The Impact of Corporate Social Responsibility on the Cost of Bank Loans

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This study examines the link between corporate social responsibility and bank debt. Our focus on banks exploits their specialized role as quasi-insider delegated monitors. We find that firms with the worst social responsibility scores pay up to 20 basis points more than the most responsible firms. However, we find that for the majority of firms, the impact of CSR is not economically important. The modest premiums associated with CSR suggest that banks do not regard corporate social responsibility as significantly value enhancing or risk reducing.

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1. Introduction

How do financial markets view socially responsible companies? Among financial economists, the accepted view of the firm has managers working to maximize the utility of the shareholders. To the extent that the interests of other stakeholders are considered, the goal must be shareholder wealth maximization. Classical finance theorists remain steadfast in their belief that if corporate social responsibility (hereafter CSR) initiatives do not maximize firm value, they represent a costly diversion of scarce firm resources. The traditional shareholder view recognizes that the unfettered pursuit of profit may result in negative externalities for other constituents, but holds that the burden of dealing with these social issues is best left to governments, who have both the means and the jurisdiction to deal with them.

However, the sovereignty of the shareholder view has come under attack from management and strategy researchers who argue that the firm has multiple stakeholders, including employees, suppliers, and the larger community in which it operates and that the proper goal of management must be to meet the objectives of all stakeholder groups simultaneously. According to advocates of the stakeholder view, corporate social responsibility goes beyond simply staying within the rules of the game, and has been defined as "actions that appear to further some social good, beyond the interest of the firm and that which is required by law" (McWilliams and Segal (2001)). A recent survey by the Center for Corporate Citizenship at Boston College finds the majority of U.S. business executives sharing this view. They describe the role of management as balancing the goals of investors, employees, consumers, communities and the environment. Recent work by

Faleye *et. al.* (2006) documents the impact of an additional stakeholder on corporate behaviour in the United States. They find labor controlled firms deviate from strict shareholder wealth maximization, investing less in long term assets and taking less risk. Support for the stakeholder view is even stronger outside of the United States, with employees being the stakeholder group most often given explicit consideration.

In an attempt to reconcile CSR with the shareholder view of the firm, stakeholder theorists suggest that pursuing multiple objectives need not be detrimental to shareholder interests. In fact, they argue that satisfying multiple constituencies may actually increase financial performance (e.g., Clarkson (1995); Waddock and Graves (1997)). This argument posits that companies paying attention to issues of sustainability and social responsibility are more likely to perform well in all dimensions, including financial performance. If the company strives to satisfy all stakeholders, the stakeholders will reciprocate by supporting the firm. Employees will be more loyal. Outside stakeholders will be more supportive. Ultimately (although perhaps not immediately) this is manifest in superior performance (Bansal (2005)). A related argument is that socially responsible companies will be less prone to extreme negative events. By including environmental, social and governance considerations into business plans, firms reduce the risk of financial fallout that may accompany lapses (Buysse and Verbeke (2003)).

The debate between the shareholder and stakeholder views revolves around whether investments in CSR are value enhancing, or whether they are examples of agency conflicts between managers and shareholders (Jensen and Meckling (1976)). This tension is illustrated by a Financial Times article in January 2004 that criticized the chairman of

Royal Dutch Shell PLC, claiming that he "spent more time trying to convince environmentalists of Shell's commitment to sustainable development than reassuring investors that he was aware of the growing gap between Shell's performance and that of its peers."[1] Barnea and Rubin (2005) suggest that CSR investments are motivated by the desire of managers to burnish their reputations as responsible stewards of industry at the expense of shareholders. This represents an agency cost of equity similar to the purchase of unnecessary corporate jets (Yermack (2006)) or other excessive perquisite consumption.

This paper approaches the question from a fresh perspective. While the bulk of the extant literature focuses on the link between CSR and the cost of equity, the studies that do examine the link between CSR and credit risk use bond yields to measure the cost of debt. In contrast, by studying private debt extended by banks, our study offers two innovations. First, we examine the role of CSR in a channel of the debt market where there has been no prior research. Second , our focus exploits the unique role of banks as "quasi-insiders" of the firm, to explore whether banks discriminate between firms with low levels of CSR and those with higher levels. The banking literature has long established that banks are fundamentally different from other stakeholders. In their roles as delegated monitors (Diamond (1984); Fama (1985)), banks are given access to information about the firm that may not be available to outsiders. They use this information to make initial decisions about the ability of the firm to honor its loan obligations and, after the loan agreement is struck,

[1] "Unsure of Shell: shareholders call for change after 4bn barrels of oil and gas are cut from proved reserves," *Financial Times of London.* January 23, page 21.

to monitor the firm to ensure repayment[2]. Among the options available to banks to mitigate risk are demands for security, shortened maturity, adding covenants or increasing the spread charged on the loan to reflect the risk[3]. Because bank lenders are able to engage in more detailed monitoring as well as to tailor loan terms, they may be more finely tuned to any impact of CSR than are public lenders.

Of interest here is whether loan contract terms, and in particular, loan spreads are influenced by the social performance of the firm. Consistent with the loan pricing literature, our dependent variable is the loan spread over LIBOR on private bank debt. Our proxy for CSR is the Kinder, Lydenberg and Domini & Co. (hereafter KLD) rankings for U.S. firms. Notwithstanding the difficulties inherent in measuring corporate social performance, KLD rankings are the most widely recognized and accepted measures of firm-level corporate social responsibility. In examining loan spreads for evidence of a "social responsibility" premium, we assume that banks have no social agenda to promote. We take banks as being neutral, favoring neither the shareholder, nor the multiple stakeholder view of the corporation. Instead, we assume that banks are interested solely in the ability of the borrower to repay its loan obligations. If investments in CSR lead to

[2] There is some support for the monitoring role of banks in the context of environmental issues. Aintablian *et. al.* (2004) find higher positive abnormal returns when new bank loans are announced for firms with higher potential for spills compared to those with more benign environmental profiles. While results are not presented in that paper, one suspects that banks compensated for the risk inherent in lending to companies with questionable environmental practices by charging higher yields.

[3] Dennis, Nandy and Sharpe (2000) provide a thorough review of the determinants of loan contract terms.

lower risk and improved financial performance (as suggested by stakeholder theory), then banks will provide more attractive loan terms to socially responsible corporations. Alternatively, if socially responsible firms are at a disadvantage because they take on costs that would otherwise be borne by outsiders and governments, there should be a positive relationship between social responsibility and spreads.

Recognizing the potential for endogeneity to confound results, we use multiple econometric methods, including both multivariate regressions and matched firms. We find a statistically significant premium averaging between 5 and 11 basis points for firms with below average environmental, social and governance records. The differential is conditional on the current CSR score of the firm, with the firms having the lowest scores being subject to the highest premiums. Matched firm analysis suggests that the maximum benefit derived from improved CSR is 23 basis points. While our results are statistically significant and robust to alternative specifications of risk, we conclude that CSR is a second order determinant of yield spreads, and the modest premium offers little incentive for firms to improve their CSR performance.

The balance of the paper is as follows. Section 2 provides a brief literature review. Section 3 outlines the data and provides a discussion of the regression and the matching firm results. Section 4 concludes.

2. Review of Existing Evidence

The link between financial performance and social performance has been examined in both the management and the finance literatures. The bulk of the finance literature views the question through the lens of socially responsible investing (SRI). Often used

interchangeably, SRI and CSR are related but subtly different concepts. CSR researchers look for links between social performance and financial performance at the firm level. SRI research focuses on the returns to investing in portfolios of companies that are identified as socially responsible. With $2.71 trillion in assets under management, representing 11% of the total U.S assets under management in 2007 according to the Social Investment Forum, the SRI industry is sizeable and growing quickly.

The consensus view in the SRI literature is that there is no observed link between CSR and equity returns. The finding of mixed results is supportive of the shareholder view. There is no observed premium for social responsibility since any corporate actions (regardless of the motivation) are immediately reflected in stock prices. Therefore, any observed relationships between corporate social responsibility and financial performance will disappear as soon as they are viewed on a risk-adjusted basis. It follows that any attempt to impose “positive” screens (where only suitably identified “socially responsible” companies are chosen) is a futile exercise. Further, opponents of SRI argue that portfolios subjected to “negative” social responsibility screens will actually underperform, since the investible universe is being artificially constrained and all risks are impounded in returns before the screening takes place.

Earlier research by Malkiel (1991) is supportive of this view. He looked at return performance of portfolios that boycotted companies doing business with South Africa and found that the stocks that were removed outperformed the other holdings by an average of 3% per year over an 18-year period. It follows that those portfolios that did not invest in South African businesses, underperformed those that did. The argument is a simple application of the Markowitz (1952) model of portfolio choice. Restricting the investible

set must lead to lower risk adjusted returns. However, Milevsky *et. al.* (2006) present an optimization algorithm and demonstrate that when passive index portfolios are appropriately rebalanced, the penalty for imposing negative screens may be economically insignificant.

