

Institutions and Corporate Reputation: Evidence from Public Debt Markets*

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Abstract

Using data from China's public debt markets, we study the value of corporate reputation and how it interacts with legal and cultural forces to assure accountability. Exploring lawsuits that change corporate reputation, we find that firms involved in lawsuits experience a decrease in bond values and a tightening of borrowing terms. Using the heterogeneities in legal and social capital environments across Chinese provinces, we find the effects are more pronounced for private firms, firms headquartered in provinces with low legal protections, and firms headquartered in provinces with high social capital. The results show that lawsuits that allege misconduct are associated with reputational penalties and that such penalties serve as substitutes for legal protections and as complements to cultural forces to provide ex post accountability and motivate ex ante trust.

Key words: Corporate Reputation, Trust, Legal Environment, Social Capital, Litigation

JEL Code: G12, G14, L14

1. Introduction

Corporate reputation (CR) is widely viewed by organizational theorists, sociologists, and information economists as an intangible asset that helps firms to get favorable prices (Karpoff and Lott, 1993), attract investors, employees, and consumers (Fombrun, 2012), and creates accountability (Carroll and Olegario, 2020). Empirical literature shows that corporate misconduct, such as fraud (Karpoff, Lee, and Vondracik, 1999; Karpoff, Lee, and Martin, 2008; Graham, Li, and Qiu, 2008; Deng, Willis, and Xu, 2014; Armour, Mayer, and Polo, 2017; Gow, Wahid, and Yu, 2018), misreporting (Hribar and Jenkins, 2004; Nelson, Price, and Rountree, 2008; Murphy, Shrieves, and Tibbs, 2009; Chava, Huang, and Johnson, 2018), and other violations (Karpoff, Lott, and Wehrly, 2005) lead to measurable reputational penalties.

This paper examines the value of corporate reputation in an emerging market, and how the reputation mechanism interacts with other important institutions such as the legal environment and cultural forces to deter and discipline misconducts. Indeed, reputational capital is not the only way that firms can assure contractual performance. Our empirical analysis is motivated by the “Trust Triangle” (Dupont and Karpoff, 2020), a powerful conceptual framework that highlights three primary mechanisms (termed the “three legs of trust”) that provide ex post accountability for opportunistic behavior and motivate ex ante trust in economic relationships.

The first leg consists of *laws and regulations*. This mechanism relies on the formal institutions (law, court, and administrative apparatus) and third-party enforcement to deter deviants, safeguard contracts, and discipline misconducts (La Porta et al., 1998). The second leg is the *reputational capital*, defined as the present value of a firm’s surplus

(quasi-rent stream) from the higher prices and lower costs they earn when their counterparties trust them (Dupont and Karpoff, 2020). Unlike the first leg, reputational capital is enforced by *related parties* through the price mechanism. It is the threat of loss in reputational capital—that is, an increase in costs or loss of future business opportunities—that impedes misconduct. The third leg consists of a society’s (cooperative) *culture* (or *social capital*) that provides “first party accountability” (Dupont and Karpoff, 2020), even in the absence of third- or related party- enforcements. More specifically, a high social capital environment fosters cooperative norms and civic-mindedness (Guiso, Sapienza, and Zingales, 2004) and heightens negative moral sentiments associated with opportunistic behaviors (Elster, 1989). Empirical evidence supports that agents from high social capital environments are less opportunistic (Hasan et al., 2017; Ang, Cheng, and Wu, 2015; Lin and Pursiainen, 2018), and they are more trusting on others (Hong, Kubik and Stein, 2005; Guiso, Sapienza and Zingales, 2008; Bottazzi, Da Rin and Hellmann. 2016; Hasan, He, and Lu, 2021).

The framework of the Trust Triangle yields important intellectual inquiries on how the three legs of trust *interact* to achieve a certain level of accountability. For example, one would expect that in countries with weak legal institutions, firms would rely heavily on reputational capital as a basis of commerce (Iacobucci, 2014; Ang, Cheng, and Wu, 2015; Pevzner, Xie, and Xin, 2015). On the other hand, high societal norms against opportunism could reinforce the firms’ reputational capital at stake when they engage in misconduct (Coleman, 1988; Fukuyama, 1995; Uzzi, 1997; Woolcock, 1998). In a dynamic setting, the three legs of trust can complement each other, that is, a greater reliance on one could foster

an increase in the utility of the others (Dupont and Karpoff, 2020).¹

To date, most studies examine only one leg of the Trust Triangle in isolation. This paper instead makes a unique contribution by investigating the interaction of the three legs. Our definition of corporate reputation fits nicely into the concept of reputational capital, which is the value of the surpluses earned by a firm because it gets favorable contract terms from its counterparties. Empirically, the classical economic approach to capture this surplus is to observe how stakeholders alter their transactions with a firm following (negative) news that causes counterparties to change their assessments of the firm's credibility (Klein and Leffler, 1981; Karpoff and Lott, 1993), which we term as *reputational penalty*. We then examine how the other two legs of trust, namely, firm's legal and social capital environment, affect the reputational penalties that we observe.

The shocks to corporate reputation that we study are corporate lawsuits. Lawsuits, especially when firms are defendants, indicate that firms acted in a way that violated an explicit or implicit contract with a stakeholder.² Moreover, lawsuits expose firms' agency risk, broken business relationships, and unethical behaviors, leading to adverse market reactions.³ To compensate for these risks (Stiglitz and Weiss, 1981; Diamond, 1991), stakeholders react to reputational damage through price and subsequent contract terms.

¹ For example, societies with strong legal institutions could “frame” the societal norms toward opportunism and fraud, for stakeholder expectations rely on taken-for-granted norms embodied within formal regulatory frameworks (Brammer and Jackson, 2012), or vice versa, in the long run, societies with higher social capital may develop strong legal institutions (Greif, 1993). Moreover, strong legal and social institutions are important antecedents of market development, which amplify the value of firms' (market-based) reputational capital.

² Note that lawsuits could harm the reputation of plaintiff firms as well. It is because litigation may reveal a hitherto unknown business dispute with stakeholders (indeed, it is not uncommon that some plaintiffs later become defendants because of the counter-claims). Moreover, under the institutional environment of China, litigation is often the last resort in dispute resolution. Even if the company is the plaintiff, others tend to interpret litigation as a broken business relationship, or failures to resolve a dispute in peaceful manner. Section 4 provides empirical evidence.

³ Prior work using lawsuits in event study shows lawsuit announcements reduce shareholder wealth (Karpoff and Lott, 1993; Bhagat, Brickley, and Coles, 1994; Bhagat, Bizjak, and Coles, 1998; Griffin, Grundfest, and Perino, 2004; Karpoff, Lott, and Wehrly, 2005; Raghu et al., 2008; Haslem, Hutton, and Smith, 2017). Among the few research on bondholders, Billings, Klein, and Zur (2011) find negative bond returns and excess trading volume around securities class actions.

The public debt market in China provides an ideal setting for this examination. First, unlike those in the United States, the capital markets in China are underdeveloped, and firms cannot access them without political approval (Allen, Qian, and Qian, 2005). One peculiar feature of Chinese firms is their ownership. State-owned Enterprises (SOE) can rely on their political connections for resources, whilst Private-owned Enterprises (POE) have to fend for themselves in marketplaces. *A priori*, it is unclear whether the reputation mechanism works in Chinese markets as much as it does in the developed markets. Second, public debtholders are important stakeholders in Chinese firms. Chinese firms rely primarily on debt for external financing. A key data advantage of public debts is that they contain multidimensional contractual features (e.g., spread, maturity, ratings, call options, and collateral requirements) that do not exist for equities. In the meantime, they are publicly traded on exchanges with market prices. The reactions of bondholders can thus be observed directly through these properties. Third, Chinese firms are heterogeneous in their home institutional environments. China is broadly divided into 31 provinces, each of which is comparable to a European country in population and economic size.⁴ Due to historical and geographical reasons, these provinces differ substantially in their legal and social capital development. These heterogeneities offer the opportunity to investigate how the reputational capital *interacts* with a firm's legal and social capital environment to discipline misconduct.

Our empirical strategy compares (at issue) bond terms and (secondary market) price reactions of litigated versus (propensity score-matched) unlitigated issuers. Consistent with

⁴ For example, there are eight Chinese provinces with populations comparable to Italy (60.5 million), France (65 million), and UK (68 million). They are Guangdong (104 million), Shandong (100 million), Henan (94 million), Sichuan (81 million), Jiangsu (79 million), Hebei (72 million), and Hunan (66 million), and Anhui (60 million). In terms of nominal GDP in 2018, the provinces of Guangdong and Jiangsu are comparable to Spain, Shandong province is comparable to the Netherlands, Zhejiang province is comparable to Switzerland, and Sichuan province is comparable to Sweden.

a reputational-penalty hypothesis, we find that firms involved in lawsuits experience a decrease in bond values and a tightening of borrowing terms. On average, the same firms pay yield spreads that are 7.0% higher for bonds issued after a lawsuit. Extending the sample to all bond issuers yields a similar result: *Ceteris paribus*, bonds of litigated issuers have, on average, a 4.2% higher yield spread than those of unlitigated firms. Specifically, bonds of defendant firms have on average a 9.6% higher yield spread than those of unlitigated firms.

Several pieces of evidence suggest the tightened contract terms are the deliberate choice of bondholders in response to a lawsuit. By distinguishing lawsuit types, we find that reputational penalties are larger for losing firms than for winning firms, for contract-related cases than for tort-related cases, and largest when firms are sued by their banks for loan defaults. This evidence is consistent with prior findings that not all misconducts prompt the same reputational loss (Karpoff and Lott, 1993; Murphy, Shrieves, and Tibbs, 2009; Brady, Evans, and Wehrly, 2019). Reputational capital as a disciplinary mechanism works better when the corporate wrongdoings affect *related parties directly* (Karpoff, 2012).

