, managers' highest payoffs occur when they both cooperate. On the other hand, a manager's lowest payoff occurs when she cooperates and her partner does not. If a manager does not cooperate, her payoff is independent of her partner's choice. Thus, cooperation while wealth maximizing, entails risk; whereas non-cooperation is riskless. In business collaborations, cooperation is necessary for success, but it involves risk. For instance, collaborators may need to invest substantial resources, rely on individual suppliers, or share proprietary information. If both partners cooperate, business collaborations can prove to be mutually beneficial, improving supply chain management, opening access to new markets, or reducing strategic risk. However, business collaborations can be very costly if partners do not cooperate.

Results suggest that CSR disclosure increases CSR investment, but does not lead to higher levels of overall cooperation in business collaborations. Further, CSR disclosure moderates the link between managers' CSR investment and cooperation in business collaborations. When CSR is disclosed, CSR investors are more likely to cooperate than Non-CSR investors. Further, CSR investors are more sensitive to CSR disclosure than Non-CSR investors. CSR investors adjust their behavior dependent upon their partners' CSR investment choice and are more likely to cooperate with other CSR investors than with Non-CSR investors. However, Non-CSR investors do not attend to CSR disclosures, and are equally likely to cooperate with CSR investors or Non-CSR investors. Conversely, when CSR is not disclosed, CSR investors are no more likely to cooperate than Non-CSR investors.

I find that CSR disclosure facilitates cooperation among CSR investors. I predicted that as a result, the overall higher level of cooperation in business collaborations would be higher when CSR is disclosed versus when CSR is not disclosed. However, my results do not support this hypothesis. In the Non-Disclosure treatment, participants converged to the payoff dominant equilibria in one session and to the risk dominant equilibria in the other session. I operationalize cooperation in business collaborations using a stag hunt task. The stag hunt task has two pure strategy equilibria, the payoff dominant strategy equilibria and the risk dominant strategy equilibria, and the mixed strategy equilibrium. When there are multiple equilibria, equilibrium analysis fails to predict which, if any equilibria will emerge. Experience teaches participants to play either the risk-dominant action or the payoff-dominant action (e.g. Rankin et al. 2000; Bosworth 2013). The pattern of results seen in the Non-Disclosure treatment is consistent with prior studies which demonstrate variance across experimental sessions in terms of converge to the payoff dominant equilibria, the risk dominant equilibria, or neither (e.g. Battalio et al. 2001).

Findings from this study suggest that disclosure of CSR investment can help to mitigate relational risk and solve coordination problems in interfirm settings. These results provide empirical evidence regarding a potential rationale for and consequence of CSR disclosure. This study contributes to the voluntary disclosure literature by examining topics beyond the narrow focus of financial disclosure and adds to the growing research examining issues surrounding CSR.

There are several limitation to this study. Since participants in the study are not practicing managers and the financial stakes are not as large as those in the field, I cannot be sure that my results would generalize to field settings. However, there are no obvious reasons why managers

would have weaker preferences for social responsibility than the participants in my experiments. In fact, managers may have stronger social responsibility preferences given that they have access to more resources and may feel an obligation to a broader group of stakeholders than just their business collaboration partner (Moser and Martin 2012). Regarding the size of the financial stakes, prior studies show that the results of experiments using smaller financial stakes generalize fairly well to settings with larger stakes (Kachelmeier and Shehata 1992; Falk and Heckman 2009).

Another limitation of the study is that CSR investment, operationalized as a charitable donation, only captures one dimension of CSR. In practice, there is substantial industry, geopolitical, and firm level variation in CSR investment. Further, unlike a charity donation, firms often invest in CSR activities that mitigate potential costs or have a positive effect on future cash flows. For instance, companies that operate in industries that entail a degree of risk to people or the environment may be more motivated to invest in CSR to stave off criticism and avoid costly regulation. The operationalization of CSR as a charity donation limits the generalizability of the results. Future research should examine the effect of CSR investment and disclosure using alternative measures of CSR investment beyond charity donations.

Further, in the experiment, CSR investment is measured as a dichotomous variable. Participants choose whether or not to donate 10% of their stag hunt task payoff to charity. Charity donations have been used in prior experimental studies (e.g. Brekke et al. 2011; Balakrishnan et al. 2011; Martin and Moser 2016). However, my study differs in that the level of charity donation is fixed at 10% and I do not allow participants to select from an array of charity donation levels (e.g. 10%, 20%, 30%). As a consequence, results from this study do not allow for inferences regarding the effect of the level of CSR investment on cooperation in business

collaborations. While this is an important question, the focus of this study is on the effect of disclosure of CSR investment. Operationalizing CSR investment as a dichotomous variable limits the generalizability of the results, as there is variation in level of CSR investment in real world. Experimental evidence suggests that higher CSR investment are associated with higher levels of costly effort and higher motivation (Balakrishnan et al. 2011; Koppel and Regner 2014). In my dissertation, charity donations are limited to the lowest level used in prior studies, which would bias against finding a result.

Similar to CSR investment, CSR disclosure is also a dichotomous. In the CSR Disclosure treatment CSR investment is disclosed; in the non-CSR Disclosure treatment CSR investment is not disclosed. The purpose of this study is to examine whether disclosure of CSR investment is viewed as a credible signal of managers' propensity to cooperate in a business collaboration. Thus, I controlled for the level and type of CSR disclosure. However, in the real world, there is significant variation in CSR disclosure. While it is beyond the scope of this study, it is important to investigate the effect of differences in CSR disclosure, and is an area for future research.