Alternatively, stakeholder theorists point to research that finds ethically screened portfolios actually outperform screened portfolios. Contrary to Malkiel's evidence of underperformance, Statman (2000) finds that the Domini Social Index[4] outperforms the S&P 500 over the 1990-1998 period. However, superior performance of socially responsible portfolios is relatively rare. More often, the research finds neither return outperformance nor underperformance for investors in screened portfolios. Examining Canadian ethical mutual funds, Asmundson and Foerster (2001) find that relative to the broader market, there is no return underperformance, and some weak evidence of lower risk for screened funds. Statman (2006), Goldreyer and Diltz (1999), Bauer, *et. al.* (2005) and Guerard (1997) provide similar evidence.

At the firm level, the argument against CSR is that engaging in such activity is

[4] Created by the social research firm of KLD Research & Analytics, the Domini 400 Social Index is a market capitalization-weighted common stock index. It monitors the performance of 400 U.S. corporations that pass multiple, broad-based social screens. The Index consists of approximately 250 companies included in the Standard & Poor's 500 Index, approximately 100 additional large companies not included in the S&P 500 but providing industry representation, and approximately 50 additional companies with particularly strong social characteristics.

costly, and *ceteris paribus*, those firms that choose to behave ethically will bear higher costs, which will in turn result in lower performance levels. Generally, the extant research on CSR and firm performance has been concentrated in the management and policy areas. The first strand of this literature looks at short-term effects of unethical behavior. Standard event study methodology is used to uncover abnormal returns in the period surrounding the unethical behavior. An examination of the South African boycott during apartheid, by Teoh *et. al.* (1999) is representative of this type of research. However, McWillams *et. al.* (1999) suggest that that the potential for confounding events to contaminate results compromises this line of attack.

The second strand looks at long term performance based on accounting or market-based ratios. Both Margolis and Walsh (2001) and Orlitzky, *et. al.* (2003) provide thorough reviews. Not unlike the SRI literature, results are mixed, with researchers documenting positive (Orlitzky, *et. al.* (2003)), neutral (McWilliams and Siegel (1999)), and negative relationships (Wright and Ferris (1997)) between CSR and financial performance. Of particular relevance to this paper is the paucity of research on the CSR/performance link from the perspective of debt. Of the 52 studies reviewed by Orlitzky *et. al.*, none of them examines the link between CSR and corporate debt. Of the 103 papers reviewed by Margolis and Walsh (2001), none of them examines debt.

The lack of research in the debt area is somewhat surprising, given the size of the corporate debt market relative to the equity market. According to Thomson Financial, the worldwide syndicated loan market totaled $3.8 trillion U.S. dollars in 2004, while the size of the equity markets was $845 billion. The few papers that do explore the link between CSR and debt use corporate bonds as the vehicle for measuring the cost of debt. D'Antonio

et. al. (1997) explore the performance of socially screened bond mutual funds and find no yield differences on a risk adjusted basis. Examining the link between environmental performance and the cost of capital, Sharfman and Fernando (2008) find that firms with good environmental performance face higher bond yields but also have higher leverage. They interpret this as responsible firms having easier access to debt financing. Chen *et. al.* (2007) report that unionized firms face lower costs of debt than non-unionized firms, because unions mitigate the tendency for shareholders to expropriate bondholders.

A related and relatively recent line of research follows from the observation that idiosyncratic risk may be priced in financial markets (Malkiel and Xu (1997), Fu (2009)). If firms with strong environmental, social and governance records have lower idiosyncratic risk, it will be reflected in price premiums. Using equally weighted portfolios of leading and lagging firms, Lee and Faff (2009) show that the leading (high CSR) firms have lower idiosyncratic risk and have lower returns than the laggards. Goss (2009) shows that firms with poor corporate social performance are more likely to experience financial distress. The focus on idiosyncratic risk is germane to this study since the risk of financial distress impacts the ability of a firm to repay creditors.

The corporate debt market is an excellent arena in which to look for a link between social performance and financial performance because of the unique intermediation role played by banks. The primary advantage to using the debt market for the study derives from its informational efficiency. For example, Altman *et. al.* (2004) find that syndicated loan markets are more informationally efficient than bond markets, with the loan market reflecting the probability of default before the bond markets. Allen *et. al.* (2004) find that negative earnings announcements are anticipated by the loan market before they are

reflected in the equity market. Our hypothesis is that banks are uniquely suited to assess the impact of CSR related investments, and their assessment will be manifest in the spreads charged to their customers. Controlling for previously identified determinants of loan spreads, we ask whether banks discriminate between firms with low levels of CSR and those with higher levels. It is to that question that we now turn.

3. Empirical Framework and Results

3.1 Data Description and Univariate Analysis

Any study of the links between CSR and financial performance must begin with a clear definition of both terms. Because we are interested in loans, our metric for financial performance will be the interest charged on corporate loans, measured as the initial all-in-drawn spread over the London InterBank Offer Rate, or LIBOR (hereafter referred to as the spread). The spread is the amount the borrower pays in basis points over LIBOR for each loan dollar drawn down. It includes the spread of the loan and any annual (or facility) fee paid to the bank group.

More problematic is the quantification of social responsibility. On examining previous studies, there appear to be several methods of defining socially responsible business practices. Carroll (1991) introduces the Carroll Concern for Society Index, while Aupperle (1991) suggests the use of aggregate measures of corporate principles and values. The use of multiple measures gathered through surveys is a common method of quantifying responsibility (e.g., Hansen and Wernerfelt (1989)). Published rankings (e.g., Waddock and Graves (1997)) are also common, with Fortune ethical rankings, the

Transparency International Corruption[5] index and the Kinder, Lydenberg and Domini & Co. rankings being among the more popular. While we acknowledge the difficulty inherent in the measurement of CSR (e.g. Entine (2003)), we use the KLD rankings as our measure of corporate social responsibility. The KLD data are widely accepted by practitioners and academics as an objective measure of corporate social responsibility, being referenced in over 40 peer reviewed articles. Sharfman (1996) provides a review of the validity of the KLD measure and demonstrates convergence between KLD and other measures of social performance. We use lagged KLD scores as the main explanatory variable in regressions on yield spreads.

KLD ranks companies on 13 dimensions of CSR, using surveys, financial statement information, reports from mainstream media, government documents and peer-reviewed legal journals. The 13 dimensions are community, corporate governance, diversity, employee relations, environment, human rights, product, alcohol, gambling, firearms, military, tobacco and nuclear power. Companies may have strengths and concerns in the first 7 dimensions, while the final 6 dimensions are purely exclusionary screens and companies can only register concerns in those categories. For example, a company can receive credit for a strong environmental policy at the same time a concern is registered for its environmental record. We do not include the exclusionary concerns as part of the total KLD score. The total of the strengths minus the concerns is the composite KLD score.

Loan information is collected from the Loan Pricing Corporation Dealscan

[5] Lee and Ng (2002) find that Transparency International's ratings of national corruption have significant power to explain price/book ratios for the 1995-1998 time period.

database. Rankings for social responsibility are available for approximately 650 companies on the S&P 500 and the Domini 400 index from 1991 to 2006. Data for firms on the Russell 1000 and DS 400 are available from 2001 to 2006. Firm level financial information is gathered from Compustat, with institutional ownership data coming from the Thompson CDA/Spectrum (13f) database. The only common element between the KLD, Dealscan, Compustat and Thompson CDA/Spectrum (13f) data is the ticker. Therefore, the KLD data are matched with the Dealscan loan data by ticker and name. There are 23,650 observations in the KLD data set, representing 4,586 unique firms. After matching with Compustat, there are 22,660 observations covering 4,397 firms. There are 86,401 U.S. loan facilities in the Dealscan database over the same period. Matching the KLD data with the loan data yields a final data set of 8,525 observations. The final filter removes all financial and insurance stocks, resulting in a final sample of 7,436 loans extended to 1,534 firms over the period from 1991 to 2006.

A natural first test might be to regress spreads on KLD scores, but the KLD score cannot be treated as a continuous variable. The ordinal nature of the KLD score provides information about the relative social performance of firms, but not the magnitude of the differences between firms with different scores. A score of +2 is better than a score of +1, but we cannot infer that a score of +2 is twice as good as +1. Likewise, there is no reason to expect that moving from a KLD score of 9 to 10 has the same impact as moving from -10 to -9. Further, we note that composition of the KLD score has changed over the sample period making inference from individual levels difficult. In order to increase the power of our tests (without losing any of the data) we divide the sample in half, and label those groups “High CSR” and “Low CSR”.