We also find that the reputational penalty is more pronounced for private firms than for state firms, which indicates private firms have more (market-based) reputational capital *at stake* than state firms. To illustrate, firms' reputational capital (the quasi-rent stream of value surplus because counterparty trusts them) can come from market-based or non-market-based sources. State firms rely heavily on their political connections for resources, thus could have less market-based reputational capital at stake. Private firms, on the other hand, are more reliant on the marketplace for resources. Hence, we find private firms suffer

more reputational penalties than state firms when caught engaged in misconduct.

We then investigate how heterogeneous legal and social capital environments across Chinese provinces affect the magnitude of reputational penalty that we observe. Using data on the provincial legal index and lawsuit density to capture the legal environments, and a battery of proxies on provincial social capital stock, we find that reputation penalty is more significant for firms headquartered in provinces with weak legal environments and for firms headquartered in provinces with high social capital. Moreover, strong social capital environment appears to weaken the impact of the legal environment on reputational capital.

Our evidence suggests that in China, stronger legal environment substitutes, and stronger social capital environment complements the reputation mechanism to assure contractual performance. Our finding on reputational capital and legal institution is consistent with Allen, Qian and Qian (2005), and Iacobucci (2014) who argue that in many countries where the state lacks the capacity to instill and enforce the rule of law, reputation mechanism could substitute the weak legal institution to safeguard contracts, deter deviance, and facilitate business economic transactions. On the other hand, our evidence on reputational capital and social capital supports a complementing relationship between the two mechanisms. Luoma-aho (2015) argues that social capital is what gives value to reputational capital, and that a high social capital environment not only fosters other-regarding behavior, but also reinforces firms' reputational capital at stake when they engage in misconduct. Finally, our evidence suggests a potential substitution between the legal and social capital environment in their interaction with the reputation mechanism. This is consistent with Guiso, Sapienza, and Zingales (2004), who find the effect of social capital is stronger where legal institutions are weaker.

This study first contributes to the body of empirical literature that seeks to capture the value of corporate reputation. Prior work shows that corporate misconduct leads to tightened debt terms, yet its focus is on private debt. For example, Graham, Li, and Qiu (2008) find that borrowers pay significantly higher loan spreads after restatement. Chava, Huang, and Johnson (2018) further show that the post-restatement spread premium is persistent and costly to restore. Deng, Willis, and Xu (2014) find a tightening of private bank loan terms following securities lawsuits. A gap remains about whether findings on private debt can apply to public debt held by widely dispersed lenders (Kale and Meneghetti, 2011).⁵ Our finding extends the results from Graham, Li, and Qiu (2008) and Chava, Huang, and Johnson (2018) to the evidence from Chinese firms, by showing that public debt holders, even in an underdeveloped capital market outside the United States, care about firm reputation and tighten bond terms following revised beliefs about firms.

More importantly, this paper advances our knowledge on how trust is formed and how misconduct is disciplined and deterred. Prior work has identified the legal institutions, reputational capital, and culture as essential antecedents of trust. However, most studies investigate one such institution in isolation. For example, whilst a large amount of literature shows the positive impact of the legal environment (Qian and Strahan, 2007; Bae and Goyal, 2009) and social capital (Guiso, Sapienza, and Zingales, 2004, 2008; Pevzner, Xie, and Xin, 2015; Bottazzi, Da Rin, and Hellmann, 2016) in finance, whether and how these institutions affect the value of corporate reputation is underexplored. Two related discussions include Brammer and Jackson (2012) on an institutional perspective to corporate reputation, and Iacobucci (2014) on the interaction between legal and

⁵ This is because, compared to public debtholders, banks have a superior ability to produce information at low cost and more flexibility in renegotiations (Rajan, 1992; Dahiya et al., 2003; Roberts and Sufi, 2009; Denis and Wang, 2014).

reputational sanctions. We fill this empirical gap by presenting evidence from the world's largest emerging market. Our findings offer important empirical evidence on how the three legs of trust interact to achieve a certain level of accountability.

The rest of this paper proceeds as follows. Section 2 introduces the institutional background and develops the hypotheses. Section 3 describes the sample and variables. Section 4 presents empirical results. Section 5 concludes with research implications.

2. Institutional Background and Hypothesis Development

2.1 *The Legal and Social Capital Environment in China*

The origins of China's legal system are a mixture of socialist practices and civil law.⁶ In particular, Allen, Qian, and Qian (2005) assess China's legal system on multiple aspects and find that the majority of sample countries in La Porta et al. (1998) have creditor and shareholder protections better than those in China. They argue that alternative governance mechanisms, such as those based on reputations and networks, support the growth of the private sector.

The country's formal legal system was rebuilt in the late 1970s after the Cultural Revolution. China's modern market-supporting laws, such as Contract Law (1994), Company Law (2005), Bankruptcy Law (2006), Property Law (2007), and Anti-Monopoly Law (2008), resemble codes in Germany, Switzerland, and Japan. Despite nascent legal protections, the use of courts as a forum for settling business disputes has increased dramatically since the 1990s.⁷ There are over 190,000 judges in the country's 3,500 (county-level) basic courts, 400 (prefecture-level) intermediate courts, 32 (provincial-level) high courts, and the Supreme Court in Beijing. Nevertheless, the Chinese judiciary is not independent from the Party or government (Landry, 2008). On the other hand, survey results show significant heterogeneities among Chinese provinces pertaining to their legal environments, including the level of judicial independence, judge quality, and citizens' popular attitudes toward the rule of law (Chen et al. 2017).

This paper focuses on lawsuits involving Chinese listed companies. These companies

⁶ La Porta, Lopez-de-Silanes, and Shleifer (2008) argue that the common law legal origin stands for a strategy that seeks to support private market outcomes, whereas civil law seeks to replace such outcomes with state-desired allocations.

⁷ From 2006 to 2015, the number of concluded court cases per year swelled from 8.55 million to 16.7 million (Supreme People's Court Work Report).

have modern corporate governance required by securities regulations and are more likely to use courts and lawyers to resolve disputes. The Chinese listing rules require companies to make timely disclosure of their lawsuits if the litigation stake (of a single case or accumulative cases within 12 months) is over RMB 10 million (US\$1.5 million) and over 10% of the company's net assets. For a stake of litigation below this threshold, the firm should also disclose if the board reckons that the lawsuit would have a significant impact on the company's securities.⁸ This mandatory disclosure requirement essentially covers all lawsuits that have a material impact on the firm. Firth, Rui, and Wu (2011) examine the effects of corporate lawsuits in China and find that litigation announcements depress the stock prices of both defendant and plaintiff firms. Lu, Pan, and Zhang (2015) study the outcomes of Chinese corporate litigation and find the politically connected firms tend to prevail in Chinese courts. They also find that the court advantage of politically connected firms is less pronounced in regions with better legal institutions.

Though the Chinese have a long tradition of cultivating *guanxi* (networks), the importance of social capital, which includes norms of reciprocity and societal trust that facilitate economic interactions, was not emphasized until recently. There are 56 ethnic groups and over 80 distinct dialects in China that are unintelligible to nonnative speakers. For historical, ethnic, and ecological reasons, different provinces vary in their density of social networks, civic norms, and levels of societal trust, which we collectively call "social capital stock." For instance, using data from the World Value Survey, Ang, Cheng, and Wu (2015) show that social capital differences among China's 31 provinces are often greater than among European countries. Hasan, He, and Lu (2021) compose a social capital index

⁸ See Chapter 11.1 of Listing Rule of the Shanghai Stock Exchange (1998) and Listing Rule of the Shenzhen Stock Exchange (1998).

across Chinese provinces, and find that regional social capital stock positively predicts their home borrowers' trustworthiness, and home lenders' generalized trust.

2.2 China's Corporate Bond Market

China's public debt market has grown dramatically since the late 2000s. World Bank statistics show China's corporate bond issuance volume as a percentage of GDP was 4.2% in 2017 and 6.4% in 2016, and was ranked the highest in the world in 2016, followed by the US and the UK.⁹ By 2020, the capitalization of the domestic bond market was 77.61 trillion RMB (\$11.64 trillion), while that of the domestic equity market was 79.72 trillion RMB (\$11.96 trillion).

Similar to the United States, China's bond market has several major categories: government bonds, central bank bills, financial institution bonds, commercial paper, and nonfinancial corporate bonds. The nonfinancial corporate bond market is divided into two major sectors: the corporate bond (*gongsizhai*) (CB) market, which launched in 2007, and the enterprise bond (*qiyezhai*) (EB) market, which launched in 1997.

Panels A and B of Table 1 compare the CB and EB markets. CB are predominantly from listed firms (76%), traded publicly on the exchange, and are regulated by the China Securities Regulatory Commission (CSRC).¹⁰ EB, by contrast, are predominantly from unlisted firms (99%) and SOE (95%), trade in the interbank market, and are regulated by the National Development and Reform Commission (NDRC). The difference is attributable

⁹ We exclude the countries with fewer than 11 million people and with a GDP of less than US\$50 billion. Data are from the latest version of the World Bank Global Financial Development database:

<https://datacatalog.worldbank.org/dataset/global-financial-development>

¹⁰ On January 15, 2015, the CSRC and Shanghai Stock Exchange announced a new corporate bond issuance reform that allows unlisted firms to issue corporate bonds in the stock exchanges. However, before this reform, unlisted firms were only allowed to issue small- and medium-size enterprise (SME) bonds through private placement, and only listed firms could issue bonds publicly in this market.

to the fact that the EB market is for state entities to raise funds for infrastructure and government-supported industries.¹¹ For the same reason, issuers in the CB market have broader industry diversification than those in the EB market. On the investor side, both institutional and qualified individual investors can trade in the CB market, but only banks and financial institutions can trade in the EB market.¹² The two markets are segmented and under two different regulatory systems.

We investigate the CB market because matching bond data with firms' litigation and financial information requires issuers to be stock market listed. Moreover, price information in the CB market is transparent to all investors. Electronic trading platforms instantaneously reveal transaction price and volume.

