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Social responsibility and corporate borrowing

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ABSTRACT

We study the impact of social capital, measured by corporate social responsibility (CSR) performance, on corporate borrowing. Using a sample of 120,204 bank loan applications of China's listed firms, we find that an increase in CSR performance increases the loan amounts of approved loans, although it does not alter the likelihood of loan approval. Using aggregate loans at the firm level, we show that CSR performance positively impacts firms' long-term borrowing from banks but does not affect their short-term borrowing. The economic magnitude of the positive effect is large at both the loan and firm levels. We attribute this positive relationship to reduced information asymmetry and improved risk mitigation. Surprisingly, we find that banks do not discipline their borrowers' CSR investments through the lending relationship. Specifically, when borrowers exhibit high CSR performance and borrow from banks with high CSR performance, further increases in CSR no longer correlate with larger loan amounts. Our findings suggest that China's state-led green credit policies should be more market-oriented.

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Corporate social responsibility (CSR); social capital; loan amount; corporate borrowing; information asymmetry; firm risk

1. Introduction

China emits 27% of global carbon dioxide and a third of the world's greenhouse gases. Without its successful transition to a low-carbon economy, it is not plausible that global climate goals will be achieved.[1] One of the greatest efforts being made by the Chinese government to achieve China's transition is the introduction of 'green credit policies,' which encourage banks to lend more to climate-friendly projects and less to highly polluting ones, promote investments in intangible social capital measured by either corporate social responsibility (CSR) or environmental, social, and governance (ESG) scores, and strengthen both information disclosure on CSR or ESG scores and interactions with stakeholders.[2]

In response to these credit policies, China's green loans have grown steadily, outpacing overall corporate borrowing in recent years, as shown in Figure 1.[3] The state-led credit initiatives have benefited the firms and industries targeted by the policy makers. However, it is not yet clear whether the state-led credit campaign will create a positive spillover effect of CSR on overall corporate borrowing (Lins, Servaes, and Tamayo 2017), and have the desired effect of creating a virtuous market-based circle of highly socially responsible banks lending to highly socially responsible firms and subsequently encouraging firms to increase their investments in social capital (Houston and Shan 2022). Therefore, in this paper, we explore the effect of social responsibility on corporate borrowing and the interplay of these two factors in China.

Superior CSR performance can alleviate information asymmetry issues like adverse selection and moral hazard, thereby facilitating corporate borrowing. A firm that demonstrates strong CSR credentials, by disclosing its commitment to sustainability and ethical governance, enhances transparency. This transparency allows lenders to more accurately evaluate and mitigate the firm's risk before extending a loan (Albuquerque, Koskinen, and

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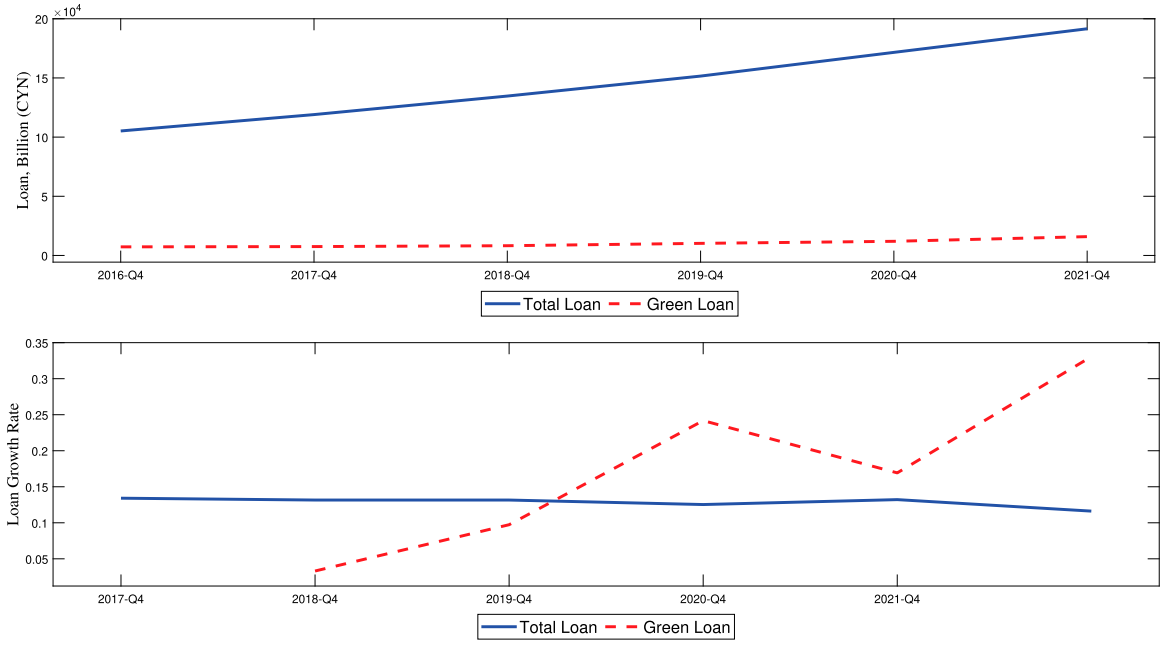

Figure 1. Bank loan and green loan in China. We obtain bank loan and green loan issuance data from the CEIC China Premium Database.

Zhang 2019; Bénabou and Tirole 2010; B. Cheng, Ioannou, and Serafeim 2014; Lee and Faff 2009; Lins, Servaes, and Tamayo 2017; Spence 1978). Moreover, commitment to CSR principles can diminish moral hazard-the propensity of a firm to adopt riskier behaviors post loan approval-by signaling a long-term orientation and ethical conduct (Bénabou and Tirole 2010; Eccles, Ioannou, and Serafeim 2014; Jensen and Meckling 1976; Masulis and Reza 2015). This commitment fosters trust between lenders and borrowers, thereby improving the chances of securing larger loans. Therefore, superior CSR performance leads firms to borrow more under conditions of significant information asymmetry than they otherwise would, particularly when the benefits derived from CSR investments outweigh their costs (Goss and Roberts 2011).

We conduct our analysis in three steps. First, we focus on the loan level. Using a sample of 120,204 bank loan applications of China's listed companies, we regress a dummy indicating whether a loan is approved and the amount of the approved loan onto the lagged CSR score for a firm. We account for firm characteristics, loan characteristics, and fixed effects. We include bank-year fixed effects, which allows us to compare quantities of interest on loans approved for firms with different CSR scores from the *same* bank in the *same* year. We find that the CSR score has no impact on the loan approval rate but a positive impact on the loan amounts of approved loans. Our results imply that superior CSR performance leads to an increase in the loan amount but does not influence the likelihood of loan approval. The economic magnitude of the effect is large. If a firm's CSR performance increases by about one standard deviation, it can borrow an additional RMB 8.26 million on every approved loan, which is about 6% of the average loan amount. The sample CSR score is negatively skewed, indicating substantial room for firms to improve their CSR performance via investing and borrow more.

Interestingly, we find that if a loan for a high-CSR firm is approved by a high-CSR bank, the positive relationship between loan size and CSR score reverses. Specifically, with all else held equal, the loan amount declines with a firm's CSR score when a bank's CSR score is high. Furthermore, we follow Houston and Shan (2022) in examining the impact of banks on the evolution of the firms' social responsibility performance by regressing the change in the firms' CSR score on the ex-ante difference between the bank's and the firm's CSR scores. We find that, in contrast with the literature using loan data from the United States (US), high-CSR banks in China are not likely to grant loans to high-CSR firms, and hence there is no positive influence on firms' subsequent social

responsibility. Our finding has insightful implications for policy making. The large-scale state-led credit policies seemingly fail to achieve a positive feedback loop effect, whereby banks use their lending relationship and their concerns for social responsibility to discipline firms' investments and socially responsible performance.

Our results show robustness against endogeneity in the model specification. We validate our single equation model using three methods: simultaneous estimation, Heckman two-stage estimation, and a subsample of approved loans. All approaches prove robust when instrumenting the CSR score with industry-average CSR scores. Furthermore, using Bloomberg's ESG score as an alternative measure of social responsibility, our loan-level analysis consistently shows a positive relationship between a firm's social responsibility and loan amount.[4]

Second, we undertake our analysis at the firm level using two aggregate data sets. The first data set incorporates the aggregate approved loans out of 120,204 bank loan applications. We use this aggregate loan data set in our initial analysis. However, as it is small and limits our analysis, we turn to the second data set, which is aggregated from firm financial reports. We find that a firm's superior CSR performance does not lead to an increase in corporate borrowing from banks, whereas firm size, profitability, risk, and capital structure are important determinants. This finding contrasts with evidence documented in the US and other Western developed countries (Albuquerque, Koskinen, and Zhang 2019; Lins, Servaes, and Tamayo 2017). When we split loans into short-term loans with a maturity of 1 year or less and long-term loans with a maturity greater than 1 year, we find that a firm's CSR performance is positively and significantly associated with long-term corporate borrowing but not with short-term corporate borrowing. Intuitively, CSR investment, which focuses on sustainable and long-term growth strategies, signals a firm's commitment to mitigating misaligned incentives and reducing information asymmetry after loan approval (Bénabou and Tirole 2010; Eccles, Ioannou, and Serafeim 2014; Jensen and Meckling 1976). Thus, high CSR performance effectively alleviates moral hazard for long-term debt contracts. In addition, moral hazard is less severe for short-term than for long-term debt contracts (Diamond 1991). As a result, the positive relationship is significant for long-term corporate borrowing but insignificant for short-term borrowing. In China, short-term corporate borrowing dominates long-term borrowing, with the ratio of short-term corporate borrowing to total corporate borrowing at about 74%; this amplifies the effect of the insignificant results for short-term corporate borrowing and results in the relationship with CSR performance being insignificant for the full sample of corporate borrowing.

