Is Doing Good Good for Your Credit Rating?
- A Trust-based Hypothesis and Global Evidence

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Abstract

Whether and how doing good (corporate social responsibility, CSR) makes business sense has been a source of constant debate. We suggest that trust underlies the mixed theory and empirical evidence of such debate. Doing good helps sustain a firm's long-term credit rating by building trust, which alleviates stakeholder relationship uncertainties in incomplete contracts. Doing good is good for credit ratings when it is effective in building trust, when and where the marginal benefit of "earned trust" is high, and where societal trust is high and likely to mitigate moral hazard problems. Our results are robust to endogeneity and robustness tests.

Keywords: Corporate social responsibility, Trust, Crisis, Credit rating, Cost of debt
JEL classification: G12; G13; G14.

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"We enable people to reach their full potential in a digital economy. This starts with our commitment to ethical conduct and to the governance structures that ensure we walk the talk, which enable us to earn the trust of our stakeholders."

CISCO 2016 CSR Report

1. Introduction

"Is doing good good for you?" Given the existing mixed theory and empirical evidence, this question, one of the most debated among economists, has yet to find a convincing answer. Whereas theories suggest that doing corporate good, formally known as corporate social responsibility (CSR), leads to doing well (Becker, 1974; Andreoni, 1989; Edmans, 2011; Deng, Kang, and Low, 2013; Ferrell, Liang, and Renneboog, 2016), CSR has also constantly been criticized as a demonstration of agency problems and a waste of corporate resources (Cheng, Hong, and Shue, 2013; Masulis and Reza, 2015).

As the opening quote suggests, firms usually cite "building trust" as the reason for doing good. Researchers have also taken CSR as a proxy for the difficult-to-measure trust/social capital to examine the value of trust in the U.S. (Lins, Servaes, and Tamayo, forthcoming). But, given the conflicting view on doing good, whether CSR is a good proxy for "earned trust" demands further scrutiny. Furthermore, trust often refers to societal trust and varies drastically across countries. So, whether and how trust influences the financial outcome of doing good all over the world remains an unexplored issue.

We attempt to fill the gap by conducting a global study with the focus on long-term credit rating. Not only is long-term credit rating a key financial measure in a firm as it influences the cost of debt and the availability and usage of credit lines (Kisgen, 2006; Faulkender and Petersen, 2006; Sufi, 2009), but ratings from the same rating agency are free of many confounding factors,

including but are not limited to exchange rates and world market return, etc., that may mislead a global study. Furthermore, the existing empirical evidence for the relation between doing good and corporate credit rating in different countries has been very mixed, with the sign on the direction of the relation ranging from negative to neutral to positive (Goss and Roberts, 2011; Jiraporn, Jiraporn, Boeprasert, and Chang, 2014; Oikonomou, Brooks, and Pavelin, 2014; Menz, 2010; Stellner, Klein, and Zwergel, 2015). This study reconciles the mixed evidence from prior research by examining, from the perspective of societal trust, the effect of corporate social responsibility on credit rating.

Trust belongs to social capital and is the "willingness to be vulnerable" (Guiso, Sapienza, and Zingales, 2006). Once "earned," trust can help sustain the firm's credit rating by mitigating uncertainties in stakeholder relationship that arise from incomplete contracts. Whereas doing good refers to all CSR activities that transcend legal requirements and aim to advance relationships with a broad set of stakeholders (Hillman and Keim, 2001), only those that reflect integrity and consistency are likely to build trust as both are important determinants for trust (Butler and Cantrell, 1984). We therefore hypothesize that doing good is more likely to be good for a firm's long-term credit rating when it follows consistent corporate policies.

We further hypothesize that the significance of the role of trust varies with its marginal benefits. Credit rating agency would value a firm's "earned" trust from its stakeholders more during times when stakeholder trust in an average firm is low. Those times may include the period of the 2007-9 financial crisis and sovereign downgrades when public trust in corporations and country finances hit a historical low, and times when a country decided to pass laws to protect stakeholders due to public outcries. Furthermore, trust is more valued in trusting societies where individuals rely more heavily on trust in financial exchanges (Knack and Keefer,

1997) as trust is an important mechanism that helps mitigate moral hazard problems there (Cline and Williamson, 2016). We therefore predict a more salient relation between doing good and long-term credit rating during crisis times and in more trusting countries. Furthermore, in countries where strong stakeholder regulation is already in place, the marginal benefit of trust in mitigating uncertainties due to incomplete contracts will be limited. We therefore expect the same "earned" trust through doing good to have a less salient effect on a firm's long-term credit rating in these countries.

We test our trust-based hypotheses in a comprehensive sample of 1,446 unique firms with 9,933 firm-year observations from 42 countries in six continents over the period of 2002-2014 and find supporting evidence. Following prior studies (Ferrell, Liang, and Renneboog, 2016; Liang and Renneboog, 2017; Cheng, Ioannou, and Serafeim, 2014), we use CSR scores (CSR) from the ASSET4 database to capture the intensity of doing good by a firm. We find that CSR is positively associated with long-term credit rating during crisis years but not in normal years. Compared to normal years, the firm faces more uncertainty in stakeholder relationships in crisis years due to contingencies undefined in an incomplete contract. Trust mitigates such uncertainty by serving as a lubricant for incomplete contracts. For example, when future contingency involves shrinking businesses, the trusted partner is less likely to be cut. Key employees are also less likely to depart firms they trust. As integrity and consistency are two determinants of trust (Butler and Cantrell, 1984), the positive relation between CSR and long-term credit rating is more significant in the firms with consistent CSR, employment, and investment policies as it suggests that these firms are sincere in building stakeholder relationships to earn trust, instead of just being opportunistic. Furthermore, the positive relation between CSR and long-term credit rating is stronger in countries with higher societal trust where trust is more valued and plays a

more important role in economic activities (Pevzner, Xie, and Xin, 2015). However, the positive relation between CSR and long-term credit rating is less significant in countries with strong stakeholder protection regulation, where the marginal benefit of trust is diminished.

Since CSR, the measure of doing good, is a highly endogenous variable, our results may be biased. Our tests during crisis periods are less likely to be endogeneity-driven, because crisis periods can be considered random shocks to trust, as panic leads to sudden loss of public trust in capital markets and the financial system. We also use sharper tests that focus on the interaction of CSR and factors that influence a firm's ability to build trust and the perceived societal trust in a country in which the firm operates. Many of these factors are exogenous, for example, country-level societal trust or media freedom, so that the interaction results are less susceptible to endogeneity biases. Furthermore, following Di Giuli and Kostovetsky (2014), we use a country's political orientation as an instrument for CSR and show that the results continue to hold. Besides relevant factors documented in the literature, our regressions control for country-level credit rating, firm fixed effects, industry fixed effects, and country fixed effects to mitigate estimation bias caused by uncontrolled or unobserved variables.

This paper contributes to the debate on finding a convincing answer to whether doing good is good for the firm and on the important role trust plays in economic activity (Putnam, Leonardi, and Nanetti, 1994; Knack and Keefer, 1997; Zak and Knack, 2001; La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1997; Guiso, Sapienza, and Zingales, 2004, 2008, 2009; Duarte, Siegel, and Young, 2012; Gennaioli, Shleifer, and Vishny, 2015; Gurun, Stoffman, and Yonkers, 2016, Lins, Servaes, and Tamayo, forthcoming; Amiraslani, Lins, Servaes, and Tamayo, 2016, and others). Using a comprehensive international sample, we show that doing good helps to sustain long-term credit rating and that trust influences such relation. We suggest that doing good

is more successful at earning trust when the firm adopts consistent policies to build stakeholder relationships, and the earned trust contributes more to sustain a firm's long-term credit rating when and where the benefits of trust are more valued.

Finally, this paper contributes to the literature on how an incomplete contract leads to certain corporate behaviors that attempt to mitigate the frictions under unspecified contingencies (Titman, 1984; Titman and Wessels, 1988; Kale and Shahrur, 2007; Banerjee, Dasgupta, and Kim, 2008; Bae, Kang, and Wang, 2011). By analyzing a broad global sample with a focus on the role of trust, our paper also reconciles mixed empirical evidence on the relation between doing good and long-term credit rating from previous studies (Goss and Roberts, 2011; Jiraporn, Jiraporn, Boeprasert, and Chang, 2014; Oikonomou, Brooks, and Pavelin, 2014; Menz, 2010; Stellner, Klein, and Zwergel, 2015).

The remainder of the paper is organized as follows. Section 2 reviews the literature, discusses the background, and develops hypotheses. Section 3 describes the data and sample. Section 4 presents empirical results, Section 5 conducts endogeneity tests to establish causality, Section 6 conducts additional tests, and Section 7 concludes.

2. Background and Hypotheses

In this section, we first provide the theoretical background on why a firm's CSR activities could influence its long-term credit rating through building strong relationships with non-financial stakeholders, and we explain how trust-building and societal trust matters for the effects of doing good on long-term credit rating. We develop several testable hypotheses along with the literature review.

The uncertainty in the relationship between the firm and its stakeholders is a natural consequence of a firm being a nexus of incomplete contracts and certain stakeholders seeking to

make firm-specific investments (Titman, 1984; Hart, 2001). Today with stand-alone companies rising from the declining large conglomerates, vertically integrated manufacturers moving toward looser forms of collaboration with their suppliers, and human capital emerging as the most crucial asset (Zingales, 2000), stakeholder relationships are becoming more important and demand more attention. Corporations try to address stakeholder needs by engaging in CSR activities that they claim to "build trust." For example, firms compete to improve employee welfare, participate in community building, and give up billions of dollars of revenue by distancing themselves from controversial products.[1] This suggests that doing good can positively influence a firm's long-term credit rating by building trust.

Hypothesis 1: There is a positive relation between CSR and long-term credit rating.

To establish that trust is indeed relevant in the relation between doing good and long-term credit rating, we focus on how trust influences such relation. Doing good is not equally successful in building trust. Butler and Cantrell (1984) identify integrity and consistency as two determinants of trust-building. While integrity is hard to determine and relies on perception, how managers handle issues with moral hazard concerns reflects their integrity. Moral hazard is a widespread problem that has a non-trivial negative effect on a firm's long-term credit rating (Millon and Thakor, 1985) and moral hazard problems arise with respect to CSR activities as it is possible for managers to extract private benefits from CSR decisions so that engagement in CSR activities may be a result of managerial opportunism and demonstration of agency costs (Cheng, Hong, and Shue, 2013). Doing good is more likely to build trust with stakeholders when the firm has a dedicated CSR policy and consistent CSR engagement so that doing good is unlikely to be

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[1]In 2015, immediately after Netflix announced one full year paid parental leave, Amazon and Microsoft made similar improvements to their policies. In 2012, Dick's Sporting Goods suspended sales of semiautomatic rifles at its 480 stores in the wake of the Sandy Hook massacre, while Wal-Mart removed the listing of such rifle from its website. CVS stopped selling cigarettes at all retail locations in 2014.

driven by managerial opportunism. As CSR policy generates value in the long run (Ortiz-de-Mandojana and Bansal, 2016; Wang and Bansal, 2012), doing good is more successful at building trust in firms which adopt other corporate policies that are also long-term oriented. When a company has consistent and well-aligned overall firm policies, including CSR, employment, and investment policies, the company makes a powerful statement to outsiders that doing good is well planned and strategized, and less likely to be driven by managers' moral hazard problems or opportunistic behavior. Furthermore, doing good is more likely to build trust when a firm consistently brings positive social impacts. We therefore hypothesize that:

Hypothesis 2: The positive relation between CSR and long-term credit rating is more salient at firms that follow policies which are consistent with building stakeholder relationships.

The level of societal trust, or the perceived trust that prevails in a country, influences economic growth, social efficiency, and corporate performance (Knack and Keefer, 1997; La Porta et al., 1997), international trade and investments (Guiso et al., 2009), financial markets and development (Guiso et al., 2004; 2008), and investors' perception and utilization of information (Duarte, Siegel, and Young, 2012; Pevzner, Xie, and Xin, 2015). As part of a country's informal norms, trust provides an alternative mechanism for shareholder protection and mitigates self-dealing at the country level. This mechanism is more relied on in countries with higher societal trust (Cline and Williamson, 2016) and we expect earned trust to be more valued in these countries. Through the more powerful trust effect in these countries, the positive relation between doing good and the firm's long-term credit rating should be stronger.