Amstad and He (2019) and Cherian, Mo, and Subrahmanyam (2019) provide descriptions of the Chinese corporate bond market. The procedure to issue CB in China mimics that of an auctioned IPO. Once the CSRC approves, the issuer can start the book-building process to invite investors. Investors send bids to the underwriter, who determines the uniform pricing for all offerings and allocates the quota in the event of oversubscription. Finally, once publicly traded, it is a universal phenomenon that corporate bonds are less liquid than stocks.

2.3 Hypothesis Development

The reputational-penalty hypothesis predicts that if lawsuits change bondholders' beliefs about CR, we should observe tighter bond terms for litigated issuers compared with

¹¹ For example, 82% of the bonds traded in the enterprise bond market are *Chengtou* bonds ("Municipal Investment Bonds") by 2017.

¹² According to the rules of the Shanghai and Shenzhen stock exchanges, wealthy individual investors with financial assets (including stocks, bonds, mutual funds, and bank wealth-management products) over RMB 3 million are allowed to trade corporate bonds in the exchange markets. Starting in February 2016, the People's Bank of China allowed wealthy individuals with financial assets over RMB 3 million to participate in the interbank market.

unlitigated issuers and adverse reactions in bond prices after lawsuit announcements. If this proposition is true, then we hypothesize:

Hypothesis 1: *Ceteris Paribus*, litigated issuers have higher at-issue bond yield spreads than unlitigated issuers.

Hypothesis 1a: Lawsuit disclosures negatively affect the secondary market bond prices.

Allen, Qian, and Qian (2005) argue that in China where the formal legal system is weak, contract enforcement and the growth of the private sector are more likely to be governed by alternative mechanisms such as those based on reputations and networks. We therefore hypothesize:

Hypothesis 2: In China, the reputation mechanism substitutes the formal legal institutions to provide accountability, especially for private firms.

Cultural forces such as a society's social capital stock provide another important governance mechanism against opportunism (Guiso, Sapienza, and Zingales, 2004, 2008). High social capital society fosters others-regarding behavior and cooperative norms, and provides a credible network of which firms' reputation spreads (Luoma-aho, 2015). It follows, high social capital reinforces the firms' reputational capital at stake when they engage in misconduct (Coleman, 1988; Fukuyama, 1995; Uzzi, 1997; Woolcock, 1998). We then hypothesize:

Hypothesis 3: Social capital complements the reputation mechanism to provide accountability.

3. Data and Descriptive Statistics

3.1 Sample Description

The data in this paper is from Wind. Wind contains all listed companies' litigation disclosures. We hand code key variables from the raw text of each lawsuit, including time, parties, case type, stake, party status, court, and case outcome from 1998 to 2013. This generates 8,531 unique lawsuits, of which 451 involve bond issuers.¹³

The bond sample period covers 2007 to 2015, pursuant to the launch of the Chinese corporate bond market on the Shanghai and Shenzhen stock exchanges in 2007. To investigate the impact of litigation on bond terms, we match bond issuance data in year t with financial and other information for bond issuers in year $t-1$, and we exclude bonds from financial and utility firms. This generates 1,048 bonds from 544 unique issuers.¹⁴ Of the 1,048 bonds, 469 (579) are from firms with (without) preceding lawsuits. For each (treated) bond from a litigated firm, we select a matched (control) bond using a one-to-one propensity score matching (PSM) algorithm. This generates 469 treated bonds and 469 control bonds. Section 3.5 provides the details of summary statistics, and Section 4 reports the regression results using both full and matched samples.

3.2 Bond Characteristics Variables

Appendix table A-1 provides details on variable definition and construction. Our primary dependent variable is *Bond Yield spread At Issue*, which is the difference between the at-issue bond yield and a matched Chinese treasury bond yield based on the date of bond

¹³ This article focuses on 451 lawsuits that involve bond issuers. We nevertheless provide a summary description of the 8,531 lawsuits as follows: The number of lawsuits increased from 27 in 1998 to 1,186 in 2013. Among the lawsuits, 36.9% (3,145 cases) relate to loans (bank or intercorporate loans), and 31.2% (2,722 cases) relate to torts, including fraud and securities actions, product liability, intellectual property infringement, share disputes, environmental damage, bribery, embezzlement, and administrative lawsuits against the government, etc. The remaining 31.9% (2,664 cases) relate to contracts incidental to business operations — for example, disputes over contracts on sales and purchases, construction projects, leasing, procurement, licensing, transportation, etc. There is a strong representation of SOE and non-SOE among both plaintiffs and defendants. SOE are plaintiffs in 1,394 cases and defendants in 2,565 cases; privately-owned listed firms are plaintiffs in 1,124 cases and defendants in 3,448 cases.

¹⁴ Note that some issuers have multiple bonds, although the majority of issuers have only one bond outstanding.

issuance.¹⁵ *Log(Maturity)* is the logarithm of bond maturity by year; and *Log(Issuance vol)* is the logarithm of the issuance proceeds. *Callable* equals 1 if the issuer can redeem the bond prior to maturity, and zero otherwise; *Collateral* equals 1 if the bond has collateral or zero otherwise. The *Bond rating score* is the numeric score of the bond rating at issue (e.g., 9 for AAA+, 8 for AAA, and so on).

3.3 Firm Characteristics Variables

Our analyses include an assortment of firm characteristics. *Firm size* is the logarithm of the book value of total assets; *Firm age* is the logarithm of the number of years since incorporation; *Profitability* is the ratio of net profit to total assets; *Leverage* is the ratio of total debt to total assets; *Tangibility* is the ratio of fixed assets to total assets. *SOE* equals 1 if a firm has the government or its agent as its ultimate controller based on ownership, and zero otherwise. *POE* is defined in the opposite way as *SOE*.

3.4 Lawsuit Variables

Our analyses also include a number of lawsuit variables, which we collect manually from lawsuit disclosure documents. They include *Log (Litigation stake)*, which is the logarithm of the plaintiff's monetary claim (in RMB); *Lose*, which equals 1 when the disclosing firm loses a lawsuit, and zero otherwise.¹⁶

¹⁵ Spread is calculated using the difference between the at-issue bond yield and the three-year Chinese treasury bonds yield matched based on issuance date, because 70% of the corporate bonds in our sample have the maturity of three or five years. We also use the five-year Chinese treasury bond matched on issuance date, and the results are similar. For robustness test, we also use the difference between the at-issue bond yield and that of the same maturity treasury bonds based on the issuance date; the results are qualitatively unchanged.

¹⁶ We follow the conventional literature (Clermont and Eisenberg, 1992; Kessler, Meites, and Miller, 1996) and define plaintiff "success" as when a plaintiff receives monetary benefit at trial. Data show that it is typical for Chinese courts to support or reject plaintiff claims in full. For robustness check, we use the proportion of the trial award to the plaintiff's monetary claims as an alternative "win" proxy and find that this does not change the results qualitatively.

To gain a better understanding of the 451 unique lawsuits in our bond issuance sample, we classify them into three categories: (1) loan-related; (2) regular business contracts; and (3) tort and other violations. *Loan-related* cases account for 18% of our sample. They typically involve banks, or other firms that sue the issuer over loan default because the issuer (or its affiliated firms) is the borrower or guarantor in bank loans or intercorporate loans (entrusted loans)¹⁷. Occasionally, the issuer can sue other firms for loan defaults. *Regular business contracts* account for 41% of our sample. Typically, firms sue (or be sued) for contracts incidental to their ordinary course of business. Examples include disputes over contracts involving sales and purchases, construction projects, leasing, procurement, licensing, transportation, etc.¹⁸ *Torts and other violations* account for 41% of our sample. In this category, the causes of action include fraud allegations, product liabilities, intellectual property infringements, environmental damage, bribery, embezzlement, administrative actions against the government, and other allegations such as anti-monopoly.¹⁹

¹⁷ To be sue, the Chinese law does not allow direct intercorporate loans. To assess credit, many firms engage in intercorporate lending through “entrusted loans” using banks as an intermediary. For a representative case study, in *Shenzhen Development Bank (SDB) v. Wanghai Yikang Development Ltd. (WYD)*, SDB sued WYD, a real estate company, for an RMB 220 million bank loan default in 2004. The loan was guaranteed by China Railway Construction Engineering Group (CRCE), a subsidiary company of China Railway Group (CRG, the issuer). The case was heard in the high court of Guangdong province in 2007, and WYD lost the case. CRCE appealed in 2007, and CRG made a public announcement about this lawsuit on April 29, 2009. In the end, the court directed an arrangement between WYD and its creditors (including CRCE) under the Bankruptcy Law of 2007. The guarantor’s liability was eventually discharged. CRG later issued a corporate bond in October 2010.

¹⁸ For a representative case study, in *COFCO Property v. Great China International Group (GCIG)*, COFCO Property (the issuer), a real estate subsidiary of China Oil and Foodstuffs Corporation, sued GCIG on April 8, 2011, to enforce an estate sale and purchase agreement. The case was resolved through mediation by the high court of Guangdong province. COFCO Property successfully acquired the property ownership at the price of around RMB 300 million. COFCO Property publicly announced this lawsuit on November 30, 2012. COFCO Property later issued a corporate bond in August 2015.

¹⁹ For a representative case study, in *Hongfujin Precision Industry (HPI) v. BYD Company Limited (BYD)*, HPI, a subsidiary of Taiwan-based technology company Foxconn, sued BYD for infringing commercial secrets and inducing employees to breach their confidentiality agreements. The case was heard by the high court of Hong Kong SAR in 2012, and HPI eventually withdrew the case. BYD publicly announced this lawsuit in August 2013. BYD issued multiple corporate bonds in 2012, 2013, and 2015.