Even though participants are in the same room, all communication is conducted electronically. This is a limitation of the study as prior research indicates that the method of communication can influence the outcome of interactions (Rowe 2004; Lynch et al. 2009). Consequently, findings of the study may not generalize to business collaborations in which managers' communication is predominantly face-to-face versus electronic. This limitation provides the opportunity for future research that examines whether the form of business collaboration interaction interacts with CSR investment and disclosure.

This study answers recent calls for experimental CSR research in accounting and contributes to the CSR, business collaboration, and internal control literatures in accounting in



several ways (Peteraf 1993; Moser and Martin 2012; Huang and Watson 2015). First, I build on research examining the use of informal control mechanisms to encourage cooperation in intrafirm collaborations (Towry 2003; Rowe 2004; Kelly and Presslee 2017). I build on these findings by exploring whether CSR disclosure is informative of managerial preferences for cooperation and facilitates cooperation in a business collaboration. In addition, this study contributes to the CSR literature by examining whether disclosure of CSR investments mitigates relational risk to improve business collaboration outcomes.

Further, I build on accounting research that examines whether disclosure of CSR investment is informative of managerial type (e.g. Balakrishnan et al. 2011; Dhaliwal et al. 2012; Hoi et al. 2013). This is the first study to examine the role of CSR investment and disclosure on cooperation in business collaborations. Cooperation in business collaborations is an important issue to both accounting academics and practitioners, as nearly half of these ventures end in failure (Gerwin 2004; Lunnan and Haugland 2008).

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## APPENDIX A: Experimental Instrument

### VERBAL CONSENT FORM



USF IRB ID # PRO00031293

Today's research study is being conducted in partnership with the University of South Florida. Researchers at the University of South Florida study many topics. To do this, we need the help of people who agree to take part in a research study. We are asking you to take part in a research study that is called: SH Decision Study.

The person who is in charge of this research study is Sukari Farrington. This person is called the Principal Investigator.

You are being asked to participate because you are a student at Chapman University and registered with the Economic Science Institute at Chapman University. The purpose of this study is to study your choices in an interactive environment.

If you take part in this study, you will be asked to make a series of choices. Information about these choices is explained in the attached instructions. The instructions will also be provided on the computers and you will be asked to complete an instruction quiz. Data will be collected and stored by the Principal Investigator and by research personnel at the Economic Science Institute and by research personnel at the University of South Florida.

You can choose not to participate in this research study. However, you will not receive compensation if you do not participate.

You should only take part in this study if you want to volunteer and should not feel that there is any pressure to take part in the study. You are free to participate in this research or withdraw at any time. Compensation is not considered a benefit in research studies. As such, you will receive no benefit from this study. There will be no penalty if you stop taking part in this study. The decision to participate or not to participate will not affect your student status (course grade) or job status.

This research is considered to be minimal risk.

You will receive compensation for your participation in this study. You will receive a show-up fee and you will receive payment based on your choices and the choices of the other participants in today's study. I cannot guarantee how much you will earn, since your earnings are dependent on your choices and the choices of the other participants in today's study. However, you can earn between \$0 and \$19, not including the show-up fee.

We must keep your study records as confidential as possible. We may publish what we learn from this study. If we do, we will not let anyone know your name. We will not publish anything else that would let people know who you are. However, certain people may need to see your study records. By law, anyone who looks at your records must keep them completely confidential. The only people who will be allowed to see these records are:

- The research team, including the Principal Investigator, the Advising Professor, and all other research staff.

- Certain government and university people who need to know more about the study. For example, individuals who provide oversight on this study may need to look at your records. This is done to make sure that we are doing the study in the right way. They also need to make sure that we are protecting your rights and your safety.) These include:

- The University of South Florida Institutional Review Board (IRB) and the staff that work for the IRB. Other individuals who work for USF that provide other kinds of oversight may also need to look at your records.
- The Department of Health and Human Services (DHHS).

If you have any questions about this study, you can contact the investigator, Sukari Farrington at (714) 516-5761 or by email at [sfarring@chapman.edu](mailto:sfarring@chapman.edu). If you have question about your rights as a research participant please contact the USF IRB at (813) 974-5638 or contact by email at [RSCH-IRB@usf.edu](mailto:RSCH-IRB@usf.edu).

Would you like to participate in this study?

## INSTRUCTIONS

### Overview

Today, you will interact with other people in an experiment divided into 4 parts of 10 rounds each for a total of 40 rounds. **You will be randomly paired with a different person in each round.** All of your choices will remain anonymous.

At the end of today's experiment, 1 round from each of the 4 parts will be randomly selected to determine your cash payout. Your cash payout depends on your choice and the choice of each person you are randomly paired with during the 4 randomly selected rounds.

Earnings will be expressed in experimental currency called francs. The sum of the francs in the 4 randomly selected rounds will be used to determine your cash payoff. Francs will be converted to dollars at a rate of 2 francs = 1 US dollar.

If you have any questions at any point in today's session, please raise your hand and the administrator will answer your questions in private.

Now let's talk about what you will do in the experiment...

### Matrix Information

You will see a matrix similar to the one below. The matrix consists of four quadrants. Notice the numbers in each quadrant. The numbers represent the francs that you (labeled “Me”) and the other person (labeled “Partner”) earn each round. These values will remain the same for all 40 rounds.

