Social Capital, Trust, and Firm Performance:
The Value of Corporate Social Responsibility during the Financial Crisis[*]

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During the 2008-2009 financial crisis, firms with high social capital, measured as corporate social responsibility (CSR) intensity, had stock returns that were four to seven percentage points higher than firms with low social capital. High-CSR firms also experienced higher profitability, growth, and sales per employee relative to low-CSR firms, and they raised more debt. This evidence suggests that the trust between the firm and both its stakeholders and investors, built through investments in social capital, pays off when the overall level of trust in corporations and markets suffers a negative shock.

"The present financial crisis springs from a catastrophic collapse in confidence ... Financial markets hinge on trust, and that trust has eroded." (Joseph Stiglitz, 2008)

"The fundamental problem isn't lack of capital. It's lack of trust. And without trust, Wall Street might as well fold up its fancy tents." (Former U.S. Labor Secretary Robert Reich, 2008)

"The global financial and economic crisis has done a lot of harm to the public trust in the institutions, the principles and the concept itself of the market economy." (OECD Secretary General Angel Gurria, 2009).

"Something important was destroyed in the last few months of 2008. It is an asset crucial to production, even if it is not made of bricks and mortar... This asset is trust." (Paolo Sapienza and Luigi Zingales, 2012)

The financial crisis highlighted the importance of trust for well-functioning markets and financial stability, but discussions on the role of trust and, more generally, social capital in economic life are not new. Already in 1972, Arrow argued that "virtually every economic transaction has within itself an element of trust", and suggested that much of the economic backwardness in the world might be due to the lack of mutual confidence. Following this theme, Putnam (1993) shows that higher social capital societies, in which trust is greater, display higher economic development (see also, Fukuyama (1995), La Porta, et al. (1997), and Knack and Keefer (1997)). Focusing on capital markets, Guiso, Sapienza, and Zingales (2004, 2008) document that trust derived from greater social capital allows for more stock market participation. These studies, and related work, demonstrate the importance of social capital and trust from a macroeconomic perspective. However, the extent to which social capital and trust impact firm performance is a relatively unexplored area in the literature. The objective of this paper is to address this question.

Empirical identification of the effect of trust and, more generally, social capital on firm performance is challenging, however. First, social capital is a broadly defined concept, often encompassing trust and cooperative norms (e.g., Scrivens and Smith (2013)), and, hence, measuring it is not straightforward. Second, without exogenous variation in firm-level social capital it is difficult to attribute changes in performance to changes in social capital.

To address the first challenge, we focus on a firm's Corporate Social Responsibility (CSR) activities as a measure of its social capital, following recent work in economics (Sacconi and Degli Antoni (2011)) suggesting

that a firm's CSR activities are a good proxy for its social capital, and also the widespread view among practitioners and corporations that a firm's CSR activities generate social capital and trust.[1]

To address the second challenge, we employ the 2008-2009 financial crisis, a period when public trust in corporations, capital markets, and institutions unexpectedly declined.[2] If a firm's social capital helps build stakeholder trust and cooperation (Putnam (1993)), it should pay off when being trustworthy is more valued, such as in an unexpectedly low-trust period. From a shareholder perspective, if high-social-capital firms are perceived as being more trustworthy, investors may place a valuation premium on such firms when overall trust in companies is low (see Guiso, Sapienza, and Zingales (2008)), such as in the 2008-2009 financial crisis. From a stakeholder perspective, the reciprocity concept often discussed in studies of social capital (i.e., the idea that "I will be good to you because I believe you will be good to me at some point in the future") suggests that stakeholders (e.g., employees, customers, suppliers, and the community at large) are more likely to help high-social-capital firms weather a shock, given that such firms displayed greater attention to, and cooperation with, stakeholders in the past.

To test whether firm-level social capital pays off during a crisis of trust, we examine the performance of a sample of 1,673 non-financial firms with CSR data available on the MSCI ESG Stats database (formerly known as KLD) over the August 2008-March 2009 financial crisis period. In regressions that control for a wide variety of factors and firm characteristics (including governance and transparency), we find that firms that entered the crisis period with high CSR ratings have significantly higher (between four and seven percentage points) crisis-period stock returns than those that entered it with low CSR ratings. The economic importance of social capital in explaining stock returns is at least half as large as the effect of cash holdings and leverage, financial variables that have been shown to affect crisis period returns (Duchin, Ozbas, and Sensoy (2010) and

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[1] Following the financial crisis, many corporations have emphasized the importance of a firm's social capital, driven by its CSR investments, in rebuilding stakeholder trust. However, the practitioner view that CSR helps build trust predates the financial crisis (Fitzgerald (2003)).

[2] The notion that the crisis led to a decline in public trust in corporations has been corroborated by surveys, such as the Edelman Trust Barometer 2009, which shows that 62% of respondents, from a twenty-country survey, had lower trust in corporations in the aftermath of the financial crisis (for the respondents from the U.S., this figure is 77%).

Almeida, et al. (2012)). This result stresses the importance of expanding the focus beyond financial capital when attempting to understand the drivers of firm-level performance during a crisis of trust.

To alleviate concerns that the stock market outperformance we observe is due to something else rather than a shock to trust, we conduct three further tests. First, we investigate the association between CSR and stock returns during the Enron/Worldcom crisis of the early 2000s, a period in which widespread revelation of fraud served to undermine investor confidence in the U.S. stock market. We find that high-CSR firms also earned excess returns relative to low-CSR firms during this period. Second, we investigate whether our results are driven by the decline in the supply of credit that firms endured during the financial crisis, rather than by a decline in market-wide trust. To do so, we test whether CSR is related to stock returns in the period July 2007 through July 2008, when there was a shock to the credit supply but no shock to the importance of trust. We find no significant relation between CSR and stock returns during this earlier period of the crisis. Third, we study whether the relation between CSR and crisis-period returns is stronger in high-trust regions, as identified in the 2006 General Social Survey. We find that this is indeed the case.

It is, of course, possible that high-CSR firms also outperform low-CSR firms during non-crisis periods (see also Edmans (2011)). To assess this possibility, we examine whether the superior performance of high-CSR firms extends to periods of economic growth or economic recovery using firm fixed effects models that test the relation between CSR and firm performance before, during, and after the crisis. These models show that CSR has a positive impact on returns only during the crisis period, and that this effect is not due to time-invariant unobservable firm characteristics.

We next seek to identify the mechanisms behind the outperformance of high-CSR firms by examining the profitability and productivity of firms as well as their capital raising during the crisis. We find that high-CSR firms have higher profitability and gross margins, and experience higher sales growth than other firms during the crisis. They also have higher sales per employee and are able to raise more debt. These results are consistent with a stakeholder and investor commitment to help out firms deemed to be more trustworthy during the crisis.

Collectively, the results showing that investors assign a premium to high-CSR firms during a crisis of trust and that real effects take place at the firm level during this time provide evidence that greater social capital

maps into higher returns at the microeconomic level. From a firm's perspective, our results indicate that the benefits which accrue to firms that build their social capital through CSR activities outweigh the costs of these activities when trust declines unexpectedly. As such, the building of social capital can be thought of as an insurance policy which pays off when investors and the economy at large face a severe crisis of confidence and when the reward for being identifiably trustworthy markedly increases. Our results indicate an enhanced insurance benefit to CSR that goes beyond the notion that CSR acts as insurance against idiosyncratic firm-specific legal risk (see, e.g., Godfrey, Merrill, and Hansen (2009), Minor (2015), and Hong and Liskovich (2016)).

While our research focus is on the impact of social capital on firm performance during a shock to trust, our study allows us to sidestep typical endogeneity concerns that make it difficult to identify whether CSR activities impact firm value, despite much research on this issue.[3] In our natural experiment, the exogenous financial shock disrupts the equilibrium, while levels of corporate social responsibility remain fixed, at least in the short term. This allows us to directly observe how investors adjust their valuations of firms with differing attitudes toward corporate social responsibility. Thus, this paper also makes a contribution to the literature investigating whether CSR is value-enhancing for shareholders. We recognize, however, that we do not have exogenous variation in the levels of CSR, thereby limiting the inferences we can draw about the impact of CSR on performance during normal times.

The remainder of the paper is structured as follows. Section I discusses in more detail the theoretical motivation behind our proxies and tests. Section II discusses our data and summary statistics. In Section III, we analyze whether CSR ratings impact stock returns during the crisis and conduct robustness tests. In Section IV, we investigate several mechanisms that may explain the excess performance of high-CSR firms. Section V concludes the paper.

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[3] While much of the literature described thus far suggests that shareholders can derive value from CSR investments, another strand of the literature argues that CSR investments could stem from agency conflicts between managers and shareholders (see, e.g., Cheng, Hong and Shue (2016) for evidence that supports the agency view and Ferrell, Liang, and Renneboog (2016) and Albuquerque, Durnev, and Koskinen (2015) for evidence that does not). Margolis, Elfenbein, and Walsh (2009) and Kitzmueller and Shimshack (2012) provide surveys of the CSR literature.

I.   Trust, Social Capital, and Corporate Social Responsibility

A.   *Trust and Social Capital*

Over the last twenty years, the terms "social capital" and "trust" have become increasingly popular in the economics and finance literature (Putnam (1993, 2000), Knack and Keefer (1997), La Porta et al. (1997), Guiso, Sapienza, and Zingales (2004, 2008)).[4] Often used indistinctly, both concepts are somewhat abstract, although social capital is arguably the hardest one to define due to its multidimensional nature.

Trust is often understood as "the expectation that another person (or institution) will perform actions that are beneficial, or at least not detrimental, to us regardless of our capacity to monitor those actions…so that we will consider cooperating with him (the institution)." (Sapienza and Zingales (2012), based on Gambetta (1988)). This definition highlights the probabilistic nature of trust (e.g., Gambetta (1988)), the concept of cooperation (e.g., Fukuyama (1995) and La Porta et al. (1997)), and the inability to monitor others' actions ex-ante (e.g., Dasgupta (1988)).[5]

Social capital is a broader concept. For example, Putnam (1993, 2000) views social capital as "the propensity of people in a society to cooperate to produce socially efficient outcomes" (La Porta, et al. (1997)) and highlights "the norms of reciprocity and trustworthiness" that arise from connections among individuals. A recent OECD paper (Scrivens and Smith (2013)) provides a decomposition of social capital into four dimensions, with the intent of facilitating the development of empirical measures: (i) personal relationships; (ii) social network support; (iii) civic engagement; and (iv) trust and cooperative norms.[6] The notion of social capital we explore, like much of the work in economics and finance (e.g., Putnam (1993, 2000), Fukuyama (1995), Knack and Keefer (1997), La Porta et al. (1997), Guiso, Sapienza, and Zingales (2004, 2008)), is mostly related to the last two interpretations of the OECD.

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[4] For recent theoretical work on the origins of trust, see Carlin, Dorobantu, and Viswanathan (2009).

[5] The concept of trust is also related to the concept of integrity put forward in recent work by Erhard, Jensen, and Saffron (2009) and Erhard and Jensen (2015), who argue that trust follows from a proactive stance to establish integrity – the process of honoring one's word on commitments made to a variety of constituents consistently.