3.5 Descriptive Statistics

Panel A of Table 2 provides summary statistics for the 1,048 bonds in our bond issuance sample. The statistics reveal substantial heterogeneity. *Bond yield at issue* ranges from 2.98% to 9.90%, with a sample mean of 5.66%. *Bond yield spread at issue* ranges from 0.41% to 7.01%, with a sample mean of 2.59%. *Bond-rating score* ranges from 5 to 9, with a standard deviation of 1.25. *Maturity* ranges from 2 to 15 years, with a sample mean of 5.59 years. *Issuance volume* ranges from RMB 80 million to 16 billion, with a sample mean of RMB 1.43 billion (US\$210 million). On average, 70% of the bonds in our sample are callable, and 38% of them have collateral.

Panel B shows the summary of bond issuer characteristics. *Firm size* ranges from 20.37 to 28.41, with a standard deviation of 1.37; *Firm age* ranges from 1 to 64 years, with a sample mean of 16.26 years (75% of the bond issuers are more than 13 years old); *Profitability* ranges from -0.03 to 0.40 (75% of firms have profitability higher than 0.02); *Leverage* ranges from 0.05 to 0.93 with a sample mean of 0.58, indicating that listed firms issuing corporate bonds have high leverage; and *Tangibility* ranges from 0.00 to 0.90 with a sample mean of 0.20. Finally, approximately 53% of issuers in our sample are SOE; the rest are POE.

Panel C reports the characteristics of lawsuits by dividing the lawsuit types, whether the issuer is an SOE and POE in each lawsuit type, whether the issuer is a plaintiff or a defendant, win rates, and litigation stake. We find both SOE and POE are balanced in each lawsuit type. In loan-related lawsuits, issuers are most likely to be defendants, whereas in other lawsuit types, the plaintiff/defendant (P/D) ratio is closer to 1:1. In terms of the case outcome, consistent with Lu, Pan, and Zhang (2015), we find SOE have, on average, higher

win rates (58.9%) than POE (42.8%). This effect is particularly prominent for loan-related cases, where SOE has a significantly higher win rate (61.3%) than POE (4.02%). In addition, cases involving SOE have a significantly larger stake (1,314.4 thousand RMB) than do those involving POE (491.9 thousand RMB).

Panel D lists the distribution of year gap (interval) between lawsuit announcements and bond issuance. About 70% of the bonds are issued within five years, and the rest of the bonds are issued more than five years after the lawsuit announcements. In the regression analysis, we define bonds issued within a four-year gap (53.9% of the full sample) as bonds with short gaps. The variable *Short gap* equals 1 if there are four or fewer years of gap between the litigation announcement and bond issuance, and zero otherwise.

Panel E compares bond and firm characteristics of our treated and control groups. Overall, treated bonds (issued by litigated firms) have higher yields, and spreads, lower ratings, shorter maturity, less issuance volume, and are more likely to provide collateral than controlled bonds (issued by unlitigated firms). Moreover, treated issuers are less profitable and have lower tangibility than controlled ones. To mitigate the observable differences between treated and control groups, we employ a one-to-one propensity score matching algorithm.²⁰ The summary statistics for the matched sample are reported in appendix table A.3. For the matched sample, the difference in firm characteristics is less significant. For example, the difference in firm size for the full sample is -0.369, significant at the 1% level, but for the matched sample it is -0.187, significant at the 5% level. After matching, the differences in bond features also reduce significantly. We report the

²⁰ When applying the propensity score matching, we first estimate a logit model based on the whole sample of firms with non-missing matching variables in the year prior to the litigation. In the logit model, the dependent variable is a dummy showing whether the issuer is litigated; the explanatory variables are firm characteristics, including firm size, age, tangibility, leverage, profitability, and industry and year dummies. Then we choose a bond with the closest propensity score without replacement for each treated bond as the control bond.

regression results using both full and matched samples in section 4.

4. Methodology and Empirical Tests

4.1 Methodology

We examine how lawsuits affect subsequent bond terms by comparing bond properties, including pricing and nonpricing terms of litigated versus unlitigated issuers, using the following baseline model:

$$\begin{aligned} \text{Spread (or other bond properties)}_{i,t} = & \beta_0 + \beta_1 \cdot (\text{Treated})_{i,t-1} + \beta_2 \cdot \\ & (\text{Bond characteristics})_{i,t} + \beta_3 \cdot (\text{Firm characteristics})_{i,t-1} + \beta_4 \cdot \\ & (\text{Year Dumm}) + \beta_5 \cdot (\text{Ind dumm}) + \varepsilon. \end{aligned} \quad (1)$$

where, *Treated* equals 1 if the bond is issued by a litigated firm, and zero otherwise. Similarly, controlling variables are defined earlier. *Year Dumm* and *Ind Dumm* indicate the year and industry fixed effects, respectively. We use Ordinary Least Squares (OLS) to estimate the model.

4.2 Baseline Results: Lawsuits and Bond Contracts

Panel A of Table 3 reports the baseline results on how lawsuit announcements affect bond terms. In columns (1)-(3) we use the full sample of 1,048 bonds; and in columns (4)-(6) we use the sample excluding plaintiffs, i.e., the sample including only disclosing firms as defendants and unlitigated firms.²¹ Intuitively, being a defendant or losing a lawsuit

²¹ We report the result of both the full sample and the sample excluding plaintiffs, because prior event studies on the effects of corporate lawsuit in China (e.g. Firth, Rui, and Wu, 2011) find that litigation announcements depress the stock prices of both defendant and plaintiff firms. Moreover, we hypothesize that lawsuits could harm the reputational capital of the plaintiff firms as well. This is because lawsuit reveals a hitherto unknown business dispute with stakeholders (Indeed, it is not uncommon that some plaintiffs later become defendants because of the counter-party claims). It may reveal firms' agency risk, broken business relationships, and other unethical behaviors. Under the institutional environment of China, litigation is often seen as the last resort in dispute resolution. Even if the company is the plaintiff, others tend to interpret litigation as a broken of business relationship, or failures to resolve a dispute in peaceful manner. This revised belief can also cause the value of firms' future surplus to decrease, which fits into the definition of

indicates a higher probability of wrongdoing. Column (1) of table 3 panel A shows that the spread is significantly higher for litigated firms than for unlitigated firms. The estimated coefficients suggest that the relationship is economically meaningful. *Ceteris paribus*, the bonds issued by litigated firms have a 4.2% ($=0.109/2.59$) higher spread on average than bonds issued by unlitigated firms. Restricting the sample to only defendants and unlitigated firms increases the economic impact of lawsuit announcements. The coefficient on *Treated bonds* in column (4) shows that the yield spreads of the bonds issued by litigated firms are 9.6% ($=0.249/2.59$) higher than those of the bonds issued by unlitigated firms on average.

The involvement in litigation does not have significant impact on nonpricing terms including maturity and issuance volume, as shown in panel A of Table 3. In appendix table A.2, we further examine the effect of litigation on call option and collateralization. The results suggest that litigated firms are more likely to issue bonds with call options but no collateral. In all the specifications, we control for firm characteristics. As expected, the results show that SOEs tend to have lower yield spreads and longer maturity, larger firms tend to have lower yield spreads and higher maturity and issuance volumes, firms with higher leverage tend to have higher yield spreads and lower issuance volumes, and less profitable firms tend to have higher yield spreads.²²

To isolate the observable differences between litigated and control firms, we use the one-to-one propensity-score-matched sample and rerun the regressions. Table A.4 in the appendix reports the results. Consistently, litigation involvement is positively associated with bond yield spreads and call options but negatively associated with maturity, issuance

reputational capital.

²² We also try a smaller sample keeping one bond for each firm. In order to do so, we follow Klein and Zur (2011), and we keep the most recently issued bond as the representative bond for the firm. The results are in appendix table A.6. We find consistent evidence that bonds from litigated firms have on average significantly higher yield spreads at issuance.

volume, and collateralization. The effect on bond pricing at issuance is the most significant compared to the effect on nonpricing terms. Taking column (1) as an example, bonds issued by litigated firms have a 4.9% (0.126/2.59) higher spread than bonds issued by unlitigated firms on average. Such effect is mitigated for the SOE. For robustness, we also run the tests with robust standard errors clustered by firm, and the results stay consistent.

4.3 Isolating Firm Heterogeneity

Then, we focus on firms that issue bonds before and after litigation. Although most issuers during our sample period have only one bond outstanding, some firms issue multiple bonds. Focusing on these issuers allows us to isolate how cross-firm differences may bias our result. This refined focus reduces our sample to 281 observations. We estimate the following model:

$$\begin{aligned} \text{Spread (or other bond properties)}_{i,t} = & \beta_0 + \beta_1 \cdot (\text{After})_t \cdot (\text{State ownership})_i + \\ & \beta_2 \cdot (\text{Bond characteristics})_{i,t} + \beta_3 \cdot (\text{Firm characteristics})_{i,t-1} + \beta_4 \cdot \\ & (\text{Year Dumm}) + \beta_5 \cdot (\text{Ind dumm}) + \varepsilon. \end{aligned} \quad (2)$$

where *After* is the time indicator for issuance after litigation announcements; *State ownership* is an indicator for POE or SOE. Many studies highlight how political connection helps firms access essential market resources, especially in emerging markets (Fisman, 2001; Faccio, 2006; Faccio, Masulis, and McConnell, 2006; Li et al., 2008). Firth, Rui, and Wu (2011) study stock market reactions to lawsuit news in China and show that abnormal returns for politically connected firms are less negative than those for non-connected firms. To test how political connections affect reputational penalty, we also introduce an interaction term between state ownership and the treatment dummy. Other control variables are defined earlier. *Year Dumm* and *Ind Dumm* indicate the year and industry fixed effects,

respectively.