The significance of the positive relation between doing good and long-term credit rating should change with the marginal benefit of "earned trust," which varies over time and across countries. A firm's earned trust is more valued during times when trust in average corporations

suffers negative shocks. (Lins, Servaes, and Tamayo, forthcoming). During financial crises and sovereign downgrades, external negative shocks lead to unexpected decline of public trust in capital markets and country finances and hurt trust in average corporations, so a firm's "earned trust" through doing good is more valuable during those periods. Passage of "say-on-pay" regulation provides another external shock when the public trust in the fairness of executive pay is so low that it needs a boost. We therefore hypothesize that

Hypothesis 3a: There is a positive relation between CSR and a firm's long-term credit rating during times when marginal benefit of trust is high.

Both formal stakeholder regulation and trust can mitigate the uncertainty in stakeholder relationships caused by incomplete contracts. Where stakeholder protection regulation is thorough and powerful, the marginal benefit of trust through mitigation of uncertainty of incomplete contracts is likely to be lower. Therefore, because of the lower marginal benefit of trust in countries with strong stakeholder protection laws, earned trust matters less and the positive relation between doing good and long-term credit rating should be less salient.

Hypothesis 3b: The relation between CSR and a firm's long-term credit rating is less salient in countries with strong stakeholder protection laws.

Trust is more valued in countries with high societal trust as deviants face harsher penalties there. Individuals rely more on others keeping their promises and do not expect to be cheated because they believe others have internalized moral rules (Coleman, 1990; Spagnolo, 1999). This also suggests trust plays a more important role in alleviating moral hazard problems in these countries. As documented in the communications and journalism literature, based on interviews with 2,000 journalists from 20 countries, Hanitzsch and Berganza (2012) show that three factors are the principal determinants of perceived societal trust: interpersonal trust,

corruption level, and media freedom. In countries where people are more trusting, stakeholders assign a higher subjective probability to an action performed by a counterparty as not-harmful or beneficial (Gambetta, 1988) and are more likely to reward CSR activities with reciprocity, which is the idea that "because you are good to me, I will be good to you." Such reciprocity results in better cooperation between the firm and stakeholders, mitigates uncertainty, and helps maintain long-term credit rating. Similarly, as corruption is one of the most relevant political performance measures to public trust (Slomczynski and Janicka, 2009) and media freedom keeps corruption and self-dealing in check, higher perceived trust prevails in countries with less corruption and more media freedom. We therefore hypothesize that

Hypothesis 4: The relation between CSR and a firm's long-term credit rating is more salient in countries with higher societal trust.

3. Sample, Variables, and Methodology

A. Sample Selection

In addition to the rapidly growing attention given to CSR initiatives, a plethora of information on CSR activities and, in particular, rating or scoring of CSR activities, has been made available through numerous information intermediaries (Ioannou and Serafeim, 2015). Thomson Reuters' ASSET4 is one of the most reputable providers of environmental, social, and governance (ESG) data, with a broad coverage of firms from all over the world. Major investment houses like BlackRock rely on ESG information from ASSET4 as analysis tools (Cheng, Ioannou, and Serafeim, 2014).

To construct our sample, we start from the universe of ASSET4 firms, which includes 3,798 unique firms from 45 countries as of year-end 2013, with coverage starting from 2002 and ending in 2014. We then obtain a long-term credit rating from the S&P Capital IQ database for

these firms, annual financial statement data from Compustat North America and Global

Compustat, and monthly stock return data from Datastream. We require that each country has at

least five observations and each firm have non-missing data on financial variables, CSR rating,

long-term credit rating from S&P, and monthly stock returns. Such requirements result in our

final sample of 1,446 unique firms and 9,933 firm-year observations from 42 countries in all six

inhabitable continents.

Panel A of Table 1 presents the distribution of sample firms by the country in which their

headquarters reside. Of the 42 countries, the U.S. dominates in terms of the number of

observations (4,888 out of 9,933). Japan, the United Kingdom, and Canada are three additional

countries that have more than 500 observations, while some countries like Hungary, Colombia,

and Philippines have fewer than 10 observations. Panel B of Table 1 reports the industry

distribution of the sample following the twelve industry classification defined in Fama and

French (1997, FF12). Most observations (15.24%, 1,514 out of 9,933) are from the

manufacturing industry, followed by other industries (15.04%, 1,494 out of 9,933). The

consumer durables industry and the healthcare industry have the least number of observations

(361 and 561, respectively). Compared to the difference in the number of observations of the

twelve industries, the variation in the mean long-term credit rating and CSR is much smaller.[2]

The industry mean of long-term credit rating is around 14 (corresponds to a letter grade of BBB),

with the healthcare, utilities, and chemicals industries boasting an industry mean of above 15

(corresponds to a letter grade of BBB+). The chemicals industry has the highest CSR mean

(0.76), while the wholesale and retail industry has the lowest CSR mean (0.55). Panel C shows

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[2] Following Klock, Mansi, and Maxwell (2005), we convert the long-term credit rating to numerical numbers ranging from 1(D) to 22(AAA).

the yearly distribution of the sample over 2002-2014, suggesting an almost monotonically increasing number of unique firms every year, from 436 in 2003 to 859 in 2014.

B. Main Variables

Our main variables are long-term credit rating, CSR ratings, and factors that either serve as a proxy for trust or influence perceived trustworthiness. Below, we describe how each of these variables is measured.

B.1 Long-term Credit Rating

S&P issues various credit ratings for both (bond) issuers and particular issues, and the ratings are for both the long term and short term (Standard and Poor's, hereafter S&P, 2015). Our study examines the effect of CSR ratings on corporate credit ratings, which, like sovereign credit ratings, belong to issuer credit ratings. The long-term credit rating data we use for this study are from the S&P Capital IQ database, which contains forward looking credit ratings assigned by S&P rating services for issuers. There are at least two advantages to focusing on credit ratings from a single credit rating agency, i.e., S&P: (1) S&P is a major global credit rating agency that is appropriate for an international study, and (2) the rating standards should be consistent within the same credit rating agency.

When we aggregate long-term credit ratings by countries where the firms' headquarters are located in Panel A of Table 1, we observe that the mean firm credit rating ranges between 10.27 for Indonesia (corresponding to a letter grade of BB) and 19.42 for Singapore (corresponding to a letter grade of AA). The sovereign credit rating also spans a wide range, between 11.38 for Turkey (corresponding to a letter grade of BB) and 22 for several countries including Canada, Denmark, Germany, the Netherlands, Norway, Singapore, Switzerland, and

the United Kingdom. In the U.S., where almost half of the observations are from, the mean firm-level credit rating is 13.9 with a sovereign rating of 21.61.

[Table 1 about here]

Summary statistics in Table 2 show that the mean of the long-term credit rating for our sample is 14.24, corresponding to a letter rating between BBB and BBB+. The median long-term credit rating is very close to the mean at 14, corresponding to a letter rating of BBB. Although the lowest long-term credit rating is 1, the 25th and 75th percentiles at 13 and 16 suggest that most of the firms in our sample are investment grade. We recognize that our sample is subject to selection bias, as ASSET4 covers only the largest firms in the world, and we are careful not to extend our findings to smaller and less well-known firms.

B.2 CSR Ratings

ASSET4 collects objective, relevant, auditable, and systematic ESG information and generates CSR ratings for the universe of firms it covers. The raw ESG information is from publicly available sources like stock exchange filings, annual financial and sustainability reports, and non-governmental organizations' websites. Specifically, trained analysts then transform the raw information, which is usually qualitative, into consistent data points to enable quantitative analysis. Every year, more than 900 data points are used as inputs to calculate 250 key performance indicators (KPIs) that are further organized into 18 categories within four pillars: environmental, social, corporate governance, and economic performance pillars. Similar to other studies that have used ASSET4 data to analyze the relation between CSR and CFP (Liang and Renneboog, 2017; Cheng, Ioannou, and Serafeim, 2014; Lys, Naughton, and Wang, 2015), the main CSR score variable (*CSR*) we use in this study is the arithmetic mean of the environmental and social pillar scores. We exclude corporate governance and economic pillar scores because

both are less connected with building and improving stakeholder relations. In additional tests, we also rely on the individual social and environmental pillar scores to explore the effect of different CSR dimensions and to evaluate the economic significance of the CSR effect on long-term credit rating.

As the four pillar scores and other CSR ratings from ASSET4 range between 0 and 100, which is much larger in magnitude compared to other explanatory variables, we rescale them to a range between 0 and 1. When we aggregate the various CSR ratings over countries, we find a large variation in the mean: from the highest value of 0.92 in Denmark to the lowest value of 0.33 in Philippines for the adjusted CSR rating, from the highest value of 0.94 in Denmark to the lowest value of 0.34 in China for the social pillar score, and from the highest value of 0.91 in Denmark to the lowest value of 0.21 in Philippines for the environmental pillar score.

B.3 Trust-Related Variables

B.3.1 Measurement of Consistent Policy

We adopt four measures for policy consistency, which include whether the firm has (1) below-median volatility in CSR score over time, (2) a policy to maintain long-term employment growth and stability, and (3) a long-term oriented investment policy like investing in research and development (R&D) and intangible assets. *CSR volatility* is calculated as the coefficient of variation of CSR scores in the most recent three years and a low reading on *CSR volatility* suggests a consistent CSR policy over time. We also construct a dummy variable High *CSR volatility* that takes value 1 if the CSR score is above-median and 0 otherwise.

Treating employees well has always been an important component of doing good/CSR scores as employees are a group of important stakeholders. Whereas a firm may have high CSR employment scores, a dedicated employment policy that aims to maintain long-term employment

growth and reflects consistency in how the firm treats its employees. We construct a dummy variable *Empolicy2* that takes value 1 if a firm maintains a long-term employment growth and stability goal and 0 otherwise.

A consistent policy on doing good is also reflected in a firm's long-term investment policy. Instead of making quick profits at the expense of long-term company growth or reputation or managing earnings opportunistically, investing in long-term oriented R&D and intangible assets reflects such consistency. We construct a dummy variable, *Positive R&D*, which takes value 1 if a firm has above-median R&D expenditure and 0 otherwise. We also construct another variable *High Intangible Industry* if the intangible asset intensity ratio is higher than 0.5 and 0 otherwise. Both dummy variables suggest a firm has a long-term oriented investment policy when they take value 1.

B.3.2 Country-level Perceived Trust

Following the literature (La Porta et al., 1997; Guiso et al., 2008; Pevzner et al., 2015; etc.), we take the mean response to a question that asks for people's belief on trust in the World Values Surveys (WVS hereafter) as a proxy for societal trust in a particular country.[3] Higher mean response on variable *Trust* suggests higher level of societal trust. Out of the 42 countries in our sample, we are able to calculate the mean societal trust for 0.33, with *Trust* ranging between 0.05 for Turkey and 0.65 for Sweden.

Another proxy for societal trust is the perceived corruption level of a country. A higher reading of variable corruption perception index (CPI) suggests lower perceived corruption and higher trustworthiness. For the 42 countries, logarithm of CPI (*logCPI*) ranges between 3.20 for

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[3] The question reads: Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? A response is coded as 1 if a survey participant reports that most people can be trusted and 0 otherwise.

Russian Federation and 4.53 for Denmark, Finland, and New Zealand. We also define a dummy variable *High CPI* which takes value 1 if *logCPI* is higher than median and 0 otherwise.

Higher public trust is likely to prevail in countries that enjoy media freedom as journalists there are more able to keep corruption and self-dealing in check for the country. (Hanitzsch and Berganza, 2012). We use the *Freedom of the Press* index from the Freedom House as another proxy for country-level perceived trustworthiness. A high reading on the index suggests higher societal trust in the country.

Starting in U.K. in 2002, many countries have initiated the practice of non-binding "Say on pay" shareholder vote on executive pay. This practice is a response to shareholders' complaint that top executives are overpaid irrespective of their performance, which hurts shareholders' trust in the corporate world. Passing regulations that support "say on pay" vote is a powerful response to the outcry of eroding trust in a country. We define a dummy variable *SOP* that takes value 1 if the firm-year observation is in a country that passes regulation that supports "say on pay" in or after that particular year and 0 otherwise.