[6] The first two interpretations of social capital are often used in sociology and present social capital as a resource for individuals built through networks (e.g., Coleman (1988), Lin (2001)); the last two interpretations are often used in politics and economics and emphasize social capital as a resource for facilitating cooperation at the group, community or societal level.

The civic engagement aspect of social capital refers to the activities through which agents contribute positively to the community and social life (e.g., volunteering, political participation, donations) (Guiso, Sapienza, and Zingales (2011), Scrivens and Smith (2013)). Civic engagement can engender positive outcomes by, for example, fostering trust and norms of cooperation, such as reciprocity.[7]

Trust and cooperative norms comprise factors (social norms – including reciprocity – and shared values) that shape the way that agents behave towards each other and as members of their society. Under this definition, social capital is viewed as an enabler of collective action and cooperation, leading to positive outcomes (e.g., economic growth, government performance, environmental stewardship). The channels through which positive outcomes are derived include: (i) reductions in transaction costs (by reducing the need for formal contracts in the presence of information asymmetry (Knack and Keefer (1997)); and (ii) potentially more efficient allocation of resources.

All these concepts are, of course, interconnected: for example, civic engagement can generate trust and cooperation, which, in turn, can foster further civic engagement; likewise, cooperation can build trust and vice versa. Furthermore, social capital can accrue at different levels, such as societal, institutional and individual levels. Hence, some individuals or institutions, including firms, can invest more in developing social capital than others (see Coleman (1990), Leana and van Buren (1999), and Glaeser, Laibson, and Sacerdote (2002)).

B.   *Social Capital and Corporate Social Responsibility*

To measure social capital at the firm level, we focus on a firm's Corporate Social Responsibility (CSR) activities. We motivate this metric from both an academic and practitioner viewpoint. Academic work linking social capital, trust and CSR is scarce, but a recent book edited by Sacconi and Degli Antoni (2011) notes that definitions of CSR tend to map directly into aspects of social capital such as civic engagement, cooperative norms, shared beliefs, and trust. One definition commonly used by academics and practitioners, proposed by the World Business Council for Sustainable Development (2004), is that "CSR is the commitment of a business to

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[7] Putnam (1993, p. 172) defines the concept of generalized reciprocity as "a continuing relationship of exchange that is at a given time unrequited or imbalanced, but that involves mutual expectations that a benefit granted out should be repaid in the future." For earlier references to reciprocity, see Gouldner (1960).

contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve the quality of life." This definition incorporates these aspects of social capital. Sacconi and Degli Antoni (2011) present a series of studies which show that firms can build social capital and trust through CSR investments.

Additionally, the belief that CSR activities can help build social capital and trust is widespread among corporate managers. For example, in two recent CEO surveys conducted by PricewaterhouseCoopers (2013, 2014), CEOs indicate their plans to increase their firms' engagement in CSR activities to restore stakeholder trust after the crisis.

Several recent studies support our claim that stakeholders are more likely to trust and cooperate with high-CSR firms. Eccles, Ioannou, and Serafeim (2014) show that high-CSR firms implement processes that consistently engage with stakeholders over the long term.[8] Bénabou and Tirole (2010) argue that stronger stakeholder engagement via CSR can lessen the likelihood of short-term opportunistic behavior by managers, a view supported by the empirical evidence in Gao, Lisic, and Zhang (2014), who show that executives of high-CSR firms are less likely to engage in insider trading than executives of low-CSR firms. In a similar vein, Kim, Park, and Wier (2012) find that socially responsible firms are less likely to manage earnings.

While we acknowledge the limitations of CSR as an all-encompassing metric of firm-level social capital (see Scrivens and Smith (2013) and Sapienza, Toldra-Simats, and Zingales (2013) for a discussion of social capital metrics), we note that (i) CSR is measureable, albeit inexactly; (ii) CSR can have a non-negative payoff (see, e.g, Edmans (2011), Servaes and Tamayo (2013), and Flammer (2015)); (iii) firm-level CSR can change through investment or depreciation. These three elements combined alleviate Solow's (1995) concerns of social capital notions.[9]

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[8] The idea of CSR as a competitive advantage is proposed and discussed in detail in Porter and Kramer (2006, 2011).
[9] Solow (1995) argues that "if 'social capital' is to be more than a buzzword… There needs to be an identifiable process of 'investment' that adds to the stock, and possibly a process of 'depreciation' that subtracts from it. The stock of social capital should somehow be measurable, even inexactly. Observable changes in it should correspond to investment and depreciation."

C.   Social Capital and Firm Valuation

In this paper, we argue that if a firm's social capital helps build stakeholder trust and cooperation, it should pay off in particular when being trustworthy is more valued, such as in an unexpectedly low-trust period.

From a shareholder perspective, Guiso, Sapienza, and Zingales (2008, p. 2557) posit that "the decision to invest in stocks requires not only an assessment of the risk-return trade-off given the existing data, but also an act of faith (trust) that the data in our possession are reliable and that the overall system is fair." During an unexpected decline in general trust, outside shareholders are likely to be more concerned that the financial information they previously relied upon to guide investment decisions may not be credible. As such, they will seek metrics such as social capital ratings that speak to a firm's values and integrity, placing a valuation premium on firms that are deemed to be more trustworthy.

From the perspective of other stakeholders (e.g., employees, customers, suppliers, and the community at large), much of their interaction with the firm occurs through implicit or incomplete contracts, which might not be honored by either party during a crisis. Social capital could facilitate these interactions by fostering trust and cooperation (Putnam (1993)) and by reducing the need for formal contracts (Knack and Keefer (1997)). For example, stakeholders may perceive that the probability of breaching (implicit) contracts is lower for high-social-capital firms due to shared values and cooperative norms. Likewise, stakeholders are more likely to "do whatever it takes" to help high-social-capital firms weather a crisis, given that such firms displayed greater attention to, and cooperation with, stakeholders in the past.[10] This observation is consistent with the notion of reciprocity often discussed in studies of social capital and with prior work showing that stakeholders seem to cooperate more when they perceive firms to be trustworthy (e.g., for employees, see Guiso, Sapienza, and Zingales (2015); for customers, see Servaes and Tamayo (2013)). The benefits of social capital derived from stakeholder cooperation may be present during any crisis, but as stressed by Sapienza and Zingales (2012) cooperation breaks down without trust; as such, firm level social capital becomes even more relevant when the

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[10] Examples include business contacts continuing solid buying or selling relationships, employees working harder (or more cheaply) and more creatively to ensure success, or outside regulators/agencies being more sympathetic to these firms' needs for direct relief or for flexibility regarding regulations.

level of trust in corporations, institutions, and capital markets plummets, as occurred during the 2008-2009 financial crisis.

II.   Sample and Summary Statistics

A.   *Sample Construction*

To construct our sample, we gather information on firms' CSR ratings from the MSCI ESG Stats Database, which contains environmental, social, and governance ratings of large, publicly traded companies.[11] This database contains yearly ratings on roughly the 3,000 largest U.S. companies and has been used in a large number of studies examining the effect of CSR on firm performance (e.g., Hong and Kostovetsky (2012), Deng, Kang, and Low (2013), Servaes and Tamayo (2013), Krüger (2015), and Borisov, Goldman, and Gupta (2016)).[12] ESG Stats classifies environmental, social, and governance performance in 13 different categories: community, diversity, employment, environment, human rights, product, alcohol, gaming, firearms, military, nuclear, tobacco, and corporate governance. As in Servaes and Tamayo (2013), we focus on the first five of these categories. We do not examine the product category because it contains a number of elements that we consider to be outside the scope of CSR, such as product quality and innovation (our findings are unchanged if we include the product category in the construction of our measure of CSR). Similarly, we do not consider in our tests the ESG Stats categories that penalize firms' participation in the six industries that are considered controversial, as there is nothing incremental that firms can do to change a ranking score, except change industries (in addition, we control for industry in all our tests). Finally, we do not examine the ESG Stats corporate governance category in our main tests because governance is generally not part of a firm's CSR remit. However, it is possible that the governance category in aggregate, or some of the individual governance category

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[11] The MSCI ESG Stats Database was previously known as the KLD Stats database constructed by Boston-based KLD Research and Analytics, Inc. (KLD).

[12] The database is constructed as follows. MSCI first defines a number of ESG categories and within each category it specifies a number of criteria which capture good/poor ESG performance. Once these criteria are set, MSCI scans public databases covering environmental issues, labor issues, and the like to ascertain the ESG performance of the firm (e.g., has the firm committed Environmental Protection Agency violations or had an industrial dispute?). Throughout this process, MSCI assigns analysts to each firm to study the different elements of CSR, and relies on sources beyond a firm's reports and publicity of its green activities. See also Krüger (2015) for a more detailed description of the process followed by MSCI to construct the CSR ratings.

components are seen by investors as measures correlated with the trustworthiness of a firm; hence, we examine this category in robustness tests.

For each of the five categories we consider, ESG Stats compiles data on both strengths and concerns. We are interested in capturing both elements; accordingly, we construct a net CSR measure that adds strengths and subtracts concerns. For each category, however, the maximum number of strengths and concerns varies across time (e.g., the total maximum of strengths for community is seven in 2005, but only four in 2010). To obtain numerically consistent measures over time, we scale the strengths (or concerns) for each category by dividing the number of strengths (or concerns) for each firm-year by the maximum number of strengths (or concerns) that were possible for that category for that year. From this exercise, we obtain strength and concern indices that range from 0 to 1 for each category-year. Our measure of net CSR involvement in each category-year is then obtained by subtracting the concerns index from the strengths index; thus, the net CSR index per category ranges from -1 to +1. Finally, to obtain our primary explanatory variable, a firm's total net CSR index (*CSR* hereafter), we combine the net CSR indices for the categories of community, diversity, employment, environment, and human rights. This is a net measure across our set of stakeholder-oriented categories, and ranges from -5 to +5. There is substantial variation in this measure across firms and industries. For example, in 2006 in the Apparel Retail Industry, GAP gets a score of 0.40, while Limited Brands scores -0.53; in Chemicals, Air Products and Chemicals' score is 0.16, while Celanese scores -1.36.[13]

We obtain stock return data from CRSP and accounting data from Compustat. We remove financial firms from our sample due to the extensive amount of government support given to such firms during the crisis. We also remove micro-cap stocks (those with a market capitalization below $250 million as of year-end 2007) because these stocks tend to have low liquidity and high bid-ask spreads, and are subject to more price pressure effects of trading (see, e.g., Fama and French (2008)), all of which would likely be more severe during the financial crisis.

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[13] Limited Brands has employee, human rights, and diversity concerns, only partially outweighed by diversity strengths; GAP, on the other hand, has strengths in diversity, human rights, and community, with some employee concerns. Celanese's score is due to environmental, employee, and diversity concerns; Air Products & Chemicals also has environmental and employee concerns, but its strengths in the same areas outweigh these concerns.