Your earnings are on the left in **blue**. Your partner’s earnings are on the right in **red**.

|    |        | Partner |       |
|----|--------|---------|-------|
|    |        | LEFT    | RIGHT |
| Me | TOP    | 7 , 7   | 0 , 5 |
|    | BOTTOM | 5 , 0   | 5 , 5 |

In each round, you and your partner will each make a choice that determines both of your earnings in the round.

You will make a choice of either TOP or BOTTOM.  
Your partner will make a choice of either LEFT or RIGHT.

Once everyone in today’s session has made their choice, the choices that you and your partner made will be displayed.

Let’s look at some examples to see how different choices determine your earnings and your partner’s earnings.

If you choose TOP and your partner chooses LEFT you would earn **7** francs and your partner would earn **7** francs.

|    |        | Partner      |              |
|----|--------|--------------|--------------|
|    |        | LEFT         | RIGHT        |
| Me | TOP    | <b>7 , 7</b> | <b>0 , 5</b> |
|    | BOTTOM | <b>5 , 0</b> | <b>5 , 5</b> |

If you choose TOP and your partner chooses RIGHT you would earn **0** francs and your partner would earn **5** francs.

|    |        | Partner      |              |
|----|--------|--------------|--------------|
|    |        | LEFT         | RIGHT        |
| Me | TOP    | <b>7 , 7</b> | <b>0 , 5</b> |
|    | BOTTOM | <b>5 , 0</b> | <b>5 , 5</b> |

If you choose **BOTTOM** and your partner chooses **LEFT** you would earn **5** francs and your partner would earn **0** francs.

|    |        | Partner |       |
|----|--------|---------|-------|
|    |        | LEFT    | RIGHT |
| Me | TOP    | 7, 7    | 0, 5  |
|    | BOTTOM | 5, 0    | 5, 5  |

If you choose **BOTTOM** and your partner chooses **RIGHT** you would earn **5** francs and your partner would earn **5** francs.

|    |        | Partner |       |
|----|--------|---------|-------|
|    |        | LEFT    | RIGHT |
| Me | TOP    | 7, 7    | 0, 5  |
|    | BOTTOM | 5, 0    | 5, 5  |

Notice that if you choose **BOTTOM** no matter what your partner chooses, you earn 5 francs.

Notice that if you choose **TOP** your earnings depend on what your partner chooses. If your partner chooses **LEFT** you will earn 7 francs. However, if your partner chooses **RIGHT** you will earn 0 francs.

## Charity Donation

**At the start of each of the four parts you can choose whether or not to donate 10% of your earnings to charity.** If you choose to donate 10% of your earnings to charity, the amount will be matched by the administrator and your donation will be doubled. The choice you make at the start of each part will only affect your payout for that part. It will not affect anyone else's payout. It will not affect your payout for any other part. In other words, your choice of whether or not to donate to charity in Part 2 will only affect your payout in Part 2. It will not affect your payout in Parts 1, 3, or 4.

If you chose to donate to charity, you will be able to select which charity you want to donate to from a list of charities. Below is an alphabetical list of the charities options with a brief description of each.

- *American Humane Association* - Protects and ensures the welfare, wellness, and well-being of children and animals. Unleashes the full potential of the bond between humans and animals to the mutual benefit of both.
- *American Red Cross* – Provides compassionate care to those in need by preventing and relieving suffering through disaster relief, supporting military families, blood donations, and other services.
- *Amnesty International* – Promotes the dignity and well-being of every person by exposing and preventing human rights abuses throughout the world.
- *Habitat for Humanity* – Builds renovates and preserves homes to broaden access to affordable housing to help break the cycle of poverty.
- *Sierra Club* – Practices and promotes the responsible use of the earth's ecosystems and resources. Educates and enlists humanity to protect and restore the quality of the natural and human environment.
- *Susan G. Komen for the Cure* – Addresses breast cancer on multiple fronts such as research community health global outreach and public policy initiatives in order to make the biggest impact against the disease.
- *Wounded Warrior Project* – Serves veterans and service members who incurred a physical or mental injury, illness, or wound co-incident to their military service since September 11, 2001 and their families.

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## DISCLOSURE TREATMENT

Everyone else in today's experiment will also choose whether or not to donate 10% of their earnings to charity at the start of each part. While you and everyone else will remain anonymous throughout today's experiment, you will be able to see if your partner chose to donate to charity. Your partner will also be able to see if you chose to donate to charity. The labels "**Donor**" and "**Non-Donor**" will appear next to "Me" and "Partner" each round. The label "Donor" indicates the choice to donate to charity. The label "Non-Donor" indicates a choice not to donate to charity. You and your partner will only be able to determine the donation choice made in the current part of the experiment. Neither you nor your partner will be able to see which donation choice was made in prior parts.

At the end of today's session, the administrator will double all donations and make an online donation to each charity selected. The administrator will make a single donation to each charity equal to the donations from everyone in today's experiment plus the administrator match amount. At the end of the experiment, you will have the opportunity to provide your email address to receive a copy of the receipt for the charitable donations.



The labels “Donor” or “Non-Donor” will appear next to “Me” and “Partner” depending on the charity donation choices made by you and your partner. Below are two examples:

**Partner (Non-Donor)**

|                   |              |              |
|-------------------|--------------|--------------|
|                   | LEFT         | RIGHT        |
| TOP               | <b>7 , 7</b> | <b>0 , 5</b> |
| <b>Me (Donor)</b> |              |              |
| BOTTOM            | <b>5 , 0</b> | <b>5 , 5</b> |

**Partner (Donor)**

|                       |              |              |
|-----------------------|--------------|--------------|
|                       | LEFT         | RIGHT        |
| TOP                   | <b>7 , 7</b> | <b>0 , 5</b> |
| <b>Me (Non-Donor)</b> |              |              |
| BOTTOM                | <b>5 , 0</b> | <b>5 , 5</b> |

Your partner CAN see the “Donor” or “Non-Donor” label and will know your charity donation choice. You CAN see your partner’s “Donor” or “Non-Donor” label and you will know your partner’s charity donation choice.