[Table 2 about here]

4. Empirical Results

A. CSR, Long-term Credit Rating, and Consistency in Doing Good

In order to estimate the relation between CSR score and long-term credit rating, we include control variables that are found to be relevant in the prior literature (Baghai, Servaes, and Tamayo, 2014; Almeida, Cunha, Ferreira, and Restrepo, 2017). In our base model, we include the following to control for firm-specific financial performance: (1) the log of inflation adjusted book total assets value in million U.S. dollars (*LogTA*), (2) the leverage ratio calculated by long-term debt divided by total assets (*Leverage*), (3) profitability measured by return on assets (*ROA*),

(4) sales growth calculated by the annual incremental sales divided by total sales in the previous year (*Sale growth*), (5) R&D measured by R&D expenditure over total assets (*R&D intensity*), (6) the capital expenditure ratio (*CAPEX intensity*), (7) the tangibility ratio (*FA/TA*), (8) the cash ratio (*Cash/TA*), (9) the current ratio measured by current assets over current liabilities (*Current Ratio*), (10) the interest coverage ratio (*EBIT/Int*), (11) long- and short-term debt divided by EBITDA (*Debt/EBITDA*), and (12) *Market beta* and *Idiosyncratic risk* estimated by 24-month stock returns before the fiscal year end . We also control proxies of the economic condition that influence the credit rating, besides sovereign credit rating that has direct influence on corporate rating (Almeida, et al., 2017), and we include (1) the yield spread of the 10-year T-bond and 3-month T-bill, which proxies for term risk (*Maturity Spread*), (2) the credit spread between the yield on corporate bonds and the 10-year T-bond, which proxies for credit risk (*Credit Spread*), (3) capital market size (*Mktcap/GDP*), and (4) credit market size offered by banks (*Private credit/GDP*), (5) inflation rates (*Inflation*), and (6) inflation adjusted GDP per capita (*GDP per cap*).   Following Baghai, Servaes, and Tamayo (2014), we set the leverage ratio to zero and include a dummy variable (*Neg Debt/EBITDA*) that equals one if the ratio is negative to take the discontinuity of the leverage ratio at zero into account. We also winsorize all explanatory variables at the 1st and 99th percentiles to mitigate the effects of extreme values.

We report results on the relation between lagged CSR score and long-term credit rating (how lagged *CSR* influences *LT rating*) from the base-case regression models in Columns (1)-(4) of Table 3. In Column (1), we include lagged *CSR* as the only explanatory variable besides year, industry, and country fixed effects. The positive and highly significant estimate is consistent with our Hypothesis 1 that lagged *CSR* influences on a firm's long-term credit rating. We then estimate an ordered logit regression model (Ologit) and an ordinary least squares regression

model (OLS) and report the results in Columns (2) – (3), respectively, as both models have their advantages. Ordered logit regression models possess an edge as they are consistent with the nature of credit rating numbers, which treat smaller numbers as worse ratings and are not related to the exact magnitude of the rating number (Baghai, Servaes, and Tamayo 2014). OLS models, however, are more advantageous in estimating economic significance. We control for industry fixed effects by including the two-digit SIC code, year fixed effects, and country fixed effects and cluster the standard errors at country and firm levels for both models.

We see in both columns (2) and (3) that almost all explanatory variables are statistically significant and have the expected and consistent signs across models. Firms tend to have better long-term credit ratings when they are larger, have a lower leverage ratio, a higher current ratio, a higher interest coverage ratio, higher profitability, a higher R&D ratio, a higher tangibility ratio, lower market beta, and idiosyncratic risk. When the maturity spread is higher, suggesting a booming economy with less overall credit risk, firm credit ratings are also higher. A higher credit spread is associated with lower firm ratings. These findings are broadly consistent with the prior literature.

The coefficient estimates on lagged *CSR* for both model specifications are positive and highly significantly different from zero, supporting the view that doing good is beneficial to the firm. To mitigate the concern that such positive relation is due to some unobservable (omitted) risk factor which is correlated with CSR, we include firm fixed effects in the estimation and report results in Column (4). The coefficient estimate on lagged *CSR* from the model with fixed firm effects controlled is about half in magnitude, and is positive and statistically different from zero with a 95% confidence level.

[Table 3 about here]

We then drill down to investigate the role of trust in the positive relation between long-term credit rating and lagged *CSR*. Trust is not easily measurable (Guiso et al. 2004). The management literature, including Butler and Cantrell (1984) and Mayer, Davis, and Schoorman (1995) and a number of other researchers, identify consistency, together with integrity, as an important determinant for building trust. We therefore focus on consistency, which is a measurable characteristic that determines the effectiveness of trust-building, to examine whether the positive relation between CSR and long-term credit rating goes through the trust-building channel. Following a CSR policy and consistently carrying out such a policy despite cash flow volatility is a powerful indication that the firm is sincere in doing good. This helps build trust between the firm and its stakeholders. We use the following as a proxy for policy consistency: CSR volatility, investment policy, and employment policy, construct interaction variables of the policy consistency proxy and CSR, and report those results in Table 4. We control for all financial and macroeconomic variables as well as firm fixed effects and year fixed effects in each of the models, and focus on the coefficient of interaction variables to study the effect of policy consistency, which we take as a proxy for CSR that effectively builds trust, on long-term credit rating.

Additionally, when estimating the effect of CSR volatility, we also control for cash flow volatility as a firm's high CSR volatility may be caused by its high cash flow volatility, which is detrimental to its long-term credit rating. Results in Column (1) show that after controlling for cash flow volatility in the most recent three years, CSR volatility in the most recent three years remains negatively associated with long-term credit rating. We then define a dummy variable *High CSR volatility* that takes value 1 if CSR volatility is above median and 0 otherwise. The highly negative and significant coefficient estimate on the interaction term *High CSR*

volatility*CSR reported in Column (2) shows that the positive effect of CSR on long-term credit rating is greatly offset by the negative effect from CSR volatility. This suggests that inconsistent CSR policy is less effective in "earning trust" and does not help sustain the firm's credit rating.

Next, we show that CSR is more likely to build trust and has a positive effect on long-term credit rating when the firm also has a consistent investment policy that targets long-term achievement, including investing in R&D and intangible assets. We define two dummy variables for this purpose: *PositiveR&D* that takes value 1 if a firm has positive R&D expenses and 0 otherwise and *High intangible industry* that takes value 1 if a firm has above-median intangible assets and 0 otherwise. The coefficient estimates on the interaction terms *PositiveR&D*CSR* and *High intangible industry*CSR* reported in Columns (3) - (4) of Table 4 are both positive and significant, as long-term investment policy suggests consistency with CSR policy and contributes to building trust.

Finally, we examine the influence of consistent employment policy on trust-building through doing good. When the firm adopts a consistent policy with respect to employee treatment, including a dedicated policy that aims to maintain long-term employment growth and stability, doing good is more likely to build trust and contribute to sustained long-term credit rating. We construct a dummy variable for this purpose: *Empolicy* that takes value 1 if a firm has a separate policy that aims at maintaining long-term employment growth and stability and 0 otherwise. The coefficient estimate on the interaction terms *Empolicy*CSR* in Column (5) is positive and highly significant, suggesting that CSR at a firm with a dedicated policy for employees builds stronger trust that sustains a firm's long-term credit rating. It is worth noting that the coefficient estimate for lagged *CSR* and *Empolicy* is either insignificant or negative,

suggesting that consistency of CSR and employment policy, which is a proxy for effective trust-building, is critical in the positive relation between CSR and long-term credit rating.

Overall, the results in Table 4 show that doing good is good to a firm through the trust-building channels for, supporting Hypothesis 2.

[Table 4 about here]

B. Marginal Benefit of Trust and CSR-Long-term Credit Rating Relation

To test the hypothesis that the CSR-long-term credit rating relation is more salient when the marginal benefit of trust is higher, we examine (1) sovereign downgrades when trust in a country's finances is subject to external shock which has a ripple effect for firms in that country (Almeida, et al., 2017), (2) when public trust in average firms is subject to external shocks, for example, during the 2007-9 financial crisis (Lins, Servaes, and Tamayo, forthcoming), and (3) passage of "say-on-pay" regulation in a country which is likely caused by low trust in the corporate system, especially executive compensation. By using shocks that are likely exogenous, we are more confident that our results are robust.

Columns (1)-(6) of Table 5 Panel A report the results. Both sovereign downgrade and the great recession during 2007-2009 are times when marginal benefit of a firm's "earned trust" is likely to be high because the public trust in an average firm is lower due to negative external shocks. The readings on the Trust Barometer developed by Edelman, the world's largest independent public relations firm and the Financial Trust Index (financialtrustindex.org) developed by Sapienza and Zingales confirm the decline in public trust during these times. For example, according to Edelman, the trust in business in the U.S. declined from 58% in 2008 to 38% in 2009 at the depth of the Great Recession. The trust in Western European countries (U.K., Germany, and France) also decreased from 46% in 2011 to 31% in 2012 when multiple

sovereign downgrades occurred in several European countries. Overall, the Financial Trust Index shows a lower level of public trust in the period of 2007-2013.

We define two dummy variables to capture when the marginal benefit is high for a firm caused by a sovereign credit rating downgrade: *Sovereign down* that takes value 1 when a country is downgraded by the S&P in the current year and 0 otherwise; *Sovereign down2* that takes value 1 when the downgrade occurs either in the current or the previous year and 0 otherwise. We estimate two specifications using these two measures and report results in Columns (1) – (2) of Table 5. The positive relation between lagged *CSR* and long-term credit rating remains for both specifications and the interaction terms using both measures are positive and highly significant, with high economic significance as well. Whereas sovereign downgrade does not necessarily hurt a firm's long-term credit rating, the benefit of doing good on long-term credit rating is greatly boosted in times when the marginal benefit of a firm's "earned trust" is high. The results for western European countries in Column (2) further show that CSR contributes to sustaining of long-term credit rating only during times when sovereign downgrades occur, highlighting the relevance of the marginal benefit of "earned trust."

We also estimate two specifications of interaction effect between crisis period and CSR. The first specification includes an interaction term of (varying) lagged *CSR* with *FinCrisis*, which is a dummy that takes value 1 if the year belongs to the great recession years of 2007-2009. After we control for firm fixed effects, year fixed effects and all financial and macroeconomic variables, the coefficient estimate on *FinCrisis*CSR* shows up as highly significant with a magnitude of 0.245 and the coefficient estimate on *FinCrisis* is also highly significant with a magnitude of -0.896. The coefficient estimate on *CSR* is positive yet not significant (t=1.616). This suggests that while average credit rating is hurt during financial crisis, doing good helps

sustain a firm's long-term credit rating. Furthermore, the benefit of doing good for long-term credit rating is only significant during financial crisis when the marginal benefit of "earned trust" is high, supporting Hypothesis 3a.

The second specification includes an interaction term of *CSR2006*, a variable that is fixed at a firm's pre-crisis CSR score in 2006, and *FinCrisis*. By using a fixed level of CSR, we can focus on the effect of varying marginal benefit of "earned trust" in and out of crisis, following Lins, Servaes, and Tamayo (forthcoming). Furthermore, we construct another dummy variable, *PostCrisis*, which takes value 1 if the year belongs to post crisis year (2013-2014), and estimate the coefficient on *CSR2006*PostCrisis*, to investigate whether varying marginal benefit of "earned trust" is relevant. If it is, we expect to observe positive and significant coefficient estimate for *CSR2006*FinCrisis* only. We control for year and firm fixed effects in both specifications and report results in Columns (3) – (4) of Table 5 Panel A. Whereas the crisis variable is consistently negatively associated with long-term credit rating, only one interaction term, *CSR2006*FinCrisis* , is positive and highly significant. This suggests that doing good helps sustain a firm's long-term credit rating when and only when trust is more valued.

Finally, the results in Column (6) show that when a country adopts "say-on-pay" policy, which is a response to low trust in the corporate system, especially executive compensation, firms with high lagged CSR ratings display more improvement in long-term credit rating than those without. The coefficient estimate for *SOP* is negative and highly significant, suggesting that adoption of SOP may actually hurt the long-term rating of firms that do not engage in CSR activities.

In summary, during times when public trust in corporations or a country's finances is low, the marginal benefit of a firm's "earned trust" is higher so that the benefit from building trust

through doing good is higher. This leads to better sustained long-term credit rating, consistent with our Hypothesis 3a.