Panel B of Table 3 presents the results using firms with bond offerings both before and after lawsuit announcements. Column (1) shows that, on average, for POE, the yield spread is 7.0% (0.182/2.59) higher than SOE for bonds issued after than before a lawsuit. In column (2), we include the lawsuit number because some firms are involved in multiple lawsuits over our sample period. *Ceteris paribus*, involvement in one additional lawsuit for POE increases the spread by 3.13% (0.0812/2.59). However, such an effect is insignificant for SOE. Columns (3) and (4) test the effect on maturity, and columns (5) and (6) test the effect on issuance volume for each offering. Table A.5 in the appendix further reports how litigation affects other bond properties, including call options and collateralization. We find that involvement in lawsuits has a significant effect on issuance volume and call options, but that effect is less significant on maturity and collateralization. Specifically, for POE, involvement in litigation reduces bond issuance volume and increases the probability of call options significantly. However, we do not find consistent results that involvement in more lawsuits further reduces issuance volume for each offering.

To conclude, from the subsample of firms that issue bonds both before and after a lawsuit, we find stronger impact on yield spreads for private firms. Overall, our evidence supports H1 and shows that bonds from litigated firms, especially defendant firms, have significantly higher at-issue yield spreads on average, suggesting that pricing is the primary mechanism that public debt investors employ to overcome information problems.

4.4 Validation Tests: Case Merit and Reputational Penalties

We next explore whether the results reflect reputational penalty due to lawsuits or some

measurement error that, for whatever reason, differs systematically between litigated and unlitigated firms. Haslem, Hutton, and Smith (2017) find heterogeneous stock market reactions across different case types. We follow the same logic and exploit the reputational repercussions of different types of lawsuits. Table 4 allows the spreads to depend on case outcome (win or lose) using only defendant issuers.²³ In addition, we compare the reputational penalties of being sued by a bank versus other case types, as well as involvement in contract-related case versus tort/other violations. As Karpoff (2012) points out, reputational capital does not discipline all types of firm misconduct. On average, firms do not lose value due to lost reputational capital when they are caught violating environmental or anti-bribery rules because these violations do not directly affect firms' counterparties. In line with this spirit, we posit bondholders are most sensitive to loan-related cases (in which firms' alleged default on private loans directly affect them), followed by regular business contracts (in which firms' contractual performance with other stakeholders is challenged), and least on tort related cases (in which the victims are typically third parties).

Consistent with this conjecture, in columns (1) and (2), we test how lawsuit outcomes (i.e., win or lose) affect the spread. For this test, we require that the case judgment is available before bond issuance. The coefficient indicates that losing issuers have a spread that is 19.6% ($=0.507/2.59$) higher ($p < 0.001$) than winning ones. In columns (3) and (4), we find that all else being equal, being sued by a bank causes the issuer to pay a 14.7% ($=0.380/2.59$) higher spread in subsequent bond issuance ($p = 0.000$) compared to other types of lawsuits. In columns (5) and (6), we find, on average, being sued in a contract-

²³ Here, including plaintiffs does not change our results about how the effects of lawsuits rely on case outcome and lawsuit type. For brevity, we only report the results using the sample of defendants in the table.

related case causes an 11.8% ($=0.306/2.59$) higher spread in subsequent bond issuance ($p=0.030$), compared to being sued in tort or other violations.

In all the specifications in table 4, we control for a dummy for the gap years between the litigation announcement and bond issuance, as well as its interaction with losing the case, being sued by a bank, and being sued in a contract-related case. We find the time gap only matters for the loan-related cases, with the interaction term being statistically significant only in column (4). This suggests that public debt holders are more concerned about reputation when their debtors are “recently” sued by a bank.

In sum, the heterogeneity tests in table 4 suggest that the reputational penalty that we document in tables 3 reflects a deliberate choice among bondholders rather than an artifact of measurement error or other randomness. Randomness cannot explain why the spread sensitivity to lawsuits is larger when the issuer loses the case and why it is most prominent when the lawsuits are related to bank loan defaults.

4.5 Impact of Issuer’s Home Institutions: Legal Environment and Social Capital

A key objective of this paper is to investigate how the reputation mechanism interacts with a firm’s institutional environments to discipline misconduct. We rely on prominent national surveys to capture heterogeneities in the legal and social capital environments among Chinese provinces.

On legal environment, we use two sets of variables. The first is the Producer Property Rights Index (PPRI) published jointly by the National Economic Research Institute and China Reform Foundation (Fan, Wang, and Zhu, 2011). PPRI is a composite index of three components: (1) the number of economic cases filed each year normalized by GDP, (2) the

extent to which the local regulations emphasize the protection of private firms, and (3) firm-level surveys on the local rule of law.²⁴ The second set of variables is the number of lawsuits per 10,000 residents in the issuer's home province, collected from the Chinese Provincial Yearbook over the 2008 to 2015 period.²⁵ Based on the sample mean, we divide Chinese provinces into "strong rule of law" and "weak rule of law" regions.²⁶ We then attribute litigated issuers into those headquartered in strong or weak rule-of-law regions.

Table 5 presents the interesting results incorporating the interaction terms of legal environment variables and lawsuit involvement. In columns (1) and (2) we use the sample including only defendants and unlitigated firms, and in columns (3) and (4) we further include plaintiffs. The coefficients on *Treated bonds* and their interactions with the legal environment suggest that the effect of lawsuits on spreads is more pronounced for issuers headquartered in weak rule-of-law regions but mitigated for those in strong rule-of-law regions. Taking column (1) as an example, being sued is associated with 12.1% ($=0.311/2.59$) higher yield spreads on average, while higher legal institutions can mitigate such effect by 11.3% ($=0.293/2.59$). Whether including the plaintiffs does not change the statistical significance of our results.

On provincial social capital, we use a battery of measures. Our first measure, *NGO*, is the number of people registered in NGOs per thousand people in a province. NGOs are typically funded by charities and operated by volunteers. Their goals are to address poverty, environmental protection, and the rights of disadvantaged groups. Individuals in regions with higher NGO participation tend to be more civic-minded and cooperative. Data on

²⁴ Prior studies using this index include Wang, Wong, and Xia (2008); Fan, Wong, and Zhang (2013); and Lu, Pan, and Zhang (2015).

²⁵ However, because the number of lawsuits are missing for some provinces, the variable *High lawsuits* has fewer observations.

²⁶ Results are similar when we use the sample median to split strong and weak rule-of-law provinces.

provincial NGO participation are manually collected from the Chinese Civil Affairs Statistical Yearbook of 2010.²⁷ The second measure, *Blood*, is provincial-level voluntary blood donation (without compensation) per thousand people. As Guiso, Sapienza, and Zingales (2004) argue, those who donate blood have neither legal nor economic incentives to do so. The activity is likely due to citizens' reciprocity and civic-mindedness. Following Ang, Cheng, and Wu (2015), this variable is measured as milliliters of voluntarily donated blood in a province, divided by population in 2000, which is the only year that complete province-level data from the Chinese Society of Blood Transfusion became available.²⁸

The third measure we use, is a score of environmental suitability in each province for growing wetland rice. Talhelm et al. (2014) find Chinese regions with a history of farming rice have more collaborative cultures than those with a history of growing wheat. This is because farmers in rice-growing regions are likely to form cooperative labor exchanges, especially when transplanting and harvesting, which are activities that must be completed in a short period of time. In economic terms, paddy rice adds value to cooperation, encouraging rice farmers to form tight relationships based on reciprocity and to avoid behaviors that create conflict. In comparison, wheat is easier to grow than rice. Wheat does not require irrigation, and wheat farmers can rely on rainfall, which does not require coordination with neighbors. Over time, societies that have to cooperate intensively become more interdependent and accumulate higher social capital. Our measure, *High rice wheat*, is defined by the natural logarithm of the rice index over wheat index. In other words, *High rice wheat*, equals 1 if the index is above mean, suggesting high social capital,

²⁷ For a robustness test, we use the average from 2010 to 2015; the results are similar across those years.

²⁸ China's blood donation law states that only the National Blood Center (NBC) can collect blood and without compensation. The NBC has operating branches in all provinces and adopts the same medical procedures across all regions, thereby mitigating the concern that differences in the quality of healthcare or medical infrastructure among provinces affect blood donation levels.

and zero otherwise, suggesting low social capital.

Based on the sample means, we divide Chinese provinces into regions with high social capital (*High NGO /High Blood/High rice wheat*) and low social capital (*Low NGO / Low Blood/Low rice wheat*). We then attribute litigated issuers into those headquartered in regions with high or low social capital and interact the social capital variables with the primary explanatory variable, *Treated bonds*. Table 6 reports the results. Similarly, in columns (1) to (3), we use the sample including the only defendant and unlitigated firms; in columns (4)-(6), we use the full sample including plaintiffs. The coefficients of the interactions are all positive and significant at least at the 5% level, suggesting that the effect of a reputational penalty is stronger for firms located in high social capital regions. Taking column (1) as an example, bonds issued by litigated firms have 13.0% ($=0.337/2.59$) higher yield spreads on average, significantly at the 5% level. However, in regions with low social capital, the difference in bond yield spreads for litigated issuers, and unlitigated issuers is not significant.

Overall, the results in table 5 support the H2 on a substituting relationship between legal institution and corporate reputation. That is, if the formal legal environment deters deviance, safeguards contracts, and facilitates businesses, it can mitigate stakeholder reliance on corporate reputation to achieve a given level of accountability. On the other hand, the results in table 6 support the H3 on a “complementing” role of social capital institutions on corporate reputation. High social capital spreads norms of cooperative behavior and firms’ (un)trustworthiness, which reinforces the marginal value of reputation.

4.6 Interactions of the Three Legs of the Trust Triangle

In this section, we further investigate how the reputational capital interacts with the other two legs, *i.e.*, legal institutions and social capital, in affecting the bond pricing at issuance and how such effect varies across different lawsuit outcomes and types.