## History Table

The History table records the charity donation choice, matrix decision, your earnings, and your partner's earnings in each round. Note that earnings for Donors do not include the deduction of the 10% charity donation.

Below is an illustrative example of the History table:

| <b>History</b> |       |           |                  |             |                    |             |                    |
|----------------|-------|-----------|------------------|-------------|--------------------|-------------|--------------------|
| Part           | Round | My Status | Partner's Status | My Decision | Partner's Decision | My Earnings | Partner's Earnings |
| 2              | 5     | Non-Donor | Donor            | BOTTOM      | RIGHT              | 5.00        | 5.00               |
| 2              | 4     | Non-Donor | Donor            | TOP         | LEFT               | 7.00        | 7.00               |
| 2              | 3     | Non-Donor | Non-Donor        | TOP         | RIGHT              | 0.00        | 5.00               |
| 2              | 2     | Non-Donor | Donor            | TOP         | RIGHT              | 0.00        | 5.00               |
| 2              | 1     | Non-Donor | Donor            | TOP         | RIGHT              | 0.00        | 5.00               |
| 1              | 10    | Donor     | Non-Donor        | BOTTOM      | RIGHT              | 5.00        | 5.00               |
| 1              | 9     | Donor     | Non-Donor        | BOTTOM      | RIGHT              | 5.00        | 5.00               |
| 1              | 8     | Donor     | Non-Donor        | TOP         | LEFT               | 7.00        | 7.00               |
| 1              | 7     | Donor     | Non-Donor        | TOP         | RIGHT              | 0.00        | 5.00               |
| 1              | 6     | Donor     | Non-Donor        | TOP         | LEFT               | 7.00        | 7.00               |
| 1              | 5     | Donor     | Non-Donor        | BOTTOM      | LEFT               | 5.00        | 0.00               |
| 1              | 4     | Donor     | Non-Donor        | BOTTOM      | LEFT               | 5.00        | 0.00               |
| 1              | 3     | Donor     | Donor            | TOP         | LEFT               | 7.00        | 7.00               |
| 1              | 2     | Donor     | Non-Donor        | BOTTOM      | RIGHT              | 5.00        | 5.00               |

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## NON-DISCLOSURE TREATMENT

Everyone else in today's experiment will also choose whether or not to donate 10% of their cash payout to charity at the start of each part. You and everyone else will remain anonymous throughout today's session; you will not be able to see if your partner chose to donate to charity. Your partner will not be able to see if you chose to donate to charity. The label "**Donor**" or "**Non-Donor**" will appear next to "Me" each round. The label "Donor" indicates your choice to donate to charity. The label "Non-Donor" indicates your choice not to donate to charity. The labels will only indicate the donation choice you made in the current part of the experiment. Only you can see the labels. Your partner cannot see the labels and you cannot see your partners' labels. Neither you nor your partner will be able to see which donation choice was made in prior parts.

At the end of today's session, the administrator will double all donations and make an online donation to each charity selected. The administrator will make a single donation to each charity equal to the donations from everyone in today's experiment plus the administrator match amount. At the end of the experiment, you will have the opportunity to provide your email address to receive a copy of the receipt for the charitable donations.

The label “Donor” or “Non-Donor” will appear next to “Me” depending on your charity donation choice. Below are two examples:

|            |        | Partner |       |
|------------|--------|---------|-------|
|            |        | LEFT    | RIGHT |
| Me (Donor) | TOP    | 7, 7    | 0, 5  |
|            | BOTTOM | 5, 0    | 5, 5  |

|                |        | Partner |       |
|----------------|--------|---------|-------|
|                |        | LEFT    | RIGHT |
| Me (Non-Donor) | TOP    | 7, 7    | 0, 5  |
|                | BOTTOM | 5, 0    | 5, 5  |

Your partner CANNOT see the “Donor” or “Non-Donor” label and will not know your charity donation choice. You CANNOT see your partner’s “Donor” or “Non-Donor” label and you will not know your partner’s charity donation choice.

## History Table

The History table records the charity donation choice, matrix decision, your earnings, and your partner's earnings in each round. Note that earnings for Donors do not include the deduction of the 10% charity donation.

Below is an illustrative example of the History table:

| <b>History</b> |       |           |             |                    |             |                    |
|----------------|-------|-----------|-------------|--------------------|-------------|--------------------|
| Part           | Round | My Status | My Decision | Partner's Decision | My Earnings | Partner's Earnings |
| 2              | 5     | Non-Donor | BOTTOM      | RIGHT              | 5.00        | 5.00               |
| 2              | 4     | Non-Donor | TOP         | LEFT               | 7.00        | 7.00               |
| 2              | 3     | Non-Donor | TOP         | RIGHT              | 0.00        | 5.00               |
| 2              | 2     | Non-Donor | TOP         | RIGHT              | 0.00        | 5.00               |
| 2              | 1     | Non-Donor | TOP         | RIGHT              | 0.00        | 5.00               |
| 1              | 10    | Donor     | BOTTOM      | RIGHT              | 5.00        | 5.00               |
| 1              | 9     | Donor     | BOTTOM      | RIGHT              | 5.00        | 5.00               |
| 1              | 8     | Donor     | TOP         | LEFT               | 7.00        | 7.00               |
| 1              | 7     | Donor     | TOP         | RIGHT              | 0.00        | 5.00               |
| 1              | 6     | Donor     | TOP         | LEFT               | 7.00        | 7.00               |
| 1              | 5     | Donor     | BOTTOM      | LEFT               | 5.00        | 0.00               |
| 1              | 4     | Donor     | BOTTOM      | LEFT               | 5.00        | 0.00               |
| 1              | 3     | Donor     | TOP         | LEFT               | 7.00        | 7.00               |
| 1              | 2     | Donor     | BOTTOM      | RIGHT              | 5.00        | 5.00               |