[Table 5 Panel A about here]

"Earned trust" benefits the firm with social capital that fills in the void of incomplete contract between a firm and its stakeholders. The marginal benefit of "earned trust" is therefore likely to be overshadowed by another mechanism that protects stakeholders, for example, stakeholder regulation. We construct several dummy variables that capture stakeholder protection regulation. *High Employment law* is a dummy variable that takes value 1 if a country has higher-than-median labor and employee protection laws and 0 otherwise. *CSR law* is a rank order variable that takes value 1 if a country has mandatory disclosure requirements only for industrial companies or only for pension funds, takes value 2 if a country has mandatory disclosure requirements for both, and takes value 0 if there is no mandatory CSR disclosure requirement. *High Social sec law* is a dummy variable that takes value 1 if a country has higher-than-median social security benefits and 0 otherwise. *High Collective law* is a dummy variable that takes value 1 if a country has higher-than-median protection for collective actions and 0 otherwise. A high reading on these proxies suggests stronger formal stakeholder protections. Using the above proxies, we report in Panel B of Table 5 the relation between doing good and long-term credit rating in countries with varying strength of stakeholder protections. The main effects of these proxies are all positive and highly significant, indicating that strong stakeholder protection helps sustain long-term credit rating. The interaction effect of these proxies and CSR is either negative and highly significant or neutral, suggesting that the doing good is less effective in sustaining a firm's long-term credit rating in countries with stronger stakeholder

protections as the marginal benefit from the "earned trust" is lower. These results support Hypothesis 3b.

[Table 5 Panel B about here]

To further establish the importance of the marginal benefit from trust and to ensure that the positive effect CSR has on long-term credit rating is not driven by a time-varying unobservable factor, we estimate the relation between long-term credit rating and CSR score every year over the period 2003-2014 and report the results in Panel C of Table 5. We control for all the explanatory variables used in Table 3[4] and observe a positive and significant CSR effect on long-term credit rating over the period of 2007-2013, when the marginal benefit of trust is relatively high. The coefficient estimate on CSR rating is insignificant with inconsistent signs in years prior to 2007 and in 2014. Starting from 2007 until 2013, a period with low public trust due to a number of crises and when a firm's "earned trust" through doing good should be more valuable, the coefficient estimate on *CSR* is highly positive and significant, consistent with H3a. The magnitude of the coefficient estimate is also much larger in the depth of crisis years. For example, the coefficient estimate is 1.142 for 2009 when S&P 500 hit its lowest point of the crisis, and it is the largest among all years. This magnitude is about half that of leverage and cash ratio and similar to that of market beta, meaning a one standard deviation of change in CSR rating (0.288) is associated with a 0.33 notch of change in long-term rating.

[Table 5 Panel C about here]

C. Country-level Societal Trust, Doing Good, and Long-term Credit Rating

We next examine how the CSR effect on long-term credit rating varies with a country's societal trust. We measure societal trust proxies with several variables: the extent to which people tend to trust each other, which is captured by the answer to the World Value survey

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[4] The Treasury bill rate, term spread and credit spread drop out of these regressions for each year.

(*Trust*), the perceived corruption measured by the corruption perception index constructed by Transparency International (*CPI*), and media freedom measured by the *Freedom of the Press* index constructed by the Freedom House (*Media Freedom*). We then capture the effect of societal trust on the relation between doing good and long-term credit rating using the interaction terms between these measures and CSR score of the firm and report the results in Table 6.

The coefficient estimate for *Trust*CSR* in Column (1) of Table 6 is positive and highly significant, suggesting a more salient CSR effect on long-term credit rating in countries where people are more trusting. When we define a dummy variable *High Trust* which takes value 1 if *Trust* is above median and 0 otherwise, the coefficient estimates for both *High Trust* and *High Trust*CSR* are positive and highly significant (Column 2). The economic significance is non-trivial as well: the contribution of CSR to long-term credit rating is 1.66 notch higher in a country with above-median perceived trust. If one notch amounts to 30 basis points on average, high societal trust is associated with 50 basis points in long-term credit rating for firms with the same CSR score. Furthermore, the coefficient estimate for lagged CSR alone is negative and highly significant in Columns (1) – (2), suggesting that doing good helps sustain a firm's long-term credit rating only in countries with high societal trust. We confirm this finding in columns (3) – (4) where we separate the full sample into two subsamples: countries with above- and below-median societal trust based on *Trust*: the positive relation between lagged CSR and long-term credit rating only holds in countries with high societal trust.

The coefficient estimate for *LogCPI*CSR* in Column (5) of Table 6 is positive and highly significant. When we define a dummy variable *High CPI* which takes on value 1 if *CPI* is above the median and 0 otherwise, the coefficient estimate for *High CPI*CSR* in column (6) is also positive and highly significant both statistically and economically. As high *CPI* means low

perceived corruption, a high *CPI* reading indicates high societal trust. The coefficient on lagged

CSR is negative and highly significant, suggesting that doing good is viewed negatively with

respect to a firm's long-term credit rating. This suggests that doing good is likely to be viewed as

a waste of corporate resources in countries with high perceived corruption (low societal trust).

Similarly, the positive and highly significant coefficient estimate for *Media Freedom*CSR* in

Column (7) lends further support to H4, as the higher value in Media Freedom suggests higher

societal trust. Overall, our results point to stronger CSR effect on long-term credit rating in

countries where high societal trust prevails so that trust plays a more important role among

informal norms in mitigating moral hazard problems, supporting H4.

[Table 6 about here]

5. Addressing Endogeneity Concerns

A. Results from Difference Models

To further mitigate endogeneity concerns, we next investigate the effect of a change in

CSR and other explanatory variables on the change in long-term credit rating using difference

models over a number of longer time periods. Through differencing, we can largely remove the

effect of certain constant firm characteristics that are hard to capture, like management quality

and corporate culture, which could bias our results. Furthermore, there is not much variation in

the long-term credit rating, as maintaining a credit rating is one of the top priorities for managers

(Graham and Harvey, 2001). Indeed, the standard deviation for our sample is 2.905, about 1/5th

the magnitude of the sample mean, which is 14.237. CSR effects also tend to be strategic and

long term (Porter and Kramer, 2002). By examining several longer time periods, we are more

likely to observe the effects of changes in *CSR* on the long-term credit rating. Panel A of Table 7

reports the results from difference models over 1-, 2-, and 3-year windows. We control for country, industry, and year fixed effects in each of these models.

The results in Column (1) show that the change in long-term credit rating from year t to $t+1$ is not significantly associated with the change in *CSR* from year t-2 to t. The relation between the change in long-term credit rating from year t to $t+2$ and the change in *CSR* from year t-2 to t, however, is positive and significant (Column 2). There is an even more significant relation between the change in long-term credit rating from year t to $t+3$ and the change in *CSR* from year t-2 to t (Column 3). These results combined provide further support for Hypothesis 1 and suggest that it takes a long time for the CSR effect to be reflected in the long-term credit rating. The statistically insignificant relation between the change in *CSR* from year t to $t+2$ and the change in long-term credit rating from year t-2 to t (Column 4) shows that improvement in the long-term credit rating is not associated with a better CSR score in the future, alleviating the reverse causality concern.

[Table 7 Panel A about here]

B. IV Regressions

We next conduct instrumental variable (IV) regressions to complement our analysis. By using an IV that correlates with CSR rating (satisfying the relevance condition) but does not lead to changes in long-term credit rating (satisfying the exclusion condition), we can arrive at a consistent estimate for both the direction and magnitude of the relation between CSR rating and long-term credit rating even though the estimate may be less efficient (Wooldridge, 2002).

We construct two instruments similar to those used in Di Giuli and Kostovetsky (2014) and Cheng, Ioannou, and Serafeim (2014) for the CSR rating. The first and main instrument, the governmental political orientation score of the most recent three years, comes from the Database

of Political Institutions. Politics and ideology influence the rationale for firms to engage in CSR activities (Di Giuli and Kostovetsky, 2014). For example, more democratic-leaning (left-leaning ideology) firms are more likely to be pro-CSR than more republican-leaning (right-leaning ideology) firms. Following this argument, we calculate the last three year average country-level political ideology score and use it as our main instrument. This satisfies the relevance condition as countries that have more left-leaning ideology invest more resources in CSR activities and it also satisfies the exclusion condition as political ideology of the country is unlikely to drive a firm's long-term credit rating.

We also generate the second instrument, country-year mean of CSR, which is the annual mean of CSR rating of *other* firms that are headquartered in the same country. We calculate the average of overall, social dimension, and environmental dimension CSR ratings, and use them in the IV regressions respectively. This IV satisfies the relevance condition because of the deep roots of CSR activities in country-level institutional factors, for example, disclosure rules, stakeholder orientation, employment protection regulation, and legal origins (Ioannou and Serafeim, 2012; Dhaliwal, Radhakrishnan, Tsang, and Yang, 2012; Edmans, et al, 2014; Liang and Renneboog, 2017). This IV also satisfies the exclusion condition, as a firm's long-term credit rating should not be driven by other firms' social performance and we do not find a systematic correlation between country-level credit rating and CSR rating.

With the help of these two instruments, we re-estimate the CSR effect on long-term credit rating and are able to perform a number of tests to assess their validity. In the first stage model of Panel B, we find a positive and highly significant relation between *CSR* and the two instruments in the results from the first-stage of the IV regression estimation, confirming that the IVs meet the relevance condition. In columns (1)-(5), we report results from the second-stage of the IV

regression. The coefficient estimate for the instrumented *CSR* is positive and significant in columns (1), (2), and (4). The instrumented *CSR*, however, is not significant in low Trust and corrupted countries. This again supports Hypothesis 1 and Hypotheses 3 that the CSR effect is positive for long-term credit rating and the positive effect is stronger in countries with high societal trust. The *p*-value for the Kleibergen-Paap rk LM statistic, which is essentially an underidentification test in the presence of heteroscedasticity, is 0.00, suggesting that the model has been identified (Kleibergen and Paap, 2006). The *p*-value for a weak identification test in the presence of heteroscedasticity (Kleibergen-Paap Walk rk test) is also 0.00, again suggesting that our instruments are not weak. The *p*-value for Hansen's *J*-test is 0.75, insignificant at the conventional level, suggesting at least one of our instruments is valid.

In summary, the results from firm fixed effects IV regressions further confirm that CSR score positively impacts the long-term credit rating of the corporate issuer, and the effect is stronger in countries with high societal trust, supporting Hypotheses 1 and 4.

[Table 7 Panel B about here]

C. Test on a Propensity Matched Sample

To mitigate the concern that our results may be driven by the differential firm characteristics of firms with high and low CSR scores, we construct a separate sample with firms that are matched on observable firm characteristics and conduct propensity score matching test. The observed characteristics, including the same 2-digit SIC code, country, year, firm size, leverage, ROA, sales growth, R&D intensity, CAPX intensity, fixed assets ratio, cash-to-total assets ratio, current ratio, interest coverage ratio (EBIT/INT), debt ratio (Neg debt/EBITD), market beta, and idiosyncratic risk, are used as inputs in a logit regression to determine the CSR rating the firm is likely to receive. Once firms are projected in the propensity score space, for

each firm with high CSR score, the procedure looks for the nearest match with low CSR score. The propensity matching procedure ensures that firms that are matched in the same propensity category have similar averages of the explanatory variables in the logit regression. Following the procedure, we can calculate the average treatment effect that is due to high CSR rating with an error margin of 0.05 to be 0.413 and 0.444, when the nearest one or three matches are included, respectively. The difference due to treatment is positive and highly significant, supporting Hypothesis 1.

[Table 7 Panel C about here]

6. Additional Tests

A. Does Leverage or Financial Constraint or Corporate Governance Drive Our Findings?

Bae, Kang, and Wang (2011) and Simintzi, Vig, and Volpin (2015) show that firms with high employee-friendly ratings use less leverage. Because leverage is in general negatively associated with credit rating, our findings may be due to a mechanical relation between high CSR score and strong credit ratings at firms with low leverage. Similarly, since firms with strong CSR scores are less financially constrained (Cheng, Ioannou, and Serafeim, 2014), it is possible that our results are driven by firms with access to financing and that can maintain a solid credit rating.

To examine the alternative stories, we conduct a subsample analysis for firms with low (below-median) and high (above-median) leverage levels and financial constraints. The leverage ratio is measured by long-term debt/assets ratio, and financial constraints are measured by KZ- and WW-index, respectively. If leverage usage or financial constraints can explain our findings, we expect the CSR effect on long-term credit rating to be pronounced only at firms with low leverage or fewer financial constraints. The results in Table 8 do not support this conjecture, as

the coefficient estimates on CSR rating for both highly levered and more financially constrained firms remain positive and highly significant. In addition, Column (4) shows that CSR effect is not simply driven by firms with good corporate governance.

[Table 8 about here]

B. Value Implication

Our findings suggest that trust plays an important role in the CSR effects, consistent with the argument in Lins et al. (2016) that social capital contributes to firm valuation, as trust is a major component of social capital. We also expect that the CSR effects should go beyond long-term credit rating and be reflected in other measures of firm valuation, especially in countries with high perceived trustworthiness, as trust helps mitigate moral hazard problems that hurt firm value. We examine the relation between *CSR* and *ROA*, *Tobin's Q* using firm fixed effects models that also control for country-year interaction fixed effects and find this is indeed the case: the relation between CSR score and ROA and Tobin's Q is positive and highly significant, especially in years with low public trust (over the period of 2007-2013) and in countries with high societal trust. From the results reported in Table 9 we confirm that the positive relation between doing good and a firm's long-term credit rating is also associated with better firm value, when and where the marginal benefit of trust is high.