[Insert Table 1 Here]

Turning to the summary statistics in Panel A of Table 1 we see that loans in this sample have average (mean) all-in drawn spreads of 118.99 basis points, consistent with the spreads reported in similar studies in the banking literature (for example, Coleman, Esho and Sharpe (2004) report average all in drawn spreads of 126.8 basis points). There is also positive skewness in the data, since firms are unlikely to receive loans having spreads less than LIBOR. This skewness is the motivation for the logarithmic transformation of the dependent variable in the regressions that follow. The KLD scores range from -11 to +11 and the median score is zero. Occidental Petroleum, First Energy and Conoco Phillips are among the worst CSR performers. Motorola, IBM, Procter and Gamble and Green Mountain Coffee are among the firms with the highest levels of corporate social responsibility in our sample. The correlations are reported in Panel B and none of the variables display correlations high enough to cause concern in the regressions that follow.

[Insert Table 2 Here]

The comparison between the high and low CSR firms in Table 2 reveals a statistically significant difference of 20.85 basis points between the spreads charged to low CSR firms and those charged to high CSR firms. However, ascribing this difference to corporate social performance in the firms would be premature. Industry effects are obvious (for example, energy firms are overrepresented in the bottom of the distribution), and several of the firm level characteristics that differ between the two groups also drive yield spreads. Specifically, the high CSR group of companies has a higher market to book ratio (1.99 vs. 1.68), lower market value of debt to equity (0.48 vs. 0.68) and lower probability of distress (0.84% vs. 0.95%). The high CSR firms tend to be smaller than the low CSR

firms as measured by the logarithm of total assets (21.91 vs. 22.20). Turning to loan related variables, high CSR firms take larger loans (as a percentage of total debt outstanding). This finding lends support to the work of Sharfman and Fernando (2008), who find that firms with better social performance have easier access to debt financing. Diamond (1991) posits that firms borrow from banks to build reputations as good repayers. As the relationship between the firm and the bank grows, the bank is willing to lend more funds. The stronger banking relationships enjoyed by high CSR firms may allow them to get larger loans than low CSR firms.

Finally, there are differences in ownership structure between the high and low firms with the latter having fewer institutional shareholders. This result is intriguing, and it is unclear whether the presence of institutional ownership motivates socially responsible behavior, in the spirit of Gillan and Starks (2000), or whether responsible business practices attract institutional investors. On a related note, the concentration of institutional ownership, defined as the percentage of the average shares outstanding held by institutions also differs between firms. High CSR firms have slightly lower concentration of institutional ownership (62% vs. 63%), significant at the 1% level. Because many of these characteristics are also known determinants of yield spreads, it points to the need for multivariate analysis to correctly control for the observed variation between firms. We turn to these results next.

3.2 Regression Design

The literature on the determinants of loan spreads is well developed, with the majority of studies using a single equation regression approach (e.g., Berger and Udell

(1995); Guedes and Oppler (1996)). We follow in that tradition, but also run a system of simultaneous equations, instrumental variable regressions and a Mahalanobis metric matching algorithm to confirm our results. We control both firm and loan characteristics, as both have been shown to be determinants of spreads. Lender characteristics are considered in a robustness check. Because the KLD data are only available on US firms, there is no need to control for country effects.

Firm controls include:

Size: Ln (Total Assets). Larger firms are better able to withstand negative shocks to cash flow and are thus less likely to default. In addition, there are reputation effects that increase with firm size (Diamond (1989), (1991)). Hence, larger firms are viewed as less risky by banks and should enjoy lower yields on debt.

Market/Book: Depending on the context, M/B has been used as a control for risk, growth opportunities and market mispricing. It is also included because of its relationship to CSR (firms with high social responsibility ratings are generally found to have higher market-to-book ratios).

Long-term Debt/Equity: It has been demonstrated both theoretically and empirically that firms with higher leverage are expected to pay higher spreads.

Secured status: A dichotomous indicator variable equal to one if the loan is secured, zero otherwise. Where available, the actual indicator is used. Where it is missing the predicted value from a first stage logistic regression is substituted. Secured status is used as the dependent variable in a logistic regression where all firm, loan, industry and year controls are used. The predicted value from this regression is used when secured status is not observed.

EBIT: We include earnings before interest and taxes scaled by total assets to control for the possibility that any relationship between the spread and the KLD variable is actually being driven by free cash flow in the firm. The temporal sequencing issue has been identified in the CSR literature. It is not clear whether CSR leads to improved financial performance or whether improved performance frees up funds that can be used on CSR related projects. Because investments in CSR are largely discretionary, the "slack resources" theory (McGuire et al. (1990)) argues that the initiation or cancellation of CSR related projects depend on the availability of excess funds.

Z Score: Altman's (1968) Z score is a measure of distress risk. We use updated coefficients from Hillegeist *et. al.* (2004) and convert the raw Z score to a probability of default so, contrary to the traditional interpretation, higher values represent a higher probability of distress. It is included in the regressions to control for the possibility that KLD scores are proxying general default risk.

Bond Rating: S&P long-term debt rating on the signing date, it is an omnibus indicator capturing various risks. It is equal to 1 if the long-term debt of the firm is rated and equal to zero if it is not. We expect that the absence of a rating will imply a higher spread.

Investment Grade: Conditional on the presence of a rating, we categorize debt as investment grade if it has a rating higher than BB+. The variable is equal to unity if the debt is of investment grade and we expect that investment grade debt will have lower spreads.

Institutional Shareholders: Equal to the natural logarithm of (1+ the number of institutional owners). Research by Barnea and Rubin (2005) suggests that investments in CSR may be an agency conflict between managers who benefit from burnishing their

reputations as champions of social responsibility, and shareholders who bear the cost of the investments. Bhojraj and Sengupta (2003) find that institutional ownership is negatively associated with yields on public bonds. Roberts and Yuan (2009) document a negative non-linear relationship between institutional ownership and loan yield spreads because of the monitoring they provide.

Institutional Concentration: The ratio of shares held by institutions to the average shares outstanding. The presence of blockholders may lead to agency costs, increasing spreads (Roberts and Yuan (2009)).

Industry Dummies based on 2-digit SIC codes. Average CSR scores differ by industry in our sample, with public administrative firms (SIC>90) having the lowest average KLD scores. Following the U.S. Department of Labor, we control for differences across ten industries. DiBartolomeo and Kurtz (1999) demonstrate the importance of controlling for industry effects in studies of socially responsible investing.

In addition to firm characteristics driving loan costs, the features of the loan are known to be determinants of its cost. Banks can trade off several loan features, including maturity, security and commitment fees (in the case of revolving loans). We include the following controls for loan characteristics:

Maturity: The duration of the loan, measured in months. There is mixed evidence on how the maturity of the loan impacts the spread. The "trade-off" hypothesis suggests that banks will charge higher spreads on loans with longer maturities, to cover the risk of lending over longer periods. The "credit quality" hypothesis predicts a negative relationship because high-risk lenders are crowded out of the long debt market. As a result, riskier borrowers can only obtain shorter-maturity loans at higher yields (Dennis, Nandy and Sharpe (2000)

and Gottesman and Roberts (2004)).

Loan Concentration: Measured as the log of the package amount / (loan package amount + total debt). Following Dennis, Nandy and Sharpe (2000) we use loan concentration as a proxy for the strength of the relationship between the bank and the borrower. Berger and Udell (1995) find evidence that stronger relationships lead to lower spreads.

Loan Type: Since costs vary depending on the type of loan negotiated, (Preece and Mullineaux (1996)), we include dummies for revolvers, lines of credit, bridge loans and miscellaneous other loans, with term loans being the omitted variable.

Loan Purpose: As above, the purpose of the loan affects its cost. We control for differing loan purposes with dummies for working capital, acquisitions, backups, and miscellaneous purposes. Corporate purpose is the omitted category.

Syndicate: A dummy variable equal to unity if the loan is syndicated. Esty (2001) and Dennis and Mullineaux (2000) document fundamental differences between conventional and syndicated loans, with syndicated loans having higher yields.

Finally, we include the 3-month US dollar LIBOR rate at the time of the loan as an independent variable to control for prevailing macroeconomic conditions. Coupled with the fact that the dependent variable is a spread over a floating rate, the addition of the LIBOR variable should capture the effects of any intertemporal economic shocks. Nonetheless, we also include (unreported) year dummies in the regression specifications. All continuous control variables are winsorized at the 1% and 99% level to control for outliers. Because we do not know the form of any potential heteroskedasticity ex ante, we utilize the generalized method of moments for estimation of the regression equations. The resulting t-statistics are robust to heteroskedasticity.