Third, we explore the economic mechanisms underlying the positive link between CSR performance and corporate borrowing. We demonstrate that social responsibility can significantly reduce information asymmetry and firm risk. Specifically, using analyst accuracy and R&D as measures of information asymmetry, and distance-to-default (DD) and Oscore as risk indicators, our findings reveal that high-CSR firms are better able to alleviate banks' concerns about adverse selection and risk, thus securing more substantial borrowing. Furthermore, our analysis shows that firms with high CSR scores obtain more long-term financing from banks compared to those with low scores, a pattern not observed with short-term funding. This suggests that superior CSR performance also helps to reduce moral hazard post-loan approval. Overall, the dynamic between CSR performance and corporate borrowing hinges on the trade-off between the costs and benefits of CSR investments. In our sample, banks are more inclined to lend to high-quality firms that invest heavily in CSR, and apply less stringent penalties for overinvestment to lower-quality firms.

Our paper is closely related to a large body of literature on CSR performance and corporate borrowing (Albuquerque, Koskinen, and Zhang 2019; B. Cheng, Ioannou, and Serafeim 2014; Cheung, Tan, and Wang 2020; Goss and Roberts 2011; Lins, Servaes, and Tamayo 2017; Su and Lu 2023). Houston and Shan (2022) document that high-CSR firms are high-value, low-risk, and strongly resilient to negative market shocks and that they have low financing costs and sustainable lending relationship with banks in Western developed countries. We document a positive impact of CSR performance on corporate borrowing from banks at the loan level, and at the firm level only for long-maturity bank loans in China. We present two additional findings. First, we demonstrate that high-CSR banks do not lend to high-CSR firms, which weakens the effectiveness of China's extensive credit policies. Our findings suggest that state-led policies should be designed to become market-led such that they enable the production of a positive feedback loop through the interplay between CSR investment and corporate borrowing, similar to the results observed in the US (Houston and Shan 2022). Second, we find that the positive

relationship between CSR performance and corporate borrowing from banks is caused by the fact that CSR can align the interests of lenders and borrowers in the long run, rather than being due to loan pricing.[5]

In addition, our paper contributes to the extensive literature on loan contracts in terms of interest alignment between lenders and borrowers, particularly the literature focusing on incentives and information asymmetry (Chod and Lyandres 2021; Diamond 1991; Hasan et al. 2023; Haugen and Senbet 1979; Leland and Pyle 1977; Ranaldo and Somogyi 2021). Non-financial information, such as social responsibility performance, can reduce incentives and weaken information asymmetry, aligning the interests of lenders and borrowers, especially in the long term. As a result, social responsibility proxied by CSR or ESG scores is a valuable social capital or intangible good that helps build trust in the lending relationship, consistent with Lins, Servaes, and Tamayo (2017) and Albuquerque, Koskinen, and Zhang (2019).

The remainder of the paper proceeds as follows. We provide the data sources and data descriptions in Section 2. We present the main empirical results at the loan and firm levels in Sections 3 and 4, respectively. In Section 5, we discuss the economic mechanism. We conclude the paper in Section 6.

2. Sample and summary statistics

2.1. Data sources and variable construction

We collect CSR data from the Hexun Social Responsibility Report (Hexun CSR) for Listed Companies, which includes non-financial firms and banks, covering the years 2012 to 2021. It began providing CSR scores and ranking data for all listed companies in China in 2010. One major advantage of using Hexun CSR rating data is that it covers all listed companies, which reduces selection bias in our analysis. The measure is based on firms' annual CSR reports and annual reports published by the Shanghai Stock Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE).[6] In addition to these requirements for certain companies, an increasing number of companies voluntarily issue CSR reports. Hexun also evaluates the CSR activities of other companies based on their annual reports and other proprietary information. In addition, we use an alternative measure of CSR obtained from Bloomberg. Our results are robust to the use of this alternative measure (Shown on Appendix A.2).

Hexun CSR evaluates firms' social responsibility in five areas: shareholder responsibility; employee responsibility; supplier, customer, and consumer responsibility; environmental responsibility; and social responsibility. They report the scores of each listed company on each sub-indicator and the summed scores. The highest summed score is 100, whereas the lowest summed score may be negative (negative scores exist for some sub-scales).

We obtain the bank loan applications submitted by China's listed companies from the China Stock Market and Accounting Research (CSMAR) database. These loan data are similar to the loan contract data from the Thomson Reuters LPC Dealscan database (Dealscan) except that in Dealscan, each loan has been approved, whereas CSMAR also includes loan applications that are denied. We use *Approval* to indicate when a loan application is approved. Similar to Dealscan, each loan record in the CSMAR loan database details the borrower and lender, along with loan characteristics. The loan characteristics are the announcement date of the loan application, the loan amount (*LoanAmount*), the loan term (*Maturity*), the collateral being pledged (*Collateral*), and the borrower's stock ID. Unfortunately, loan rates are available for less than 1% of loan applications. Therefore, our analysis focuses on loan amount rather than loan pricing. The final sample of bank loans includes 120,204 loan application observations for 4,067 listed companies in 31 provinces over the 10-year period from 2012 to 2021. On average, firms take three loans during our sample period. Although this may seem like a small sample size compared with loan data in Dealscan for the US market, it is the most comprehensive publicly available bank loan data set for Chinese firms.

Using stock ID, we match firms (borrowers) to the CSMAR database, from which we obtain firm characteristics such as total assets (*Size*), the financial leverage ratio (*Leverage*), the return on assets (*ROA*), Tobin's Q (*TobinQ*), the proportion of fixed assets to total assets (*Tangibility*), years since the establishment of the firm (*Age*), and the growth rate of firm income relative to the previous year (*IncomeGrowth*).

To account for the firm's credit risk, we follow an iterative procedure outlined by Bharath and Shumway (2008) and compute the firm's DD measure. We use the DD measure as a proxy for credit risk in

Table 1. Summary statistics.

Variable	mean	sd	min	p25	p50	p75	max
Panel A. CSR							
CSR	23.97	16.15	−18.45	15.90	21.44	26.83	90.01
ESG_Bloomberg	21.17	7.25	5.79	16.53	20.66	23.97	59.92
Panel B. Loan Characteristic							
Loan Amount	18.71	1.52	6.91	17.73	18.52	19.52	28.73
Approval	0.03	0.18	0	0	0	0	1
Maturity	1.57	1.53	0.50	1	1	1	10
Collateral	0.10	0.30	0	0	0	0	1
Panel C. Aggregate Loan Characteristic							
Loan	19.58	1.64	14.51	18.42	19.52	20.58	24.69
LT Loan	19.84	1.53	15.42	18.83	19.67	20.78	24.69
ST Loan	18.66	1.50	13.82	17.73	18.60	19.58	23.92
Panel D. Firm Characteristic							
Size	22.83	1.26	17.88	21.93	22.74	23.68	28.42
ROA	0.03	0.06	−0.27	0.01	0.03	0.05	0.16
Leverage	0.53	0.19	0.11	0.39	0.54	0.67	0.92
Tobin Q	1.69	0.88	0.86	1.12	1.40	1.91	5.80
Tangibility	0.92	0.10	0.52	0.90	0.95	0.98	1
DD	−1.95	8.62	−28.58	−1.86	1.97	2.54	3.56
Age	20.68	5.77	3	17	20	24	66
IncomeGrowth	13.89	24.01	−26.06	−1.46	11.28	26.34	70.28
Total loan growth rate	0.14	0.96	−19.97	−0.16	0.07	0.39	21.56
LT loan growth rate	0.38	7.05	−22.77	−0.23	0	0.39	24.02
ST loan growth rate	0.14	4.04	−24.02	−0.23	0.06	0.45	23.51
Total loan	20.03	2.15	0	18.78	20.10	21.38	26.83
LT loan	18.52	4.56	0	18.22	19.47	20.51	25.84
ST loan	12.32	9.29	0	0	17.55	19.62	26.52

Note: This table presents descriptive statistics for the main variables. The sample period is from 2012 to 2021. All variables are winsorized at the 1st and 99th percentiles.

our analysis because loan ratings and firm credit ratings are not available. The detailed computation procedure for DD can be found in the Appendix A.8.

The variable definitions is provided in the Appendix A.1 and the summary statistics can be found in Table 1. To mitigate concerns that our results may be driven by outliers, we winsorize all variables at the 1st and 99th percentiles.[7]

2.2. Summary statistics

We report the summary statistics regarding CSR scores in Panel A of Table 1. The mean CSR score is 23.97, with a large standard deviation of 16.15. The CSR score is negatively skewed, with the 75th percentile being 26.83 and the median being 21.44. This suggests that the CSR scores of listed companies are generally low and subject to substantial variation. We also examine social responsibility as reflected in the alternative ESG measure obtained from Bloomberg. We find that the mean and skewness of ESG scores are similar to those of the CSR scores.

We provide the loan-level statistics in Panel B of Table 1. On average, the log loan amount is 18.71, equivalent to RMB 134 million for loan application. The loan size is large because listed firms are generally more mature and larger than unlisted firms. The approval rate is strikingly low, with lenders rejecting 97% of loan applications. The maturity distribution is skewed right, with an average maturity period of about 1.57 years. Collateral borrowing is relatively low, as only 10% of firms pledge collateral when applying for a loan.

We study the impact of CSR on corporate borrowing from banks at the firm level. We aggregate the approved loans to the firm level and provide the summary statistics of a small sample of firm loans in Panel C, Table 1. The aggregated firm-loan-level data sample is relatively small. The logarithm of a firm's total loan outstanding is 20, which is equivalent to RMB 485 million. In addition, we obtain the firm loans from the firms' balance sheets, and we provide the summary statistics in Panel D, Table 1. We can compute the loan growth rate for the balance-sheet loans. The logarithm of a firm's total loans outstanding on the balance sheet is also 20 and

its growth rate is 14% per year. The magnitude and high growth rate of bank loans are consistent with the notion that formal financing plays a key role in economic growth in China (Ayyagari, Demirgüç-Kunt, and Maksimovic 2010; Degryse, Lu, and Ongena 2016; Ding et al. 2023). In particular, the distributions of total loans, long-term loans, and short-term loans outstanding from the aggregate loan sample and from the balance-sheet loan sample are similar.[8]

Panel D in Table 1 reports other firm characteristics. The average log total firm asset (*Size*) is 22.83 (RMB 822 million) and the average *ROA* is 0.03. *Leverage*, *TobinQ*, *Tangibility*, *Age* and *IncomeGrowth* are 0.53, 1.69, 0.92, 20.68, and 13.89, respectively. The mean and median of the *DD* are −1.95 and 1.97, respectively, with a maximum of 3.56, which suggests a low corporate default risk. This is consistent with the DD computed in Xu et al. (2022).