In Panel A, we incorporate two interactions, *Treated bonds*SOE*, and *Treated bonds*High law institutions*, and split the samples into high and low social capital using the number of NGOs (*High NGO*).²⁹ The results suggest, first of all, the effect of being sued or involved in a lawsuit is significantly less pronounced for the SOE; second, the mitigating role of high law institutions in increasing the yield spreads is stronger and more significant in regions with low social capital, although both coefficients (-0.0457 and -0.701) are negative. Put differently, though high law institutions help mitigate the impact of reputational penalty in both high and low social capital environments, this mitigation effect is much weaker in high social capital environments than in low social capital environments. Whether including plaintiffs or not does not change our results about the interactive effects. This result suggests a *substitutive* relationship between social capital and legal institutions in affecting firms' reputational penalties.

In Panel B, we further examine how the reputational loss depends on the lawsuit outcome (lose or win), as well as its crossover effects from the other two legs of the trust triangle. We incorporate two interactions, *Lose*SOE*, and *Lose*High law institutions*. In column (1) we run the tests using the full sample, and in columns (2) and (3) we split the sample into high and low social capital regions based on the number of NGOs (*High NGO*). The results suggest both state ownership, and better legal environment can significantly mitigate the effect of losing a case in increasing the cost of bond financing afterwards. The

²⁹ For robustness, we also split the sample using *High Blood* and *High rice wheat* in Panel A, and the results are consistent. The same for Panel B and C of table 7.

mitigating role of high law institutions in increasing the yield spread of losing firms is stronger and more pronounced in regions with lower social capital. The *Chi-sq* test suggests that the economic difference between the coefficients of *Lose*High law institutions* (-0.318 versus -0.824) is significant at the 10% level. This confirms a substitutive relationship between social capital and legal institutions in affecting the reputational penalty of losing a case.

In Panel C, we explore the reputational penalty of different lawsuit types, *i.e.*, contract and tort/other related cases, as well as the crossover effects from the other two legs of the trust triangle, using a similar empirical setting. The results are consistent, showing that both state ownership and better legal environment mitigate the effect of contract related lawsuits in increasing the cost of bond financing; and the mitigating effect of legal environment is more pronounced and significant for regions with lower social capital.

Overall the results in table 7 exhibit how the three legs of trust interact with each other to discipline misconduct. We show the legal institution substitutes, and the social capital complements the role of reputational capital, supporting H2 and H3. Moreover, the substituting role of legal institution on reputation capital is weakened by a strong social capital environment, suggesting a possible substitution between the law (formal institution) and social capital (informal institution) in disciplining misconduct.

4.7 Event Studies

So far, our results confirm the reputational penalty of litigation through bond terms upon issuance. Little is known, however, on how lawsuit announcements affect existing bondholders. To calculate the wealth effect, we extract intraday bond price and trading data from *Wind*. Merging the bond trading data with lawsuits information allows us to derive

134 treated bonds with lawsuit announcement dates. We then employ a one-to-one propensity-score-matching algorithm based on bond characteristics, including rating, time to maturity, and coupon rate, to select the control bonds by unlitigated issuers.³⁰ This generates a sample of 268 corporate bonds (134 treated and 134 control bonds).

To reduce the impact of other information confounding the lawsuit announcement or the possibility of information leakage, we compute and report event windows that range from one to three trading days around the announcement date. We also calculate *Excess trading volume* as trading volume for bonds from litigated firms on a given day over the event window, minus the trading volume for its control bond over the same window.

Table 8 panel A reports average bond daily returns around different windows, namely, (-1, 0] and [-1, +1]. Columns (1) and (2) report the mean daily return for treated and control bonds. Column (3) reports their difference, which we define as an excess daily bond return. For the window (-1,0], the mean excess bond return is larger at -22bp and significant at the 5% level. After one more trading day, the excess return falls to -5bp and remains significant at the 5% level.

Panel B reports the excess daily trading volume near the announcement date. The daily trading volume is abnormally high around the announcement date. Over the window [-1, +1], the excess trading volume is valued at 5.95 million RMB (US\$ 900,000).³¹

We then run the following regression model:

$$\text{Excess/Abnormal bond return} = f(\text{event window} \times \text{Treated}, \text{bond characteristics}, \text{firm characteristics}, \text{abnormal stock return}) \quad (3)$$

³⁰ For the matching algorithm for the bond return sample, in the logit model, the dependent variable is a dummy showing whether the issuer is litigated; the explanatory variables are bond features including rating, time to maturity, and coupon rate, given that the existing securities terms are more likely to determine the price.

³¹ We also test with longer event windows [-3, +3] and [-5, +5]. The untabulated results show the effect for bond return vanishes; however, the effect on excess bond daily trading remains significant at the 1% level.

The dependent variable is *Excess bond return (EBR)* and *Abnormal bond return (ABR)* calculated following the literature.^{32,33} The key explanatory variable is *Treated*. Our controls for bond characteristics include *Bond rating score* and *Log (time to maturity)*. Firm characteristics include *Defendant* (if the disclosing firm is the defendant), *Central SOE*, *Local SOE*, *Firm size*, *Firm age*, *Tangibility*, *Leverage*, and *Profitability*. To account for stockholder reactions to lawsuit information, we control for *Abnormal stock returns*. In addition, to avoid the potential impact of trading activities on bond return, we control for *Lag exc trading*, defined as the standardized pre-period excess trading volume. We also include year and industry fixed effects with or without month fixed effects in the regressions.

Panel C presents the regression results on how lawsuit announcements affect *EBR*. Columns (1)-(4) report the results with *Treated* for the window $(-1, 0]$, and columns (5)-(8) report those for window $[-1, +1]$. The results from the models with month fixed effects suggest that on the lawsuit announcement date, the EBR of treated over control bonds is -24.4bp. Throughout the three-day period $[-1, +1]$, the EBR falls to -6.0bp.³⁴ Using ABR instead, the differences are larger. Table A.7 in the appendix reports that ABR of treated over control bonds is -44bp on the lawsuit announcement date and -33bp over the window

³² For *EBR*, we follow the method in Billings, Klein, and Zur (2011). *EBR* is the difference between the raw return for the bond in the lawsuit sample over an event window and its control bond. The daily clean bond return is daily bond price changes. Daily bond return is daily price change plus accrued interest. Raw return is the total cumulative bond return over the period beginning at a set number of trading days before the announcement date and ending on the same number of trading days after the announcement date.

³³ For *ABR*, we employ a mean-adjusted return model that accounts for changes in the term structure (Handjinicolaou and Kalay, 1984; Maxwell and Stephens, 2003). We first calculate a bond's premium holding period return (PBR) as the difference in a bond's raw daily return and duration-equivalent treasury security. We then use this PBR to calculate the average expected excess return as the average PBR for the month before the announcement date. The ABR is the difference in PBR around the announcement and the expected excess bond returns.

³⁴ The negative excess bond return (*EBR*) of the bonds with litigation vanishes when we expand the window to 7 or 11 days. The effect is similar for abnormal bond return (*ABR*).

[-1, +1]; both are significant at the 5% level. Taken together, we show in a narrow event window that bondholders react negatively to lawsuit news.

5. Conclusion

The last 20 years have seen substantial development in studying how legal institutions, reputational capital, and culture have a first-order effect on the formation of trust. However, most studies investigate one leg of trust in isolation. To date, there is little theoretical or empirical research that seeks to understand the endogenous determination of a society's relative reliance on all three legs of the Trust Triangle as the basis for trust in economic relationships (Dupont and Karpoff, 2020). This study responds to this call by presenting empirical evidence from China's corporate bond market.

Using lawsuits as events that shock firms' reputational capital, we find firms involved in lawsuits experience a decrease in bond values and a tightening of borrowing terms. The effect is more pronounced in private firms than state firms. Moreover, we show the magnitude of reputational penalty is larger for firms headquartered in regions with weak legal environments and high social capital. This evidence suggests that in emerging markets, stronger legal environment substitutes, and stronger social capital environment complements the reputation mechanism in economic transactions. Further evidence shows that the substituting role of the legal environment on reputational capital is weakened by a strong social capital environment, suggesting possible substitution between legal and cultural forces in discipline misconduct. Taken together, our evidence sheds light on how the three legs of trust interact to achieve a certain level of accountability.

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Table 1 China's Corporate Bond Market: An Overview**Panel A Bond issuance: Enterprise bonds vs. corporate bonds**

	Enterprise bonds			Corporate bonds (incl. bonds issued by private SMEs)		
	<i>Issuance vol. (bn RMB)</i>	<i>Bond number</i>	<i>Issuer number</i>	<i>Issuance vol. (bn RMB)</i>	<i>Bond number</i>	<i>Issuer number</i>
1996	0.9	4	4	-	-	-
1997	2.96	6	6	-	-	-
1998	9.804	27	26	-	-	-
1999	12.806	42	41	-	-	-
2000	8.53	10	9	-	-	-
2001	12.9	4	4	-	-	-
2002	32.5	14	12	-	-	-
2003	32.8	16	14	-	-	-
2004	27.2	15	14	-	-	-
2005	60.4	33	29	-	-	-
2006	61.5	42	42	-	-	-
2007	110.935	80	78	11.2	3	3
2008	156.69	57	56	28.8	14	14
2009	325.233	166	162	73.49	45	45
2010	282.703	160	156	51.15	16	15
2011	248.548	187	185	129.12	72	70
2012	649.931	479	461	262.631	270	255
2013	475.23	367	357	171.949	374	339
2014	697.198	578	529	144.562	579	410
2015	342.102	297	285	1031.38	1316	659

Panel B Characteristics of outstanding bonds by sector (as of March 2016)

	Obs.	Obs.(dummy=1) (percent)	Obs.(dummy=0) (percent)
<i>Corporate bonds</i>			
Bond issued by listed firms	743	561 (76%)	182(24%)
Bond issued by SOEs	743	395 (53%)	348 (47%)
Chengtou bond	743	67 (9%)	676 (91%)
<i>Enterprise bonds</i>			
Bond issued by listed firms	4,406	34 (1%)	4,372 (99%)
Bond issued by SOEs	4,406	4,204 (95%)	202 (5%)
Chengtou bond	4,406	3,634 (82%)	772 (18%)

Table 2 Descriptive Statistics

This table reports summary statistics for the bond issuance sample in the analysis. The full dataset consists of 1,048 bonds. Of these bonds, 469 are from listed firms with lawsuits before the issuance, and 579 bonds are from those without lawsuits before the issuance. We exclude bonds from financial firms and utilities. The matched sample consists of 469 treated bonds and 469 control bonds defined by a one-to-one propensity-score-matching algorithm based on firm characteristics including firm size, firm age, tangibility, leverage, and profitability. Bond ratings are from leading Chinese rating agencies, converted to integer values ranging from 9 for AAA+ to 5 for AA-. Standard deviations are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions of all the variables are in table A.1 of the appendix.