[Table 9 about here]

C. More Robustness Checks

Firms that are located in the U.S. and Japan represent an overwhelming proportion of our sample (4,888 and 897 out of 9,933, respectively) and may bias our conclusion. To alleviate such concern, in Table 10, we report results from a subsample of firms that are non-U.S. and non-Japan and still find the positive and significant CSR effects on long-term credit rating continue to

hold. When we use separate CSR dimensions of *Social* and *Env* in the regressions in Columns (3) and (4), both *Social* and *Env* dimensions still show significantly positive effect on long-term credit rating. We also conduct further robustness checks using regressions that control for firm fixed effects, country-year, and industry-year interaction fixed effects with country and year or firm, and year double clustering. Whereas the former controls for time-invariant firm fixed effects that we fail to include in the regression but influences long-term credit rating, the latter two control for time-varying country- and industry-fixed effects that are not in the regression. As we see in Columns (5) – (8) of Table 10, the positive and significant CSR effect on long-term credit rating remains.

Although our main CSR rating measure does not include the G (corporate governance) dimension following the literature (Liang and Renneboog, 2017), when we use an alternative CSR score measure that includes the G dimension, our results continue to hold.[5]

[Table 10 about here]

7. Conclusion

Our paper hypothesizes that trust underlies the answer to the hotly debated question whether doing good (CSR) is good to a firm with a focus on the firm's long-term credit rating. Although previous studies have explored the relation between CSR and credit rating, the empirical evidence has been mixed and is subject to causality concerns. In this paper, we view CSR as a way for a firm to "earn trust" and examine the role that "earned trust" and societal trust play in the CSR effect on long-term credit rating. Using a comprehensive international sample over the period 2002-2014, we find a positive relation between doing good and long-term credit rating, influenced by how effective a firm is at building trust and the marginal benefit of the "earned trust.". Doing good is not always successful at building trust. It is, rather, consistent

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[5] Results available from the authors upon request.

policies which aim at building long-term stakeholder relationships that help build trust between the firm and its stakeholders. Doing good is more effective in sustaining a firm's long-term credit rating during times when and where the marginal benefit of "earned trust" is higher and in countries with higher societal trust where trust is a part of the informal norms to mitigate moral hazard problems. The empirical findings strongly support our hypothesis that both firm-level "earned trust" and country-level societal trust matter.

The literature documents the value of social capital (Lins et al., forthcoming) in the U.S. during the great recession. Our paper provides further empirical evidence that supports this argument and extends the literature to better appreciate the influence trust has on the CSR effects in a global setting. Most importantly, we show that whether doing good is beneficial to the firm or not depends on trust-related firm- and country-level factors. So, there should not be a "one size fits all" answer to this question. The literature documents that superior corporate social performance leads to better access to financing through improved stakeholder relationships (Cheng, Ioannou, and Serafeim, 2014). Our paper suggests that strong long-term credit rating helped by doing good is a possible channel that gains the firm better access to finance. The literature also shows that CSR information is a useful input for the analyst forecasting process and that it has gained attention over time (Dhaliwal, et al., 2012; Ioannou and Serafeim, 2015). Our paper confirms the usefulness of non-financial information for rating agencies.

Because our findings are based on a sample of large and reputable firms that belong to the universe covered by ASSET4, we should be careful in applying our findings to all firms. Furthermore, firms with credit ratings tend to use more leverage (Faulkender and Peterson, 2006), so the economic significance of the CSR effect on credit rating that we document in this study may be smaller for firms that are not rated. As data become available, it will be interesting to

investigate whether our results are more generally applicable. It will also be worthwhile to keep

track of the varying risk factors for credit rating processes and examine how they influence the

time series of the ratings received by a firm of a certain financial quality.

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Appendix. Variable definition

Variable Name	Definition	Source
Credit rating related:		
Lt rating	Issuer long-term credit rating; Company credit rating; Following Klock, Mansi, and Maxwell (2005), we convert long-term credit rating to numerical numbers from 1(D) to 22(AAA).	Capital IQ
Sovereign cr rating	Sovereign credit rating	Capital IQ
CSR and Corporate Governance related:		
CSR	Firm Corporate social responsibility rating; (social + env) / 2	ASSET4, calculated
High CSR	Takes 1 if CSR score is above 0.50, else 0	ASSET4, calculated
Social	Firm CSR rating related social issues	ASSET4
Env	Firm CSR rating related environmental issues	ASSET4
CGOV	Firm corporate governance rating	ASSET4
External shock related		
Fin crisis	Takes 1 if the year is in US financial crisis period (2007 to 2009), else 0	
Fin crisis2	Takes 1 if the year is in US financial crisis period (2008 to 2009), else 0	
Crisis	Takes 1 if the year is in US financial period(2007 to 2009) or European sovereign debt crisis period (2010 to 2012), else 0	
Crisis2	Takes 1 if the year is in US financial period(2008 to 2009) or European sovereign debt crisis period (2010 to 2012), else 0	
Sovereign down	Takes 1 if the country's sovereign credit rating is downgraded in the current year by S&P, else 0	Capital IQ
Sovereign down2	Takes 1 if the country's sovereign credit rating is downgrade in the current or the previous years by S&P, else 0	Capital IQ
SOP	Takes 1 if the year is the year that a country pass Say on Pay law or after, else 0	Country's Say on Pay law
External trust building related		
Trust	Fraction of people say to the question of "Most people can be trusted"; Country trust index is constructed from the most recent wave survey	World Value Survey (WVS); 4th to 6th wave
High Trust	Takes 1 if a country trust index is higher than overall median country trust index	World Value Survey (WVS); 4th to 6th wave
CPI	Corruption perception index; the higher the index, the less country corrupted; adjusted as maximum as score 1	Transparency International
High CPI	Takes 1 if a country CPI index is higher than overall median country CPI index	Transparency International
Media Freedom	Takes 1 if a country has full media freedom, 0 otherwise	Freedom House
SOP	Takes 1 if the year is the year that a country pass Say on Pay law or after, and 0 otherwise	Country's Say on Pay law
SOP Country	Takes 1 if the countries pass Say on Pay law during the	Country's Say on

	sample period, and 0 otherwise	Pay law
Internal trust building related:		
Invgrade	Takes 1 if a company's long-term credit rating is 'BBB' and above, and 0 otherwise	Capital IQ, calculated
CSR volatility	The last three years (including this year) CSR coefficient of variation (CV)	Asset4, calculated
High CSR volatility	Takes 1 if CSR volatility is higher than median, else 0	Asset4, calculated
Positive R&D	Take 1 if a firm has positive R&D and 0 otherwise	Computstat, calculated
High Intangible Industry	Takes 1 if the asset intensity ratio is above 0.5 within industry and 0 otherwise	Computstat, calculated
Empolicy	Takes 1 if a firm has a policy that aims at maintaining long-term employment growth and stability, and 0 otherwise	Asset4, calculated
Company financial variables:		
LogTA	Log(total assets), in U$ and inflation adjusted using Year 2010 number as a base	Compustat
Leverage	Long-term debt over total assets	Compustat
ROA	Ib/TA(total assets)	Compustat
Sale growth	Sales' growth rate; [sale(t) / sale(t-1)] -1	Compustat
R&D intensity	R&D expenditure / total assets, treat missing R&D as 0	Compustat
Missing R&D	Takes 1 if R&D is missing, else 0	
CAPX intensity	Capital expenditure / total assets	Compustat
FA/TA	Net fixed assets / total assets	Compustat
Cash/TA	Cash and equivalents / total assets	Compustat
CF/TA	Cash flow / total assets; Cash flow is calculated as (oibdp+dp)	Compustat
Current ratio	Current assets/current liabilities	Compustat
EBIT/Int	[Earnings before interest and tax (EBIT) / interest expenses]/100; interest coverage ratio	Compustat
Debt/EBITDA	Debt / Earnings before interest, tax, depreciation, and amortization (EBITDA)	Compustat
Neg Debt/EBITDA	Takes 1 if Debt/EBITDA<0, else 0	Compustat
Market beta	Market beta is calculated using the past 24 month returns and Fama & French market factor	Datastream
Idiosyncratic risk	Firms specific idiosyncratic risk	Datastream
Tobin's Q	(Total assets - book value of common equity + market value of common equity)/total assets	Compustat
KZ index	KZ index by Kaplan and Zingales (1997) is calculated following Baker, Stein, and Wurgler (2003); Higher *KZ index* implies that the firm is more financially constrained.	Baker, Stein, and Wurgler (2003)
Low KZ	Takes 1 if KZ index is lower than annual median, else 0	
WW index	WW index is based on Whited and Wu(2006); Higher *WW index* implies that the firm is more financially constrained	Whited and Wu (2006)
Low WW	Takes 1 if WW index is lower than annual median, else 0	
Low leverage	Takes 1 if leverage is lower than annual median, else 0	
Macroeconomic variables:		

Maturity spread	10 year U.S. T-Bond Yield – 3 month U.S. Treasury Bill Yield	Federal Reserve H.15 Report
Credit spread	10 year U.S. T-Bond Yield – AAA corporate bond yield	Federal Reserve H.15 Report
Mktcap/GDP	Annual market capitalization / GDP	World Bank
Private credit/GDP	Annual Domestic private credit provided by banks/GDP	World Bank
Inflation	Annual Inflation rate, measured by GDP deflator	World Bank
GDP per capita	Annual GDP per capita in 1,000 U$, inflation adjusted using Year 2010 number as a base	World Bank

Table 1. Sample distribution

Table 1 describes country, industry and year distribution of our sample. The sample consists of domestic and global Compustat non-financial firms with Asset4 CSR scores and S&P Capital IQ company and country credit ratings during 2002-2014 periods. Panel A shows the number of firm-year observations, average sovereign, firm credit rating, CSR scores, country Log corruption perception index, country trust index, country media freedom, government ideology (right:0, left:1, center:0.5) in the sample by country. Panel B presents the number of firm-year observations, mean firm credit rating and CSR scores in the sample by 12 Fama and French industry. Panel C reports the number of firms each year between 2002 and 2014. Year 2002 does not show any observations due to one year lagging.

Panel A. Country distribution

Country	No. of firm-year obs	Sovereign credit rating	Company credit rating	CSR	Social	Env	LogCPI	Trust	Media freedom	Gov ideology
Australia	290	22.00	14.14	0.67	0.66	0.67	4.45	0.46	1	0.58
Austria	32	21.75	14.25	0.81	0.80	0.82	4.35		1	0.61
Belgium	43	20.49	15.23	0.81	0.81	0.81	4.30		1	0.12
Brazil	83	13.60	13.08	0.73	0.78	0.67	3.67	0.09	0	1.00
Canada	590	22.00	13.44	0.56	0.56	0.56	4.44	0.42	1	0.30
Chile	37	18.57	13.95	0.56	0.55	0.57	4.27	0.12	0.27	0.81
China	34	19.00	14.15	0.38	0.34	0.42	3.63	0.49	0	1.00
Colombia	5	12.80	12.80	0.87	0.93	0.81	3.57		0	
Czech Republic	11	18.09	15.45	0.59	0.71	0.46	3.86		1	1.00
Denmark	13	22.00	16.92	0.92	0.94	0.91	4.53		1	0.18
Finland	66	21.91	13.85	0.84	0.82	0.86	4.53	0.58	1	0.52
France	432	21.53	14.50	0.85	0.87	0.84	4.26	0.19	1	0.14
Germany	305	22.00	14.39	0.80	0.80	0.81	4.37	0.34	1	0.37
Greece	30	12.03	11.67	0.77	0.82	0.72	3.70		0.70	0.45
Hong Kong, China	142	21.24	16.10	0.54	0.55	0.53	4.38	0.40	0.23	
Hungary	6	11.83	11.67	0.92	0.92	0.91	3.93	0.29	0.33	0.67
India	55	13.00	12.76	0.83	0.85	0.81	3.54	0.38	0	1.00
Indonesia	22	11.86	10.27	0.65	0.76	0.55	3.45	0.21	0	
Ireland	71	18.35	13.61	0.68	0.70	0.66	4.32		1	0.45