3. Empirical findings

3.1. Corporate CSR and loan approval

We first explore whether a firm's CSR performance could increase the approval likelihood of a loan application using the following specification:

$$Approval_{i,j,b,t} = \alpha + \gamma \cdot CSR_{j,t-1} + X'_{t-1} \cdot \beta + \zeta_j + \lambda_{b,t} + \varepsilon_t \tag{1}$$

where $Approval_{i,k,t}$ is a dummy that equals one if loan i from bank b taken by firm j is approved in year t, and zero otherwise. $CSR_{j,t-1}$ is firm j's one-year lagged CSR score representing the degree of social responsibility. X_{t-1} is a vector that accounts for the lagged firm characteristics and the loan characteristics. The lagged firm characteristics include *Size*, *ROA*, *Leverage*, *TobinQ*, *DD*, *Tangibility*, *Age*, and *IncomeGrowth*. The loan characteristics include *LoanAmount*, *Maturity*, and *Collateral*.

We control for ζ_j firm fixed effects to account for time-invariant, firm-specific factors. Importantly, we include $\lambda_{b,t}$ bank-year fixed effects to address time-varying factors like CSR preferences, risk aversion, and monitoring skills on the supply side, that affect loan approvals across banks. As argued by Coimbra and Rey (2017), these bank supply factors may interact with demand-side shocks. Incorporating bank-year fixed effects helps ensure that variations in loan amounts reflect the characteristics of the firms and loans, rather than differences between banks. This approach reliably attributes differences in loan amounts to observed firm variables instead of unobserved variations between banks. Additionally, China's green credit initiatives, which mandate financial institutions to support 'key industries' in sustainability efforts, can influence bank lending preferences. By applying bank-year fixed effects, we absorb such time-varying preferences, enabling a precise comparison among firms obtaining loans from the *same bank* within the *same year*.

A challenging task in our specification is that we cannot control for maturity measured in years. The main reason is the low rate of loan approvals in our loan-level data set.[9] Only 3% of loan applications are approved in our sample. Among the approved loans, 40% do not contain information about maturity. When we control for maturity measured in years, technically, it is equivalent to controlling for loan fixed effects. We observe that more than 73% of loan applications and more than 61% of approved loans have a maturity greater than one year and that one year is the conventional cutoff for categorizing short-term loans (of 1 year or less) and long-term loans (greater than 1 year). We define and use a dummy that equals 1 if maturity is greater than 1 year to mitigate this issue and to account for maturity. We abuse the notation and call this dummy Maturity as above.

We report the results in Table 2. We find that a loan application is unlikely to be approved even though a firm's CSR performance is high. Although the coefficients of *CSR* in the univariate regressions in Columns (1) and (2) are significant, the significance of *CSR* performance is completely absorbed by firm/loan characteristics and firm fixed effects, as observed in Columns (3) and (4). Therefore, CSR performance does not necessarily raise the likelihood of obtaining a bank loan.

Examining the controls in Table 2, both loan and firm characteristics play a crucial role in predicting the likelihood of loan approval, especially when firm fixed effects are not taken into account. In Column (3) without

Table 2. CSR performance and loan approval.

	Loan Approval			
	(1)	(2)	(3)	(4)
CSR	0.004***	−0.002***	0.001	−0.002
	(6.19)	(−3.26)	(0.58)	(−1.27)
Size			0.007***	0.003
			(7.54)	(0.42)
ROA			0.031**	−0.022
			(2.11)	(−0.75)
Leverage			0.001	0.020
			(0.27)	(0.96)
Tobin Q			−0.000	−0.000
			(−0.47)	(−0.09)
DD			−0.001***	0.000
			(−9.29)	(0.48)
Tangibility			−0.024***	−0.047
			(−3.40)	(−1.13)
Age			0.001***	
			(4.77)	
IncomeGrowth			0.000***	−0.000
			(7.60)	(−0.56)
Loan Amount			−0.005***	−0.004***
			(−10)	(−3.50)
Maturity			−0.018***	−0.014**
			(−14.30)	(−2.95)
Collateral			0.026***	0.006
			(12.13)	(1.21)
Constant	0.034***	0.034***	−0.012	0.089
	(58.48)	(73.76)	(−0.56)	(0.53)
Observations	84,543	84,433	80,131	80,019
R-squared	0.15	0.48	0.17	0.49
Firm FE	NO	YES	NO	YES
Bank∗Year FE	YES	YES	YES	YES

This table reports the impact of a firm's CSR performance on the likelihood of a loan application being approved. The dependent variable is the dummy that is one when the loan application is approved and zero otherwise. The key independent variable is the one-year lagged standardized CSR score. Control variables are firm and loan characteristics. The sample period spans from 2012 to 2021. All variables are winsorized at the 1st and 99th percentiles. We cluster standard errors at the loan level. Note: *T*-stats are reported in parentheses. *, ** and *** respectively indicates 10%, 5% and 1% significance level.

firm fixed effects, firms that are larger, more profitable, less risky (with a higher DD), with fewer fixed investments, with a longer time since establishment, and with higher income growth rate are more likely to have their loan applications approved by the *same* bank than their counterpart firms.

However, the impact of firm characteristics on loan approvals diminishes when firm fixed effects are included, whereas loan characteristics such as loan size and maturity continue to have an impact. Specifically, in Column (4), we find that firms are more likely to have their loan applications approved in the case of small loans with short maturities, as banks face lower loan risk exposure and less uncertainty arising from information asymmetry than is the case for large loans and long maturities.[10]

3.2. Corporate CSR and loan amount

Now, we examine whether a firm's CSR performance helps it obtain a larger loan than a low-CSR firm, conditional on the firm's loan application being approved. Our specification is as follows:

$$LoanAmount_{i,j,b,t} = \alpha + \gamma \cdot CSR_{j,t-1} \cdot Approval_{i,j,b,t} + X'_{t-1} \cdot \beta + \zeta_j + \lambda_{b,t} + \varepsilon_t \quad (2)$$

where $LoanAmount_{i,j,b,t}$ is the logarithm of loan i's outstanding taken by firm j from bank b in year t. We are interested in the joint effect captured by the coefficient of $CSR_{j,t-1} \cdot Approval_{i,j,b,t}$. The coefficient estimate tells us how much the loan amount increases as a firm's CSR score increases once a loan application is approved. When accounting for the bank-year fixed effects, we compare loans taken by two firms with different CSR scores from the *same bank* in the *same year*.

We emphasize that social capital is a crucial non-rate factor in loan determination, influenced by market imperfections. For example, Huang, Jiang, and Xiao (2023) show that technological advancements can boost bank deposits without affecting interest rates, while Buchak et al. (2018) observe notable impacts of Fintech on residential loan markets. Ideally, our model would control for loan rates to better assess CSR's impact on loan amounts; however, such data are not available in China.

We report the results in Table 3. The coefficient estimates for $CSR \cdot Approval$ are positive and significant in all specifications in Columns (1)–(4), suggesting that a firm with higher CSR score receives a larger loan amount relative to another firm with a lower CSR score when they accept a loan from the *same bank* in the *same year*.[11] Specifically, the coefficient of interest under the most stringent specification in Column (4) is 6% at the 5% significance level. The magnitude and statistical significance are larger in the other three specifications than in

Table 3. CSR performance and loan amount.

	Loan Amount			
	(1)	(2)	(3)	(4)
CSR · Approval	0.18***	0.06**	0.13***	0.06**
	(6.11)	(2.00)	(4.34)	(2.14)
CSR	0.15***	0.01**	0.01*	−0.01
	(29.36)	(2.36)	(1.78)	(−1.43)
Approval	−0.17***	−0.22***	−0.27***	−0.23***
	(−6.10)	(−7.51)	(−10.03)	(−7.39)
Size			0.42***	0.22***
			(61.95)	(14.07)
ROA			0.10	0.26***
			(0.99)	(2.30)
Leverage			−0.25***	−0.06
			(−7.20)	(−1.18)
Tobin Q			0.08***	0.04***
			(12.26)	(5.54)
DD			0.01***	0.01***
			(6.36)	(4.73)
Tangibility			1.26***	0.23***
			(25.34)	(2.63)
Age			−0.01***	
			(−16.11)	
IncomeGrowth			−0.00**	0.00
			(−2.32)	(1.14)
Maturity			0.11***	0.05***
			(12.19)	(4.82)
Collateral			0.25***	0.30***
			(17.59)	(18.94)
Constant	18.57***	18.58***	8.08***	13.27***
	(4, 230.10)	(5, 206.67)	(50.76)	(34.37)
Observations	84,255	84,143	80,131	80,019
R-squared	0.18	0.49	0.26	0.49
Firm FE	NO	YES	NO	YES
Bank∗Year FE	YES	YES	YES	YES

This table reports the impact of a firm's CSR performance on loan amount when a loan is approved. The independent variable is the product of the standardized one-year lagged CSR score and the dummy that indicates that a loan is approved or not. The dependent variable is the logarithm of one plus loan amount. Control variables are firm and loan characteristics. The sample period spans from 2012 to 2021. All variables are winsorized at the 1st and 99th percentiles. We cluster standard errors at the loan level. Note: *T*-stats are reported in parentheses. *, ** and *** respectively indicates 10%, 5% and 1% significance level.

this stringent specification. Economically, if a firm raises its CSR score by one standard deviation, equal to an increase of about 16, its loan amount increases by 6%. In absolute terms, the rise is large and equivalent to 0.32% ($= 0.06/18.71$) of an average (log) loan size, which translates to additional borrowing of RMB 8.26 ($e^{18.71} \times (e^{0.06} - 1)$) million from a bank if the firm increases its CSR score by about 16. The averaged CSR score for firms in our sample is low and left-skewed, with a mean of 23.97 and a median of 21.44, indicating the substantial potential for firms to increase their borrowing by investing in and improving their social responsibility.