### Questionnaire, Virtual Coin Toss, and Payouts

After completing the 40 rounds, you will be asked to provide information about yourself. All of your answers to these questions are anonymous and will not affect your cash payout in anyway. Lastly, you will be asked to choose a virtual coin toss from a series of five options. You will receive a cash payout based on the option you choose and the outcome of the virtual coin toss. Your payout from the virtual coin toss will have no effect on your payout from the randomly selected four rounds of the experimental task.

Lastly, you will be informed which four rounds were randomly selected, your cash payout, and the amount, if any, that will be donated to charity on your behalf. You will remain seated until you are called to the front to receive your cash payout. After receiving your cash payout, you are free to go.

If you have any questions, please raise your hand and the administrator will answer your questions in private.

If you do not have any questions, please complete a quiz on the instructions.

## QUIZ

Please take a few minutes to complete the quiz.

### Question 1

All of the people in this experiment, including you, chose whether or not to donate 10% of their earnings to a charity at the start of each of part.

Answer: True

Hint: Everyone chooses whether or not to donate 10% of their earnings to charity at the start of each of the four parts of the experiment.

### Question 2

One round from each of the four parts will be randomly selected to determine your cash payout.

Answer: True

Hint: One round will be randomly selected from each part to determine your cash payout.

### Question 3

If you choose to donate 10% of my cash payout from the experimental task to charity, the amount will be tripled by the administrator.

Answer: False

Hint: Charity donation amounts will be doubled by the administrator.

### Question 4

In each round, you will be able to see whether or not your partner chose to donate to charity and your partner will be able to see whether or not you chose to donate to charity.

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#### DISCLOSURE TREATMENT

Answer: True

Hint: The labels “Donor” and/or “Non-Donor” will appear next to “Me” and “Partner” each round.

---

#### NON-DISCLOSURE TREATMENT

Answer: False

Hint: You will not be able to see your partner’s “Donor” or “Non-Donor” label. Your partner will not be able to see your “Donor” or “Non-Donor” label.

### Question 5

You will be matched with the same partner each round.

Answer: False

In each round you will be randomly matched with a different partner.

Please refer to the matrix on pages 2-4 in the instructions to answer the following questions:

Question 6

If you choose TOP and your partner chooses RIGHT you earn \_\_\_\_ francs.

Answer: 0

Hint: You earn 0 francs and your partner earns 5 francs..

Question 7

If you choose BOTTOM and your partner chooses LEFT, you earn \_\_\_\_\_ francs.

Answer: 5 francs

Hint: You earn 5 francs and your partner earns 0 francs.

Question 8

If you choose TOP and your partner chooses LEFT, your partner earns \_\_\_\_\_ francs.

Answer: 7

Hint: You earn 7 francs and your partner earns 7 francs.



EXPERIMENTAL TASK

You will now start Part 1 [2, 3, 4]

Would you like to donate 10% of your earnings to charity?

Yes, I want to donate

- American Humane Association
- American Red Cross
- Amnesty International
- Habitat for Humanity
- Sierra Club
- Susan G. Komen for the Cure
- Wounded Warrior Project

No, I don't want to donate

---

| DISCLOSURE TREATMENT       |        | Partner (Donor / Non-Donor)* |       |
|----------------------------|--------|------------------------------|-------|
|                            |        | LEFT                         | RIGHT |
| Me (Donor /<br>Non-Donor)* | TOP    | 7 , 7                        | 0 , 5 |
|                            | BOTTOM | 5 , 0                        | 5 , 5 |

---

| NON-DISCLOSURE TREATMENT   |        | Partner |       |
|----------------------------|--------|---------|-------|
|                            |        | LEFT    | RIGHT |
| Me (Donor /<br>Non-Donor)* | TOP    | 7 , 7   | 0 , 5 |
|                            | BOTTOM | 5 , 0   | 5 , 5 |

---

\*The term "Donor" ("Non-Donor") indicates a participant chose (not) to donate to charity.

## QUESTIONNAIRE

You are almost finished. Please take a few minutes to answer the following questions.

Please select the category that best indicates your level of agreement.

|   |  | Strongly Disagree | Somewhat Agree | Neither Disagree nor Agree | Somewhat Agree | Strongly Agree |
|---|--|-------------------|----------------|----------------------------|----------------|----------------|
| 1 | Companies should take actions to help society.                     |                   |                |                            |                |                |
| 2 | I prefer to work for a company that takes actions to help society. |                   |                |                            |                |                |
| 3 | I share the same values with people who donate to charity.         |                   |                |                            |                |                |
| 4 | People who donate to charity care about others.                    |                   |                |                            |                |                |
| 5 | People who donate to charity are cooperative.                      |                   |                |                            |                |                |

You are asked to imagine that you have been randomly paired with another person. This other person is someone you do not know and you will not knowingly meet in the future. Both you and the other person will be making choices by selecting one of three choices for the following nine situations. Your own choices will produce points for both yourself and the other person. Likewise, the other person's choice will produce points for him or her and for you. Every point has value: The more points you receive, the better for you; the more points the other person receives, the better for him or her. Keep in mind that the choices you make for this task will NOT affect your cash payout. Further, there are no right or wrong choices - simply choose the option you prefer most.