As in Lins, Volpin, and Wagner (2013) we define the financial crisis as the period from August 2008 to March 2009. August of 2008 preceded the September 2008 Lehman Brothers bankruptcy, while March of 2009 is the month in which the S&P 500 hit its lowest point of the crisis. This period also corresponds to the period of decline in trust as suggested by Sapienza and Zingales (2012). The decline in trust later in 2008 is also corroborated by the Trust Barometer developed by Edelman, the world's largest independent public relations firm, which conducts global surveys of trust in business, government, NGOs and the media. They report that trust in business in the U.S. declined from 58% in early 2008 to 38% in early 2009.[14]

The main stock return measures for each firm are *Raw Crisis Period Return*, which is the firm's raw buy-and-hold return from August 2008 through March 2009, and *Abnormal Crisis Period Return*, which is the raw return minus the expected return, based on the market model estimated over the 60-month period ending in July 2008. To avoid problems with outliers, we winsorize these returns at the 1st and 99th percentiles. We relate these return measures to our *CSR* measure for the year 2006 to guard against the possibility that by year-end 2007 firms may have already changed their CSR policies to the extent they anticipated a potential crisis ahead.[15]

After combining non-financial firms with sufficient data coverage on the CRSP and Compustat databases and firms on the ESG Stats database, we obtain a sample of 1,673 non-financial firms for which all explanatory variables are available for the crisis period.

B.   Descriptive statistics

Table I provides descriptive statistics for our main variables. The first row of Panel A of Table I shows that our primary variable of interest, *CSR*, is slightly negative with a mean value of -0.165 and a median value of -0.200. Thus, the average and median firm has more CSR concerns than strengths, consistent with Deng, Kang, and Low (2013), Servaes and Tamayo (2013), and Borisov, Goldman, and Gupta (2016). The next row shows

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[14] The Global Competitiveness Index developed by the World Economic Forum also contains a component measuring trust in financial markets and is released in September of each year (it is partially based on survey evidence). This trust measure shows a decline from 5.65 in September 2008 to 5.06 in September 2009. The Financial Trust Index (financialtrustindex.org) developed by Sapienza and Zingales is another measure of public trust, but because this index started after the onset of the crisis we cannot employ it to corroborate the extent to which trust changed as a result of the crisis.

[15] We have repeated all our analyses using CSR measured at year-end 2005 in case 2006 CSR data partially reflect the anticipation of a future crisis. All our findings persist. These results are reported in the Internet Appendix.

that the *Raw Crisis Period Return* is substantially negative, with a mean of -39.1%, a median of -40.3%, and a 25th percentile value of -59.5%, indicating that investors and stakeholders were likely quite concerned about the survival prospects of many of the firms they held in their portfolios, worked for, or interacted with in business transactions. The median abnormal return is close to zero at 1.3%, while the mean is 11.6%. Table I also provides definitions and descriptive statistics for firm characteristics that we use as control variables in our models, and Panel B presents a correlation matrix of all variables employed in our main analyses.

III. Crisis Period Returns

A. Baseline results

We estimate various regression models of stock returns during the crisis period as a function of firms' pre-crisis CSR ratings and a number of control variables. Panel A of Table II contains our baseline regression models. The dependent variable in columns (i) and (iii) is the *Raw Crisis Period Return*, while in columns (ii) and (iv) it is the *Abnormal Crisis Period Return.* Our variable of interest is the firm's *CSR* score measured at year-end 2006. In all models, we include industry dummies (defined at the two-digit SIC level) because some industries may be more prone to CSR investments than others and they may have been differentially affected by the financial crisis. We also control for the firm's factor loadings based on the Fama-French 3-factor model plus the momentum factor.[16]

Models (i) and (ii) show that firms with higher CSR ratings performed significantly better during the crisis. The effect of CSR on returns is large economically; a one standard deviation increase in *CSR* (0.381) is associated with a 2.25 percentage point increase in raw returns and a 4.15 percentage point increase in abnormal returns during the crisis.

One concern with the specifications reported in models (i) and (ii) is that the strong performance of high-CSR firms during the crisis may be due to omitted variables that happen to be correlated with CSR, and not due to CSR itself. To address this possibility, in models (iii) and (iv) we control for a firm's financial health in

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[16] We estimate the factor loadings over the 60 months prior to the onset of the crisis, using factor returns obtained from Kenneth French's website. Firms are excluded from the analysis if fewer than 12 months of data are available to estimate factor loadings.

the year before the crisis and for other firm characteristics that have been found to affect stock returns. We employ several proxies to measure a firm's financial health and, thus, its ability to withstand a severe downturn in the economy: *Cash holdings* (computed as cash and marketable securities divided by assets), *Short-term debt* (computed as debt in current liabilities divided by assets), *Long-term debt* (computed as long-term debt divided by assets), and *Profitability* (computed as operating income divided by assets). During a crisis, profitable, cash rich firms with low debt can continue investing, while other firms may be forced to cut investment, especially if they have short-term debt maturing during the crisis (see Duchin, Ozbas, and Sensoy (2010), Almeida, et al. (2012), and Harford, Klasa, and Maxwell (2014) for empirical evidence consistent with these expectations).

Because additional firm characteristics may also be important for stock returns (see, e.g., Daniel and Titman (1997)), we also control for *Size* (measured as the log of a firm's equity market capitalization), *Book-to-market* (computed as book value of equity divided by market value of equity), and *Momentum* (computed as the raw return over the period August 2007 to July 2008). We also add a dummy for firms with a *Negative Book-to-market* ratio, as such firms are likely distressed and their returns may behave more like those of high book-to-market firms than low book-to-market firms (see Fama and French (1992)). Finally, we control for a firm's *Idiosyncratic risk* (computed as the residual variance from the market model estimated over the five-year period ending in July 2008, using monthly data) under the premise that stock price volatility may also affect returns (Goyal and Santa-Clara (2003)). We measure financial health and firm characteristics at the end of December of 2007, or as close as possible to it for firms that do not have a December fiscal year-end, except for momentum and idiosyncratic volatility, which are computed over one and five years, respectively, before the start of the crisis period.

The results presented in models (iii) and (iv) of Panel A of Table II confirm that high-CSR firms had higher stock returns during the crisis. The magnitude of the high-CSR outperformance is somewhat attenuated once we include additional control variables, but the effect is still important economically. For example, in model (iii), a one standard deviation increase in *CSR* (0.381) is associated with a 1.83 percentage point increase in raw crisis-period returns.

Turning to the control variables, as expected, firms that entered the crisis in better financial health (higher cash holdings and profitability and lower debt) have higher crisis-period stock returns, while firms with higher idiosyncratic risk had lower returns. In terms of economic significance, the effects of leverage, cash holdings and idiosyncratic risk are the largest. Based on model (iii), a one standard deviation increase in long-term debt (0.19), cash holdings (0.20), and idiosyncratic risk (0.01) is associated with a change in raw crisis period returns of -2.16, 3.48, and -3.16 percentage points, respectively. Thus, the economic impact of CSR ratings on returns during the crisis is more than four fifths of the impact of leverage and more than half of the impact of cash holdings and volatility, indicating that social capital is indeed important in explaining crisis period returns.

In Panel B of Table II, we re-estimate our previous models, but instead of including our linear measure of CSR as an explanatory variable, we divide firms into *CSR* quartiles and include dummies for quartiles 2 through 4 (the intercept captures the effect of quartile 1). This approach allows us to assess whether the effect of a firm's social capital on returns is more pronounced at very high or low levels of social capital. The results again illustrate that firms with better CSR ratings had the largest crisis-period returns. The difference in raw returns between firms in the best and worst *CSR* quartiles, as captured by the coefficient on *CSR4*, is 5.52 percentage points when we omit firm characteristics and 4.53 percentage points when we include them. For abnormal returns, the difference is even greater at 9.85 percentage points and 7.27 percentage points, respectively. The impact of CSR on returns is monotonic, but not entirely linear. Based on model (iv), which features the full set of control variables, abnormal returns improve about 4.8 percentage points when moving from the lowest to the 2nd lowest quartile of *CSR*. Only modest improvements in returns accrue when moving to the 3rd quartile, while a move from the 3rd to the 4th quartile has a more significant improvement in returns of 1.65 percentage points. These results indicate that investors were most concerned when a firm had a low level of social capital and most reassured when firm social capital was high.

We also ensure that our findings persist after we control for measures of corporate governance. Recent evidence shows that better-governed firms performed relatively well in the financial crisis (Lins, Volpin, and Wagner (2013) and Nguyen, Nguyen, and Yin (2015)). If governance is correlated with our CSR measure, then

it is possible that *CSR* is simply proxying for governance and that we are suffering from an omitted variable bias. To address this concern, we gather data on a variety of governance measures as of year-end 2006. We first use our prior method to construct a governance measure from the ESG Stats database: for each firm, the number of governance concerns is divided by its possible maximum and subtracted from the number of strengths divided by its possible maximum, yielding a governance index that ranges from -1 to +1. We also measure governance using the firm's *E-index* (the entrenchment index featuring the six governance provisions[17] identified in Bebchuk, Cohen, and Ferrell (2009)), *Board independence* (the fraction of the board consisting of outside directors), *Board size*, a dummy if the *CEO is not the Chairman*, and *Board ownership* (the fraction of outstanding shares owned by the board members)*,* obtained from the MSCI Governance Metrics and Directors databases.

In Panel C of Table II, we repeat the analyses from Panel A, but we now add governance controls. All models include the full set of other control variables employed in Panels A and B. Models (i) and (ii) show that the *ESG Stats governance index* is not significantly related to raw or abnormal crisis-period returns and that the impact of *CSR* on crisis period returns is virtually identical to that reported previously, providing evidence that the *CSR* effect is not picking up a governance component. Models (iii) and (iv) include all other governance measures and, again, the effect of *CSR* on crisis-period returns persists. The E-index is significant for both raw and abnormal return models, which provides evidence that firms with more entrenched managers performed worse during the crisis. The other governance provisions are insignificant.

To get a sense of the costs associated with firms' CSR activities, we follow Di Giuli and Kostovetsky (2014) and estimate a regression model (reported in the Internet Appendix) of the log of Selling, General, and Administrative (SG&A) expenses measured in 2006 as a function of *CSR* and a number of control variables (log assets, equity book-to-market, cash holdings to assets, total interest bearing debt to assets, dividend payments to assets, income before extraordinary items to assets). Increasing *CSR* from its 1st to its 4th quartile is associated with SG&A expenses that are $44.9 million higher for the median firm in our sample and $203.5 million for the

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[17] The E-index consists of the following six governance provisions that indicate entrenchment: a staggered board, limits to amend the charter, limits to amend bylaws, supermajority voting requirements, golden parachutes for executives, and the ability to adopt a poison pill (see Bebchuk, Cohen, and Ferrell (2009)).

mean firm. These cost estimates are substantial and may at least partly explain why not all firms choose to engage in CSR activities.

Overall, the findings reported in Table II show that more socially responsible firms suffered less during the crisis, and that this effect is not due to differences in financial strength or corporate governance.[18] These results are consistent with the view that a firm's investments in social capital provided investors with a greater sense of trust in the firm as the crisis was unfolding, leading to relative stock price outperformance.