Interestingly, regardless of whether a loan application is approved, the CSR score positively affects the loan amount, as the coefficient of the CSR score in Columns (1)–(3) is statistically significant when we drop either firm fixed effects or firm/loan characteristics. However, the CSR score does not affect the loan amount positively in Column (4), where these factors are controlled, as the coefficient becomes insignificant and negligible.

Both the firm and loan characteristics are important determinants of the loan amount if a loan application is approved. The coefficients of these variables in Columns (3)–(4) have the expected signs and are consistent with the literature (Bradley and Roberts 2015; Chava, Livdan, and Purnanandam 2009). In terms of firm characteristics, firms receive a higher loan amount conditional on loan approval if they are larger, more profitable, less risky (as indicated by a higher DD), and have a higher Tobin Q than their counterparts. In terms of loan characteristics, firms can take out a larger loan if loan maturity is longer rather than shorter or if they pledge collateral.

In summary, these findings present initial evidence that a firm's CSR performance does not determine a bank's loan approval decision. However, superior CSR performance is rewarded once a loan is granted. High-CSR firms will be offered a larger loan relative to low-CSR firms when they borrow from the same bank. This suggests that CSR is valuable and informative in loan origination for banks.

3.3. Model specificaiton and endogeneity

Our study's specification faces challenges due to endogeneity. For example, Albuquerque, Koskinen, and Zhang (2019) suggest that CSR, being an intangible good, can enhance product differentiation and profit margins, potentially easing access to finance. Conversely, Hong, Kubik, and Scheinkman (2012) argue that less financially constrained firms, with better access to finance, may invest more in CSR and thereby improve their CSR performance compared to more constrained firms. In both scenarios, the CSR score could correlate with the error term, resulting in biased coefficients for $CSR \cdot Approval$. Additionally, the inclusion of *Approval* as an independent variable in our single equation model raises concerns about its endogeneity when *LoanAmount* is also a dependent variable in loan decisions. This could introduce bias in estimating the coefficient of $CSR \cdot Approval$. In this section, we explore three approaches to validate our single equation specification.

We have adopted the industry-average CSR score as a new instrumental variable for firm CSR, following the methodology outlined by B. Cheng, Ioannou, and Serafeim (2014) and El Ghoul et al. (2011). This choice is relevant because a firm's CSR investment strategy is strongly influenced by industry peers. For instance, shifts toward long-term, green, and innovative strategies within an industry may compel companies to adopt similar practices and invest in comparable technologies to maintain a competitive edge and appeal to socially responsible consumers. Additionally, the industry-average CSR score is exogenous to the size of a firm's loan, as banks primarily assess a firm's specific financial and CSR status, rather than the broader industry context.

In the first approach, we estimate a simultaneous equation system for loan approval and loan amount but using three-stage least squares (Zellner and Theil 1962), with results presented in Table 4.[12] Without an instrumental variable, Columns (1)–(2) indicate that CSR does not impact loan approval but increases the loan amount once a loan is approved. When employing an instrumental variable, Columns (3)–(5) show similar outcomes but with reduced statistical significance. Notably, the coefficient of $CSR \cdot Approval$, 6%, remains consistent in magnitude and statistically significant, aligning with findings from our previous single-equation analysis.

In the second approach, we address selection bias using the Heckman two-stage model. Initially, we use industry-average CSR as an instrumental variable (IV) to derive $\widehat{CSR}$. In the first stage of the Heckman model, we employ this exogenous variable, $\widehat{CSR}$, along with firm age, *Age*, to predict the likelihood of loan approval. We choose *Age* as an IV for loan approval because, while older firms typically secure larger loans due to their proven

Table 4. Simultaneous equation model.

	Without CSR IV		With CSR IV		
	Approval	Loan Amount	CSR	Approval	Loan Amount
CSR	0.01	−0.01*			
	(0.91)	(−1.71)			
CSR · Approval		0.06***			
		(2.76)			
IndustryCSR			0.07***		
			(17.62)		
$\widehat{CSR}$				0.51	−0.13
				(1.17)	(−1.61)
$\widehat{CSR}$· Approval					0.06*
					(1.76)
Loan Amount	1.24***			4.37*	
	(2.74)			(1.76)	
Size	−0.27***	0.23***	0.25***	−1.19*	0.27***
	(−2.59)	(15.46)	(26.44)	(−1.73)	(11.47)
ROA	−0.44**	0.33***	6.16***	−4.42	1.05**
	(−2.23)	(3.16)	(98.04)	(−1.38)	(2.16)
Leverage	0.04	−0.01	0.20***	0.11	−0.02
	(0.55)	(−0.27)	(6.01)	(0.49)	(−0.38)
Tobin Q	−0.05**	0.04***	0.02***	−0.24*	0.05***
	(−2.40)	(5.20)	(3.91)	(−1.72)	(7.68)
DD	−0.01**	0.01***	−0.00	−0.02*	0.00***
	(−2.31)	(5.15)	(−0.92)	(−1.58)	(4.09)
Tangibility	−0.21*	0.14*	−0.01	−1.07	0.23***
	(−1.76)	(1.73)	(−0.20)	(−1.60)	(3.12)
IncomeGrowth	−0.00*	0.00**	−0.00***	−0.00	0.00***
	(−1.75)	(2.34)	(−7.52)	(−1.59)	(3.58)
Maturity	−0.10***	0.07***		−0.29*	0.06***
	(−3.03)	(6.84)		(−1.82)	(6.94)
Collateral	−0.36***	0.29***		−1.36*	0.31***
	(−2.68)	(20.82)		(−1.75)	(23.48)
Constant	−16.69***	13.32***	−7.46***	−53.49*	12.17***
	(−2.70)	(12.09)	(−30.85)	(−1.74)	(10.42)
Observations	83,479	83,479	80,297	95,551	95,551
R-squared			0.64		
Firm FE	YES	YES	YES	YES	YES
Bank FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

This table presents the results of simultaneously estimates of loan approval and loan amount in a linear equation system. Columns (1) and (2) show results without the instrumental variable for CSR, while Columns (4) and (5) include it. Column (3) uses the industry average CSR score as an instrumental variable to estimate a firm's CSR. The sample period spans from 2012 to 2021. All variables are winsorized at the 1st and 99th percentiles. We cluster standard errors at the loan level. Note: *T*-stats are reported in parentheses. *, ** and *** respectively indicates 10%, 5% and 1% significance level.

stability, the impact of firm age on loan amounts is less pronounced than on approval decisions, as supported by Cowling, Liu, and Zhang (2016). Finding a suitable exogenous variable that affects loan approval but not loan amount is challenging, particularly with our loan-level data limitations. In the second stage of the Heckman model, we calculate the inverse mills ratio (*IMR*) from the first stage and then regress loan amount on *CSR · Approval*, using *IMR* as a control. We use bootstrapping techniques to mitigate potential errors from the first-stage Heckman estimation in the second-stage regression by calculating the t-values as averages from these bootstrap samples. The results, displayed with and without IV in Table 5, are consistent with our simultaneous estimation approach. Specifically, Column (2) without IV reveals that the coefficient of *CSR* is 0.11% and statistically significant, aligning with our previous single-equation analysis. The robustness of these results is further confirmed when instrumenting CSR with *IndustryCSR*. Additionally, the instrumental variable *Age* has successfully passed both the weak instrumental variable and the under-identification tests in the first-stage of Heckman model.

Table 5. Heckman selection model.

	Without CSR IV		With CSR IV		
	Approval (1)	Loan Amount (2)	CSR (3)	Approval (4)	Loan Amount (5)
CSR	0.00	0.11**			
	(−0.38)	(2.55)			
Age	0.0006***			0.0004	
	(4.47)			(1.88)	
IndustryCSR			0.07***		
			(17.25)		
$\widehat{CSR}$				0.09	8.85***
				(1.12)	(3.75)
Size	0.00***	−1.24**	0.24***	−0.02	−1.51***
	(3.95)	(−2.29)	(25.60)	(−0.86)	(−3.21)
ROA	0.02	−8.78***	6.15***	−0.53	−49.73***
	(1.58)	(−2.62)	(96.60)	(−0.96)	(−3.72)
Leverage	0.01***	−5.39***	0.21***	−0.01	−0.96***
	(2.83)	(−2.71)	(6.33)	(−0.40)	(−3.72)
Tobin Q	−0.00*	0.73***	0.01***	−0.00*	−0.31***
	(−1.94)	(2.86)	(2.96)	(−2.41)	(−3.28)
Tangibility	−0.04***	14.55***	0.02	−0.05	−4.62***
	(−5.38)	(2.73)	(0.31)	(−0.93)	(−3.65)
DD	−0.00***	0.41***	0.00	0.00	−0.04***
	(−10.21)	(2.75)	(0.19)	(−1.46)	(−3.48)
IncomeGrowth	0.00***	−0.08***	−0.00***	0.00	0.02***
	(7.06)	(−2.70)	(−7.19)	(1.54)	(3.91)
Maturity		0.06***			0.05***
		(5.91)			(5.74)
Collateral		0.31***			0.33***
		(20.52)			(23.15)
IMR		−623.25***			158.66***
		(−2.71)			(3.83)
Constant	−0.04*	520.84***	−7.40***	0.52	−63.77***
	(−1.70)	(2.78)	(−30.15)	(0.96)	(−3.24)
Observations	80,568	80,179	80,297	92,086	91,681
R-squared	0.15	0.49	0.64	0.15	0.49
Firm FE	NO	YES	YES	NO	YES
Bank∗Year FE	YES	YES	YES	YES	YES

This table reports the regression results obtained using the Heckman two-stage model. Columns (1) and (2) show results without the instrumental variable for CSR, while Columns (4) and (5) include it. Column (3) uses the industry average CSR score as an instrumental variable to estimate a firm's CSR. The sample period spans from 2012 to 2021. All variables are winsorized at the 1st and 99th percentiles. We cluster standard errors at the firm level. Note: *T*-stats are reported in parentheses. *, ** and *** respectively indicates 10%, 5% and 1% significance level.