The general form of the regression equation is:

$$\text{Ln(Spread)} = f(\text{firm characteristics, loan characteristics, KLD}) \quad (1)$$

3.3 Single Equation Results

The first regression (Model 1) in Table 3 uses sixteen dummies for the level of CSR in a firm in addition to the industry, firm and loan controls described above. The extreme positive and negative KLD classifications are aggregated to ensure that there are sufficient observations in each classification. Specifically, all KLD scores equal to or greater than 8 are represented by a single indicator variable. Likewise, all scores equal to or less than –8 are aggregated. Despite the noise inherent in using indicators for each level of KLD, this exploratory regression offers a useful first look at the data. The second specification (Model 2) partitions the sample into two groups — the aforementioned "Low CSR" and "High CSR" firms. The third specification tests for bias by using just the observations where secured status is observed.

[Insert Table 3 Here]

Because the dependent variable is log transformed, we apply Kennedy's (1981) adjustment to correctly interpret the coefficient on the independent variable.[6] After controlling for industry, firm and loan characteristics, the regression suggests that firms with KLD scores of -8 or lower pay 24.2% more than firms with a KLD score of 0. Firms with a KLD score of -7 pay 18.4% more. Both results are significant at the 1% level. As the level of concern falls, as measured by the composite KLD score, the additional

[6] The coefficient is $\exp(\beta - 1/2(\sigma)^2) - 1$, where β is the regression coefficient and σ is the standard deviation. In our case, $\exp(0.2195 - 1/2(.0741)^2) - 1 = 0.242$.

compensation demanded by banks falls, both in magnitude and statistical significance. When the KLD score rises to 2, the additional spread demanded is indistinguishable from zero.

When KLD scores reach +5 or +6 there is a statistically significant decrease in spreads. Equally interesting is the behavior of the KLD coefficient when the KLD score is greater than 7. These are the most socially responsible firms and, if the stakeholder view is correct, should be rewarded with the lowest yield spread. Instead, the firms with the highest KLD scores (KLD positive 8 or more) actually pay 27.1%, or 33 basis points more than firms with neutral CSR records. Consistent with Barnea and Rubin (2005), this may be evidence that lenders punish firms that squander resources on social responsibility when those initiatives have negative net present values. One possible interpretation is that as firms increase the number of stakeholders that they try to accommodate in their business mission, they lose focus because the goals of competing stakeholders may not be perfectly aligned. The ability of the firm to focus on multiple missions has been explored in a related context by Dewatripont *et. al.* (1999). Their theoretical model predicts that firms with "fuzzy" missions will have poor managerial incentives, impairing the effectiveness of the organization.

On the other hand, there are only 47 firms with scores of 8 or higher and inferences must be made with caution. We return to this question in the matched firm tests described later in the paper. It is equally possible that this result is sample specific. Indeed, that is the biggest drawback to using a specification where each KLD level has its own indicator. A more reasonable alternative is to aggregate the levels and have one indicator for the top half of the sample and another for the bottom half. In this specification (Model 2) firms in

the bottom half of the sample (KLD<0) pay 9% more than firms in the top half of the sample. These regressions offer the first evidence that there is information embedded in the extra-financial information contained in CSR rankings and that banks are able to assess the value of CSR investments in mitigating risk. An approximation of the economic impact of these effects is insightful. Interpreting these effects in the original units requires a correction because the log transformed estimator consistently underestimates the mean. After applying the bias correction following Miller (1984), the mean loan spread is 121 basis points. ($\exp(4.38+0.5x(0.91)^2)=120.79$ The economic impact implied in model 2 is approximately 11 basis points.

Because the Dealscan database is missing secured status for 3,421 observations, an (unreported) logistic regression is used to fit the missing data in estimating models 1 and 2. An alternative specification uses only the observations where the secured status is known. This lowers the sample size to 3,996. The goal is to ensure that the "errors-in-variables" introduced by the fitting process is not biasing the regression coefficients. Model 3 shows the regression results. As can be seen, the coefficient on the Low CSR Indicator retains both its sign and significance.

3.4 Instrumental Variable Regressions

The preceding specifications suffer from potential endogeneity of the KLD score with other determinants of yield spreads. It is possible that the variables that determine loan spreads are also determining lagged KLD scores. If so, there will be correlation between the coefficients of the explanatory variable and the error term leading to biased estimates. In order to circumvent this problem, we run instrumental variable regressions.

Our first instruments are the states where the firms have head offices. Our motivation is that regional differences in attitudes to CSR may be reflected by the actions of the firms. The dependent variable is the Low CSR Indicator used in the preceding analysis. We run the following logistic regression:

$$\text{Prob} = f\left\{\begin{matrix}\text{Low}\\ \\ \text{High}\end{matrix}\right\} \quad \text{(head office, political, lagged KLD)} \qquad (2)$$

The first model in Table 4 includes only the intercept and the (unreported) head office indicators. The head office indicators are jointly significant. Continuing in a geographic vein, we follow Rubin (2006) and add state voting records. Rubin finds that companies with high CSR rankings tend to be located in states that vote Democratic in presidential elections and low CSR firms tend to be in Republican states. To capture this effect, Model 2 includes a variable that sums up the number of US presidential elections won by Republicans in each state over nine elections cycles from 1972- 2004. The third specification uses a measure of Republican strength in each state as calculated by the Brookings Institute.[7]

[Insert Table 4 Here]

While all of the political and head office instruments are significant, they are too weak by themselves to be used as instruments in an IV regression. Therefore we add lagged KLD scores from three years before the initiation of the loan. Bansal (2005) argues that the firm specific capabilities captured by CSR metrics take several years to acquire and are more persistent than indicators of financial performance. It is unlikely that CSR scores assigned to firms three years before the initiation of the loan are going to be

[7] See: www.thegreenpapers.com/G04/President-Strength.phtml

influential in setting loan contract terms. Using 3-year lagged KLD scores alongside head office and the Brookings political strength indicator yields an instrument that is powerful enough to be used in place of the Low CSR Indicator. We label the instrument "Low CSR (Predicted)" and insert it into our yield spread regression as the single explanatory for CSR performance. Descriptive statistics for the instrument are reported in Panel B of Table 4. The advantage of a two-step process is that the endogeneity of the KLD score and yield spread is controlled and the resulting variable is a continuous probability instead of an ordinal score. The cost of controlling the endogeneity in the foregoing is a significant loss of data, since the firm needs to be in the data set for three years before the lagged KLD observation can enter the regression.

[Insert Table 5 Here]

Table 5 shows the results of the spread regressions where the KLD variable is endogenized. The first model estimates the full specification and can be directly compared with Model 2-Table 3. All of the control variables have the expected signs. Larger firms, those with higher M/B, lower leverage and higher profitability pay lower spreads. The coefficient on CSR is positive and significant, confirming our result in Table 3. Firms with a higher probability of low CSR scores pay higher spreads. Direct interpretation of the coefficient is complicated by the scale of the independent variable and the logarithmic transformation of the dependent variable. We overcome this by standardizing the coefficient in the usual fashion, multiplying by the ratio of the standard deviation of the coefficient to the dependent variable. This yields a standardized coefficient of 0.035. A one standard deviation increase in the probability of having low CSR raises spreads by about 0.037 standard deviations. Since all of the reported standard deviations are log

transformed, they are also back transformed to original units[8]. Ultimately, the economic impact is slightly lower at 5.5 bps., perhaps reflecting the increased noise in the specification.

The next two models segment the sample by year, with Model 2 covering the period from 1991- 2000 and the second model covering the period 2001-2006. The reasons are twofold. First, we want to test whether the addition of Russell 1000 firms after 2001 is impacting the data. Second we can explore whether there has been any change in bank response to CSR over time. Our main result is robust to different time periods, remaining positive and significant in both regressions. The Wald test of the CSR coefficients fails to reject the hypothesis of equality under the null. There is no evidence that the magnitude of the reported effect has changed. The other coefficient of note is the Z score, which is significantly larger (at the 5% significance level) in the latter period. This evidence is consistent with Berger and Bouwman (2008) who report that banks expand liquidity prior to banking related crises such as the subprime crisis starting in 2007 but not before market driven crises like the bursting of the tech bubble in 2000.

Model 4 examines an alternative to the bond rating as a control for firm level risk. We use the bond rating indicator in all baseline regressions because it is available for all observations. However, by using a single dichotomous variable we lose any information about the quality of the bond rating. As a robustness test, we substitute an indicator for an investment grade credit rating, conditional on the presence of a bond rating. Once again,

[8] The standard deviation of the log transformed spread is computed as:

$\sigma_{norm} = \sqrt{\left(\exp\left(\sigma^2_{\log}\right)-1\right)\left(\exp\left(2\mu+\left(\sigma^2_{\log}\right)\right)\right)}$ where μ is the log transformed mean.

the coefficient on CSR remains significant and positive in this smaller subsample.