B.   Excess returns and CSR during the Enron/Worldcom fraud scandals

The above findings show that a positive relation between CSR and excess returns obtains in the 2008-2009 crisis period when the overall level of trust in corporations suffered a severe shock. As this crisis was arguably the most severe crisis of confidence in generations, there are few other economy-wide shocks to trust that could have the same effect. Perhaps one 'shock' that comes close to a crisis of trust is the one caused by the ripple effects associated with the frauds and subsequent bankruptcies of Enron, Worldcom, and several other large firms. Enron filed for bankruptcy in December of 2001, after admitting to accounting violations in October 2001. Of course, fraud committed by one company alone does not necessarily dent trust in all firms. However, soon after Enron's accounting violations were revealed, other cases came into the spotlight. In the last quarter of 2001 and the first half of 2002 alone, Adelphia, Bristol-Myers Squibb, Global Crossing, Homestore.com, ImClone Systems, Kmart, Qwest, Tyco, and Worldcom were all in the news because of accounting irregularities and/or outright fraud. Global Crossing, Adelphia, and Worldcom filed bankruptcy in January, June, and July of 2002, respectively.

These bankruptcies and scandals are likely to have caused a general decline in trust in corporations. Several newspaper articles published at the time support this belief. For example, on July 14, 2002, Associated

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[18] We also examine whether CSR is proxying for reporting transparency or (the lack of) accounting concerns, using the following ESG Stats measures: CSR transparency strength, CSR transparency concern, accounting concern (see Dhaliwal, et al. (2011)). We find no evidence that this is the case. We also include an indicator variable set equal to one if the firm is included in the *100 Best Companies to Work For* list as published by Fortune Magazine in February 2008. Edmans (2011) finds that firms included in this list earn excess returns over the subsequent five-year period. This dummy is not significant in explaining crisis-period returns and its inclusion does not have any impact on the coefficient of our measure of CSR.

Press Newswires published an article entitled: "How much will the loss of trust in U.S. businesses hurt the economy?" and on July 17, The Wall Street Journal reported on a warning from Alan Greenspan, the Federal Reserve Chairman at the time, that breakdowns in corporate governance could undermine the trust necessary for efficient markets. On December 31, 2002, the Financial Times, when discussing the accuracy of forecasts that were made for 2002, stated that: "…even fewer divined that a loss of trust in company statements would be the trigger for another growl of the bear market."

To determine whether our findings also hold around the Enron crisis, we follow the same procedure as the one employed for the 2008-2009 financial crisis. Specifically, we cumulate returns over the period October 2001, when the Enron accounting violations were first revealed, to March 2003, the month prior to the beginning of the stock market rally that persisted until the start of the recent crisis. We relate these returns to our measure of *CSR* computed as of year-end 2000, and the same control variables as employed previously. Small firms (market values below $250 million in 2007 dollars) are again excluded, but this time we include financial firms as they were not uniquely supported by the government during this period. Factor loadings are computed over the five-year period ending in September 2001. Unfortunately, ESG Stats coverage for this period is much smaller, yielding a sample of only 412 companies.

Table III contains the results. We report two specifications each for raw and abnormal returns. Models (i) and (ii) use our primary measure of *CSR* (the difference between scaled CSR strengths and weaknesses) as the key explanatory variable, while models (iii) and (iv) contain a coarser CSR measure, namely a dummy variable, set equal to one if our measure of *CSR* is positive and zero otherwise. The latter specification may be better suited in this case, given the small sample size and the non-linearities in the CSR–return relation reported in Panel B of Table II.

As illustrated in both columns (i) and (ii), the coefficient on our linear measure of CSR, while positive, is not significantly different from zero. The indicator variable for high-CSR firms, which is employed as an explanatory variable in models (iii) and (iv), is significant, and indicates that firms with positive CSR scores had 7.3 percentage points higher raw returns (9.5 percentage points higher abnormal returns) than firms with

negative CSR scores. This finding suggests that during the crisis of confidence surrounding the accounting scandals revealed in 2001/2002, high-CSR firms again earned excess returns relative to low-CSR companies.

We ensure that our findings are robust to different starting and ending points of this crisis. Abnormal returns are positively related to the high-CSR dummy (at the 10% significance level or better) for any starting month between October 2001 (the month of the Enron bankruptcy) and May 2002 (after many other firms had revealed accounting irregularities), and for any ending month between December 2002 and March 2003 (when the stock market recovery started).

These results support our prior findings that social capital created through CSR activities matters more when investor confidence in corporations has been damaged.

C.   *Comparing returns inside and outside of the crisis period*

The previous evidence indicates that CSR affected stock returns during two periods when overall trust in corporations, institutions, and financial markets declined. In this section, we investigate whether this positive relation is indeed unique to periods of low trust or is common for most periods, perhaps due to some unobservable (omitted) risk factor which is correlated with CSR.

To address this question, we estimate a difference-in-differences model with continuous treatment and include firm and time fixed effects. Specifically, we construct a panel of monthly returns for all the firms in our sample starting in 2007, prior to the onset of the crisis, and ending in 2013, several years into the economic recovery. For this panel, we estimate the following model:[19]

$$Return_{i,t} = b_o + b_1 CSR_{i,2006} * Crisis_t + b_2 CSR_{i,2006} * Post\text{-}crisis_t + b_3{}' X_{i,t\text{-}1} + Time\ Dummies$$
$$+ Firm\ Fixed\ Effects + e_{i,t} \tag{1}$$

where $Return_{i,t}$ is the monthly raw or market-model adjusted return, $CSR_{i,2006}$ is our proxy for CSR, measured at year-end 2006, $Crisis_t$ is a dummy variable set equal to 1 in the period August 2008 – March 2009, $Post\text{-}crisis_t$ is a dummy variable set equal to 1 in the period April 2009 – December 2013, and $X_{i,t\text{-}1}$ is a vector of control variables. The control variables are the firm financial characteristics and factor loadings employed in Table II,

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[19] We are grateful to an anonymous referee for suggesting this test.

but updated annually (accounting variables) or monthly (market-based variables). We measure CSR twenty months before the onset of the crisis to eliminate any concern that firms adjusted their CSR policies in anticipation of the crisis. To ensure that the accounting data are publicly available, we leave a three-month gap after the fiscal year-end to update the data. Factor loadings are re-estimated each month based on the previous 60 months' data. Time dummies are specified at the monthly level and firm fixed effects control for time invariant omitted risk factors. The firm's *CSR* measure itself is absorbed by the firm fixed effect. All standard errors are clustered at the firm level.[20] As in Table II, firms with market values below $250 million as of year-end 2007 are excluded from the analysis. The coefficient on the interaction between 2006 CSR and the crisis (b_1) captures the differential impact of CSR on monthly stock returns during the eight-month period from August 2008 to March 2009, after controlling for the firm's factor loadings and financial characteristics and removing both the firm's average return (firm fixed effects) over the entire estimation period and any time-series pattern in overall returns (time fixed effects).

The results for both raw and market-model adjusted returns are presented in Panel A of Table IV. Both specifications indicate that high-CSR firms exhibit superior performance during the crisis period; after the crisis, the relation between *CSR* and returns becomes insignificant. In terms of economic significance, the coefficient of 0.0201 on the *Crisis*CSR* interaction indicates that a one standard deviation increase in 2006 *CSR* (0.381) is associated with 77 basis points extra return during the crisis on a monthly basis.[21, 22] These results indicate that the excess returns earned by high-CSR firms are limited to the crisis period, consistent with our suggestion that social capital created through CSR pays off when trust in the economy unexpectedly declines.

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[20] Significance levels are virtually identical if we double cluster standard errors by firm and time period.

[21] We have also estimated this model without the monthly time dummies, but with the inclusion of dummies for the crisis period and the post-crisis period. These dummies capture the change in returns during and after the crisis for firms with a *CSR* score of zero. The coefficient on the crisis dummy indicates an average monthly decline during the crisis of 7.56 percentage points relative to the pre-crisis period. In the post-crisis period, the raw returns are 1.60 percentage points higher per month than in the pre-crisis period (see Internet Appendix).

[22] Gormley and Matsa (2014) recommend the inclusion of further fixed effects to control for unobserved firm heterogeneity. In particular, they suggest including dummies for quintiles of firm characteristics and interacting these quintile dummies with time dummies. We estimate such a specification, in which we include dummies for quintiles of size, book-to-market, and momentum and interact each of these quintile dummies with monthly time dummies. This specification, which includes 1,260 time/characteristic quintile interactions, continues to yield significant crisis period returns for high-CSR firms. The coefficient on the CSR/crisis period interaction is 0.0185 (p-value=0.00) for raw returns and 0.0154 (p-value=0.00) for abnormal returns (see Internet Appendix).

The lack of a reversal in abnormal returns for high-CSR firms after the crisis may appear surprising. Such a reversal rests on the assumption that overall trust in firms and markets has fully recovered. Trust has remained relatively low since the crisis, however. For example, according to the Financial Trust Index, 11% of respondents trusted the stock market and 12% trusted large corporations in December 2009. These figures increased to 13% and 16%, respectively, by December 2012, but they are still suggestive of a low level of trust subsequent to the crisis.[23] This would be consistent with the lack of return reversals. We also note that high-trust firms should not earn further positive abnormal returns either if prices already adjusted to the overall decline in trust during the crisis. That is, any benefits of being trustworthy when overall trust is low should now be reflected in the share price. Operating performance, on the other hand, may well be affected during both the crisis and post-crisis periods. In subsequent sections, we provide evidence that this is indeed the case.

In the specifications reported in Panel A of Table IV, we hold CSR constant as of year-end 2006 to determine whether CSR measured before the onset of the crisis has an effect on returns during and after the crisis. In an alternative specification, we also allow CSR to vary over time as new information on CSR becomes available. That is, we match 2007 returns with year-end 2006 CSR, 2008 returns with year-end 2007 CSR, etc. These specifications allow us to gauge whether updated CSR affects subsequent returns outside the crisis period. These models yield similar results to the ones reported in Panel A of Table IV: crisis period returns increase with CSR, but there is no effect of CSR on returns subsequent to or prior to the crisis.

Finally, we also construct a hedge portfolio that goes long in firms in the highest quartile of *CSR* firms and short in firms in the lowest quartile, updating the portfolio composition on an annual basis as new CSR information becomes available. This portfolio earns excess returns (adjusted for four factor loadings) of 74 basis points per month during the crisis period, while the excess returns are insignificant in the four years prior to and after the crisis (reported in the Internet Appendix).

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[23] Similarly, the trust component of the Global Competitiveness Index produced by the World Economic Forum was still lower in September 2013 (5.54) than in September 2008 (5.65). The Edelman Trust Barometer, on the other hand, does show that trust has recovered. It was 58% in the survey released in early 2014, which is the same as the figure released in early 2008.

D.   *Excess returns and CSR during a shock to the supply of credit*

We next investigate whether our results could be due to a shock to the supply of credit, rather than a shock to market-wide trust. Starting in July of 2007, the weakening solvency of the banking sector led to a substantial increase in LIBOR rates, which had a strong negative impact on the ability of firms to borrow (see, e.g., Duchin, Ozbas, and Sensoy (2010) and Ivashina and Scharfstein (2010)). This shock to the supply of credit persisted until at least March 2009, which is the end of the crisis period in our prior tests. If high-CSR firms earned excess returns during the crisis because investors believed that these firms were better able to weather the credit crunch, our test could be picking up this effect instead of the ability to weather a shock to trust. To investigate this possibility, we test whether CSR is related to returns in the period of July 2007 through July 2008, when the shock to credit supply already happened but the shock to trust had not yet occurred (the Edelman Trust Barometer shows no decline from early 2007 to early 2008; see also Sapienza and Zingales (2012)).