In our final approach, we focus exclusively on approved loans, with the results presented in Table 6. Due to the smaller sample size, we have reduced the control for fixed effects. The results align with our baseline findings both with and without the IV. Specifically, the effect of *CSR* on loan amounts is consistently positive and economically significant, showing a magnitude similar to previous findings in the case without the IV.

Overall, these approaches validate our estimates from single equation models in addressing endogeniety. Specifically, the magnitudes of the coefficients for the interaction term between CSR and loan approval across the three approaches are consistent with our estimates from the single equation models in terms of both statistical significance and economic impact[13]

3.4. Bank CSR and loan amount

Houston and Shan (2022) find that a lender's attitude regarding the desirability of a borrower's ESG performance is related to its own views regarding ESG-related policies. ESG is an alternative measure of social responsibility. Bankers are concerned about their social reputation. They fear that the value of this social capital may be diminished if they conduct business with borrowers with poor ESG ratings. Houston and Shan (2022) show that banks

Table 6. CSR performance and loan amount for approved loans.

	Loan Amount			
	Without CSR IV		With CSR IV	
	(1)	(2)	(3)	(4)
CSR	0.06*	0.05		
	(1.70)	(1.32)		
$\widehat{CSR}$			1.38***	1.15**
			(3.84)	(2.27)
Size	0.26***	0.30***	−0.13	−0.05
	(5.73)	(6.55)	(−1.07)	(−0.27)
ROA	0.13	−0.35	−9.92***	−8.48**
	(0.18)	(−0.48)	(−3.47)	(−2.22)
Leverage	−0.17	−0.49**	0.53	0.19
	(−0.71)	(−1.97)	(1.46)	(0.44)
Tobin Q	−0.06	−0.01	−0.04	−0.02
	(−1.31)	(−0.17)	(−0.63)	(−0.38)
DD	−0.02***	−0.01**	0.00	−0.01
	(−4.54)	(−2.15)	(−0.59)	(−1.58)
Tangibility	1.22***	0.81**	0.58	−0.42
	(4.22)	(2.51)	(1.43)	(−0.61)
Age	0.02***	0.02***	0.01	0.01*
	(3.31)	(2.89)	(1.30)	(1.82)
IncomeGrowth	0.00**	0.00*	0.00**	0.00
	(2.56)	(1.70)	(1.99)	(0.44)
Maturity	0.29***	0.36***	0.04	0.17
	(4.91)	(6.03)	(0.39)	(1.53)
Collateral	0.64***	0.55***	0.69***	0.63***
	(8.66)	(7.38)	(7.27)	(6.61)
Constant	10.55***	10.17***		
	(9.90)	(9.34)		
Observations	2,393	2,382	2,382	2,382
R-squared	0.46	0.47		
Industry FE	NO	YES	NO	YES
Bank∗Year FE	YES	YES	YES	YES

This table reports the impact of CSR on loan amount within a sub-sample of approved loans. The sample period spans from 2012 to 2021. All variables are winsorized at the 1st and 99th percentiles. We cluster standard errors at the loan level. Note: *T*-stats are reported in parentheses. *, ** and *** respectively indicates 10%, 5% and 1% significance level.

tend to grant loans to firms with similar ESG profiles and positively influence the firms' ESG performance in US loan markets.

We demonstrate that this is not the case in China through three steps. First, we plot the relationship of a bank's CSR score and the average CSR score of firms that establish their first loans with this bank in Figure 2. Specifically, we first remove the firm-level time-series mean from the bank and firm's CSR. Secondly, we only consider the matching of borrowers and lenders with no prior lending relationships. Thirdly, we equally weight the CSR of the firms who obtained loan financing from the same bank and calculate their mean. Finally, we match the firm's mean CSR with the bank's mean CSR in the whole period. We find that the relationship is clustered in two domains, to each of which we fit a line. The coefficient of the fitted line is insignificant. This implies that there is no discernible correlation between the CSR scores of a bank and its borrowers.

Second, we use this observation to examine the direct impact of banks on the evolution of the firms' CSR performance using the following specification from Houston and Shan (2022):

$$CSR\_Chg_{j,t-1,t+1} = \alpha + \beta CSR\_Diff_{j,b,t-1} + \gamma\, Lender\_Chg_{b,t-1,t+1} + \delta CSR\_Borrower_{j,t-1} + X'_{t-1} \cdot \theta + \alpha_{industry} + \eta_t + \varepsilon_t. \quad (3)$$

where $CSR\_Chg_{j,t-1,t+1}$ is the difference between the firm's Hexun CSR scores during a two-year period, from one year prior to one year after the date at which the loan contract is signed. The ex-ante difference between the

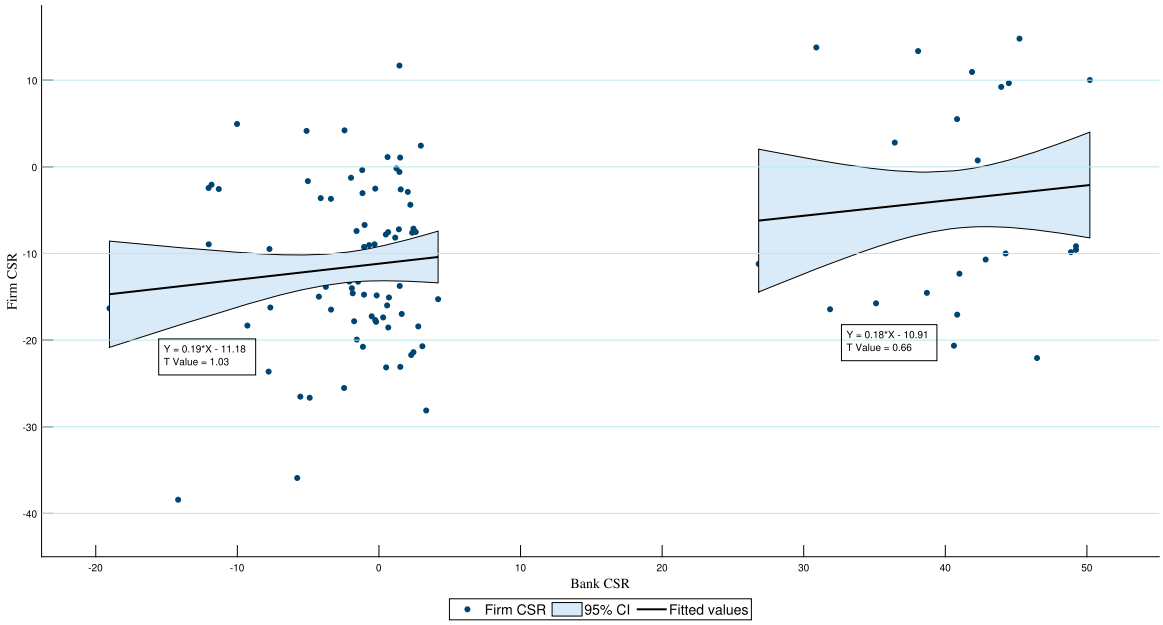

Figure 2. Distribution of the Bank and its Loan Contract's CSR Scores. This figure illustrates the CSR scores of the bank and its loan contracts. To adjust for the time-series effects, we subtract the firm-level average CSR scores observe during our sample period from both banks' and firms' CSR scores. The sample only includes banks and firms who have no prior lending relationship and are matched for the first time. For each year, we assign equal weight to the CSR scores of the firms who obtained loan financing from the bank, and calculate an aggregate bank-year level CSR score for the bank's loan contracts. Fitted linear relationship is reported in black line and the corresponding 95% confidence interval is reported using dash line.

bank's and the firm's CSR performance ($CSR\_Diff_{j,b,t-1}$) is the difference between the bank's and firm's CSR scores measured one year before the signing of the loan contract. We incorporate $Lender\_Chg_{b,t-1,t+1}$ to control for the evolution in the lender's CSR scores over the same 2-year window. In particular, the signing date of the loan is the date when the bank and the firm first establish a loan relationship. Therefore, the sample only includes firms and banks without a prior lending relationship that are matched for the first time. We control the borrower's ex-ante CSR score as in by Houston and Shan (2022) and use other controls consistent with Equation (2). $\alpha_{industry}$ and η_t denote the dummies for the industry classifications by the China Securities Regulatory Commission and year fixed effects. We cluster the standard errors at the borrower level.

We report the results in Table 7. The key coefficient of interest, the difference between the bank and firm CSR scores (i.e. *CSR_Diff*), is small and statistically insignificant in all three specifications. This suggests that the gap between the bank's and firm's CSR scores is unrelated to the evolution of the firm's CSR performance over time. In other words, banks in China do not use the lending relationship to discipline their borrowers' investments by directing them toward CSR investments.

Finally, we develop this observation further by regressing the loan amount on $CSR \cdot Approval \cdot High\_BankCSR$ in a specification similar to that of Section 3.2. *High_BankCSR* takes a value of 1 if the CSR score of bank b is greater than the median CSR score of the sample with a 1-year lag $t-1$, and 0 otherwise. We report the results in Table 8. Interestingly, we find that the coefficient of $CSR \cdot Approval \cdot High\_BankCSR$ is negative and insignificant, whereas the coefficient of $CSR \cdot Approval$ remains positive and significant. The results suggest that high-CSR firms generally obtain larger loans but that this effect becomes smaller when firms borrow from high-CSR banks. For the Chinese context, this finding rejects the existence of a positive interplay between the social responsibility of lenders and borrowers via the lending relationship, in contrast to the results found in the US (Houston and Shan 2022). Our analysis rejects a reputation mechanism in which socially responsible banks discipline a firm's investment in social capital through the lending relationship. The implication is that China's large-scale credit policies fail to achieve this ideal market-led effect.

Table 7. Evolution in corporate CSR performance and bank lending.