For each of the situations, choose the option you prefer most.

|   |                   | A   | B   | C   |
|---|-------------------|-----|-----|-----|
| 1 | You get           | 480 | 540 | 480 |
|   | Other person gets | 80  | 280 | 480 |
| 2 | You get           | 560 | 500 | 500 |
|   | Other person gets | 300 | 500 | 100 |
| 3 | You get           | 520 | 520 | 580 |
|   | Other person gets | 520 | 120 | 320 |
| 4 | You get           | 500 | 560 | 490 |
|   | Other person gets | 100 | 300 | 490 |
| 5 | You get           | 560 | 500 | 490 |
|   | Other person gets | 300 | 500 | 90  |
| 6 | You get           | 500 | 500 | 570 |
|   | Other person gets | 500 | 100 | 300 |
| 7 | You get           | 510 | 560 | 510 |
|   | Other person gets | 510 | 300 | 110 |
| 8 | You get           | 550 | 500 | 500 |
|   | Other person gets | 300 | 100 | 500 |
| 9 | You get           | 480 | 490 | 540 |
|   | Other person gets | 100 | 490 | 300 |

You had the option of donating to the following charities:

- American Humane Association
- American Red Cross
- Amnesty International
- Habitat for Humanity
- Sierra Club
- Susan G. Komen for the Cure
- Wounded Warrior Project

How satisfied are you with these options? (Very Dissatisfied, Somewhat Dissatisfied, Somewhat Satisfied, Very Satisfied)

Please list any charities you would like to see added to the charity list (Open ended)

Were the instructions clear? (Very Confusing, Somewhat Confusing, Somewhat Clear, Very Clear)

Age (18 to 40, over 40)

Gender (Male, Female, Other, Prefer not to answer)

Year (Freshman, Sophomore, Junior, Senior, Graduate student)

Estimate the number of college-level economics courses or business courses you've completed or are currently enrolled in at Chapman or at another institution (0 to 30, over 30)

Almost done. Please indicate the frequency with which you have carried out the following acts.

|    |   | Never | Once | More than once | Often | Very often |
|----|---|-------|------|----------------|-------|------------|
| 1  | I have helped a stranded motorist by stopping or calling for help.  |       |      |                |       |            |
| 2  | I have given directions to a stranger.  |       |      |                |       |            |
| 3  | I have made change for a stranger.  |       |      |                |       |            |
| 4  | I have given money to a charity.  |       |      |                |       |            |
| 5  | I have given money to a stranger who needed it (or asked me for it).  |       |      |                |       |            |
| 6  | I have donated goods or clothes to a charity.   |       |      |                |       |            |
| 7  | I have done volunteer work for a charity.   |       |      |                |       |            |
| 8  | I have donated blood.   |       |      |                |       |            |
| 9  | I have helped carry a stranger's belongings (books, parcels, etc.).   |       |      |                |       |            |
| 10 | I have delayed an elevator and held the door open for a stranger.   |       |      |                |       |            |
| 11 | I have allowed someone to go ahead of me in line (at Xerox machine, in the supermarket, etc.).                                    |       |      |                |       |            |
| 12 | I have given a stranger a lift in my car.   |       |      |                |       |            |
| 13 | I have pointed out a clerk's error (in a bank, at the supermarket, etc.)  |       |      |                |       |            |
| 14 | I have let a neighbor whom I didn't know too well borrow an item of some value to me (a dish, tools, etc.).                       |       |      |                |       |            |
| 15 | I have bought charity holiday cards deliberately because I knew it was a good cause.  |       |      |                |       |            |
| 16 | I have helped a classmate who I did not know that well with a homework assignment when my knowledge was greater than his or hers. |       |      |                |       |            |
| 17 | I have before being asked, voluntarily looked after a neighbor's pets or children without being paid for it.                      |       |      |                |       |            |
| 18 | I have offered to help a handicapped or elderly stranger across a street.   |       |      |                |       |            |
| 19 | I have offered my seat on a bus or train to a stranger who was standing.  |       |      |                |       |            |
| 20 | I have helped an acquaintance to move households.   |       |      |                |       |            |

### COIN FLIP

Below is a set of computerized coin flips expressed in francs. You will receive a cash payout depending on which coin flip you chose and the outcome of the computerized coin flip. We will convert your points into dollars at a rate of 2 francs = 1 US dollar. Chose the coin flip you prefer:

3.2 francs if the coin flips heads and 3.2 francs if the coin flips tails.

4.8 francs if the coin flips heads and 2.4 francs if the coin flips tails.

6.4 francs if the coin flips heads and 1.6 francs if the coin flips tails.

8.0 francs if the coin flips heads and 0.8 francs if the coin flips tails.

9.6 francs if the coin flips heads and 0 francs if the coin flips tails.

The coin flipped \_\_\_\_\_ [heads/tails]. You earned \_\_\_\_\_ points.

SUBMISSION

Congratulations! You are done. Let's calculate your cash payout.