For this exercise, we augment the specification of model (1) with an additional interaction term between CSR measured at year-end 2006 and a dummy (shock to credit) equal to one during the July 2007 – July 2008 period. The results of this estimation, which are reported in Panel B of Table IV, indicate that there is no significant relation between *CSR* and either raw or abnormal returns in this earlier period. The coefficients on the CSR/Crisis interactions remain virtually unchanged from those in Panel A, and the CSR/Crisis interactions are always significantly larger than the CSR/credit shock interactions. Thus, a shock to credit supply is unlikely to explain the positive association between social capital and stock returns during the crisis documented in Table II and in Panel A of Table IV.

E.   *Regional trust and the relation between CSR and returns*

Our interpretation of the excess crisis period returns for high-CSR firms is that such firms build social capital through their CSR activities, which pays off when there is a shock to overall trust. In this section, we provide evidence for this interpretation by linking the crisis period returns earned by high-CSR firms to regional variation in trust across the U.S.

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We obtain data on regional variation in trust from the 2006 General Social Survey (GSS) conducted by the National Opinion Research Center (NORC) at the University of Chicago (see also Kelly (2015)). This survey asks a random sample of Americans a large number of questions related to various aspects of society, including: "Can people be trusted?" In 2006, the survey covered 3,929 responses to this question; after removing 192 respondents who state "Depends," 34% of the respondents reply that people can be trusted while the remainder reply that people cannot be trusted. There is substantial variation in trust across the nine regions in which respondents are classified: for example, only 26% of the respondents in the West South Central region reply that they can trust people compared to 43% in New England and the Mountain region.

We exploit this cross sectional variation to explore whether regional differences in trust affect the returns earned by high-CSR firms by matching the regional trust averages with the regions in which the firms are headquartered. Our primary hypothesis follows the work of Putnam (2000) who argues that an agent's social capital is more valuable in a society where overall social capital is higher. Framing this argument in our context, in regions where people have a lower propensity to trust, CSR activities are less likely to be viewed by investors and other stakeholders as trust-enhancing activities; instead they may be perceived as window dressing and less genuine activities. As such, they are less likely to pay off. If more stakeholders are based in the region where the firm is headquartered, we can use this regional variation in trust to directly test whether trust matters more where it should – in more trusting regions. Employees, customers and other stakeholders in more trusting regions are more likely to reward trustworthy firms, for example, by working harder and maintaining strong buying relationships, leading to higher crisis-period returns. Additionally, if investors hold local companies (see, e.g., Coval and Moskowitz (1999)) and prices are influenced by local investors (see, e.g., Hong, Kubik, and Stein (2008)), more trustworthy firms may also be able to raise more capital and achieve higher valuations during the crisis.

In Panel C of Table IV, we repeat our prior analyses, but now allow the effect of CSR on returns to vary depending on whether the firm is headquartered in a high- or low-trust region. The results indicate that crisis-period returns are more affected by CSR in high-trust regions compared to low-trust regions. For raw returns, increasing CSR by one standard deviation is associated with monthly excess returns of 1.05% in high-trust

regions, but only 59 basis points in low-trust regions. The difference between the two is significant at the 6% level. For abnormal returns, there is also a substantial difference between the two sets of regions although it is of a smaller magnitude.

Two caveats are in order. First, an individual's ability to trust people may be different from her ability to trust firms; hence, our findings should be interpreted with this caution in mind. Second, our test assumes that the survey response reflects an individual's propensity to trust people (and other agents), and, as such, her willingness to respond to a firm's CSR efforts. This propensity, if it is an inherent personal characteristic, should not vary (much) through time, which is indeed the case: it has declined very gradually from 38% in 2000 to 34% in 2014,[24] but did not shift dramatically around the crisis – we also find a similar stability in trust when splitting the sample into high- and low-trust regions. The fact that prior work shows that regional variation in trust impacts economic and financial development also suggests that the level of regional trust is indeed a persistent feature (e.g., Knack and Keefer (1997) and Guiso, Sapienza, and Zingales (2004)). The stability of this metric over time is thus consistent with the above result that a firm's CSR efforts pay off less in low trust areas. As such, it is at odds with the alternative view that a firm's CSR efforts are particularly valuable in areas where the propensity to trust is low and that individuals in these regions can be persuaded to become more trusting.

Overall, this evidence indicates that the impact of CSR on returns during the crisis period is related to the general level of trust in the area where the company is located, and supports the view that the link between returns and CSR during the crisis operates through the trust channel.

F.   Elements of CSR and returns

Next, we examine whether it is a firm's social capital in aggregate (*CSR*) or a specific component of *CSR* that is important for crisis period returns. At the outset of this paper, we argue that a firm can build social capital through a variety of activities and that such activities can enhance the trust of all of a firm's stakeholders.

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[24] This gradual decline in trust is consistent with Putnam's (2000) observation that trust has been declining in the U.S. over the last several decades.

For example, customers may reward firms for treating their employees better, while employees may work harder because the company cares more about its community or the environment. It is possible, however, that some aspects of CSR are considered more important in building trust than others, which could affect the strength of their relation with returns. To test this conjecture we disaggregate *CSR* into two components: those that speak mainly to internal stakeholders (Employees and Diversity) and those that speak mainly to external stakeholders (Community, Human Rights, and Environment).

Our results are reported in Panel D of Table IV using the same firm fixed effects specification as before. Both components of *CSR* are significant in explaining crisis period raw and abnormal stock returns, which indicates that a focus on both internal and external stakeholders is seen by investors as being valuable during the 2008-2009 financial crisis.[25] In terms of economic significance, both elements of CSR are of similar importance. An increase in *Internal stakeholder CSR* of one standard deviation (0.310) is associated with a 0.43 percentage point higher monthly abnormal return during the crisis, while an increase in *External stakeholder CSR* of one standard deviation (0.189) is associated with a 0.35 percentage point higher abnormal return.

G.   *Further robustness tests*

In this section, we report the results of various additional tests conducted to determine whether our main findings are robust. We first focus on measuring CSR performance at different points in time. In our baseline models reported in prior tables, we measure CSR performance at the end of 2006, more than one year before the onset of the shock to trust and several months before LIBOR rates started rising. It is possible that some corporate managers were anticipating a potential slowdown given the heady returns for asset prices in general in 2006, and that they started adjusting their CSR activities in 2006 in anticipation of a potential crisis. It is also possible that only those firms that were able to cope better with the crisis were the ones to adjust their CSR activities upwards. While we control for observables that could potentially affect crisis-period returns, if CSR at

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[25] Note that the scores for the *Internal* and *External CSR* categories are not highly correlated ($\rho=0.12$) and, thus, our results to do not mechanically follow from the aggregate *CSR* score.

the end of 2006 is correlated with some unobservable measure of the ability to withstand a shock to trust, then the results we report may not be due to social capital and CSR, but to some other factor.

To address this concern, we investigate whether firm *CSR* scores measured in 2005 are positively related to crisis-period stock returns since 2005 clearly precedes any fears of a financial crisis. In the first two columns of Table V, we re-estimate model (1) above using *CSR* measured in 2005 as the variable of interest. The effect is of comparable magnitude to the effect using 2006 CSR. We next conduct the same test using 2007 CSR data and, as reported in columns (iii) and (iv), our findings persist.

It is also possible that high-CSR firms performed well during the crisis because prior CSR activities were actually negative NPV projects, and firms were forced to cut these activities during the crisis. If CSR is just one element of excess investment, then the level of CSR could also proxy for the extent of overinvestment in the firm as whole. Thus, it could be that firms that engaged more in non-value maximizing behavior pre-crisis performed better during the crisis simply because they had more excesses that could be trimmed. A straightforward way of checking this is to see whether our results still hold when CSR is measured at year-end 2008 when these excesses would arguably have already been cut. This is what we do in models (v) and (vi) of Table V. Our findings persist: high CSR levels measured in the depth of the crisis are still associated with higher crisis period returns.

Overall, our results are not sensitive to the time period in which CSR investments are measured. The main reason for this lack of sensitivity is that CSR levels are relatively persistent over time. For example, the correlation in our CSR measure between 2005 and 2006 is 0.90, the correlation between 2006 and 2007 is 0.89, and the correlation between 2005 and 2007 is 0.82.

As a second robustness test, we assess whether the decision to remove micro-cap firms (those with an equity market capitalization below $250 million) from our sample affects our results. We excluded these firms because they typically display very low stock market liquidity, and this factor could outweigh other factors during the crisis. In models (vii) and (viii) of Table V we re-estimate our full model including these firms. Our results hold even when they are added back to our sample.

Third, we verify that our findings are not due to the inclusion of March 2009 as part of the crisis period. Stock markets started recovering globally during the middle of that month and we want to make sure that our results are not just due to this recovery. We find that the coefficient on *CSR* remains positive and significant in specifications that exclude March 2009 from the crisis return window (reported in the Internet Appendix).

IV. The effect of CSR investments on operating performance and capital raising

In this section, we study the operating performance and capital raising activities of companies during the crisis and surrounding periods to explore in more detail the possible sources of the excess returns earned by high-CSR firms during the crisis. As for returns, we estimate a difference-in-differences model with continuous treatment levels. In particular, using quarterly data, we estimate the following regression model over the period 2007-2013 for different metrics of performance and capital raising:

$$Performance\ (or\ Capital)\ Metric_{i,t} = b_o + b_1 CSR_{i,2006} * Crisis_t + b_2 CSR_{i,2006} * Post\text{-}crisis_t + b_3 X'_{i,t-1}$$
$$+ Time\ Dummies + Firm\ Fixed\ Effects + e_{i,t} \qquad (2)$$

where $CSR_{i,2006}$ is our measure of year-end 2006 CSR for firm i, $Crisis_t$ is a dummy variable set equal to one for the 4th quarter of 2008 and the first quarter of 2009,[26] $Post\text{-}crisis_t$ is a dummy set equal to one for the 2nd quarter of 2009 until the fourth quarter of 2013, and $X_{i,t-1}$ is a vector of control variables. All models include quarter and firm fixed effects. Thus, if a particular firm performed well throughout the estimation period because of some unobservable characteristics, this effect would be captured by its fixed effect. Similarly, if the performance of all firms varies through time, something that happened during the crisis, then it will be captured by the time dummies. To avoid problems with extreme observations, we winsorize all performance and capital raising variables at the 1st and 99th percentiles. Standard errors in all models are clustered at the firm level.

Our findings are reported in Table VI. Our first performance measure is *Operating return on assets*, computed as operating income divided by assets. The interaction between *CSR* and the crisis period dummy is positive and highly significant, indicating that high-CSR firms exhibit higher profitability relative to other

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[26] For firms whose fiscal quarters do not overlap with the normal division of a calendar year in quarters, we consider all quarters ending in October 2008 to March 2009 as crisis quarters. We do not include the quarter ending September 2008 as a crisis quarter because most of the performance for that quarter precedes the Lehman bankruptcy.

companies at the end of 2008 and the beginning of 2009. In terms of economic significance, an increase in *CSR* of one standard deviation (0.381) is associated with an increase in profitability of 30 basis points during the crisis period, which is substantial compared to average quarterly profitability of 3.1% over the estimation period and 2.2% during the crisis. Also note that the increase in profitability for high-CSR firms persists in the post-crisis period as well, albeit at an attenuated level. As argued previously, given that trust in corporations has remained low since the end of the crisis, observing some excess operating performance for high-CSR firms during this time is not surprising.