	CSR_Chg		
	(1)	(2)	(3)
CSR_Diff	0.03	0.03	0.06
	(0.45)	(0.50)	(0.87)
Lender_Chg	−0.09	−0.09	−0.09
	(−1.51)	(−1.46)	(−1.48)
CSR_Borrower	−0.37***	−0.39***	−0.44***
	(−4.15)	(−4.35)	(−4.61)
Size			4.02***
			(3.27)
ROA			44.38
			(1.47)
Leverage			−1.83
			(−0.33)
Tobin Q			0.42
			(0.53)
DD			0.18
			(1.61)
Tangibility			6.68
			(0.82)
Age			0.14
			(0.51)
IncomeGrowth			0.06*
			(1.91)
Loan Amount		0.17	−1.12
		(0.23)	(−1.34)
Maturity		1.96	2.51*
		(1.31)	(1.68)
Collateral		−2.26	0.34
		(−1.41)	(0.17)
Constant	8.68**	5.30	−71.68**
	(2.13)	(0.38)	(−2.48)
Observations	634	625	501
R-squared	0.30	0.31	0.35
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
Cluster	YES	YES	YES

This table presents the findings on the impact of the firms' CSR profile change on the ex-ante difference between the bank and firms' CSR performance, as outlined in Houston and Shan (2022). The CSR profile change (*CSR_Chg*) is measured as the difference between the firms' Hexun CSR scores during a two-year period, from one year before to one year after the loan contract signing date. The ex-ante difference between the bank and firms' CSR scores (*CSR_Diff*) is calculated as the difference between their respective CSR scores measured one year before the loan contract signing date. *Lender_Chg* is the bank's CSR scores over the same two-year window. *CSR_Borrower* is the firms' CSR score one year before the loan contract signing date. Control variables are firm and loan characteristics. The sample period spans from 2012 to 2019. All variables are winsorized at the 1st and 99th percentiles. We cluster standard errors at the firm level. Note: *T*-stats are reported in parentheses. *, ** and *** respectively indicates 10%, 5% and 1% significance level.

4. Corporate CSR and firm-level borrowing

We have established that a firm's CSR performance has a positive impact on corporate borrowing at the loan level. Now, we investigate whether the positive impact on corporate borrowing holds at the aggregate firm level. We use loan data obtained from firms' annual financial reports. Loans comprise both short-term loans with maturities of 1 year or less and long-term loans with maturities that exceed 1 year. Both the mean and median of the ratio of the short-term loans to the total loans are about 70%, suggesting that listed firms in China generally take short-term loans. We refer to this data set as the 'balance-sheet loan' data set and use it for the main analysis

Table 8. Firm-bank CSR and bank loan (loan level).

	Loan Amount	
	(1)	(2)
CSR · Approval · High_BankCSR	−0.18	−0.16
	(−1.05)	(−0.84)
Approval · High_BankCSR	−0.17	−0.26*
	(−1.16)	(−1.71)
CSR · High_BankCSR	0.01	−0.01
	(0.21)	(−0.18)
CSR · Approval	0.35**	0.34*
	(2.09)	(1.90)
CSR	0.01	0.02
	(0.57)	(0.50)
Approval	−0.03	0.01
	(−0.27)	(0.05)
High_BankCSR	−0.02	−0.06**
	(−1.02)	(−2.56)
Size		0.30***
		(11.90)
ROA		0.13
		(0.48)
Leverage		−0.09
		(−0.96)
Tobin Q		0.03**
		(1.97)
DD		0.01***
		(8.13)
Tangibility		0.07
		(0.46)
IncomeGrowth		0
		(−0.85)
Maturity		0.17***
		(10.77)
Collateral		0.42***
		(17.83)
Constant	18.79***	11.85***
	(991.32)	(19.06)
Observations	36,967	34,752
R-squared	0.53	0.54
Firm FE	YES	YES
Bank∗Year FE	YES	YES

This table reports the preference of high-CSR banks towards firm's CSR performance when granting a loan. The dependent variable is the interaction of the firm one-year lagged CSR score and the dummy variable *Approval* and the dummy *High_BankCSR*. *High_BankCSR* is one if a bank's CSR score is greater than the median of the sample and zero otherwise. The dependent variable is the natural logarithm of one plus max loan amount. Control variables include firm/loan characteristics. The sample period spans from 2012 to 2019. All variables are winsorized at the 1st and 99th percentiles. We cluster standard errors at the loan level. Note: *T*-stats are reported in parentheses. *, ** and *** respectively indicates 10%, 5% and 1% significance level.

at the firm level. We also undertake our analysis by loan data aggregated from a data set of individual approved loans used for the loan-level analysis.

We regress the loan growth rate and (log) loan level of a firm on its CSR score and report the results in Table 9. Column (1) provides the results for the loan growth rate and Column (2) for the loan level. The coefficients of *CSR* regressed on both the growth rate and level are insignificant. This implies that being socially responsible does not necessarily lead to an increase in total corporate borrowing for China's listed companies, whereas financial ratios are important determinants of borrowing ability.[14]

Table 9. CSR performance and balance-sheet loan.

	Total Loan		Short-term Loan		Long-term Loan	
	Loan Growth (1)	Loan (2)	Loan Growth (3)	Loan (4)	Loan Growth (5)	Loan (6)
CSR	0.01	0.00	0.00	−0.07	0.11**	0.11**
	(0.53)	(−0.47)	(0.05)	(−1.30)	(3.22)	(2.37)
Size	−0.22***	0.81***	−0.20	1.14***	−0.82***	2.27***
	(−6.89)	(23.98)	(−1.08)	(11.59)	(−5.94)	(13.58)
ROA	0.94***	0.65*	2.05**	1.15	5.26**	3.24*
	(6.26)	(2.05)	(3.28)	(0.50)	(3.17)	(2.06)
Leverage	−2.00***	2.23***	−4.20***	3.07***	−4.18**	8.22***
	(−16.92)	(8.51)	(−11.52)	(9.15)	(−3.72)	(12.61)
Tobin Q	0.05**	0.04***	0.10	0.03	0.20	0.14
	(3.88)	(3.62)	(1.45)	(0.58)	(1.41)	(1.78)
DD	−0.04***	−0.03***	−0.05***	−0.06***	−0.07*	−0.05**
	(−22.20)	(−10.52)	(−4.64)	(−4.81)	(−2.63)	(−2.93)
Tangibility	−0.27	−0.76***	0.26	−0.21	−2.14*	−7.15***
	(−1.35)	(−3.74)	−0.29	(−0.29)	(−2.49)	(−6.22)
Age	0.00					
	(0)					
IncomeGrowth	0.00***	0.00***	0.00	0.01**	0.02***	0.01***
	(13.10)	(10.06)	(1.87)	(3.85)	(6.22)	(8.37)
Constant	6.02***	1.60*	6.16	−8.19**	22.03***	−35.36***
	(7.60)	(2.23)	(1.23)	(−4.28)	(6.60)	(−9.14)
Observations	16,835	19,692	16,835	19,692	16,835	19,692
R-squared	0.24	0.86	0.12	0.57	0.11	0.65
Firm FE	YES	YES	YES	YES	YES	YES
Year∗Province FE	YES	YES	YES	YES	YES	YES

This table reports the coefficient estimates of a firm's CSR performance on loan obtained from balance sheet. The dependent variable is either loan growth rate or (log) loan level. The key independent variable is the one-year lagged CSR score. Control variables are firm characteristics. Column(1)-(2) report the estimates for total bank loan, Column (3)-(4) for short-term loan, and Column (5)-(6) for long-term loan. The sample period spans from 2012 to 2021. All variables are winsorized at the 1st and 99th percentiles. We cluster standard errors at the firm level. Note: *T*-stats are reported in parentheses. *, ** and *** respectively indicates 10%, 5% and 1% significance level.

There are interesting heterogeneities across loan maturities, which are associated with the long-term prospects targeted by CSR strategies. We divide the balance-sheet loans into long- and short-term loans and rerun the estimation for the two subgroups. The results are reported in Columns (3)–(6) of Table 9. Columns (5) and (6) show that a one-standard-deviation increase in a firm's CSR score causes both the growth rate and the level of long-term loans to rise by about 11%, which is significant at the 5% level. Conversely, the growth rate and level of short-term loans are not sensitive to the CSR score, as shown in Columns (3) and (4). The intuition is as follows. Investment in CSR reflects a firms' long-term investment strategies that involve less speculative risk taking than other strategies, which reduces the risk exposure that banks face in long-term loan contracts (Bénabou and Tirole 2010; Eccles, Ioannou, and Serafeim 2014). In addition, banks rely less on CSR, which is a substitute for monitoring, in assessing short-term loan contracts compared with long-term contracts (Holmstrom and Tirole 1997), as banks are more concerned about financial performance than CSR performance for short-term loans because they face fewer uncertainties in the short run. As a result, CSR performance has a significant impact on long-term corporate borrowing but not on short-term borrowing.

In our sample, at the firm level, the majority of balance-sheet loans are short term, as indicated by the 70% ratio of short-term loans to total bank loans. The non-significance of CSR performance on corporate borrowing at the firm level, as shown in Columns (1)–(2), is explained by the trade-off effect of the CSR score on short- and long-term loans and the fact that short-term loans dominate long-term loans.

Ideally, we would have conducted our analysis using loan data aggregated from a data set of individual approved loans. Unfortunately, CSMAR collects data on loans only if a firm voluntarily discloses the loan information, which many firms do not. Nevertheless, we aggregate the approved loans and obtain a small sample.[15] We run an unbalanced panel regression and do not control for firm fixed effects because of the small sample size.

Table 10. CSR performance and aggregate loan (firm level).