Israel	11	16.91	14.91	0.37	0.36	0.39	4.12		0.82	0.00
Italy	131	16.78	14.82	0.77	0.79	0.75	3.79	0.28	0.15	0.21
Japan	897	19.36	15.92	0.72	0.65	0.78	4.32	0.37	1	0.00
Korea, Rep.	91	17.38	14.89	0.83	0.80	0.85	3.99	0.28	0.26	0.14
Luxembourg	26	22.00	12.15	0.55	0.53	0.57	4.43		1	0.50
Malaysia	30	16.00	15.00	0.55	0.59	0.52	3.85	0.09	0	
Mexico	49	14.33	13.76	0.63	0.66	0.61	3.50	0.15	0	0.02
Netherlands	129	21.81	15.44	0.83	0.86	0.79	4.46	0.43	1	0.23
New Zealand	44	20.55	15.09	0.57	0.55	0.60	4.53	0.49	1	0.55
Norway	64	22.00	13.78	0.83	0.83	0.82	4.46	0.74	1	0.66
Philippines	6	12.83	11.67	0.33	0.46	0.21	3.54		0	0.50
Poland	14	16.00	13.71	0.60	0.68	0.53	4.01	0.18	1	0.13
Portugal	30	16.70	14.30	0.81	0.88	0.75	4.13		1	0.68
Russian Federation	100	13.93	11.91	0.52	0.57	0.47	3.20	0.25	0	0.50
Singapore	36	22.00	19.42	0.55	0.57	0.52	4.50	0.37	0	
South Africa	21	14.14	12.38	0.81	0.87	0.75	3.77	0.23	0	1.00
Spain	99	18.75	15.25	0.89	0.91	0.87	4.16	0.20	1	0.67
Sweden	175	21.94	14.77	0.80	0.80	0.80	4.51	0.65	1	0.44
Switzerland	162	22.00	16.17	0.87	0.87	0.86	4.48	0.51	1	
Thailand	24	15.00	14.88	0.76	0.80	0.72	3.57	0.41	0	
Turkey	16	11.38	11.38	0.60	0.67	0.53	3.83	0.05	0	
United Kingdom	623	22.00	14.17	0.76	0.78	0.75	4.38	0.30	1	0.81
United States	4,888	21.61	13.90	0.54	0.55	0.53	4.29	0.39	1	0.41
Overall	9,933	18.08	14.09	0.70	0.72	0.67	4.08	0.33	0.59	0.49

Panel B. Sample distribution by industry

Fama & French 12 Industries	Obs.	Percent	Mean Company Credit Rating	Mean CSR Scores
Consumer Non-Durables	800	8.05%	14.49	0.65
Consumer Durables	361	3.63%	14.65	0.74
Manufacturing	1514	15.24%	14.02	0.70
Oil, Gas, and Coal Extraction	830	8.36%	13.75	0.56
Chemicals and Allied Products	648	6.52%	15.04	0.76
Business Equipment (Computers, Software)	945	9.51%	13.80	0.62
Telephone and Telephone Transmission	731	7.36%	13.96	0.59
Utilities	1018	10.25%	15.22	0.66
Wholesale, Retail, and Some Service	1031	10.38%	13.83	0.55
Healthcare, Medical Equipment, and Drugs	561	5.65%	15.39	0.60
Other	1494	15.04%	13.72	0.58

Panel C. Sample distribution by year

Year	Obs	Percent
2003	436	4.39%
2004	450	4.53%
2005	720	7.25%
2006	864	8.70%
2007	758	7.63%
2008	814	8.19%
2009	923	9.29%
2010	1000	10.07%
2011	1029	10.36%
2012	1042	10.49%
2013	1038	10.45%
2014	859	8.65%

Table 2. Descriptive Statistics

Tabel 2 presents summary statistics of our sample related to long-term credit rating of bond issuers (*Lt rating*). Panel A reports corporate social responsibility score (*CSR*) and other firm characteristic variables. Panel B reports country or macro-economic related variables. We report the definition of each variable in Appendix.

Panel A. Firm-level

Variable	N	Mean	P50	P25	P75	SD
Lt rating$_t$	9933	14.237	14.000	13.000	16.000	2.905
CSR$_{t-1}$	9933	0.612	0.697	0.331	0.881	0.288
LogTA$_{t-1}$	9933	9.372	9.299	8.469	10.210	1.201
Leverage$_{t-1}$	9933	0.236	0.219	0.137	0.315	0.139
ROA$_{t-1}$	9933	0.049	0.047	0.023	0.081	0.064
Sale growth$_{t-1}$	9933	0.077	0.056	-0.011	0.134	0.200
R&D intensity$_{t-1}$	9933	0.016	0.000	0.000	0.019	0.030
Missing R&D	9933	0.428	0.000	0.000	1.000	0.495
CAPX intensity$_{t-1}$	9933	0.057	0.045	0.026	0.073	0.046
FA/TA$_{t-1}$	9933	0.354	0.307	0.155	0.532	0.234
Cash/TA$_{t-1}$	9933	0.100	0.073	0.031	0.137	0.096
Current ratio$_{t-1}$	9933	1.541	1.340	0.992	1.848	0.891
Ebit/int$_{t-1}$	9933	0.213	0.060	0.031	0.127	1.024
Debt/EBITDA$_{t-1}$	9933	2.699	2.062	1.178	3.406	3.110
Neg Debt/EBITDA$_{t-1}$	9933	0.011	0.000	0.000	0.000	0.104
Market beta$_{t-1}$	9933	1.066	1.022	0.634	1.448	0.657
Idiosyncratic risk$_{t-1}$	9933	0.048	0.043	0.031	0.058	0.025
CSR volatility$_{t-1}$	8818	0.142	0.089	0.033	0.200	0.147
CF volatility$_{t-1}$	8812	0.145	0.093	0.049	0.177	0.231
Positive R&D$_{t-1}$	9933	0.516	1.000	0.000	1.000	0.500
High intangible industry$_{t-1}$	9881	0.450	0.000	0.000	1.000	0.497
Empolicy$_{t-1}$	9933	0.335	0.000	0.000	1.000	0.472
Low Employment growth$_{t-1}$	8184	0.532	1.000	0.000	1.000	0.499

Panel B. Country or macro-levels
Maturity and credit spreads statistics are calculated using US annual numbers.

Variable	N	Mean	P50	P25	P75	SD
Sovereign cr rating	42	18.082	18.658	14.495	21.883	3.702
LogCPI	42	4.081	4.208	3.773	4.422	0.376
Trust	31	0.333	0.338	0.203	0.422	0.164
Media freedom	42	0.590	1.000	0.000	1.000	0.460
Gov ideology	34	0.489	0.500	0.215	0.669	0.305
Private credit/GDP	42	0.945	0.940	0.572	1.244	0.420
Mktcap/GDP	42	1.029	0.738	0.434	1.045	1.493

Inflation	42	0.028	0.020	0.016	0.034	0.023
GDP per capita	42	32.144	31.601	11.090	46.677	23.285
Maturity spread	12	2.043	2.110	1.151	2.910	1.104
Credit spread	12	1.571	1.625	1.323	1.780	0.479

Table 3. Base regressions

The dependent variable is long-term credit rating of firms assessed by Standard and Poors. We convert credit rating of characters into numeric values from 1(D) to 22(AAA) following Klock, Mansi, and Maxwell (2005). Our sample covers from year 2002 to 2014. *LogTA* and *GDP per capita* are measured by inflation adjusted US dollars using year 2010 as a base year. Refer to Appendix for detailed explanation of other variables. Models (1) and (2) employs ordered logit regressions. Model (3) is an OLS regression model and controls for SIC2-digit industry, year, and country fixed effect. Model (4) is a firm fixed model. Robust *t*-statistics are calculated after clustering at firm levels for Models (1) and (2) and after clustering at both country and firm levels for Model (3) and (4) and are reported in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

VARIABLES	(1) Ordered Logit	(2) Ordered Logit	(3) OLS	(4) Firm Fixed
CSR_{t-1}	2.966***	0.726***	0.671***	0.321**
	(15.808)	(3.867)	(9.027)	(2.305)
$LogTA_{t-1}$		0.860***	0.799***	0.631***
		(13.988)	(20.350)	(7.487)
$Leverage_{t-1}$		-3.457***	-3.197***	-2.011***
		(-8.040)	(-14.661)	(-10.157)
ROA_{t-1}		11.515***	10.147***	3.791***
		(13.455)	(14.468)	(10.846)
$Sale\ growth_{t-1}$		-0.615***	-0.576***	-0.109
		(-4.795)	(-8.892)	(-1.533)
$R\&D\ intensity_{t-1}$		4.393**	4.325***	1.414*
		(2.111)	(3.479)	(1.778)
$Missing\ R\&D_{t-1}$		-0.257**	-0.282**	0.104
		(-2.110)	(-2.563)	(1.278)
$CAPX\ intensity_{t-1}$		1.355	1.186	3.360***
		(1.084)	(1.177)	(4.451)
FA/TA_{t-1}		0.548	0.623	1.153***
		(1.502)	(1.344)	(3.550)
$Cash/TA_{t-1}$		-0.635	-0.704	-0.104
		(-1.038)	(-1.471)	(-0.452)
$Current\ ratio_{t-1}$		0.195***	0.194**	0.114***
		(3.070)	(2.613)	(3.626)
$EBIT/Int_{t-1}$		0.024	0.032	0.011
		(0.789)	(1.582)	(1.043)
$Debt/EBITDA_{t-1}$		-0.146***	-0.128***	-0.071***
		(-7.752)	(-7.045)	(-5.992)
$Neg\ Debt/EBITDA_{t-1}$		-2.085***	-1.631***	-1.078***
		(-3.761)	(-3.459)	(-5.280)
$Market\ beta_{t}$		-0.582***	-0.545***	-0.163***
		(-11.734)	(-6.541)	(-4.560)
$Idiosyncratic\ risk_{t}$		-34.417***	-31.651***	-15.366***
		(-19.409)	(-14.298)	(-12.586)

Maturity spread $_t$		0.282**	0.395***	0.164***
		(2.166)	(7.938)	(4.009)
Credit spread $_t$		-2.254***	-0.629***	-0.287**
		(-5.352)	(-4.078)	(-2.701)
Sovereign cr rating $_t$		0.298***	0.318***	0.308***
		(5.486)	(3.949)	(5.180)
Private credit/GDP $_t$		-0.001	-0.001	-0.010***
		(-0.343)	(-0.445)	(-3.487)
Mktcap/GDP $_t$		-0.000	-0.000	0.001***
		(-0.338)	(-0.544)	(2.771)
Inflation $_t$		3.797**	3.624	1.108
		(2.537)	(1.457)	(0.964)
GDP per cap $_t$		-0.117***	-0.112**	-0.077**
		(-3.051)	(-2.363)	(-2.707)
Observations	9,933	8,897	8,896	8,776
Adjusted R-squared			0.650	0.918
Pseudo R-squared	0.0826	0.218		
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	No
Country FE	Yes	Yes	Yes	No
Firm FE	No	No	No	Yes
SE clustered by	Firm	Firm	Firm&Country	Firm&Country

Table 4. Internal trust building and the effect of CSR on long-term credit rating

The dependent variable is long-term credit rating of firms assessed by Standard and Poors. We convert credit rating of characters into numeric values from 1(D) to 22(AAA) following Klock, Mansi, and Maxwell (2005). Our sample covers from year 2002 to 2014. All models are firm and year fixed effect models. *Empolicy* takes 1 if the company has a policy for maintaining long term employment growth and stability, else 0. Refer to Appendix for detailed explanation of other variables. Robust *t*-statistics are calculated after clustering at both country and firm levels and are reported in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

VARIABLES	(1)	(2)	(3)	(4)	(5)
CSR_{t-1}	0.347**	0.436**	0.211	0.208	0.150
	(2.288)	(2.494)	(1.555)	(1.090)	(1.069)
CSR volatility$_t$	-0.241*				
	(-1.919)				
CF volatility$_t$	-0.120*				
	(-1.892)				
High CSR volatility$_t$		0.053			
		(1.420)			
High CSR volatility$_t$*CSR_{t-1}		-0.165**			
		(-2.066)			
Positive R&D$_{t-1}$			-0.418***		
			(-6.065)		
Positive R&D$_{t-1}$* CSR_{t-1}			0.224**		
			(2.324)		
High intangible industry$_{t-1}$				-0.049	
				(-0.319)	
High intangible industry$_{t-1}$* CSR_{t-1}				0.237*	
				(1.783)	
Empolicy$_{t-1}$					-0.558***
					(-5.096)
Empolicy$_{t-1}$* CSR_{t-1}					0.648***
					(4.596)
Sovereign cr rating$_t$	0.308***	0.309***	0.307***	0.305***	0.347***
	(5.733)	(5.782)	(5.173)	(5.164)	(7.517)
Financial variables controlled	Yes	Yes	Yes	Yes	Yes
Macro variables controlled	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No	Yes
Country FE	No	No	No	No	Yes
SE clustered by	Firm & Country	Firm & Country	Firm & Country	Firm & Country	Firm & Country
Observations	7,667	7,674	8,776	8,730	6,797
Adjusted R-squared	0.922	0.922	0.918	0.918	0.925