Next, we analyze changes in *Gross margin*, defined as (sales – cost of goods sold) / sales, to see whether high-CSR firms were able to sell their products at a higher mark-up during the crisis. Of course, higher mark-ups could be due to higher prices or lower costs; the gross margin just illustrates the net effect. As shown in model (ii) of Table VI, gross margins of high-CSR firms are higher relative to those of low-CSR firms during the crisis. Over the crisis quarters, a one standard deviation increase in *CSR* is associated with gross margins that are 60 basis points higher. This effect appears small relative to average gross margins of 40.1% during the estimation period and 38.3% during the crisis, but the results on profitability reported in model (i) suggest that much of this increase flows through to the bottom line. Also note that gross margins have remained relatively higher for high-CSR firms since the end of the crisis and, though the difference in margins is lower than during the crisis, the change between the crisis and post-crisis periods is not statistically significant. These findings are also consistent with the work of Albuquerque, Durnev, and Koskinen (2015) suggesting that high-CSR firms have higher profit margins.

One concern is that the higher mark-ups documented in model (ii) may be associated with lower sales growth. This is what we study in model (iii); we compute sales growth as the percentage growth in sales over the previous quarter. Interestingly, high-CSR firms experience higher sales growth during the crisis compared to other firms; a one standard deviation increase in *CSR* is associated with 2.55 percentage points greater sales growth. This is a considerable effect, given mean quarterly sales growth of 3.24% over the sample period, and a mean decline in sales of 6.91% during the two crisis quarters. The findings of models (ii) and (iii) combined indicate that during the crisis high-CSR firms experienced lower declines in sales than other firms, despite

charging higher mark-ups. This suggests that the customers of these firms were more willing to 'stick' with the company during this period. Note from model (iii) that the higher level of sales growth for high-CSR firms also persists after the crisis, although the magnitude of the effect is substantially lower than during the crisis.

To examine the customer channel in greater depth, we study changes in accounts receivable as a fraction of sales around the crisis. The results reported in column (iv) show no significant effect. Thus, there is no evidence that the stronger sales growth of high-CSR firms is due to increased credit sales. Customers of high-CSR firms are not paying their invoices any faster during the crisis either.

In sum, the operating performance results described up to this point suggest that one of the channels through which high-CSR firms earn excess returns during the crisis period is the willingness of customers to continue supporting these firms, as reflected in higher sales growth and an acceptance of higher mark-ups.

We now turn to the employee channel and study whether high-CSR firms achieved higher sales per employee in the crisis period. As illustrated in column (v) of Table VI, there is a positive association between *CSR* and employee productivity during the crisis. The coefficient of 38.434 suggests that an increase in *CSR* of one standard deviation is associated with quarterly sales per employee that are $14,643 higher during the crisis. The mean (median) firm over the estimation period has sales per employee of $131,484 ($75,282), with a standard deviation of $323,585, indicating that the impact of CSR on employee productivity is considerable. This result suggests an additional channel through which CSR affects performance. Note that this effect also persists after the crisis, but at half the rate.[27]

One shortcoming of our analysis of sales per employee is that the number of employees is only available on Compustat at an annual level. Thus, we divide quarterly sales by the number of employees at year-end to compute sales per employee. For example, sales per employee for the first quarter of 2009 are computed using the number of employees reported for year-end 2009. We also verify that our findings remain unchanged when

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[27] We have also estimated these models without the time dummies, but with dummies for the crisis and post-crisis periods. The coefficients on these dummies allow us to determine the effect of the crisis on performance for firms with a zero *CSR* score. In general, we find a strong decline in performance during the crisis and a substantial recovery in the post-crisis period. For example, during the crisis quarters, firms with a *CSR* score of zero experienced a decline in operating return to assets of 0.91 percentage points, a decline in gross margin of 1.4 percentage points, and a decline in sales growth of 9.8 percentage points. In the post-crisis period, profitability improved by 0.76 percentage points, gross margins increased by 0.70 percentage points, and sales growth by 9.3 percentage points relative to the crisis period.

we lag the number of employees by one year. Finally, to verify that higher sales per employee are not due to employee layoffs, we compute growth in the number of employees on an annual basis and estimate models of employee growth as a function of *CSR*, year dummies and firm fixed effects, and the interaction between *CSR* and a dummy for 2008/2009 and another interaction between *CSR* and a dummy for 2010 through 2013. This regression is similar to the ones estimated for the performance measures, except that it is estimated using annual instead of quarterly data. As illustrated in column (vi) of Table VI, there is no evidence of higher employee layoffs for high-CSR firms in 2008 or 2009. In fact, if we remove firms that double their employees or lose half their employees in a year, we find some evidence that high-CSR firms experience more employee growth in 2008 and 2009 relative to low-CSR firms, as illustrated in column (vii).

Next, we focus on the investor channel and study capital raising during and surrounding the crisis. We divide both long-term debt and equity issues by total assets and relate these debt or equity issue measures to CSR activities as in equation (2) above. We report results of these specifications in columns (viii) and (ix) of Table VI. As illustrated in column (viii), high-CSR firms raised more debt during the crisis, albeit the economic effect is modest. Increasing *CSR* by one standard deviation increases debt issuances relative to assets by 0.19 percentage points while average debt issuance is 2.61% over the sample period and 2.26% during the crisis. Also note that the effect of CSR on debt capital raising becomes insignificant in the post-crisis period. Equity issuances, which are studied in column (ix), are not related to CSR around the crisis period.

In our final set of tests, we relate the measures of operating performance presented in Table VI to the stock price performance documented previously. To do so, we re-estimate our regression model of returns in Table II, but add the actual performance metrics achieved during the crisis period as explanatory variables. The goal of this exercise is not to predict returns but rather assess to what extent the cross-sectional variation in crisis period returns can be explained by concurrent operating performance. Actual performance is computed as average performance over the quarters ending from October 2008 to March 2009. We include profitability, gross margin, sales growth and sales per employee as performance measures. These models (tabulated in the Internet Appendix) indicate that profitability, gross margin and sales growth all affect crisis-period (abnormal) returns, with the economic effect of profitability being the largest. Increasing profitability by one standard

deviation is associated with incremental crisis period returns of 5.88 percentage points; the economic effect of gross margin is somewhat smaller while the effect of sales growth is around half of that. In these models, the coefficient of *CSR* is reduced by about half for raw returns and one quarter for abnormal returns. For raw returns, the coefficient of *CSR* is no longer significant, but it is significant the 5% level for abnormal returns. This suggests that part of the excess returns earned by high-CSR firms during the crisis are due to their superior operating performance (related to stakeholder trust). The unexplained variation in returns could be due to the direct effect of social capital on shareholder trust (see Guiso, Sapienza, and Zingales (2004, 2008)) although we recognize that other performance measures may also matter for stock returns, which would attenuate this effect.

Overall, the evidence reported in this section broadly suggests that some of the increased returns to high-CSR firms accrue through the customer and employee channels. There is modest evidence in support of increased debt capital raising. It is noteworthy that even after controlling for these real effects, CSR continues to have a persistent, albeit reduced, impact on crisis-period returns.

V.   Conclusion

This paper provides evidence that firm-specific social capital, built up through CSR activities, pays off in a time period when the importance of trust unexpectedly increases – the 2008-2009 financial crisis. In particular, we find that firms with high CSR ratings outperform firms with low CSR ratings during the crisis by at least four percentage points, after controlling for a variety of firm characteristics and risk factors. We also find that the excess returns are higher for firms headquartered in regions where individuals are more trusting. There is no difference in stock return performance between high- and low-CSR firms during the recovery period after the crisis. Collectively, these results suggest that increased social capital created through CSR efforts matters predominantly in periods when trust in corporations at large has eroded and that during normal times any benefits of social capital are already imbedded in a firm's share price. The lack of a reversal in returns in the post-crisis period suggests that being trustworthy has remained important, which is in line with survey data that report continuing low levels of trust in corporations and the stock market.

We also examine the mechanisms through which higher CSR levels might generate excess returns during the crisis and find that high-CSR firms benefit through higher profitability, margins, sales growth, and employee productivity relative to low-CSR firms. Some of these effects also persist in the post-crisis period, but at lower levels of economic and statistical significance, again consistent with the survey evidence suggesting trust remains relatively low.

Overall, our results suggest that the building of firm-specific social capital can be thought of as an insurance policy which pays off when investors and the overall economy face a severe crisis of confidence. Our work also indicates that social capital, in addition to financial capital, can be an important determinant of firm performance and highlights the circumstances under which CSR can be beneficial for firm value.

Two caveats are in order. First, as with most empirical work, unobserved time-varying firm heterogeneity could explain our findings, but the fact that our results survive the inclusion of a large battery of control variables and firm and time fixed effects and hold during another period when trust suffered a shock mitigates this concern. Second, in constructing our proxy for social capital at the firm level, we rely on the prior literature suggesting a link between CSR and the formation of social capital. However, there may be other channels through which firms can build social capital and increase trust. Examining these channels and studying the relative efficacy of the CSR channel compared to other channels would be a fruitful avenue for further work.

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Table I
Descriptive Statistics

The sample consists of 1,673 firms with CSR data available from the MSCI ESG STATS database as of year-end 2006 and returns available during the period August 2008 – March 2009. *CSR* is the total net (strengths minus concerns) CSR score computed using five stakeholder-oriented categories (environment, employees, human rights, community and diversity). To compute the total net CSR measure, we first compute the net CSR index within each of the categories. The net CSR index for each category is computed by taking the number of strengths identified for a given firm and dividing this by the maximum possible strengths in that category, and subtracting the number of concerns identified for the firm divided by the maximum possible concerns; the net CSR score for each category ranges from -1 to +1. The total net CSR measure, *CSR*, is then computed as the sum of the net CSR indices for the five categories; it ranges from -5 to +5. CSR ratings are measured at the end of 2006. *Crisis period raw return* is the raw return computed over the period August 2008 – March 2009. *Crisis period abn. return* is the market model adjusted return over the period August 2008 – March 2009, with market model parameters computed over the five-year period ending in July 2008 using the CRSP value-weighted index as the market proxy. Accounting data are based on the last quarter ending at or before the end of 2007. *Market capitalization* is in millions of dollars. *Long-term debt* is computed as long-term debt divided by assets. *Short-term debt* is computed as debt in current liabilities divided by assets. *Cash holdings* is computed as cash and marketable securities divided by assets. *Profitability* is computed as operating income divided by assets. *Book-to-market* is computed as book value of equity divided by market value of equity. *Negative B/M* is a dummy variable set equal to 1 when the book-to-market ratio is negative and zero otherwise. *Momentum* is the raw return over the period August 2007 to July 2008. *Idiosyncratic risk* is computed as the residual variance from the market model estimated over the five-year period ending in July 2008, using monthly data. Financial firms and micro-cap firms, which we define as firms with a market capitalization below \$250 million as of year-end 2007, are removed from the sample. The control variables are winsorized at the 1st and 99th percentiles, as are the returns.