	Total Loan	Short-term Loan	Long-term Loan
	(1)	(2)	(3)
CSR	0.09	−0.02	0.13***
	(1.17)	(−0.17)	(3.57)
Size	0.70**	0.79***	0.56***
	(3.69)	(5.41)	(12.02)
ROA	−1.45	−2.57**	−1.56***
	(−0.84)	(−2.35)	(−6.43)
Leverage	−0.72	−1.22*	−0.79***
	(−1.99)	(−2.18)	(−5.29)
Tobin Q	0.07	0.05	−0.04
	(0.79)	(0.92)	(−0.63)
DD	−0.01	0.00	−0.02**
	(−0.57)	(0.26)	(−3.26)
Tangibility	1.23**	0.61	1.30***
	(3.77)	(0.50)	(4.48)
Age	0.01	−0.02	0.00
	(0.52)	(−1.23)	(0.23)
IncomeGrowth	0.00**	0.01***	0.00
	(3.06)	(3.82)	(1.06)
Constant	2.58	1.27	6.05***
	(0.60)	(0.33)	(5.74)
Observations	844	288	597
R-squared	0.49	0.53	0.54
Year∗Province FE	YES	YES	YES

This table reports the coefficient estimates of a firm's CSR score on bank loans aggregated from those approved loans. The dependent variable is (log) loan level and the key independent variable is a firm's standardized one-year lagged CSR score. Control variables are firm characteristics. The sample period spans from 2012 to 2021. All variables are winsorized at the 1st and 99th percentiles. We cluster standard errors at the firm level. Note: *T*-stats are reported in parentheses. *, ** and *** respectively indicates 10%, 5% and 1% significance level.

We cannot compute the loan growth rate due to the missing values in some years. We report the results in Table 10. We find that the results are suggestively informative and consistent with the evidence documented on the balance-sheet firm-level bank loans. Specifically, the coefficient on *CSR* regressed on long-term loans is 13% at the 1% significance level, whereas the coefficient on short-term loans is insignificant. The coefficient for total bank loans is not significant either. These results are consistent with our previous findings for balance-sheet loans.

It is plausible that the positive impact of high CSR performance on the loan amount at the loan level and on long-term corporate borrowing at the firm level is caused by loan pricing.[16] Using Dealscan loan data, Cheung, Tan, and Wang (2020) document that firms with superior CSR performance tend to benefit from low loan interest spreads in countries that prioritize egalitarianism and harmony or that have low levels of hierarchy and control. However, we show that this is not the case in China at the firm level. We examine loan interest expenses reported in financial statements, and we find that firms' CSR scores do not lead to a reduction in their interest expenses on loans.[17] Given that high-CSR firms raise more long-term funds from banks than low-CRS firms and that this does not hold for short-term funds, CSR is a unique social capital that stimulates corporate borrowing without lowering loan rates in China.

5. Economic mechanism

5.1. Information asymmetry

The literature shows that information asymmetry between lenders and borrowers plays a pivotal role in loan contracts (Bellucci et al. 2023; Haß, Vergauwe, and Zhang 2019; Sufi 2007). Compared with information-opaque

borrowers, it is easier for lending banks to accurately assess the creditworthiness of information-transparent borrowers, and to monitor them efficiently and at a lower cost once loans are granted. Kim, Park, and Wier (2012) and F. Gao, Lisic, and Zhang (2014) document that a firm's CSR engagement can signal a firm's management integrity and commitment to ethical information disclosure practices.

We use analyst accuracy and research and development (R&D) intensity to proxy information asymmetry for borrowers. These two measures are widely used in the finance literature and have intuitive economic relations with information asymmetry (Cheung, Tan, and Wang 2020; Drobetz, Grüninger, and Hirschvogl 2010; Krishnaswami, Spindt, and Subramaniam 1999; Zhong 2018). Analyst accuracy is calculated as the product of −1 times the absolute value of the forecast error scaled by the beginning stock price. Higher values indicate greater transparency than lower values. R&D intensity is defined as the ratio of R&D expenses to total sales. Bhattacharya and Ritter (1983) find that firms with substantial innovation investments tend to have high information asymmetry. A firm is considered to be information-transparent (and hence to present less severe information asymmetry) if its analyst accuracy or R&D intensity in the year before the loan contract is greater than the sample median; otherwise, it is considered information-opaque.

Using the two information asymmetry measures above, we divide our sample into loans to information-transparent borrowers and loans to information-opaque borrowers. We estimate our main specification in Section 3.2 for each of the subsamples. Table 11 reports the results for information asymmetry measured by analyst accuracy. We find that the coefficient on $CSR \cdot Approval$ is 6% and statistically significant at the 5% level for loans to information-opaque borrowers, as shown in Columns (2) and (4). For information-transparent borrowers, as shown in Columns (1) and (3), the coefficient is insignificant. The results suggest that superior CSR performance mitigates the information asymmetry of borrowers when lenders decide on loan amounts.

5.2. Risk mitigation

CSR can provide protection against adverse shocks and downside risk (Godfrey, Merrill, and Hansen 2009). Studies show that high CSR scores tend to offset the effects of punishments imposed by regulatory authorities (Gong et al. 2021), reduce systematic risk and raise firm value (Albuquerque, Koskinen, and Zhang 2019), lower idiosyncratic risk and the probability of financial distress (Lee and Faff 2009), reduce the likelihood of negative regulatory, legislative, or fiscal action (Berman et al. 1999; Heinkel, Kraus, and Zechner 2001), and are associated with higher abnormal returns and long-term post-acquisition returns (Deng, Kang, and Low 2013). We conjecture that high-CSR firms are better able to mitigate financial distress or risk relative to low-CSR firms.

We use the DD and Oscore to categorize firms according to their level of riskiness. In the previous specification, we used DD to control for risk. The Oscore is a multi-factor financial measure proposed by Ohlson (1980) and used to predict bankruptcy. It is readily derived from the financial disclosure statements provided by publicly traded corporations and is commonly used in the corporate financing literature (Dichev 1998; Stambaugh, Yu, and Yuan 2012, 2015). We obtain Oscores directly from CSMAR. A firm is riskier than others if its DD is low or its Oscore is high.

Using DD and Oscore, we divide our sample into loans to risky borrowers and loans to less-risky borrowers. We re-estimate our main specification (Section 3.2) in each of subsamples and report the results in Table 12. The coefficient of $CSR \cdot Approval$ is 9%, and significant at the 1% level for loans to risky borrowers, as shown in Columns (2) and (4), whereas it is insignificant for loans to less-risky borrowers, as shown in Columns (1) and (3). The results suggest that CSR strategies restrict short-term opportunistic and risk-taking behaviors by agents, thereby lowering the risk exposure faced by firms.

5.3. Overinvestment

Managers tend to overinvest in CSR to 'do good with other people's money' if they can gain private benefits (I.-H. Cheng, Hong, and Shue 2023), a practice that diverges from the goal of maximizing firm value. Barnea and Rubin (2010) and I.-H. Cheng, Hong, and Shue (2023) find that insider (manager and large blockholders) are prone to allocate excessively to CSR when they have low ownership stakes, leading to overinvestment in CSR as they incur few of the costs. Banks can penalize CSR overinvestment because of their access to private

Table 11. CSR performance and loan amount – information channel (loan level).

	Analyst Accuracy		R&D Intensity	
	High-Transparent (1)	Low-Transparent (2)	High-Transparent (3)	Low-Transparent (4)
CSR · Approval	0.05	0.07**	0.07	0.06**
	(0.44)	(2.60)	(0.82)	(2.43)
CSR	−0.01	−0.01*	−0.03	−0.00
	(−0.38)	(−1.78)	(−1.58)	(−0.60)
Approval	−0.43***	−0.22***	−0.34***	−0.23***
	(−4.30)	(−7.55)	(−3.16)	(−8.12)
Size	0.35***	0.20***	−0.17***	0.25***
	(4.19)	(12.15)	(−2.85)	(15.55)
ROA	0.39	0.36***	0.56	0.24**
	(1.07)	(2.91)	(1.26)	(2.03)
Leverage	−0.23	−0.02	0.30	−0.12*
	(−0.94)	(−0.31)	(1.39)	(−1.95)
Tobin Q	0.02	0.04***	−0.00	0.04***
	(0.53)	(4.70)	(−0.02)	(4.62)
DD	0.01*	0.01***	0.01**	0.00***
	(1.92)	(5.58)	(2.53)	(4.12)
Tangibility	−0.76	0.25***	−0.27	0.35***
	(−1.26)	(2.68)	(−0.56)	(3.73)
IncomeGrowth	0.00	0.00	0.00**	0.00
	(1.13)	(1.16)	(2.49)	(0.50)
Maturity	0.04	0.05***	0.03	0.06***
	(1.06)	(5.08)	(1.10)	(5.96)
Collateral	0.40***	0.29***	0.60***	0.25***
	(9.11)	(17.50)	(12.69)	(16.03)
Constant	11.38***	13.69***	22.57***	12.54***
	(5.81)	(33.75)	(15.35)	(31.80)
Observations	6,893	72,531	11,318	68,085
R-squared	0.56	0.50	0.51	0.51
Firm FE	YES	YES	YES	YES
Bank∗Year FE	YES	YES	YES	YES

This table presents the coefficient estimates of a firm's CSR performance regressed on (log) loan amount, given that a loan is approved for both low and high information transparency groups. Information transparency is based on the accuracy of analysts' forecasts in Column (1)-(2) and on the research and development (R&D) intensity in Column (3)-(4). The independent variable is the product of the standardized one-year lagged CSR score and the dummy that indicates a loan is approved or not. The independent variable is the logarithm of one plus loan amount. Control variables are firm and loan characteristics. The sample period spans from 2012 to 2021. All variables are winsorized at the 1st and 99th percentiles. We cluster standard errors at the loan level. Note: *T*-stats are reported in parentheses. *, ** and *** respectively indicates 10%, 5% and 1% significance level.

information, which allows them to differentiate between effective and ineffective CSR spending and accordingly adjust loan amounts (Goss and Roberts 2011; Rajan 1992). Specifically, Goss and Roberts (2011) find that low-quality firms (hence borrowers), identified as those using collateral for loans, often engage in value-destructive overinvestment in CSR to decrease borrowing costs. This leads to an expected negative correlation between CSR performance and loan amount for such low-quality borrowers as a form of punitive measure. We find this is the case in in our sample. Conversely, for high-quality borrowers, who typically do not pledge collateral, the relationship between CSR performance and loan amount hinges on the trade-off between the costs and benefits of their investments. A positive correlation is foreseen when the benefits of CSR investments outweigh their costs, while a neutral relationship is predicted if the opposite holds true. Our findings indicate a positive relationship for high-quality borrowers in China.