The following rounds were selected from each part to determine your payout:

Part One Round \_\_ , Part Two Round \_\_ , Part Three Round \_\_ , Part Four Round \_\_

Your total francs earned today is: \_\_\_\_\_

Your total cash payout is \$\_\_\_\_\_

Payout Breakdown

\$\_\_\_\_\_ = Experimental earnings of \$\_\_\_\_\_ + Coin Flip earnings of \$\_\_\_\_\_

Total donations to charity: \$\_\_\_\_\_

Donation Breakdown

You donated to the following charities: \_\_\_\_\_

Total donation to charity of \$\_\_\_\_\_ = Your donation of \$\_\_\_\_\_ + Administrator's matching of \$\_\_\_\_\_

Fill in your name below to receive your cash payout.

First: \_\_\_\_\_ Last: \_\_\_\_\_ Student ID #: \_\_\_\_\_

If you want to see how much money was donated to each charity based on today's sessions, fill in your email below to receive a copy of each receipt. You will receive an email within 24 hours.

Email Address: (optional) \_\_\_\_\_

FINISH

Please wait quietly until everyone is finished and the administrator informs you that today's session is complete. Thank you.

## APPENDIX B: Screen Shots

### Instructions

**Instructions** | Quiz | Experiment | Questionnaire | Coin Flip | Submission | Finish

Please take a few minutes to read the instructions

Page 1 | Page 2 | Page 3 | Page 4 | Page 5 | Page 6 | Page 7 | Page 8 | Page 9

**INSTRUCTIONS**

Overview

Today, you will interact with other people in an experiment divided into 4 parts of 5 rounds each for a total of 20 rounds. You will be randomly paired with another person in each round. All of your choices will remain anonymous.

At the end of today's experiment, 1 round from each of the 4 parts will be randomly selected to determine your cash payout. Your cash payout depends on your choice and the choice of each person you are randomly paired with during the 4 randomly selected rounds.

Earnings will be expressed in experimental currency called francs. The sum of the francs in the 4 randomly selected rounds will be used to determine your cash payoff. Francs will be converted to dollars at a rate of 10 francs = 1 US dollar.

If you have any questions at any point in today's session, please raise your hand and the administrator will answer your questions in private.

Now let's talk about what you will do in the experiment...

Start Quiz



# Quiz

Instructions | **Quiz** | Experiment | Questionnaire | Coin Flip | Submission | Finish

Please take a few minutes to complete the quiz.

**Question 1**  
All of the people in this experiment, including you, choose whether or not to donate 10% of their earnings to charity at the start of each of part.

Your Answer: True  False

**Question 2**  
One round from each of the four parts will be randomly selected to determine your cash payout.

Your Answer: True  False

**Question 3**  
If you choose to donate 10% of your earnings to charity, the amount will be tripled by the administrator.

Your Answer: True  False

**Question 4**  
In each round you will be able to see whether or not your partner chose to donate to charity and your partner will be able to see whether or not you chose to donate to charity.

Your Answer: True  False

**Question 4**

Quiz Submission Error

Please answer the questions, highlighted in red, correctly in order to start the experiment.

OK

# Experimental Task

Instructions Quiz **Experiment** Questionnaire Coin Flip Submission Finish

**Information**

Part: 1  
Round: 1

---

**Charity**

American Humane Association  
American Red Cross  
Amnesty International  
Habitat for Humanity  
Sierra Club  
Susan G. Komen for the Cure  
Wounded Warrior Project

Details... Confirm

**Partner**

LEFT RIGHT

TOP

**7, 7**      **0, 5**

**Me**

BOTTOM

**5, 0**      **5, 5**

Donation Confirmation

**?** You will now start Part 1.

Would you like to donate 10% of your earnings to charity?

Yes, I want to donate    No, I do not want to donate

**History**

| Part | Round | My Status | Partner's Status | My Decision | Partner's Decision | My Earnings | Partner's Earnings |
|------|-------|-----------|------------------|-------------|--------------------|-------------|--------------------|
|      |       |           |                  |             |                    |             |                    |
|      |       |           |                  |             |                    |             |                    |
|      |       |           |                  |             |                    |             |                    |
|      |       |           |                  |             |                    |             |                    |
|      |       |           |                  |             |                    |             |                    |
|      |       |           |                  |             |                    |             |                    |

Instructions Quiz **Experiment** Questionnaire Coin Flip Submission Finish

**Information**

Part: 3  
Round: 1

---

**Charity**

American Humane Association  
American Red Cross  
Amnesty International  
Habitat for Humanity  
Sierra Club  
Susan G. Komen for the Cure  
Wounded Warrior Project