Panel A Bond Term Characteristics

	Obs.	Mean	Std. Dev.	Min	Max	25%	50%	75%
Bond yield at issue (%)	1,048	5.66	1.14	2.98	9.90	4.90	5.50	6.40
Bond yield spread at issue (%)	1,048	2.59	1.11	0.41	7.01	1.74	2.36	3.26
Bond rating score	1,048	7.07	1.25	5	9	6	7	9
Callable	1,048	0.70	0.46	0	1	0	1	1
Collateral	1,048	0.38	0.49	0	1	0	0	1
Maturity (years)	1,048	5.59	1.72	2	15	5	5	6
Issuance volume (bn RMB)	1,048	1.43	1.47	0.80	16	0.56	1.00	1.60

Panel B: Bond Issuer Characteristics

	Obs.	Mean	Std. Dev.	Min	Max	25%	50%	75%
Total assets (bn RMB)	1,048	52.30	167	0.703	2170	6.01	13.5	34.3
Total liabilities (bn RMB)	1,048	34.20	92.10	0.05	988	2.97	8.29	24.6
Total equity (bn RMB)	1,048	18.10	81.20	0.30	1,180	2.88	4.8	12.3
Fixed assets (bn RMB)	1,048	12.20	54	0.00	703	0.46	1.51	5.94
Firm size	1,048	23.49	1.37	20.37	28.41	22.52	23.32	24.26
Firm age	1,048	16.26	5.73	1	64	13	17	19
Profitability	1,048	0.04	0.03	-0.03	0.40	0.02	0.03	0.06
Leverage	1,048	0.58	0.17	0.05	0.93	0.47	0.61	0.71
Tangibility	1,048	0.20	0.19	0.00	0.90	0.05	0.14	0.33
SOE	1,048	0.53	0.50	0	1	0	1	1

Panel C Case Distribution for the Bond Issuance Sample

Suit type	<i>SOE</i>					<i>POE</i>					Total
	Plaintiff	Defendant	P/D ratio	Win rate	Litigation stake (thd)	Plaintiff	Defendant	P/D ratio	Win rate	Litigation stake (thd)	
1 (Loan related)	10	29	34.48%	61.3%	510.83	2	40	5.00%	4.02%	230.10	81
2 (Reg business)	61	64	95.31%	56.8%	329.54	33	27	122.22%	55.3%	790.56	185
3 (Tort)	55	54	101.85%	60.2%	2906.07	32	44	72.73%	65.6%	406.41	185
Total	126	147	85.71%	58.9%	1314.40	67	119	56.30%	42.8%	491.90	451

Panel D Distribution of Years between Lawsuit Announcements and Bond Issuance

<i>Time gap (in years)</i>	<i>Freq</i>	<i>Percent</i>
1	41	8.74
2	74	15.78
3	60	12.79
4	78	16.63
5	71	15.14
6	35	7.46
7	67	14.29
8	41	8.74
9	2	0.43
Total	469	100

Panel E Comparative Summary Statistics by Group: Full Sample

	<i>Treated firms</i>		<i>Control firms</i>		<i>Difference</i>
Bond yield at issue	5.783 (0.053)	469	5.554 (0.050)	579	0.229*** (0.074)
Bond yield spread at issue	2.663 (0.052)	469	2.503 (0.048)	579	0.160** (0.071)
Bond rating score	6.893 (0.054)	469	7.092 (0.053)	579	-0.198*** (0.076)
Callable	0.723 (0.021)	469	0.701 (0.019)	579	0.022 (0.028)
Collateral	0.380 (0.022)	469	0.323 (0.019)	579	0.056** (0.029)
Log(Maturity)	1.639 (0.234)	469	1.678 (0.297)	579	-0.038** (0.017)
Log(Issuance vol.)	2.207 (0.033)	469	2.356 (0.035)	579	-0.149*** (0.049)
Firm size	23.267 (0.055)	469	23.636 (0.061)	579	-0.369*** (0.084)
Firm age	18.322 (0.208)	469	15.497 (0.251)	579	2.825*** (0.335)
Leverage	0.586 (0.008)	469	0.574 (0.007)	579	0.012 (0.010)
Profitability	0.039 (0.002)	469	0.043 (0.001)	579	-0.003** (0.002)
Tangibility	0.174 (0.008)	469	0.229 (0.008)	579	-0.055*** (0.011)

Table 3 Baseline Results

Panel A Effect of Lawsuits on Pricing and Non-pricing Terms of Bond Contracts

This table reports the results of the regressions examining how lawsuits affect the pricing and non-pricing terms of bond contracts. The key explanatory variable is *Treated bond*, which equals 1 if the bond is issued by the litigated firm, and 0 otherwise. Columns (1)-(3) use the full sample of 1,048 bonds, including bonds issued by litigated firms (plaintiffs and defendants) and unlitigated firms; columns (4)-(6) use the sample of bonds issued by either defendants or unlitigated firms. All the other variables are defined in appendix table A.1. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

<i>Dep. Var.</i>	<i>Bond Yield Spread</i>	<i>Log(Maturity)</i>	<i>Log(Issuance vol.)</i>	<i>Bond Yield Spread</i>	<i>Log(Maturity)</i>	<i>Log(Issuance vol.)</i>
	<i>Full sample</i>			<i>Sample excl. plaintiff</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
Treated bond	0.109** (0.0536)	-0.0241 (0.0155)	0.00326 (0.0322)	0.249*** (0.0703)	-0.00961 (0.0182)	-0.0758** (0.0357)
SOE	-0.942*** (0.0595)	0.112*** (0.0162)	0.0322 (0.0358)	-0.992*** (0.0679)	0.104*** (0.0185)	-0.000864 (0.0391)
Bond rating score	-0.372*** (0.0278)	0.0283*** (0.00963)	0.00450 (0.0208)	-0.372*** (0.0322)	0.0298*** (0.0108)	0.0267 (0.0217)
Callable	-0.148** (0.0583)	0.212*** (0.0210)	0.119*** (0.0438)	-0.159** (0.0684)	0.224*** (0.0238)	0.161*** (0.0464)
Collateral	0.241*** (0.0675)	0.0134 (0.0212)	0.0146 (0.0405)	0.234*** (0.0743)	0.0202 (0.0236)	-0.00226 (0.0456)
Log(Maturity)	0.426*** (0.116)		-0.119 (0.0780)	0.235* (0.131)		-0.183** (0.0832)
Log(Issuance vol.)	-0.107** (0.0466)	-0.0250 (0.0165)		-0.0717 (0.0551)	-0.0419** (0.0188)	
Firm size	-0.0957*** (0.0336)	0.0582*** (0.0150)	0.518*** (0.0230)	-0.112*** (0.0395)	0.0771*** (0.0161)	0.520*** (0.0254)
Firm age	-0.00870** (0.00423)	0.00136 (0.00152)	0.00274 (0.00296)	-0.00955** (0.00448)	0.00166 (0.00159)	0.00221 (0.00311)
Leverage	0.568*** (0.211)	-0.108 (0.0721)	-0.602*** (0.147)	0.519** (0.222)	-0.158** (0.0745)	-0.499*** (0.155)
Profitability	-3.285*** (0.983)	-0.407* (0.217)	0.544 (0.494)	-3.676*** (1.118)	-0.379 (0.247)	1.698*** (0.548)
Tangibility	-0.150 (0.145)	-0.0158 (0.0477)	-0.611*** (0.0937)	-0.0233 (0.171)	-0.0381 (0.0563)	-0.599*** (0.105)
Cons	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Obs.	1,048	1,048	1,048	838	838	838
R-sq.	0.521	0.316	0.619	0.549	0.333	0.656

Panel B Lawsuits and Bond Contract: Subsample for Firms with Bond Offerings both Before and After Lawsuits

This table reports the results of the regressions on how lawsuits affect the pricing and nonpricing terms of bond contracts using the subsample for firms that issue bonds both before and after lawsuit announcements. *After* equals 1 if the bond is issued after the litigation announcement, or 0 otherwise. *Lawsuit Num* equals the number of lawsuits involving the disclosing firm. *POE* equals 1 if the disclosing firm is a non-SOE, or 0 otherwise. All the other variables are defined in appendix table A.1. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