Table 5. CSR effect during external shock and crisis periods

Table 5 uses three external shocks to test the effect of CSR during external shock and crisis periods. As the first shock we use sovereign debt down grade. The second shock used is US financial crisis (either 2007-2009). We use say on pay (SOP) law passage as the third shock. The dependent variable is long-term credit rating of firms assessed by Standard and Poors. We convert credit rating of characters into numeric values from 1(D) to 22(AAA) following Klock, Mansi, and Maxwell (2005). Our sample covers from year 2002 to2014 except Models (2) to (4). Model (2) covers Western European sample from 2010 to 2014 to test sovereign debt crisis in Western Europe. *LogTA* and *GDP per capita* are measured by inflation adjusted US dollars using year 2010 as a base year. Models (1) and (2) use OLS regressions and use SIC2-digit industry, year, and country fixed effect models. Models (3) and (4) use firm fixed model. In Models (4) and (5), CSR2006 is constant and measured as a firm CSR score at the end of year 2006 and the sample period covers from 2006 to 2014. Refer to Appendix for detailed explanation of other variables. Robust *t*-statistics are calculated after clustering at both country and firm levels except Model (1) and are reported in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

Panel A. External shock and CSR effect

	(1) OLS	(2) OLS	(3) Firm FE	(4) Firm FE	(5) OLS	(6) OLS
VARIABLES		W. Europe				
CSR_{t-1}	0.629***	0.140	0.247			0.480
	(8.177)	(0.187)	(1.616)			(1.678)
Sovereign downgrade	0.032					
	(0.245)					
Sovereign down*CSR_{t-1}	0.463***					
	(3.516)					
Sovereign downgrade2		-1.286*				
		(-1.795)				
Sovereign down2*CSR_{t-1}		2.033**				
		(2.681)				
Fin crisis (2007-09)			-0.896***	-0.244***	-0.214***	
			(-8.388)	(-5.128)	(-4.387)	
Fin crisis*CSR_{t-1}			0.245**			
			(2.080)			
CSR2006					0.983***	
					(5.056)	
CSR2006*Fincrisis				0.300***	0.183**	
				(3.093)	(2.631)	
CSR2006*Post crisis (2013-14)				-0.072		
				(-0.676)		
SOP						-0.401**
						(-2.670)
SOP*CSR_{t-1}						0.491***
						(3.048)
SOP country**CSR_{t-1}						0.001
						(0.186)
Sovereign cr rating $_t$	-0.636***	0.234**	0.237***	0.314***	0.358***	0.322***
	(-4.310)	(2.540)	(3.380)	(5.901)	(5.802)	(4.097)
Financial variables controlled	Yes	Yes	Yes	Yes	Yes	Yes
Macro variables	Yes	Yes	Yes	Yes	Yes	Yes

controlled						
Observations	8,896	738	8,776	5,628	5.770	8,896
Adjusted R-squared	0.651	0.751	0.918	9.925	0.722	0.650
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	No	No	Yes	Yes
Country FE	Yes	Yes	No	No	Yes	Yes
Firm FE	No	No	Yes	Yes	No	No
SE clustered by	Firm & Country	Firm & Country	Firm & Country	Firm & Country	Firm & Country	Firm & Country

Panel B. Stakeholder protection laws and the effect of CSR on long-term credit rating

The dependent variable is long-term issuer credit rating. Our sample covers from year 2002 to 2014. All models use year, industry, and country fixed effects. All the law information is from Dhaliwal, Radhakrishnan, Tsang, and Yang (2012). Employment law is a measure of the protection of labor and employment (high is 1 if the country number is greater than median). Social securities law is a measure of social security benefits (high is 1 if the country number is greater than median). Collective relations law is a measure of the protection of collective actions (high is 1 if the country number is greater than median) CSR law equals 1 if the country has mandatory disclosure requirements on CSR issues only for industrial companies or only for pension funds; 2 if the country has mandatory disclosure requirements for both industrial companies and pension funds, and 0 otherwise. Robust t-statistics are calculated after clustering at both country and firm levels and are reported in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

VARIABLES	(1)	(2)	(3)	(4)
CSR_{t-1}	0.781***	0.733***	0.740***	0.737***
	(7.728)	(9.196)	(7.696)	(7.418)
High Employment law	6.699**			
	(2.607)			
High Employment law* CSR_{t-1}	-0.899**			
	(-2.586)			
Csr law		2.144		
		(1.480)		
Csr law* CSR_{t-1}		-0.269**		
		(-2.284)		
High Social sec law			7.522*	
			(2.007)	
High Social sec law* CSR_{t-1}			-0.304	
			(-0.996)	
High Collective law				5.438***
				(2.885)
High Collective law* CSR_{t-1}				-0.182
				(-0.588)
Sovereign cr rating $_t$	0.356***	0.360***	0.359***	0.363***
	(5.009)	(5.092)	(5.120)	(5.095)
Financial variables controlled	Yes	Yes	Yes	Yes
Macro variables controlled	Yes	Yes	Yes	Yes
Observations	8,676	8,601	8,676	8,676
Adjusted R-squared	0.648	0.648	0.648	0.648
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
SE clustered by	Firm & Country	Firm & Country	Firm & Country	Firm & Country

Panel C. Annual regression

Panel C reports annual regression between 2006 and 2014. The dependent variable is long-term issuer credit rating. Before 2006, CSR is not significantly associated with long-term credit rating. Robust *t*-statistics are reported in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

VARIABLES	(1) Y2006	(2) Y2007	(3) Y2008	(4) Y2009	(5) Y2010	(6) Y2011	(7) Y2012	(8) Y2013	(9) Y2014
CSR_{t-1}	0.169	0.628*	0.845**	1.142***	0.818***	0.849***	0.775***	0.804***	0.403
	(0.532)	(1.809)	(2.532)	(3.955)	(2.886)	(3.125)	(2.879)	(2.959)	(1.292)
Sovereign cr rating $_t$	0.212	0.787***	0.160	0.212	0.388**	0.252***	0.185	0.201***	0.154**
	(0.861)	(3.857)	(0.515)	(1.422)	(2.435)	(4.697)	(1.431)	(2.998)	(2.101)
Financial variables controlled	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Macro variables controlled	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIC2 industry fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	857	751	807	919	995	1,024	1,037	1,033	854
Adjusted R-squared	0.550	0.589	0.610	0.677	0.648	0.669	0.684	0.693	0.695

Table 6. Country-level Societal Trust and the CSR-Long-term Credit Rating Relation

The dependent variable is long-term issuer credit rating. Our sample covers from year 2002 to 2014. Country level trust, corruption perception, and media freedom indices are used. High Corruption Perception Index (CPI) means that the country is less corrupted. Refer to Appendix for detailed explanation of other variables. Robust t-statistics are calculated after clustering at both country and firm and are reported in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

VARIABLES	(1)	(2)	(3) High trust	(4) Low trust	(5)	(6)	(7)
CSR_{t-1}	-1.533**	-0.849**	0.639***	0.260	-8.384***	-0.693	-0.488
	(-2.358)	(-2.097)	(9.668)	(0.690)	(-3.941)	(-1.522)	(-1.233)
$Trust_t$	-20.979***						
	(-8.404)						
$Trust_t * CSR_{t-1}$	5.878***						
	(3.357)						
$High\ Trust$		9.777**					
		(2.103)					
$High\ Trust * CSR_{t-1}$		1.660***					
		(4.109)					
$LogCPI_t$					0.667		
					(0.889)		
$LogCPI_t * CSR_{t-1}$					2.121***		
					(4.246)		
$High\ CPI$						-0.686	
						(-1.615)	
$High\ CPI* CSR_{t-1}$						1.479***	
						(3.252)	
$Media\ Freedom_t$							-0.799***
							(-3.012)
$Media\ Freedom_t * CSR_{t-1}$							1.282***
							(3.098)
$Sovereign\ cr\ rating_t$	0.363***	0.320***	0.327**	0.156**	0.284***	0.304***	1.282***
	(3.960)	(4.006)	(2.702)	(2.634)	(3.885)	(3.714)	(3.098)
Financial variables controlled	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Macro variable controlled	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SE clustered by	Firm & country	Firm & Country	Firm & country	Firm & country	Firm & country	Firm & country	Firm & country
Observations	8,662	8,896	7,760	1,136	8,896	8,896	8,895
Adjusted R-squared	0.651	0.652	0.661	0.683	0.652	0.651	0.651

Table 7. Endogeneity issues

We address endogeneity issues with several different methods. Panel A shows difference regressions and Panel B presents two stage least square (2SLS) regressions and Panel C reports results from propensity score match (PSM).

Panel A. Difference regression

The dependent variable is *Lt rating* (t+1 or t+2 or t+3) minus *Lt rating* (t) for the Models (1) to (3). For the Model(4), the dependent variable is *CSR* (t+2) – *CSR* (t). Our sample covers from year 2002 to 2014.

VARIABLES	(1) $\Delta Lt\ rating_{t+1}$ (1 year)	(2) $\Delta Lt\ rating_{t+2}$ (2 year)	(3) $\Delta Lt\ rating_{t+3}$ (3 year)	(4) ΔCSR_{t+2} (2 year)
$Lt\ rating_t$-$Lt\ rating_{t-2}$	0.006	-0.058**	-0.107***	0.002
	(0.679)	(-2.127)	(-3.647)	(0.861)
CSR_t - CSR_{t-2}	0.105	0.263**	0.378**	-0.154***
	(1.412)	(2.155)	(2.079)	(-20.343)
$LogTA_t$ - $LogTA_{t-2}$	0.137***	0.037	-0.053	0.003
	(3.771)	(0.521)	(-0.709)	(0.450)
$Leverage_t$ - $Leverage_{t-2}$	-0.590***	-0.951***	-0.664***	0.016
	(-6.042)	(-5.071)	(-3.076)	(0.789)
ROA_t - ROA_{t-2}	1.652***	1.993***	2.135***	-0.024
	(8.920)	(7.662)	(7.323)	(-1.093)
$Sale\ growth_t$ - $Sale\ growth_{t-2}$	0.045	0.112**	0.082	-0.008**
	(1.290)	(2.404)	(1.673)	(-2.276)
$R\&D\ intensity_t$ - $R\&D\ intensity_{t-2}$	-1.733*	-1.889	-0.289	0.051
	(-1.863)	(-1.033)	(-0.133)	(0.556)
$Missing\ R\&D_t$ - $Missing\ R\&D_{t-2}$	-0.014	-0.003	0.004	0.008
	(-0.474)	(-0.054)	(0.046)	(1.236)
$CAPX\ intensity_t$ - $CAPX\ intensity_{t-2}$	-0.043	-1.465	-2.163*	0.007
	(-0.108)	(-1.501)	(-1.917)	(0.158)
FA/TA_t - FA/TA_{t-2}	0.343**	0.836***	0.968***	-0.033
	(2.433)	(3.061)	(2.717)	(-0.767)
$Cash/TA_t$ - $Cash/TA_{t-2}$	0.531**	0.930***	0.892**	0.036
	(2.499)	(3.404)	(2.496)	(1.667)
$Current\ ratio_t$ - $Current\ ratio_{t-2}$	0.018	0.027	0.045	-0.002
	(1.176)	(1.272)	(1.386)	(-0.688)
$EBIT/Int_t$ - $EBIT/Int_{t-2}$	0.002	-0.006	0.013	0.004***
	(0.209)	(-0.607)	(0.990)	(8.294)
$Debt/EBITDA_t$ - $Debt/EBITDA_{t-2}$	-0.016***	-0.023***	-0.026***	0.001*
	(-6.702)	(-4.319)	(-3.261)	(1.781)
$Neg\ Debt/EBITDA_t$ - $Neg\ Debt/EBITDA_{t-2}$	-0.030	-0.159	-0.141	0.021*
	(-0.354)	(-0.670)	(-0.492)	(1.783)
$Market\ beta_t$ - $Market\ beta_{t-2}$	0.012	0.019	0.015	0.001
	(1.229)	(1.198)	(0.975)	(0.389)
$Idiosyncratic\ risk_t$ - $Idiosyncratic\ risk_{t-2}$	-1.141**	-2.252***	-1.955**	-0.065
	(-2.546)	(-3.264)	(-2.246)	(-0.648)
$Sovereign\ cr\ rating_t$ - $Sovereign\ cr\ rating_{t-2}$	0.035	-0.021	-0.104	0.006
	(1.033)	(-0.505)	(-0.749)	(1.381)