3.5. Endogeneity of Loan Contract Terms

One criticism of the preceding regressions could be that the endogeneity of maturity and yield spread has not been adequately controlled. Dennis, Nandy and Sharpe (2000) demonstrate how the failure to account for this can lead to improper inference. To verify the results of the preceding regressions, we re-estimate the following system of equations using three stage least squares. The results are presented in Table 6.

Ln(Spread) = f(maturity, firm characteristics, loan characteristics, KLD) (3)

Maturity = f(ln(Spread), firm characteristics, loan characteristics, KLD) (4)

[Insert Table 6 Here]

Compared to the results in Table 5, the coefficient on CSR has increased, suggesting a penalty of 14.86% higher spreads, significant at the 1% level, for firms in the lower half of the CSR spectrum. Turning to the maturity equation, the coefficient of CSR is not significant. While we cannot draw any inferences from the CSR coefficient in the maturity equation, the negative log spread coefficient on maturity and the negative maturity coefficient of spread offer support to the "credit quality" hypothesis. Contrary to explanations that appeal to the term structure, we find longer maturities leading to lower spreads and higher spreads being associated with shorter maturities. A plausible explanation is that low quality firms are "frozen out" of the short term market (Gottesman and Roberts (2004)). The remaining coefficients in both equations have the expected signs.

3.6. Unobserved Heterogeneity of Lead Lenders

While the foregoing analysis has controlled for borrower and loan characteristics, there exists the possibility that our results may be impacted by unobserved heterogeneity among the lenders. Several recent papers on the determinants of loan contract terms have controlled for lead lenders' characteristics. Coleman, Esho and Sharpe (2006) demonstrate that banks with better monitoring abilities are able to demand higher initial loan spreads. They also find that high-risk banks charge higher yields, a result that is also reported by Hubbard, Kuttner and Palia (2002), who note a negative association between the health of the lender and the spread charged to the borrower. They find that capital-constrained banks charge higher spreads, especially when the borrowers have higher levels of information opacity.

Following the line of reasoning promoted by Coleman, Esho and Sharpe, (2006) our results could be explained by bank monitoring. If the firms with the lowest KLD scores also require the most monitoring, then the positive relationship between poor scores and yields could be due to the superior monitoring abilities of the banks that hold those loans and not due to the KLD score. We control for unobserved lender heterogeneity by adding bank fixed effects to our model. The administration agent in each deal is identified as the lead bank in the syndicate. We identify the ultimate parent of each lead bank, and include indicator dummies in the regressions for all banks with more than ten loans.

[Insert Table 7 Here]

Table 7 reproduces the result of Model 1 in Table 5, and repeats the results after controlling for bank fixed effects. Of primary interest is the Low CSR coefficient. It remains unchanged, suggesting that bank effects are not responsible for the results we report.

Recapping our results to this point, we find that CSR is recognized and priced by banks in setting loan contract terms. The effect is statistically significant, but economically modest, ranging from 5 to 11 basis points depending on the regression specification. Our findings are robust to alternative specifications of risk, they hold over different sub-periods and remain after controlling for industry, firm level, loan and lender characteristics. A more direct test is possible. To confirm the regression results, we turn now to matched firm tests of differences in yield spreads.

3.7. Matched Firms

An alternative to the regression approach is to use matched pairs to examine if there is a yield differential between firms with high scores and those with low scores. Traditionally, researchers attempt to isolate the variable of interest by matching firms based on other characteristics that also drive the dependent variable. Following the work of Fama and French (1993) matching is often done on the basis of size and book to market ratio. Control firms are sorted into bins based on size and then further subdivided based on their book-to-market ratio. Each firm in the treatment group is then matched to the firm (or portfolio of firms) whose characteristics most closely match its own[9]. The difficulty with this approach is that matching is restricted to the criteria selected and it is sensitive to the selection of bin size. In order to minimize the likelihood of mismatched firms confounding the results, we borrow from the biostatistics literature and utilize Rubin's (1980) matching algorithm based on minimization of the Mahalanobis distance between a set of covariates that includes the propensity score. Our methodology is as follows: first we calculate the propensity score for the entire sample. In the first model we use the Low CSR Indicator as

[9] Barber and Lyon (1996) provide an econometric review.

the dependent variable of a logistic regression on all of the firm and loan covariates identified in the preceding regression analysis including industry and year dummies. The sample is then sorted by the Low CSR Indicator into treatment (=1) and control groups(=0). The first treatment firm is randomly selected. All control firms whose propensity score is within +/- 0.25 standard deviations of the treatment firm are considered as potential matches. If no control firms fall within the propensity score range, the treatment firm is discarded and does not become part of the final set. If only one control firm falls within the callipers, it is selected and the pair of firms is added to the final set. If more than one control firm is available, the Mahalanobis distance for the treatment firm and each of the candidate controls is calculated. We calculate the distance along three dimensions -- size, market to book ratio and propensity score, where each is scaled by its variation. The two firms with the shortest distance are added to the final set. Matching is done without replacement and continues until all treatment firms have been matched or discarded. We expect the two sets of empirical distributions of yield spreads to be identical under the null with respect to the mean

[Insert Table 8 Here]

The results of firm matching, presented in Table 8, confirm the main regression result that firms with lower levels of CSR pay higher spreads. There are 3,556 potential treatment firms with KLD scores less than 0. The control firms are those with KLD scores equal to or greater than 0. The matching algorithm isolates these firms and successfully identifies 2,851 control firms that share the same firm and loan characteristics, but have higher KLD scores. As can be seen, firms with lower KLD scores pay 7.4 basis points more than matched firms [$\exp(4.4498+ \frac{1}{2}(0.873^2))-\exp(4.3544+ \frac{1}{2}(0.912^2))$]. The result is significant

at the 1% level. None of the other variates is significantly different from zero. Significance is tested using t-tests for continuous variables and chi-test for categorical variables. While the results are not shown, none of the year or industry controls are significant. This result is qualitatively similar to the results of the regression analysis, falling between the 11 bps in Table 3 and the 5.5 bps in Table 5.

A second model returns to our first regression and explores whether lenders penalize firms with very high KLD scores. If so, it would be evidence supportive of Barnea and Rubin's (2005) conjecture that investments in CSR are agency costs, where managers burnish their reputations at the expense of shareholders. The matching algorithm is able to find 29 control firms with KLD scores (in the top 10% of CSR performance) that match the treatment firms (in the top1%) across multiple dimensions, and the log spread is considerably higher for the very highest scoring CSR firms (50 bps.). However, the result is not statistically significant at traditional levels, so we are unable to comment on the agency argument. There is too much variability in this small sample to make inferences about the reaction of lenders to firms with very high levels of CSR. Whether agency costs are present remains an area for future research.

Our final model attempts to quantify the impact of moving from very low levels of CSR to very high levels of CSR. Model 3 displays results where control firms are in the bottom decile and treatment firms are in the top decile, after excluding the top 1% of firms. Note that this test reverses the treatments and controls relative to the preceding two models. The matching algorithm demands more potential controls than treatments and the exclusion of the suspicious top 1% of firms means the top decile has fewer firms than the bottom decile. This test should yield the maximum benefit attributable to CSR. Our results

suggest that a firm in the bottom decile of CSR performance could lower its cost of borrowing by 23 basis points by moving into the top decile. We view the modest 7 bps premium for firms in the bottom half of the CSR distribution, and a total benefit of only 23 basis points as evidence that banks view CSR as a second order determinant of spreads.

4. Conclusion

The CSR phenomenon has firmly taken root across corporate America, if not within the academic finance community. MBA candidates can now specialize in Corporate Social Responsibility. Firm resources are employed to produce reports on CSR initiatives. Scarce advertising dollars are spent trumpeting social records. And, while there is a growing body of literature on corporate social responsibility, there has been little research on the effect of CSR on the cost of debt financing.

To our knowledge, this paper is the first to examine the impact of social responsibility on the cost of private debt financing. In doing so, we address the impact of CSR in a previously unexplored channel of debt markets while exploiting the unique role of banks as "quasi-insiders" of the firm. Because they have access to firm information unavailable to outsiders, banks are in a position to judge whether the CSR related investments of the firm lower risk or improve the financial position of the company. Their determination is manifest in the loan contract terms offered to the firm. We provide evidence that banks charge 5 to 11 basis points more for firms with below average environmental, social and governance records. We confirm the robustness of our results using two different econometric techniques, and we document the maximum penalty for poor CSR performance to be 23 basis points, when firms in the top decile are compared to firms in the bottom decile of CSR performance. Our results suggest that banks consider

CSR as, at best, of second-order importance in determining loan spreads. At a higher level, we fail to uncover any strong support for the stakeholder view that investment in CSR reduces firms' risk and enhances financial performance.