Details... Confirm

**Partner (Donor)**

LEFT RIGHT

TOP

**7, 7**      **0, 5**

**Me (Non-Donor)**

BOTTOM

**5, 0**      **5, 5**

**Next Round**

**History**

| Part | Round | My Status | Partner's Status | My Decision | Partner's Decision | My Earnings | Partner's Earnings |
|------|-------|-----------|------------------|-------------|--------------------|-------------|--------------------|
| 3    | 1     | Non-Donor | Donor            | TOP         | RIGHT              | 0.00        | 5.00               |
| 2    | 10    | Donor     | Non-Donor        | TOP         | RIGHT              | 0.00        | 5.00               |
| 2    | 9     | Donor     | Non-Donor        | TOP         | LEFT               | 7.00        | 7.00               |
| 2    | 8     | Donor     | Non-Donor        | TOP         | RIGHT              | 0.00        | 5.00               |
| 2    | 7     | Donor     | Non-Donor        | TOP         | LEFT               | 7.00        | 7.00               |
| 2    | 6     | Donor     | Donor            | TOP         | LEFT               | 7.00        | 7.00               |
| 2    | 5     | Donor     | Donor            | BOTTOM      | RIGHT              | 5.00        | 5.00               |
| 2    | 4     | Donor     | Donor            | BOTTOM      | RIGHT              | 5.00        | 5.00               |
| 2    | 3     | Donor     | Non-Donor        | TOP         | LEFT               | 7.00        | 7.00               |
| 2    | 2     | Donor     | Non-Donor        | TOP         | LEFT               | 7.00        | 7.00               |
| 2    | 1     | Donor     | Donor            | TOP         | LEFT               | 7.00        | 7.00               |
| 1    | 10    | Non-Donor | Donor            | TOP         | RIGHT              | 0.00        | 5.00               |
| 1    | 9     | Non-Donor | Non-Donor        | TOP         | RIGHT              | 0.00        | 5.00               |
| 1    | 8     | Non-Donor | Non-Donor        | TOP         | RIGHT              | 0.00        | 5.00               |

## Questionnaire

[Instructions](#) | [Quiz](#) | [Experiment](#) | **Questionnaire** | [Coin Flip](#) | [Submission](#) | [Finish](#)

You are almost finished. Please take a few minutes to answer the following questions.

Please select the category that best indicates your level of agreement.

Companies should take actions to help society.

select... Strongly Disagree Somewhat Disagree Neither Disagree nor Agree Somewhat Agree Strongly Agree

I prefer to work for a company that takes actions to help society.

select... Strongly Disagree Somewhat Disagree Neither Disagree nor Agree Somewhat Agree Strongly Agree

I share the same values with people who donate to charity.

select... Strongly Disagree Somewhat Disagree Neither Disagree nor Agree Somewhat Agree Strongly Agree

People who donate to charity care about others.

select... Strongly Disagree Somewhat Disagree Neither Disagree nor Agree Somewhat Agree Strongly Agree

People who donate to charity are cooperative.

**Submit Questionnaire**

## Coin Flip

[Instructions](#) | [Quiz](#) | [Experiment](#) | [Questionnaire](#) | **Coin Flip** | [Submission](#) | [Finish](#)

Below is a set of computerized coin flips expressed in Francs. You will receive a cash payout depending on which coin flip you chose and the outcome of the computerized coin flip. We will convert your Francs into dollars at a rate of 2 Francs = 1 US dollar. Choose the coin flip you prefer:

- 3.2 Francs if the coin flips heads, and 3.2 Francs if the coin flips tails.
- 4.8 Francs if the coin flips heads, and 2.4 Francs if the coin flips tails.
- 6.4 Francs if the coin flips heads, and 1.6 Francs if the coin flips tails.**
- 8.0 Francs if the coin flips heads, and 0.8 Francs if the coin flips tails.
- 9.6 Francs if the coin flips heads, and 0 Francs if the coin flips tails.



The coin flipped tails. You earned 1.6 Francs.

Waiting...



 Congratulations! You are done. Let's calculate your cash payout...

The following rounds were selected from each part to determine your cash payout:

Part 1 Round 9    Part 2 Round 2    Part 3 Round 8    Part 4 Round 5

Your total Francs earned today: 21.4

Your total cash payout is: **\$10.70** 


Total donations to charity: **\$1.00** 


Fill in your name below to receive your cash payout.

First:                      Last:                      Student ID #:  
                                           

If you want to see how much money was donated to each charity based on today's session, fill in your email below to receive a copy of each receipt. You will receive an email within 24 hours.

Email Address: (optional)

**Payout Breakdown** 

 \$10.70 = Experiment earnings of \$9.90 + Coin Flip earnings of \$0.80

## APPENDIX C: IRB Approval Letter



RESEARCH INTEGRITY AND COMPLIANCE  
Institutional Review Boards, FWA No. 00001669  
1790 Bruce B. Downs Blvd., MDC015 • Tampa, FL 33612-4799  
(813) 974-5638 • FAX (813) 974-7091

July 19, 2017

Sukari Farrington  
School of Accountancy  
USF, 4202 East Fowler Ave BSN 3403  
College of Business, School of Accounting  
Tampa, FL 33620

RE:                   **Exempt Certification**  
IRB#:                Pro00031293  
Title:                SH Decision Study

Dear Mrs. Farrington:

On 7/19/2017, the Institutional Review Board (IRB) determined that your research meets criteria for exemption from the federal regulations as outlined by 45CFR46.101(b):

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:  
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

As the principal investigator for this study, it is your responsibility to ensure that this research is conducted as outlined in your application and consistent with the ethical principles outlined in the Belmont Report and with USF HRPP policies and procedures.

Please note, as per USF HRPP Policy, once the Exempt determination is made, the application is closed in ARC. Any proposed or anticipated changes to the study design that was previously declared exempt from IRB review must be submitted to the IRB as a new study prior to initiation of the change. However, administrative changes, including changes in research personnel, do not warrant an amendment or new application.

Given the determination of exemption, this application is being closed in ARC. This does not limit your ability to conduct your research project.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have

any questions regarding this matter, please call 813-974-5638.

Sincerely,

A handwritten signature in black ink, appearing to read "Kristen Salomon", followed by a horizontal line.

**Kristen Salomon, Ph.D., Vice Chairperson**  
**USF Institutional Review Board**