Following Booth and Booth (2006) and Goss and Roberts (2011), we categorize our sample into high and low-quality borrowers based on the secured status of their loans, where high-quality (low-quality) borrowers are those borrowing without (with) collateral. We regress the logarithm of the loan amount on *CSR · Approval* and present the results in Table 13. For high-quality borrowers, as shown in Column (1), the coefficient on

Table 12. CSR performance and corporate borrowing – risk channel (loan level).

	OScore		DD	
	Low-Risk (1)	High-Risk (2)	Low-Risk (3)	High-Risk (4)
CSR · Approval	0.03	0.09***	0.04	0.09***
	(0.53)	(3.03)	(0.89)	(2.88)
CSR	−0.01	−0.01	−0.03***	0.00
	(−0.82)	(−0.55)	(−2.81)	(0.19)
Approval	−0.41***	−0.17***	−0.24***	−0.23***
	(−7.24)	(−5.07)	(−5.10)	(−6.30)
Size	0.27***	0.15***	0.26***	0.19***
	(10.15)	(7.32)	(10.16)	(8.89)
ROA	0.24	0.24	0.19	0.30*
	(1.23)	(1.54)	(0.96)	(1.85)
Leverage	0.22**	−0.20**	−0.02	−0.17*
	(2.43)	(−2.39)	(−0.29)	(−1.88)
Tobin Q	0.03***	0.04**	0.05***	0.04***
	(2.88)	(2.77)	(4.24)	(2.92)
DD	0.00	0.00**		
	(0.22)	(2.82)		
Tangibility	0.37***	0.21	0.01	0.30**
	(2.81)	(1.41)	(0.11)	(2.16)
IncomeGrowth	−0.00	0.00	0.00	0.00
	(−0.35)	(0.66)	(0.24)	(0.99)
Maturity	−0.10***	0.16***	−0.03**	0.13***
	(−6.57)	(11.72)	(−2.14)	(9.11)
Collateral	0.15***	0.38***	0.18***	0.37***
	(5.49)	(20.73)	(7.39)	(18.58)
Constant	12.04***	14.89***	12.57***	13.98***
	(18.59)	(28.86)	(20.34)	(26.48)
Observations	32,928	46,184	36,313	42,785
R-squared	0.50	0.52	0.50	0.52
Firm FE	YES	YES	YES	YES
Bank∗Year FE	YES	YES	YES	YES

This table reports the coefficient estimates of a firm's CSR performance regressed on (log) loan amount given that a loan is approved for low versus high financial risk group. Financial risk is based on the OScore in Column (1)-(2) and on DD in Column (3)-(4). The independent variable is the product of the standardized one-year lagged CSR score and the dummy that indicates a loan is approved or not. The dependent variable is the logarithm of one plus loan amount. Control variables are firm and loan characteristics. The sample period spans from 2012 to 2021. All variables are winsorized at the 1st and 99th percentiles. We cluster standard errors at the loan level. Note: *T*-stats are reported in parentheses. *, ** and *** respectively indicates 10%, 5% and 1% significance level.

CSR · Approval is 0.1, significant at the 1% level, indicating that these borrowers secure better loan terms with superior CSR investments, in line with the theory that CSR investments' benefits outweigh their costs. In contrast, for low-quality borrowers, Column (2) reveals a negative coefficient, marginally significant at the 10% level, suggesting that banks penalize these borrowers for CSR overinvestment, although the marginal significance may reflect that the overinvestment is not drastically severe. To address the selection bias inherent in the decision to use collateral and to evaluate the robustness of the corrected regressions, we utilize the Heckman two-stage model with bootstrapping and report the results in the Appendix A.5. Our findings remain unchanged.

6. Conclusion

Our study demonstrates that CSR performance can increase firm borrowing. In bank loan markets, superior CSR performance helps a firm obtain a high loan amount once a loan is approved, although it does not raise the likelihood of a loan being approved. Interestingly, high-CSR banks do not necessarily grant larger loans to high-CSR firms, which implies that China's state-led credit policy does not achieve a market-oriented feedback effect between lenders and borrowers via lending relationships.

Table 13. Over-investment.

	Loan Amount	
	Unsecured (high-quality) (1)	Secured (low-quality) (2)
CSR · Approval	0.10***	−0.11*
	(3.06)	(−1.71)
CSR	−0.01	−0.00
	(−1.31)	(−0.21)
Approval	−0.31***	0.01
	(−8.26)	(0.12)
Size	0.23***	0.18***
	(13.27)	(3.86)
ROA	0.28**	−0.11
	(2.40)	(−0.26)
Leverage	−0.03	−0.20
	(−0.46)	(−1.05)
Tobin Q	0.04***	0.04
	(4.99)	(1.35)
DD	0.00***	0.01**
	(3.11)	(2.04)
Tangibility	0.21**	−0.28
	(2.26)	(−0.97)
IncomeGrowth	0.00	0.00**
	(0.26)	(2.60)
Maturity	0.04***	0.16***
	(2.90)	(5.02)
Constant	13.11***	15.04***
	(30.97)	(13.02)
Observations	71,735	7,334
R-squared	0.50	0.63
Firm FE	YES	YES
Bank∗Year FE	YES	YES

This table reports regression estimates of whether the impact of borrower's CSR performance and loan amount varies with the level of a borrower's quality. Loan observations are divided into two groups based on collateral presence – high and low borrower quality. The sample period spans from 2012 to 2021. All variables are winsorized at the 1st and 99th percentiles. We cluster standard errors at the firm level. Note: *T*-stats are reported in parentheses. *, ** and *** respectively indicates 10%, 5% and 1% significance level.

At the firm level, firms with high CSR performance can obtain more long-term loans from banks owing to their CSR performance, although they cannot increase their borrowing from banks by investing more in CSR. We find that superior CSR performance reduces information asymmetry and mitigates risk, thereby causing substantial heterogeneity in corporate borrowing. Firm borrowing increases with the CSR score for risky firms or firms exposed to high information asymmetry relative to non-risky peers or peers with low information asymmetry. Furthermore, the positive link between CSR performance and loan amount is primarily due to the benefits of CSR investment outweighing the costs.

We find that firms raise more funds from equity markets if they invest more in CSR and improve their CSR performance, but that this finding does not apply to bond markets.

Notes

1. In 2021, the Chinese government announced its goals of achieving peak emissions before 2030 and carbon neutrality by 2060. See the World Bank Group's China Country Climate and Development Report, available at https://openknowledge.worldbank.org/handle/10986/38136.
2. China has implemented a series of related policies, including green tax and green procurement, as well as green credit policies relevant to the financial sector, namely, green credit, insurance, and security policies. Green credit policies are the most advanced of these policies, with three agencies (the Ministry of Environmental Protection, the Peoples' Bank of China, and the China Banking Regulatory Commission) sharing the responsibility for their implementation. The green credit policies were first issued

in 2007, then revamped in 2012 as the 'Green Credit Guidelines' and in 2022 as the 'Green Finance Guidelines for the Banking and Insurance Industry.'

3. China's green loans reached RMB 18 trillion (about USD 3 trillion) in March 2022 (about six times the amount of green bonds). The growth of green loans, at 14% in the first quarter of 2022, outpaced the growth of overall loans at 4.3%. However, green loans accounted for only about 10% of the total loan market, indicating large untapped potential for their expansion. The regulator claims that the green credit of the 21 major banks can save more than 400 million tons of standard coal and reduce carbon dioxide equivalents by more than 700 million tons each year; see https://greenfdc.org/interpretation-new-cbirc-green-finance-guidelines-for-the-banking-and-insurance-industry/.
4. Both CSR can ESG score can be used for measuring social responsibility (Lins, Servaes, and Tamayo 2017). It is unfortunate that ESG score from Bloomberg is available for less than 200 China's firms, which we take for a robustness check.
5. Our analysis focuses on loan pricing at the firm level because of data limitations.
6. In December 2008, the SHSE mandated that firms listed as belonging to its 'Corporate Governance Sector' (the 230 firms with the best governance practices at the time) issue a CSR report with their annual report beginning in the 2008 reporting year. Similarly, in December 2008, the SZSE mandated that listed firms on its 'Shenzhen 100 Index' issue a CSR report (top 100 listed firms ranked by total market capitalization).
7. Our results are robust to winsorizing all variables at the 5% and 95% levels.
8. The loans outstanding at the firm level from the balance sheet are more volatile than those from the aggregate loan sample. The lower bound for the loans outstanding at the firm level from the balance sheet is zero because a few listed firms do not have loans.
9. This loan-level data set from CSMAR is the only one that is publicly available in China. Private loan-level data are used in Cong et al. (2019) and H. Gao, Ru, and Tang (2021).
10. When we include firm fixed effects, Age is removed because of collinearity.
11. The results in the Appendix A.3 indicate that none of the three subcategories-Environment (E), Social (S), and Governance (G)-show a significant impact on loan approval. However, once a loan is approved, both the Governance and Social dimensions have a positive and significant influence on the loan amount. The Environmental dimension, while positive, does not show a significant impact. This leads to an overall positive relationship between CSR performance and loan amount.
12. To reduce computational demands, we apply bank and year fixed effects separately instead of joint bank-year fixed effects.
13. We observe a positive relationship between loan approval and loan amount in the simultaneous estimation, which contradicts our previous interpretation. The extent to which this affects our estimate remains unclear. However, the second and third approaches confirm that our single equation specification accurately estimates the impact of CSR performance on loan amount, once a loan is approved.
14. B. Cheng, Ioannou, and Serafeim (2014) measure CSR performance by ESG performance scores obtained from Thomson Reuters ASSET4. They use a panel data set for 49 countries and show that superior CSR performance can reduce financial constraints and improve access to finance. However, their analysis set only includes 70 firms from China.
15. The aggregate sample contains 1,432 firm-year loan observations for 423 firms. After filtering out financial institutions, we have 844 firm-year loan observations.
16. In addition, we examine whether CSR performance increases firm borrowing in capital markets. The results are mixed. High-CSR firms can raise more funds in stock markets, but not in bond markets. However, if a bond is labeled green, bond issuance increases with CSR performance. We concentrate on borrowing from banks in the main text.
17. Our loan-level data exclude loan rates, which prevents us from conducting the pricing analysis at the loan level.

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