Year FE	Yes	Yes	Yes	Yes
SIC2 industry FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
SE clustered by	Firm & Country	Firm & country	Firm & country	Firm & country
Observations	7,193	6,089	5,029	5,942
Adjusted R-squared	0.0707	0.0790	0.101	0.0899

Panel B. Firm fixed effect Instrumental Variable (IV) Regressions

The dependent variable in the first stage is *CSR* and the dependent variable in the second stage in Models (1) to (5) is *Lt rating* (t). Our sample covers from year 2002 to 2014. In the first stage of all Models use 2 IVs: government political orientation score (right: 0. Left: 1, center: 0.5) of the past three year average & annual country average CSR scores. In the table, the first stage of Model (1) is only shown. Model (1) shows overall sample and Models (2) and (4) are high trust country samples and Models (3) and (5) are low trust country samples. Refer to Appendix for detailed explanation of other variables. Robust *t*-statistics are calculated after clustering at both country and firm and are reported in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

VARIABLES	First stage CSR_t	(1) $Lt\ rating_t$ Overall sample	(2) $Lt\ rating_t$ High Trust	(3) $Lt\ rating_t$ Low Trust	(4) $Lt\ rating_t$ High CPI	(5) $Lt\ rating_t$ Low CPI
CSR_t (instrumented)		2.056**	1.792*	10.078	2.050**	1.288
		(2.059)	(1.722)	(1.282)	(2.103)	(0.185)
Sovereign cr rating $_t$	0.000	0.328***	0.333***	0.096	0.232***	0.330***
	(0.01)	(9.624)	(5.559)	(0.835)	(3.606)	(7.343)
Instruments:						
Last 3 years Country Ideology	0.049***					
	(6.65)					
Country average CSR scores$_t$	0.117*					
	(1.86)					
Financial variables controlled	Yes	Yes	Yes	Yes	Yes	Yes
Macro variables controlled	Yes	Yes	Yes	Yes	Yes	Yes
Kleibergen-Paap rk LM statistic	22.456***					
(Underidentification test)	(p=0.00)					
Kleibergen-Paap rk Wals F statistic	24.125***					
(Weak identification test)	(p=0.00)					
Hansen J statistic	0.104					
(Overidentification test)	(p=0.75)					
Endogenous chi-square test	4.011**					
	(p=0.05)					
Year fixed	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed	Yes	Yes	Yes	Yes	Yes	Yes
SEC clustered by	Country & Year	Country & Year	Country & Year	Country & Year	Country & Year	Country & Year
Observations	8,195	8,195	7,174	1,021	7,559	632
Adjusted R-squared	0.832	0.912	0.917	0.784	0.915	0.898

C. Propensity Score Matching

Panel C reports results from propensity score match. In the first stage, we use a logit model to estimate propensity scores for each company long-term credit rating. We match company long-term credit ratings which differ in the level of *CSR* scores, with high *CSR* (0.50 above) and low *CSR* (0.50 and below), respectively, and which are similar in size, leverage, ROA, sale's growth, R&D intensity, CAPX intensity, FA/TA, Cash/TA, Current ratio, EBIT/Int, Neg debt/EBITD, Market beta, Idiosyncratic risk. The matched firms are also in the same SIC2-digit industries, countries, years. We report results from the matches using the nearest one observation and the nearest three observations, which is based on the distance of their propensity scores, as well as requiring the error margin (caliper) to be less than 0.05, respectively below. NN1 refers to the nearest one neighbor and NN3 refers to the nearest three neighbors in conducting the matches. Robust z-statistics are reported in parentheses. *, **, *** indicate at the 10%, 5%, and 1% level, respectively.

DV	Difference	Caliper 0.05 & NN1	Caliper 0.05 & NN3
Lt rating$_t$	After matching (High vs. Low *CSR*)	0.413*** (3.55)	0.444*** (4.23)

Table 8. Alternative stories: Financial constraints, leverage, and corporate governance

The dependent variable is long-term issuer credit rating. Our sample covers from year 2002 to 2014. All models use firm and year fixed effects. Model (1) and (2) show that financial constraints (measured by KZ index and WW index) do not drive our results. Model (3) show that leverage does not drive our results. For the even financially constrained and high levered firms, CSR activities still positively associated with long-term credit rating. Model (4) shows that corporate governance does not drive the CSR effect. Robust t-statistics are calculated after clustering at both country and firm levels and are reported in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

VARIABLES	(1) High KZ Financially constrained	(2) High WW Financially constrained	(3) High leverage	(4)
CSR_{t-1}	0.312**	0.437***	0.353**	0.345**
	(2.596)	(6.790)	(2.567)	(2.694)
$CGOV_{t-1}$				-0.093
				(-0.910)
$Sovereign\ cr\ rating_t$	0.524***	0.137***	0.221***	0.307***
	(9.082)	(3.054)	(3.285)	(5.142)
Financial variables controlled	Yes	Yes	Yes	Yes
Macro variables controlled	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
SE clustered by	Firm & country	Firm & country	Firm & country	Firm & country
Observations	4,394	2,546	5,233	8,776
Adjusted R-squared	0.905	0.903	0.911	0.918

Table 9. Value implication of CSR and trust

The dependent variable is ROA for the Model(1) and Tobin's Q for the Model(2) to (5). Our sample covers from year 2002 to 2014. All the Models use firm and country#year interaction fixed effects. Inflation variable is not shown because country#year interaction fixed effects are absorbed. Robust t-statistics are calculated after clustering at both country and firm levels and are reported in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

VARIABLES	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) Q	(6) Q	(7) Q	(8) Q
		Year>=2006	High Trust	Low Trust		Year>=2006	High Trust	Low Trust
CSR_{t-1}	0.005**		0.005**	0.011	0.098**		0.101***	0.057
	(2.712)		(2.314)	(0.948)	(2.581)		(2.837)	(0.246)
Fin crisis (2007-09)		-69.122				292.660		
		(-0.361)				(0.142)		
CSR2006*Fincrisis		0.015**				0.113***		
		(2.312)				(3.716)		
CSR2006*Post crisis (2013-14)		-0.006**				-0.106**		
		(-2.209)				(-2.263)		
$LogTA_{t-1}$	-0.037***	-0.043***	-0.040***	-0.008	-0.338***	-0.315***	-0.370***	0.010
	(-9.266)	(-5.947)	(-18.764)	(-0.885)	(-6.161)	(-4.893)	(-9.439)	(0.106)
$Leverage_{t-1}$	-0.007	0.016*	-0.008	-0.034	-0.164	-0.059	-0.158	-0.724
	(-1.418)	(1.809)	(-1.653)	(-1.249)	(-1.040)	(-0.444)	(-0.855)	(-1.503)
ROA_{t-1}		0.084***			0.685***	0.508***	0.708***	0.163
		(5.019)			(6.287)	(6.747)	(5.740)	(0.267)
$Sale\ growth_{t-1}$	0.029***	0.024***	0.031***	0.017**	0.018	0.066	0.066	-0.310
	(7.627)	(10.298)	(10.452)	(2.243)	(0.233)	(1.470)	(1.460)	(-1.128)
$R\&D\ intensity_{t-1}$	0.100	0.184***	0.137**	-0.157	1.969**	1.867**	2.209**	2.293
	(1.482)	(2.831)	(2.277)	(-0.821)	(2.059)	(2.388)	(2.413)	(1.356)
$Missing\ R\&D_{t-1}$	-0.004	-0.006	-0.003	-0.001	0.020	-0.030	0.007	0.123**
	(-1.388)	(-1.098)	(-1.146)	(-0.175)	(0.666)	(-0.805)	(0.168)	(2.200)
$CAPX\ intensity_{t-1}$	0.017	-0.069*	0.023	-0.027	0.441**	0.048	0.401*	0.862*
	(1.154)	(-2.016)	(1.417)	(-0.347)	(2.331)	(0.146)	(1.947)	(1.834)
FA/TA_{t-1}	-0.023**	-0.000	-0.024*	-0.021**	-0.164	-0.314	-0.197	-0.062
	(-2.334)	(-0.045)	(-2.074)	(-2.181)	(-1.221)	(-1.263)	(-1.290)	(-0.357)
$Cash/TA_{t-1}$	0.068***	0.071***	0.068***	0.068**	0.382**	0.332***	0.421***	-0.187

	(8.060)	(5.724)	(7.412)	(2.709)	(2.599)	(5.680)	(3.967)	(-0.186)
Market beta $_t$	0.001	0.001	0.001	0.006**	-0.023***	-0.037***	-0.029***	0.015
	(1.533)	(0.776)	(0.712)	(2.230)	(-3.594)	(-4.194)	(-4.768)	(0.604)
Idiosyncratic risk $_t$	-0.283***	-0.170***	-0.290***	-0.142**	-0.473	0.479	-0.290	-0.887
	(-7.111)	(-3.688)	(-5.967)	(-2.330)	(-1.570)	(1.464)	(-0.944)	(-0.677)
Private credit/GDP $_t$	-14.744	13.861	100.338	1.270	-55.283	311.556	-13.469	0.537
	(-1.253)	(0.248)	(1.277)	(0.853)	(-0.668)	(1.554)	(-0.339)	(0.043)
Mktcap/GDP $_t$	-1.643	-0.095	-3.223*	2.725	-88.390	20.636	-16.173	13.117
	(-0.535)	(-0.120)	(-1.951)	(1.625)	(-1.140)	(1.189)	(-0.264)	(0.864)
GDP per cap $_t$	119.199	12.227	-90.374**	0.273	1,480.512	-404.833	558.130	142.795
	(1.392)	(0.296)	(-2.584)	(0.033)	(0.969)	(-1.294)	(0.572)	(0.630)
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country#Year Interaction fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SE clustered by	Firm & country	Firm & country	Firm & country	Firm & country	Firm & Country	Firm & country	Firm & country	Firm & country
Observations	9,016	5,782	7,918	1,098	8,117	5,187	7,149	968
Adjusted R-squared	0.522	0.516	0.521	0.557	0.815	0.791	0.778	0.894

Table 10. Robustness Tests

The dependent variable is long-term issuer credit rating. Our sample covers from year 2002 to 2014. Models (1) to (4), and (6) use firm and year fixed effects. Models (5) and (7) use firm and country#year interaction fixed effects. Model (8) uses SIC4-digit industry, year, and country fixed effects. Robust t-statistics are calculated after clustering at both country & year levels for Models (1) to (5) and firm and & year levels for Models (6) to (8) and are reported in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

VARIABLES	(1) $Lt\ rating_t$	(2) $Lt\ rating_t$	(3) $Lt\ rating_t$	(4) $Lt\ rating_t$	(5) $Lt\ rating_t$	(6) $Lt\ rating_t$	(7) $Lt\ rating_t$	(8) $Lt\ rating_t$
	No US	No Japan						
CSR_{t-1}	0.555***	0.230***			0.241***	0.321**	0.241*	0.854***
	(3.386)	(3.071)			(3.154)	(2.478)	(1.840)	(4.573)
$Socail_{t-1}$			0.284***					
			(4.017)					
Env_{t-1}				0.196***				
				(3.011)				
$Sovereign\ cr\ rating_t$	0.317***	0.280***	0.307***	0.309***	3,438.219	0.308***	1,011.155	0.322***
	(9.793)	(8.857)	(9.816)	(9.880)	(0.000)	(5.966)	(0.000)	(5.910)
Financial variables controlled	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Macro variables controlled	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Year fixed	Yes	Yes	Yes	Yes	No	Yes	No	Yes
SIC4 industry fixed	No	No	No	No	No	No	No	Yes
Country# year FE	No	No	No	No	No	No	No	Yes
Industry#year FE	No	No	No	No	Yes	No	Yes	No
SE clustered by	Country & Year	Country & Year	Country & Year	Country & Year	Country & Year	Firm & Year	Firm & Year	Firm & Year
Observations	3,913	7,917	8,776	8,776	8,724	8,776	8,724	8,887
Adjusted R-squared	0.915	0.914	0.918	0.930	0.921	0.918	0.921	0.715