Our findings suggest interesting avenues for future research. More work needs to be done to understand how market participants react to firm-level corporate social responsibility initiatives. This paper has demonstrated that lenders are providing modest incentives for firms to correct the most egregious behavior by demanding higher yield spreads from firms with the worst records in social responsibility. But if firms are being punished for paying too much attention to stakeholder groups, it suggests that there is a role for government in mitigating negative externalities, since rational firms will not engage in socially responsible behaviors if they are punished by the market for doing so. Indeed, the lack of very high KLD scores in our sample is consistent with the idea that there may be a threshold beyond which further investments in CSR are evidence of value destroying agency costs. Further research may help shed light on those aspects of CSR that add value and those that do not.

Appendix A

Variable	Definition	Source
Dependent Variable		
Log Spread	Logarithm of Initial all-in-drawn spread over LIBOR	Dealscan
Loan Related Independent Variables		
Maturity	Months to maturity on the loan	Dealscan
Security	Indicator variable. Equal to one if the loan is secured, zero otherwise. Where available, the actual indicator is used. Where it is missing the predicted value from a first stage logistic regression is substituted.	Dealscan and first stage logistic regression
Loan Concentration	Log of (Loan package amount / (loan package amount + total debt)).	Dealscan
Loan Type Dummies	Indicator variables for revolvers, lines of credit, bridge loans and miscellaneous. Term loans are the omitted variable.	Dealscan
Loan Purpose Dummies	Indicator variables for working capital, acquisitions, backup loans, debt repayment and miscellaneous. Loans for "Corporate Purpose" are omitted.	Dealscan
Syndicate	Indicator variable for syndicated loans. Equal to one if the loan is syndicated and zero otherwise.	Dealscan
LIBOR	Three month US London Interbank Offer Rate at the end of the month of deal signing.	British Banker's Association
Firm Related Independent Variables		
Industry Dummies	There are 10 industry dummies based on 2-digit SIC codes. Agriculture (SIC<10); Mining (10-15); Construction (15-20); Manufacturing (20-40) Transportation, Commercial, Gas and Electricity (40-50); Wholesale (50-52); Retail (52-60); Financial (60-70); Services (70-90); Public Administrative (SIC>90). Agriculture is the omitted variable in all regressions.	Dealscan
Z Score	Altman distress prediction score computed with updated coefficients following Hillegeist et. al (2004). Scores are reported as probabilities using logistic transformation.	Compustat
Market/Book	A proxy for growth opportunities, measured as Market value of equity+book value of debt/ Book value of Assets	Compustat
Debt/Equity	Book value of long term debt divided by market value of equity	Compustat
Size	Logarithm of total assets	Compustat
Bond Rating	Borrower rating indicator variable. Equals unity if the long term debt of the borrower has an S&P rating.	Compustat
Investment Grade	Borrower rating indicator variable. Equals unity if S&P rating on the borrower's long term debt rating on the signing date is higher than BB+.	Compustat
EBIT	Earnings before Interest and Taxes scaled by Total Assets	Compustat
Inst. Shareholders	Equal to the natural log of (1+ the number of institutional shareholders)	Thompson CDA/Spectrum (13f)
Inst. Concentration	Equal to the ratio of institutional shares to total shares outstanding.	Thompson CDA/Spectrum (13f)
KLD Total	Composite score is sum of strengths and weaknesses in 11 areas of environmental social and governance. Exclusionary screens are not included.	KLD Analytics
CSR Instruments		
GOP Vote	Percentage of nine presidential elections (1972-2004) won by Republican candidate, by state.	US Census

Brookings	The degree of Republican sentiment in a US state, as measured by the Brookings Institute (www.thegreenpapers.com/G04/President-Strength.phtml)	Brookings

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Table 1

Panel A: Summary Statistics

This table reports the descriptive statistics for the principal variables. The sample consists of 7,436 loans collected from Dealscan over the 1991to 2006 period for non-financial firms. Spread is defined as the initial all-in-drawn spread over LIBOR for the loan, expressed in basis points. Definitions of all remaining variables are provided in Appendix A.

Variable	N	Mean	Median	Std Dev	Minimum	Maximum
Log Spread	7352	4.38	4.32	0.91	2.14	7.17
Spread	7352	118.99	75.00	112.69	8.50	1300.00
Size	7421	22.05	22.04	1.50	9.90	27.20
Market/Book	7359	1.84	1.48	1.25	0.63	39.12
Debt/Equity	7361	0.58	0.27	1.40	0.00	38.27
EBIT	7419	0.09	0.08	0.11	-2.66	1.00
Z Score	6981	0.89	0.98	0.33	0.00	2.34
Inst. Shareholders	6482	5.30	5.34	0.81	0.69	7.28
Inst. Concentration	6298	0.62	0.65	0.20	0.00	1.00
Loan Maturity	7201	42.82	48.00	24.94	1.00	276.00
Loan Concentration	7418	-1.59	-1.39	1.14	-10.31	0.00
LIBOR	7436	3.73	3.84	1.81	1.03	6.86
KLD Total	7436	-0.43	0.00	2.57	-11.00	11.00

Panel B: Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13
Log Spread (1)	1												
Firm Size (2)	-0.389***	1											
Market/Book (3)	-0.187***	-0.151***	1										
Debt/Equity (4)	0.269***	0.169***	-0.189***	1									
EBIT (5)	-0.282***	-0.030***	0.329***	-0.203***	1								
Z Score (6)	0.221***	0.300***	-0.677***	0.343***	-0.410***	1							
Bond Rating (7)	-0.214***	0.517***	-0.122***	0.076***	0.007	0.302***	1						
Inst. Shareholders (8)	-0.504***	0.693***	0.203***	-0.083***	0.194***	-0.154***	0.397***	1					
Inst. Concentration (9)	0.055***	-0.049***	0.003	-0.038***	0.077***	-0.069***	0.039***	0.306***	1				
Loan Maturity (10)	0.270***	-0.223***	-0.048***	0.037***	0.004	0.011	-0.098***	-0.210***	0.101***	1			
Loan Concentration (11)	-0.062***	-0.572***	0.221***	-0.320***	0.152***	-0.439***	-0.357***	-0.245***	0.100***	0.116***	1		
LIBOR (12)	-0.262***	0.052***	0.063**	-0.085***	0.099***	-0.059***	0.014	0.017	-0.057***	0.079***	0.048***	1	
KLD Total (13)	-0.153***	-0.091***	0.175***	-0.085***	0.117***	-0.209***	-0.035***	0.034***	-0.051***	-0.061***	0.107***	0.059***	1

Table 2
Summary Statistics for High and Low CSR Firms

This table reports the descriptive statistics for the principal variables. The sample consists of 7436 loans collected from Dealscan over the 1991 to 2006 period. Spread is defined as the initial all-in-drawn spread over LIBOR for the loan, expressed in basis points. Complete definitions of remaining variables can be found in the appendix. Low firms are those with KLD composite scores less than zero. High CSR firms are those with KLD scores of zero or more. Differences in means are measured by a t-test. Median differences are measured by non-parametric Wilcoxon test. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively.

Label		N	Mean	Median	Std Dev	Minimum	Maximum
Spread	Low	3509	129.89***	92.50***	117.84	11.00	1300.00
	High	3843	109.04	72.50	106.82	8.50	1100.00
Size	Low	3546	22.20***	22.28***	1.48	16.14	27.08
	High	3875	21.91	21.87	1.52	9.90	27.20
Market/Book	Low	3530	1.68***	1.40***	1.02	0.63	31.63
	High	3829	1.99	1.58	1.41	0.70	39.12
Debt/Equity	Low	3530	0.68***	0.34***	1.66	0.00	38.27
	High	3831	0.48	0.21	1.10	0.00	18.78
EBIT	Low	3546	0.08***	0.08***	0.11	-2.66	0.83
	High	3873	0.10	0.09	0.11	-1.49	1.00
Z Score	Low	3341	0.95***	1.04***	0.00	0.00	1.66
	High	3640	0.84	0.91	0.00	0.00	2.34
Inst. Shareholders	Low	3079	5.28**	5.34**	0.79	0.69	7.24
	High	3403	5.32	5.34	0.83	0.69	7.28
Inst. Concentration	Low	2970	0.63***	0.65***	0.20	0.00	1.00
	High	3328	0.62	0.64	0.20	0.00	1.00
Maturity	Low	3453	44.01***	52.00***	24.55	1.00	240.00
	High	3748	41.72	48.00	25.25	1.00	276.00
Loan Concentration	Low	3545	-1.71***	-1.51***	1.17	-9.94	0.00
	High	3873	-1.48	-1.32	1.10	-10.31	0.00
LIBOR	Low	3556	3.72	3.84**	1.77	1.03	6.86
	High	3880	3.74	3.84	1.85	1.03	6.86
KLD Total	Low	3556	-2.41***	-2.00***	1.69	-11.00	-1.00
	High	3880	1.39	1.00	1.77	0.00	11.00

Table 3
Regression of Spread against CSR

This table shows the coefficients from a regression of the log-spread on CSR and controls for borrower characteristics and loan features. The dependent variable is the natural logarithm of the all-in-drawn spread. Descriptions of the explanatory variables are provided in the appendix. Model 1 uses indicators for KLD levels with KLD=0 as the reference. Model 2 segments the sample into high and low CSR firms. Low firms are those with KLD composite scores less than zero. Firms with KLD scores of zero or more are the reference. Model 3 tests for bias due to the estimation of the secured variable by using only observations for which the secured status is observed. Estimation is done using the generalized method of moments. Robust standard errors are in parenthesis. ***, ** and * denote significance level at 1%, 5% and 10% levels respectively. Indicator variables for year, loan type, loan purpose and industry are included in all regressions but coefficients are not reported.