Panel A: Summary Statistics

	Mean	Standard deviation	25th perc.	Median	75th perc.
CSR	-0.165	0.381	-0.343	-0.200	0.006
Crisis period raw return	-0.391	0.284	-0.595	-0.403	-0.211
Crisis period abn. return	0.116	0.592	-0.275	0.013	0.383
Market capitalization	6922	23941	598	1327	4010
Long-term debt	0.198	0.193	0.011	0.170	0.307
Short-term debt	0.029	0.055	0	0.0055	0.031
Cash holdings	0.172	0.199	0.026	0.088	0.247
Profitability	0.033	0.034	0.021	0.034	0.049
Book-to-market	0.430	0.295	0.231	0.377	0.576
Negative B/M	0	0.155	0	0	0
Momentum	-0.082	0.370	-0.322	-0.110	0.116
Idiosyncratic risk	0.011	0.010	0.005	0.009	0.015

Table I (continued)

Panel B: Correlation Matrix

	CSR	Crisis raw return	Crisis abn. Return	Ln (mkt cap)	L/T debt	S/T debt	Cash hold.	Profit.	B/M	Neg. B/M	Mom.
Crisis raw return	0.11										
Crisis abn. return	0.08	0.72									
Ln(mkt cap)	0.20	0.09	-0.09								
Long-term debt	-0.07	-0.10	-0.10	0.05							
Short-term debt	0.06	-0.00	-0.04	0.11	0.01						
Cash holdings	0.06	0.10	0.24	-0.20	-0.33	-0.11					
Profitability	0.05	0.06	-0.06	0.24	-0.05	-0.03	-0.30				
Book-to-market	-0.09	-0.10	-0.02	-0.25	-0.11	0.01	-0.21	-0.19			
Negative B/M	-0.02	-0.01	0.02	-0.06	0.38	0.06	0.04	-0.01	-0.30		
Momentum	-0.08	-0.03	-0.35	0.14	-0.09	-0.01	-0.03	0.13	-0.22	-0.04	
Idiosyncratic risk	-0.12	-0.13	0.11	-0.39	-0.03	-0.07	0.41	-0.31	-0.11	0.09	-0.08

Table II
Crisis Period Returns and CSR

This table presents regression estimates of crisis period returns on *CSR* and control variables. Crisis period returns are measured as both raw buy and hold returns and abnormal returns over the period August 2008 to March 2009. In Panel A, we use a linear measure of CSR, *CSR*, which is the net (strengths minus concerns) CSR score computed using five stakeholder-oriented categories, measured at the end of 2006. In Panel B, we use 0/1 dummy variables for CSR quartiles such that: *CSR2* takes the value of 1 if the firm is in the second CSR quartile and 0 otherwise; *CSR3* takes the value of 1 if the firm is in the third CSR quartile and 0 otherwise; *CSR4* takes the value of 1 if the firm is in the fourth CSR quartile and zero otherwise. In Panel C, we employ the linear measure of *CSR* and add measures of corporate governance. *ESG Stats governance index* is the net CSR index for the governance category and is computed by taking the number of strengths, divided by the possible maximum, and subtracting the number of concerns, divided by the possible maximum; the *ESG Stats governance index* ranges from –1 to +1. The *E-index* is the sum of six dummies reflecting the following anti-takeover provisions: (i) a staggered board, (ii) limits to amend the charter, (iii) limits to amend bylaws, (iv) supermajority voting requirements, (v) golden parachutes for executives, and (vi) the ability to adopt a poison pill (see Bebchuk, Cohen, and Ferrell (2009)), obtained from MSCI Governance Metrics. *Board independence* (fraction of board consisting of outside directors), *Board size*, a dummy if the *CEO is not the Chairman*, and *Board ownership* (fraction of outstanding shares owned by the board members) are obtained from the MSCI Directors database. When the governance metrics are not available on the MSCI databases, we set them equal to zero and code a missing variable dummy which we set equal to one if that governance item is missing. These dummies are included in all models, but their coefficients are not reported. All control variables are as defined in Table I. Industry dummies are defined at the two-digit SIC code level. Financial firms and micro-cap firms with a market capitalization below $250 million are removed from the sample. The control variables and returns are winsorized at the 1st and 99th percentiles. Heteroscedasticity consistent standard errors are presented in parentheses. ***, **, * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, or 10% level, respectively.

Table II (continued)

Panel A: Net CSR score – raw and abnormal returns

	Raw return	Abnormal return	Raw return	Abnormal return
	(i)	(ii)	(iii)	(iv)
CSR	0.059***	0.109***	0.048***	0.087***
	(0.018)	(0.027)	(0.017)	(0.032)
Ln(Market cap)			0.001	-0.015
			(0.005)	(0.011)
Long-term debt			-0.112***	-0.102
			(0.046)	(0.086)
Short-term debt			-0.323***	-0.384*
			(0.115)	(0.219)
Cash holdings			0.175***	0.380***
			(0.047)	(0.091)
Profitability			0.528**	0.732
			(0.261)	(0.509)
Book-to-market			-0.116***	-0.045
			(0.030)	(0.058)
Negative B/M			-0.015	0.049
			(0.061)	(0.127)
Momentum			-0.030	-0.285
			(0.024)	(0.044)
Idiosyncratic risk			-3.155***	-8.870***
			(0.876)	(1.719)
Constant	-0.588***	-0.781***	-0.528***	0.0867***
	(0.260)	(0.035)	(0.059)	(0.032)
Four-factor loadings	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
N	1,673	1,673	1,673	1,673
Adj. R-squared	0.17	0.33	0.20	0.37

Table II (continued)

Panel B: Dummies for quartiles of net CSR score – raw and abnormal returns

	Raw return	Abnormal return	Raw return	Abnormal return
	(i)	(ii)	(iii)	(iv)
CSR2	0.0303	0.0560	0.0296	0.0480
	(0.0192)	(0.0347)	(0.0188)	(0.0341)
CSR3	0.0365*	0.0649*	0.0405**	0.0562
	(0.0197)	(0.0373)	(0.0192)	(0.0361)
CSR4	0.0552***	0.0985***	0.0453**	0.0727**
	(0.0126)	(0.0356)	(0.0194)	(0.0362)
Ln(Market cap)			0.002	-0.012
			(0.006)	(0.011)
Long-term debt			-0.113***	-0.103
			(0.046)	(0.087)
Short-term debt			-0.328***	-0.386*
			(0.115)	(0.219)
Cash holdings			0.175***	0.381***
			(0.047)	(0.091)
Profitability			0.530**	0.734
			(0.260)	(0.508)
Book-to-market			-0.117***	-0.046
			(0.030)	(0.057)
Negative B/M			-0.017	0.046
			(0.061)	(0.058)
Momentum			-0.031	-0.288
			(0.024)	(0.044)
Idiosyncratic risk			-3.184***	-8.934***
			(0.874)	(1.729)
Four factor loadings	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
N	1,673	1,673	1,673	1,673
Adj. R-squared	0.16	0.32	0.20	0.36

Table II (continued)

Panel C: Controlling for corporate governance

	Raw return	Abnormal return	Raw return	Abnormal return
	(i)	(ii)	(iii)	(iv)
CSR	0.048***	0.090***	0.049***	0.088***
	(0.017)	(0.032)	(0.017)	(0.032)
ESG Stats governance index	0.008	-0.151		
	(0.050)	(0.092)		
E-index			-0.008*	-0.018**
			(0.005)	(0.009)
Board independence			-0.080	-0.085
			(0.072)	(0.140)
Board size			0.002	-0.000
			(0.004)	(0.007)
CEO is not Chair			-0.010	-0.015
			(0.015)	(0.026)
Board ownership			-0.039	-0.034
			(0.074)	(0.147)
Four-factor loadings	Yes	Yes	Yes	Yes
Firm characteristics	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
N	1,673	1,673	1,673	1,673
Adj. R-squared	0.20	0.37	0.20	0.37

Table III
CSR and returns during the Enron/Worldcom fraud scandals

This table presents the regression estimates of raw and abnormal stock returns from October 2001 to March 2003 as a function of CSR. Abnormal returns are computed based on the market model using the CRSP value-weighted index as the market proxy. Market model parameters are estimated using monthly data over the five-year period ending in September 2001. CSR ratings are measured at the end of 2000. The control variables are the same as employed in Table II. All financial controls are measured at year-end 2000 or as close to it as possible for firms without December fiscal year-ends. Fama-French and momentum factor loadings are computed using monthly data over the five-year period ending in September 2001. The firm characteristics employed as control variables are the same as in Table II, except that they are measured as of year-end 2000. Industry dummies are defined at the two-digit SIC code level. Micro-cap firms with a market capitalization below \$250 million (in 2007 dollars) are removed from the sample. The control variables and returns are winsorized at the 1st and 99th percentiles. Heteroscedasticity consistent standard errors are presented in parentheses. ***, **, * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, or 10% level, respectively.

	Raw return	Abnormal return	Raw return	Abnormal return
	(i)	(ii)	(iii)	(iv)
Constant	1.058***	0.977***	0.116	0.244
	(0.176)	(0.208)	(0.219)	(0.267)
CSR	0.026	0.060		
	(0.044)	(0.053)		
CSR > 0 indicator			0.073*	0.095**
			(0.039)	(0.044)
Four factor-loadings	Yes	Yes	Yes	Yes
Firm characteristics	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
N	412	412	412	412
Adj. R-squared	0.16	0.20	0.17	0.21

Table IV
Abnormal Returns Surrounding the Crisis and CSR

This table presents the results of estimating the following panel regression model:

$$Return_{i,t} = b_o + b_1 CSR_{i,2006} * Crisis_t + b_2 CSR_{i,2006} * Post\text{-}crisis_t + b_3' X_{i,t-1} + Time\ Dummies$$
$$+ Firm\ Fixed\ Effects + e_{i,t}$$

where $Return_{i,t}$ is the monthly raw or market-model adjusted return, $CSR_{i,2006}$ is our proxy for CSR, measured at year-end 2006, $Crisis_t$ is a dummy variable set equal to 1 in the period August 2008 – March 2009, $Post\text{-}crisis_t$ is a dummy variable set equal to 1 in the period April 2009 – December 2013, and $X_{i,t-1}$ is a vector of control variables. Panel A reports results using the overall measure of CSR. In Panel B, we create an additional interaction between CSR and the period July 2007 – July 2008 when there was a shock to the supply of credit. In Panel C, we allow the effect of CSR on returns to depend on whether the firm is headquartered in a low-trust or high-trust region based on the 2006 General Social Survey. In Panel D, CSR is split into two components: Internal Stakeholder CSR, which combines the measures for Diversity and Employment, and External Stakeholder CSR, which combines the measures for Community, Environment, and Human Rights. The control variables are the same as employed in Table II and they include firm financial characteristics as well as factor loadings. The financial characteristics based on accounting data are updated three months after each fiscal year-end. The characteristics based on market data (momentum, size, market-to-book, factor loadings) are updated monthly. Factor loadings are re-estimated each month based on the previous 60 months' data. The regression is estimated over the period 2007-2013. Financial firms and micro-cap firms with a market capitalization below $250 million (in 2007 dollars) are removed from the sample. Except when otherwise indicated, the numbers in parentheses are heteroscedasticity consistent standard errors, clustered at the firm level. ***, **, * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, or 10% level, respectively.