	Model 1	**Model 2**	**Model 3**
Intercept	8.4726	8.4314	7.9777
	(0.2306)***	(0.2268)***	(0.2689)***
KLD negative 8 or less	0.2195		
	(0.0741)***		
KLD negative 7	0.1710		
	(0.0640)***		
KLD negative 6	0.0606		
	(0.0522)		
KLD negative 5	0.1657		
	(0.0425)***		
KLD negative 4	0.0548		
	(0.0323)*		
KLD negative 3	0.1485		
	(0.0266)***		
KLD negative 2	0.0821		
	(0.0208)***		
KLD negative 1	0.0903		
	(0.0189)***		
KLD positive 1	0.0542		
	(0.0215)**		
KLD positive 2	0.0353		
	(0.0276)		
KLD positive 3	-0.0282		
	(0.0316)		
KLD positive 4	-0.0368		
	(0.0390)		
KLD positive 5	-0.1057		
	(0.0505)**		
KLD positive 6	-0.2011		
	(0.0604)***		
KLD positive 7	0.0843		
	(0.0982)		
KLD positive 8 or more	0.2474		
	(0.1222)**		
Low CSR Indicator		0.0866	0.0704
		(0.0127)***	(0.0153)***
Firm Size	-0.1519	-0.1486	-0.1431
	(0.0078)***	(0.0076)***	(0.0095)***
Market/Book	-0.0255	-0.0253	-0.0301
	(0.0100)**	(0.0100)**	(0.0122)**
Debt/Equity	0.1934	0.1944	0.1701
	(0.0109)***	(0.0109)***	(0.0119)***
Secured (Fitted)	0.5805	0.5839	
	(0.0198)***	(0.0199)***	
Secured (Actual)			0.7334
			(0.0222)***
EBIT	-0.8034	-0.7971	-0.6548
	(0.0964)***	(0.0962)***	(0.1065)***

	Model 1	Model 2	Model 3
Z Score	10.3139	10.6339	8.0556
	(2.5098)***	(2.5057)***	(2.9236)***
Bond Rating	-0.0568	-0.0625	-0.0477
	(0.0179)***	(0.0178)***	(0.0207)**
Inst. Shareholders	-0.1083	-0.1071	-0.0538
	(0.0099)***	(0.0100)***	(0.0131)***
Inst. Concentration	0.2153	0.2094	0.1131
	(0.0324)***	(0.0326)***	(0.0384)***
Loan Maturity	-0.0003	-0.0002	-0.0003
	(0.0003)	(0.0003)	(0.0004)
Loan Concentration	-0.0951	-0.0953	-0.1188
	(0.0102)***	(0.0102)***	(0.0125)***
Syndicate	-0.0683	-0.0763	-0.0520
	(0.0451)	(0.0447)*	(0.0709)
LIBOR	-0.0474	-0.0474	-0.0507
	(0.0131)***	(0.0132)***	(0.0158)***
Controls			
Industry	Yes	Yes	Yes
Loan Type and Purpose	Yes	Yes	Yes
Year	Yes	Yes	Yes
Adjusted R^2	0.675	0.673	0.705
Number of Obs	7352	7352	3996

Table 4

Panel A: First Stage Logistic Regression of Instrumental Variables

This table shows the coefficients from a first stage logistic regression of the the Low CSR Indicator against geographic, political and lagged CSR variables. Model 1 includes fifty state-level indicators (results not reported) for the 2006 head office location of each firm. Model 2 retains the head office indicators and adds "GOP Vote", equal to the percentage of times a state voted for the Republican party in 9 presidential elections from 1972-2004. Model 3 retains the head office indicators and adds a Republican strength metric as compiled by the Brookings Institute. Model 4 adds composite KLD scores from 3 years prior to loan inception. Model 5 combines head office, Brookings and lagged KLD to form a new instrumental variable called "Low CSR (Predicted)". Variable descriptions are in Appendix A. Standard errors are in parenthesis. ***, ** and * denote significance level at 1%, 5% and 10% levels respectively

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Intercept	-33.22	-22.529	-38.472	-1.272	2.822
	(575.6)	(290.1)	(290.2)	(1344)	(1046.6)
GOP Vote		1.699			
		(0.435)***			
Brookings			0.646		-0.035
			(0.1477)***		(0.2757)***
Lagged KLD Score				-1.134	-1.130
				(0.035)***	(0.036)***
Controls					
Head Office	Yes	Yes	Yes	Yes	Yes
AIC	10018	9878	9872	3751	3710
Number of Obs.	7436	7336	7336	4786	4715

Panel B: Descriptive Statistics for Instrumental Variable

This table provides descriptive statistics for the IV regressor formed in Table 4-Panel A. It is labeled " Low CSR (Predicted)" in the regressions that follow.

Mean	0.4920
Std. Dev	0.3540
Min	0.0000
25th%	0.1518
Median	0.4293
75th%	0.8515
Max	1.0000

Table 5
Regression of Log-Spread with Instrumental Variable

This table shows the coefficients from a regression of the log-spread on CSR and controls for borrower characteristics and loan features. The dependent variable is the natural logarithm of the all-in-drawn spread. Model 1 uses the CSR instrument formed in Table 4. Low CSR (Predicted) represents the probability of a firm being in the bottom half of firms in CSR performance. Models 2 and 3 segment the sample by year, with Model 2 covering 1991-2000 and Model 2 covering 2001-2006. Model 4 introduces "Investment Grade" as an alternative to "Bond Rating" as an alternative measure of risk. Estimation is done using the generalized method of moments. Robust standard errors are in parenthesis. ***, ** and * denote significance level at 1%, 5% and 10% levels respectively. Indicators for year, loan type, loan purpose and industry are included in all regressions but coefficients are not reported.

	Model 1	**Model 2**	**Model 3**	**Model 4**
Intercept	8.5323	7.3133	8.7848	7.7586
	(0.3021)***	(0.4025)***	(0.3359)***	(0.2640)***
Low CSR (Predicted)	0.0939	0.1170	0.0809	0.1042
	(0.0237)***	(0.0377)***	(0.0306)***	(0.0251)***
Firm Size	-0.1437	-0.1321	-0.1585	-0.1209
	(0.0100)***	(0.0169)***	(0.0134)***	(0.0109)***
Market/Book	-0.0320	0.0172	-0.0738	-0.0391
	(0.0140)**	(0.0213)	(0.0173)***	(0.0153)**
Debt/Equity	0.1795	0.2457	0.1611	0.1112
	(0.0128)***	(0.0273)***	(0.0152)***	(0.0141)***
Secured (Fitted)	0.6474	0.7188	0.5958	0.5726
	(0.0283)***	(0.0541)***	(0.0326)***	(0.0391)***
EBIT	-1.2216	-1.4278	-1.1380	-1.2210
	(0.1403)***	(0.2407)***	(0.1671)***	(0.1589)***
Z Score	7.8183	1.9918	12.0338	4.8279
	(3.2683)**	(4.7883)	(4.3506)***	(3.6956)
Bond Rating	-0.0834	-0.0985	-0.0713	
	(0.0268)***	(0.0471)**	(0.0319)**	
Investment Grade				-0.3697
				(0.0378)***
Inst. Shareholders	-0.1060	-0.1033	-0.1205	-0.1084
	(0.0127)***	(0.0237)***	(0.0184)***	(0.0140)***
Inst. Concentration	0.2007	0.2457	0.1804	0.2449
	(0.0451)***	(0.1108)**	(0.0478)***	(0.0526)***
Loan Maturity	0.0003	-0.0015	0.0015	0.0000
	(0.0004)	(0.0007)**	(0.0005)***	(0.0005)
Loan Concentration	-0.1155	-0.1086	-0.1214	-0.1421
	(0.0120)***	(0.0184)***	(0.0163)***	(0.0131)***
Syndicate	-0.0284	-0.0574	0.0265	-0.0851
	(0.0748)	(0.0843)	(0.1913)	(0.0827)
LIBOR	-0.0309	0.0342	-0.0980	-0.0197
	(0.0170)*	(0.0242)	(0.0221)***	(0.0188)
Controls				
Industry	Yes	Yes	Yes	Yes
Loan Type and Purpose	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Adjusted R2	0.679	0.611	0.687	0.697
Number of Obs.	4644	1817	2827	3756

Table 6
Simultaneous Equations of Yield Spread and Maturity

This table shows the coefficients from a simultaneous system of equations of log spread and loan maturity. The first equation models loan maturity as a function of the Low CSR Indicator, the log spread and firm and loan controls. the The second equation models the Log Spread as a function of loan maturity and the Low CSR Indicator, as well as all of the firm and loan controls described in the Appendix. In order to identify the system, LIBOR is substituted for year dummies in the maturity equation. Descriptions for all explanatory variables are given in the Appendix. Estimation is done by three stage least squares. Standard errors are in parenthesis. ***, ** and * denote significance level at 1%, 5% and 10% levels respectively.