Panel A. Overall CSR

Variable	Raw return	Abnormal return
*CSR * Crisis*	0.0201***	0.0153***
	(0.0037)	(0.0039)
*CSR * Post-crisis*	0.0018	0.0020
	(0.0022)	(0.0024)
Firm characteristics	Yes	Yes
Factor loadings	Yes	Yes
Firm fixed effects	Yes	Yes
Time (monthly) fixed effects	Yes	Yes
Standard errors clustered by	Firm	Firm
*CSR * (Crisis – Post-crisis)*	0.0183	0.0124
(p-value)	(0.00)	(0.00)
N	121,247	121,247
Adj. R-squared	0.29	0.06

Table IV (continued)

Panel B. CSR during the shock to the supply of credit and the crisis

Variable	Raw return	Abnormal return
*CSR * Shock to credit*	0.0021	0.0001
	(0.0030)	(0.0030)
*CSR * Crisis*	0.0216***	0.0154***
	(0.0041)	(0.0040)
*CSR * Post-crisis*	0.0033	0.0021
	(0.0027)	(0.0028)
Firm characteristics	Yes	Yes
Factor loadings	Yes	Yes
Firm fixed effects	Yes	Yes
Time (monthly) fixed effects	Yes	Yes
Standard errors clustered by	Firm	Firm
*CSR * (Crisis – Shock to credit)*	0.0195	0.0153
(p-value)	(0.00)	(0.00)
*CSR * (Post-crisis – Crisis)*	-0.0183	-0.0133
(p-value)	(0.00)	(0.00)
N	121,247	121,247
Adj. R-squared	0.29	0.06

Table IV (continued)

Panel C. Split by high and low-trust regions

Variable	Raw return	Abnormal return
*CSR * Crisis * High Trust*	0.0275***	0.0171**
	(0.0073)	(0.0074)
*CSR * Crisis * Low Trust*	0.0154***	0.0130***
	(0.0047)	(0.0047)
*CSR * Post-crisis * High Trust*	-0.0079*	-0.0048
	(0.0047)	(0.0050)
*CSR * Post-crisis * Low Trust*	0.0037	0.0025
	(0.0024)	(0.0027)
Firm characteristics	Yes	Yes
Factor loadings	Yes	Yes
Firm fixed effects	Yes	Yes
Time (monthly) fixed effects	Yes	Yes
Standard errors clustered by	Firm	Firm
*CSR * (Crisis – Post-crisis) * High Trust*	0.0354	0.0219
(p-value)	(0.00)	(0.00)
*CSR * (Crisis – Post-crisis) * Low Trust*	0.0117	0.0105
(p-value)	(0.01)	(0.01)
*CSR * Crisis * (High – Low Trust)*	0.0121	0.0041
(p-value)	(0.06)	(0.64)
N	115,453	115,453
Adj. R-squared	0.29	0.07

Table IV (continued)

Panel D. Internal and External Stakeholder CSR

Variable	Raw return	Abnormal return
*Int. Stakeholder CSR * Crisis*	0.0225***	0.0140***
	(0.0048)	(0.0049)
*Int. Stakeholder CSR * Post-crisis*	0.0002	0.0049**
	(0.0027)	(0.0029)
*Ext. Stakeholder CSR * Crisis*	0.0144**	0.0185***
	(0.0072)	(0.0071)
*Ext. Stakeholder CSR * Post-crisis*	0.0057*	-0.0048
	(0.0040)	(0.0044)
Firm characteristics	Yes	Yes
Factor loadings	Yes	Yes
Firm fixed effects	Yes	Yes
Time (monthly) fixed effects	Yes	Yes
Standard errors clustered by	Firm	Firm
*Int. Stakeholder CSR * (Crisis – Post-crisis)*	0.0223	0.0091
(p-value)	(0.00)	(0.04)
*Ext. Stakeholder CSR * (Crisis – Post-crisis)*	0.0087	0.0233
(p-value)	(0.20)	(0.00)
N	121,247	121,247
Adj. R-squared	0.29	0.06

Table V
Crisis Period Returns and CSR: Robustness

This table presents the results of estimating the following panel regression model:

$Return_{i,t} = b_o + b_1 CSR_i * Crisis_t + b_2 CSR_i * Post\text{-}crisis_t + b_3{}' X_{i,t-1} + Time\ Dummies + Firm\ Fixed\ Effects + e_{i,t}$

where $Return_{i,t}$ is the monthly raw or market-model adjusted return, CSR_i is our proxy for CSR, measured at year-end 2005, 2007, or 2008. $Crisis_t$ is a dummy variable set equal to 1 in the period August 2008 – March 2009, $Post\text{-}crisis_t$ is a dummy variable set equal to 1 in the period April 2009 – December 2013, and $X_{i,t-1}$ is a vector of control variables. The control variables included in all models are the same as employed in Table II and they include firm financial characteristics as well as factor loadings. The financial characteristics based on accounting data are updated three months after each fiscal year-end. The characteristics based on market data (momentum, size, market-to-book, factor loadings) are updated monthly. Factor loadings are re-estimated each month based on the previous 60 months' data. The firm's CSR measure itself is absorbed by the firm fixed effect. The regression is estimated over the period 2007-2013. Financial firms are removed from the sample. Micro-cap firms with a market capitalization below \$250 million (in 2007 dollars) are removed from the sample in models (i) through (vi), but included in models (vii) and (viii). Except when otherwise indicated, the numbers in parentheses are heteroscedasticity consistent standard errors, clustered at the firm level. ***, **, * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, or 10% level, respectively.

Variable	CSR2005		CSR 2007		CSR2008		Including micro-cap firms	
	Raw return (i)	Abn. return (ii)	Raw return (iii)	Abn. return (iv)	Raw return (v)	Abn. return (vi)	Raw return (vii)	Abn. return (viii)
CSR * Crisis	0.0149***	0.0097**	0.0181***	0.0122***	0.0180***	0.0129***	0.0206***	0.0163***
	(0.0043)	(0.0043)	(0.0038)	(0.0038)	(0.0036)	(0.0036)	(0.0038)	(0.0038)
CSR * Post-crisis	0.0022	0.0023	0.0023	0.0034	0.0030	0.0036	0.0021	0.0025
	(0.0025)	(0.0027)	(0.0022)	(0.0024)	(0.0021)	(0.0024)	(0.0023)	(0.0025)
CSR * (Crisis – Post-crisis)	0.0127	0.0076	0.0158	0.0088	0.0150	0.0093	0.0185	0.0138
(p-value)	(0.00)	(0.05)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
N	111,056	111,056	133,218	133,218	134,194	134,194	133,403	133,403
Adj. R-squared	0.29	0.07	0.28	0.06	0.28	0.06	0.27	0.07

Table VI
Operating performance, employee growth, capital raising, and CSR surrounding the crisis

Models (i)-(v) and (viii)-(ix) are regressions of various measures of performance and capital raising using the following specification:

$$Outcome_{i,t} = b_o + b_1 CSR_{i,2006} * Crisis_t + b_2 CSR_{i,2006} * Post\text{-}crisis_t + b_3' X_{i,t-1} + Time\ Dummies + Firm\ Fixed\ Effects + e_{i,t}$$

where $CSR_{i,2006}$ is our measure of CSR computed as of year-end 2006, $Crisis_t$ is a dummy variable set equal to one for quarters ending from October 2008 to March 2009. $Post\text{-}crisis_t$ is a dummy variable set equal to one for quarters ending from April 2009 to December 2013. $X_{i,t-1}$ is a vector of control variables. In the models of performance, we control for the log of total assets. In the models of security issuance, we control for the log of total assets, the ratio of cash holdings to assets lagged one quarter, the ratio of total debt to assets lagged one quarter and the ratio of operating income to assets. The performance measures are: *Operating return on assets*, measured as operating income to assets, *Gross margin*, measured as (sales – cost of goods sold) / sales, *Sales growth*, measured as the percentage change in sales from the previous quarter, *Accounts Receivable divided by Sales*, and *Sales per employee*. Measures of capital raising are: long-term debt issuance divided by assets and equity issuance divided by assets. All data items are from quarterly Compustat, except number of employees, which is from the annual Compustat database. Time dummies are specified at the quarterly level. All performance and security issuance measures have been winsorized at the 1st and 99th percentiles.

Models (vi) and (vii) contain regressions of the following model:

$$Employment\ growth_{i,t} = b_o + b_1 CSR_{i,2006} * 2008/2009 + b_2 CSR_{i,2006} * 2010/2013 + b_3 LogAssets + Time\ Dummies + Firm\ Fixed\ Effects + e_{i,t}$$

where employment growth is the percentage growth in employees relative to the prior year, *2008/2009* is a dummy for observations in 2008 and 2009, and *2010/2013* is a dummy for observations in 2010 to 2013. Data are from the annual Compustat data base and time dummies are specified at the annual level. In model (vi), employment growth is winsorized at the 1st and 99th percentiles. In both panels, the regression is estimated over the period 2007-2013. Financial firms and firms with a market capitalization below $250 million as of year-end 2007 are removed from the sample. Standard errors, clustered at the firm level are listed in parentheses. ***, **, * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, or 10% level, respectively.

Table VI (continued)

Variable	Operating return on assets (in %) (i)	Gross margin (%) (ii)	Sales growth (%) (iii)	Accounts receivable / Sales (%) (iv)	Sales per employee (in $000's) (v)
CSR * Crisis	0.797*** (0.185)	1.562*** (0.511)	6.690*** (1.111)	-0.474 (0.962)	38.434*** (10.183)
CSR * Post-crisis	0.282** (0.117)	1.256*** (0.442)	1.285*** (0.398)	0.635 (1.815)	19.586** (10.125)
p-value (Crisis – Post-crisis)	0.00	0.54	0.00	0.53	0.00
Firm fixed effects	Yes	Yes	Yes	Yes	Yes
Quarter fixed effects	Yes	Yes	Yes	Yes	Yes
Standard errors clustered by	Firm	Firm	Firm	Firm	Firm
N	43,302	43,319	43,918	43,622	42,923
Adj. R-squared	0.636	0.875	0.044	0.770	0.769

Variable	Employee growth (vi)	Employee growth in -50% and +100% range (vii)
CSR * 2008/2009	1.999 (1.978)	2.285* (1.253)
CSR * 2010/2013	0.031 (1.911)	0.792 (1.246)
p-value (2008/2009 – 2010/2013)	0.09	0.11
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Standard errors clustered by	Firm	Firm
N	10,604	10,439
Adj. R-squared	0.142	0.185

Table VI (continued)

Variable	Debt issuance / Assets (%) (viii)	Equity issuance / Assets (%) (ix)
CSR * Crisis	0.491** (0.236)	-0.058 (0.051)
CSR * Post-crisis	0.280 (0.217)	-0.034 (0.034)
p-value (Crisis – Post-crisis)	0.33	0.60
Firm fixed effects	Yes	Yes
Quarter fixed effects	Yes	Yes
Standard errors clustered by	Firm	Firm
Control variables	Yes	Yes
N	38,397	38,719
Adj. R-squared	0.33	0.15