	Maturity	**Log Spread**
Intercept	129.9194	9.9385
	(15.9954)***	(0.2936)***
Log Spread	-10.9703	
	(1.8408)***	
Loan Maturity		-0.0500
		(0.0066)***
Low CSR Indicator	1.6291	0.1413
	(0.5071) ***	(0.0183)***
Firm Size	-1.4716	-0.1318
	(0.3931)***	(0.0115)***
Book/Market	-2.4095	-0.1118
	(0.3626)***	(0.0150)***
Debt/Equity	1.5072	0.1607
	(0.5296) ***	(0.0150)***
Secured (Fitted)	18.3547	1.1308
	(1.3289) ***	(0.0670)***
EBIT	21.5300	0.6541
	(3.9177) ***	(0.2231)***
Z Score	161.5497	13.7944
	(92.7790) *	(3.3305)***
Bond Rating	0.4761	0.0080
	(0.7085)	(0.0277)
Inst. Shareholders	-0.3827	-0.0772
	(0.4318)	(0.0139)***
Inst. Concentration	7.4885	0.4170
	(1.4189)***	(0.0509)***
Loan Concentration	2.0451	0.0418
	(0.3661) ***	(0.0185)**
Syndicate	3.9268	0.1384
	(1.8050) **	(0.0698)**
LIBOR	-0.0226	
	(0.2016)	
Controls		
Industry	Yes	Yes
Loan Type and Purpose	Yes	Yes
Year	No	Yes
System Weighted R^2	0.383	
Number of Obs.	7352	

Table 7
Instrumental Variable Regression with Bank Fixed Effects

This table shows the coefficients from a regression of the log-spread on CSR and controls for borrower characteristics and loan features. The dependent variable is the natural logarithm of the all-in-drawn spread. Model 1 repeats the results of Table 5- Model 1 for reference. Model 2 includes controls for bank fixed effects. Bank fixed effects are controlled through identifying each facility's administration agent and its ultimate parent. All lenders with ten or more observations in the set are given indicators. Differences in observations are due to firms with co-lead banks. Estimation is done using the generalized method of moments. Robust standard errors are in parenthesis. ***, ** and * denote significance level at 1%, 5% and 10% levels respectively. Coefficients on Industry. loan type, loan purpose and year dummies are included in all regressions but are not reported.

	Model 1	**Model 2**
Intercept	8.5323	8.6956
	(0.3021)***	(0.3003)***
Low CSR (Predicted)	0.0939	0.0916
	(0.0237)***	(0.0235)***
Firm Size	-0.1437	-0.1489
	(0.0100)***	(0.0104)***
Market/Book	-0.0320	-0.0422
	(0.0140)**	(0.0140)***
Debt/Equity	0.1795	0.1725
	(0.0128)***	(0.0120)***
Secured (Fitted)	0.6474	0.6389
	(0.0283)***	(0.0282)***
EBIT	-1.2216	-1.2572
	(0.1403)***	(0.1386)***
Z Score	7.8183	8.2558
	(3.2683)**	(3.2052)**
Bond Rating	-0.0834	-0.0960
	(0.0268)***	(0.0274)***
Inst. Shareholders	-0.1060	-0.1004
	(0.0127)***	(0.0128)***
Inst. Concentration	0.2007	0.1976
	(0.0451)***	(0.0455)***
Syndicate	-0.0284	-0.0547
	(0.0748)	(0.0813)
LIBOR	-0.0309	-0.0265
	(0.0170)*	(0.0169)
Controls		
Industry	Yes	Yes
Loan Type and Purpose	Yes	Yes
Year	Yes	Yes
Adjusted R^2	0.679	0.694
Number of Obs.	4644	4454

Table 8
Spread Differences using Matched Firms

Differences in log-spread are measured by matching firms using Mahalanobis metric matching. In Model 1, Low CSR=1 is the treatment and Low CSR=0 is the control. In Model 2, firms with KLD>7 is the treatment and firms with between 3 and 6 is the control. In Model 3, firms in the top 10% (excluding KLD 8 or more) is the treatment and firms in the bottom 10% is the control. Mahalanobis distance is measured between M/B, size and propensity score for each firm. The propensity score is calculated using all industry, firm level, loan and year controls. The table displays the mean and standard deviation for each variable. The p-value of the non-parametric Wilcoxon rank sum test measures the difference between the samples.

		Model 1	**p-val.**	**Model 2**	**p-val**	**Model 3**	**p-val**
Log Spread	C'trl	4.3544 (0.912)	<.0001	3.5743 (0.824)	0.2816	4.1087 (0.911)	0.0005
	Treat	4.4498 (0.873)		3.8702 (1.212)		3.8839 (0.836)	
KLD Score	C'trl	1.3316 (1.794)	<.0001	5.4138 (0.501)	<.0001	-4.96 (1.190)	<.0001
	Treat	-2.292 (1.609)		8.4483 (0.736)		3.9276 (1.056)	
Firm Size	C'trl	22.037 (1.448)	0.692	22.484 (1.676)	0.162	23.053 (1.179)	0.7162
	Treat	22.022 (1.471)		23.123 (1.760)		23.086 (1.250)	
Market/Book	C'trl	1.7447 (0.896)	0.438	2.7263 (1.303)	0.6504	1.609 (0.747)	0.3413
	Treat	1.7267 (0.861)		2.5868 (1.011)		1.661 (0.744)	
Debt/Equity	C'trl	0.528 (0.815)	0.495	0.3016 (0.988)	0.9069	0.5814 (0.759)	0.1271
	Treat	0.5139 (0.749)		0.3268 (0.592)		0.4966 (0.759)	
Secured (Fitted)	C'trl	0.4066 (0.491)	0.775	0.2069 (0.412)	0.758	0.252 (0.435)	0.1937
	Treat	0.4103 (0.492)		0.2414 (0.436)		0.2118 (0.409)	
EBIT	C'trl	0.0833 (0.084)	0.576	0.154 (0.094)	0.6768	0.076 (0.079)	0.3727
	Treat	0.0846 (0.082)		0.1437 (0.094)		0.0811 (0.075)	
Z Score	C'trl	0.0085 (0.004)	0.799	0.0063 (0.004)	0.4905	0.0089 (0.004)	0.9311
	Treat	0.0086 (0.004)		0.007 (0.004)		0.009 (0.003)	
Bond Rating	C'trl	0.7515 (0.432)	0.439	0.8276 (0.384)	0.7226	0.8954 (0.306)	0.5384
	Treat	0.7497 (0.433)		0.8621 (0.351)		0.9088 (0.288)	
Inst. Shareholders	C'trl	4.9847 (1.115)	0.785	5.6598 (0.992)	0.0769	5.1945 (1.271)	0.672
	Treat	4.9769 (1.053)		6.0907 (0.821)		5.2343 (1.293)	
Inst. Concentration	C'trl	0.5344 (0.287)	0.684	0.534 (0.187)	0.1588	0.489 (0.280)	0.5922
	Treat	0.5313 (0.287)		0.5941 (0.129)		0.4999 (0.276)	
Syndicate	C'trl	0.9807 (0.138)	0.843	1 (0.000)	1	0.9759 (0.154)	0.6138
	Treat	0.98 (0.140)		1 (0.000)		0.9812 (0.136)	
LIBOR	C'trl	3.7093 (1.823)	0.839	4.5157 (1.773)	0.2819	4.057 (1.826)	0.8352
	Treat	3.6995 (1.792)		3.9939 (1.883)		4.029 (1.850)	
Controls							
Industry		Yes		Yes		Yes	
Loan Type and Purpose		Yes		Yes		Yes	
Year		Yes		Yes		Yes	
Number of Pairs		2851		29		373	