<i>Dep. Var.</i>	<i>Bond Yield Spread</i>		<i>Log(Maturity)</i>		<i>Log(Issuance vol.)</i>	
	(1)	(2)	(3)	(4)	(5)	(6)
After * POE	0.182* (0.103)	0.0249* (0.0123)	-0.0177 (0.0389)	0.0148 (0.0394)	-0.360*** (0.103)	-0.306** (0.118)
POE	0.647*** (0.145)	0.588*** (0.136)	-0.137*** (0.0489)	-0.137*** (0.0432)	0.199 (0.149)	0.217 (0.146)
Lawsuit num.		-0.0262*** (0.00552)		-0.00884*** (0.00179)		0.0128*** (0.00484)
Lawsuit num. * After		-0.0303 (0.0635)		-0.00955*** (0.00211)		0.0121 (0.0547)
Lawsuit num * After * POE		0.0812*** (0.0197)		-0.00224 (0.00659)		-0.0210 (0.0130)
Bond rating score	-0.0401 (0.0379)	-0.0543 (0.0355)	0.0176 (0.0172)	0.0160 (0.0160)	-0.0310 (0.0408)	-0.0270 (0.0414)
Callable	-0.0527 (0.102)	0.00668 (0.0948)	0.101*** (0.0367)	0.121*** (0.0359)	0.435*** (0.114)	0.392*** (0.119)
Collateral	0.0862 (0.127)	0.209* (0.126)	0.0923 (0.0567)	0.123*** (0.0468)	0.274** (0.137)	0.211 (0.141)
Log(Maturity)	1.053*** (0.143)	0.858*** (0.152)	- -	- -	0.0688 (0.174)	0.185 (0.187)
Log(Issuance vol.)	-0.244*** (0.0572)	-0.201*** (0.0516)	0.0103 (0.0254)	0.0250 (0.0236)	- -	- -
Firm size	-0.247*** (0.0502)	-0.280*** (0.0482)	0.0643** (0.0319)	0.0566* (0.0302)	0.556*** (0.0492)	0.555*** (0.0507)
Firm age	-0.00402 (0.00805)	0.00432 (0.00667)	-0.0123*** (0.00410)	-0.00828** (0.00370)	0.00746 (0.00748)	0.00358 (0.00768)
Leverage	0.350 (0.308)	1.015*** (0.330)	-0.196 (0.148)	-0.0153 (0.141)	-1.247*** (0.443)	-1.494*** (0.471)

Profitability	-2.044 (1.463)	-0.0391 (1.325)	-0.261 (0.559)	0.151 (0.525)	-5.907*** (1.421)	-6.549*** (1.424)
Tangibility	0.241 (0.301)	0.0890 (0.275)	0.397*** (0.131)	0.320*** (0.114)	-0.312 (0.297)	-0.248 (0.293)
Cons	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	281	281	281	281	281	281
R-sq.	0.691	0.727	0.603	0.646	0.572	0.576

Table 4 Heterogeneity Tests: Losing the Case, Being Sued by a Bank, and Lawsuit Type

This table reports the results of the regressions examining whether the effects on bond pricing at issuance relies on lawsuit outcome (i.e., win or lose), being sued by a bank, and the lawsuit type (contract related or tort/others related). *Lose* equals 1 if the disclosing firm loses the case and 0 otherwise. *Sued by bank* equals 1 if the firm is sued by a bank in loan-related cases. *Contract* is defined as 1 if the lawsuit is contract related and 0 otherwise. *Short gap* equals 1 if the years between the litigation announcement and bond issuance is equal to or less than four, and zero otherwise. We use the sample of bonds issued by defendant firms. All the other variables are defined in appendix table A.1. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

<i>Dep. Var.</i>	<i>Bond Yield Spread At Issue</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Lose	0.507*** (0.113)	0.620*** (0.140)				
Lose*Short gap		-0.282 (0.285)				
Short gap		0.238 (0.272)		-0.0184 (0.186)		0.198 (0.247)
Sued by bank			0.380*** (0.121)	0.276** (0.139)		
Sued by bank* Short gap				0.832*** (0.263)		
Contract					0.306** (0.124)	0.405** (0.159)
Contract * Short gap						-0.223 (0.260)
SOE	-1.385*** (0.153)	-1.337*** (0.172)	-1.441*** (0.138)	-1.463*** (0.132)	-1.573*** (0.120)	-1.569*** (0.120)
Log (litigation stake)			0.0380 (0.0263)	0.0383 (0.0259)		
Other bond features	Yes	Yes	Yes	Yes	Yes	Yes
Other firm features	Yes	Yes	Yes	Yes	Yes	Yes
Cons	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	218	218	225	225	225	225
R-sq.	0.623	0.621	0.629	0.638	0.606	0.605

Table 5 The Impact of Legal Institutions on Reputational Penalty

This table reports the results of the regressions examining how lawsuits affect bond pricing at issuance through legal institutions. Columns (1)- (2) use the subsample of defendants and unlitigated firms; and column (3)-(4) uses the full sample. The key variable is *Treated bonds*, defined as 1 if the bond is issued by the litigated firm, and 0 otherwise, as well as its interactions with the dummy variables identifying the local legal environments, i.e. *High law institutions* and *High lawsuits*. We use the Producer Property Rights Index (Fan, Wang, and Zhu, 2011) in 2009, as well as the number of lawsuits per 10,000 persons in each region from 2008 to 2015 to measure legal environments. Strong-legal environment and weak-legal environment regions are defined by sample mean of PPRI and number of lawsuits in each region. All the other variables are defined in appendix table A.1. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

<i>Dep. Var.</i>	<i>Bond Yield Spread At Issue</i>			
	<i>Excl. plaintiff</i>		<i>Full sample</i>	
	(1)	(2)	(3)	(4)
Treated bonds	0.311** (0.133)	0.831*** (0.257)	0.287*** (0.104)	0.405** (0.190)
Treated bonds * High law institutions	-0.293** (0.132)		-0.243** (0.120)	
High law institutions	-0.128 (0.0891)		-0.130 (0.0897)	
Treated bonds* High lawsuits		-0.659** (0.270)		-0.332* (0.181)
High lawsuits		-0.153 (0.103)		-0.159 (0.101)
SOE	-1.010*** (0.0684)	-1.060*** (0.107)	-0.963*** (0.0592)	-1.030*** (0.0984)
Other bond features	Yes	Yes	Yes	Yes
Other firm features	Yes	Yes	Yes	Yes
Cons	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Obs.	838	382	1048	465
R-sq.	0.550	0.610	0.527	0.575

Table 6 The Impact of Social Capital on Reputational Penalty

This table reports the results of the regressions examining how lawsuits affect bond pricing at issuance through social capital. Columns (1)-(3) use the subsample of defendants and unlitigated firms; column (4)-(6) use the full sample. The key variable is *Treated bonds*, defined as 1 if the bond is issued by the litigated firm, and 0 otherwise. All the other variables are defined in appendix table A.1. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

<i>Dep. Var.</i>	<i>Bond Yield Spread At Issue</i>					
	<i>Excl. plaintiff</i>			<i>Full sample</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
Treated bonds	0.0732 (0.107)	0.104 (0.0978)	0.262*** (0.0697)	0.0285 (0.0761)	0.00958 (0.0695)	0.136** (0.0550)
Treated bonds * High NGO	0.337** (0.134)			0.276** (0.106)		
High NGO	-0.183*** (0.0662)			-0.180*** (0.0665)		
Treated bonds * High blood		0.351** (0.142)			0.290*** (0.110)	
High Blood		-0.0684 (0.0668)			-0.0665 (0.0668)	
Treated bonds * High rice wheat			0.204** (0.0968)			0.272*** (0.0778)
High rice wheat			0.0209 (0.0557)			0.0363 (0.0564)
SOE	-0.994*** (0.0677)	-0.984*** (0.0684)	-0.994*** (0.0688)	-0.942*** (0.0595)	-0.944*** (0.0599)	-0.961*** (0.0610)
Other bond features	Yes	Yes	Yes	Yes	Yes	Yes
Other firm features	Yes	Yes	Yes	Yes	Yes	Yes
Cons	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	838	822	811	1048	1027	1003
R-sq.	0.553	0.554	0.558	0.523	0.529	0.537

Table 7 Interactions of the Three Legs of the Trust Triangle**Panel A Lawsuits and Bond Pricing**

This table reports the results of the regressions examining how the reputational capital interacts with the other two legs of the trust triangle (Dupont and Karpoff, 2020), i.e. legal institutions and social capital in affecting the bond pricing at issuance. Columns (1)-(2) use the subsample of defendants and unlitigated firms; column (3)-(4) use the full sample. *Treated bonds*, defined as 1 if the bond is issued by litigated firm, and 0 otherwise. All the other variables are defined in appendix table A.1. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Dep. Var	<i>Bond Yield Spread At Issue</i>			
	<i>Excl. plaintiff</i>		<i>Full sample</i>	
	High SC	Low SC	High SC	Low SC
	(1)	(2)	(3)	(4)
Treated bonds	0.891*** (0.155)	0.654** (0.265)	0.574*** (0.148)	0.338* (0.179)
SOE	-0.882*** (0.108)	-0.751*** (0.120)	-0.919*** (0.108)	-0.733*** (0.120)
Treated bonds * SOE	-0.948*** (0.169)	-0.554** (0.260)	-0.531*** (0.147)	-0.226 (0.191)
High law institutions	-0.0319 (0.0951)	-0.0232 (0.121)	-0.0510 (0.0979)	-0.0540 (0.119)
Treated bonds* High law institutions	-0.0457 (0.161)	-0.701*** (0.261)	-0.0953 (0.138)	-0.407** (0.182)
Chi-sq(Treated bonds * SOE)	(High SC, Low SC)= 1.71		(High SC, Low SC)= 1.68	
P value	(0.1904)		(0.1954)	
Chi-sq(Treated bonds * High law institutions)	(High SC, Low SC)= 4.83**		(High SC, Low SC)= 1.94	
P value	(0.0280)		(0.1635)	
Other bond features	Yes	Yes	Yes	Yes
Other firm features	Yes	Yes	Yes	Yes
Cons	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Obs.	458	375	542	498
R-sq.	0.626	0.548	0.570	0.541

Panel B Lawsuit Outcome and Bond Pricing

This table reports the results of the regressions examining how the reputational penalty depends on the lawsuit outcome (lose or win) as well as its crossover effects from the other two legs of the trust triangle, i.e. legal institutions and social capital. Column (2)-(3) split the sample into regions with high and low social capital based on the number of NGOs (High NGO). *Lose*, is defined as 1 if the litigated firm lost the case, and 0 otherwise. All the other variables are defined in appendix table A.1. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Dep. Var	<i>Bond Yield Spread At Issue</i>		
	High SC		Low SC
	(1)	(2)	(3)
Lose	0.858*** (0.155)	1.231*** (0.189)	0.650*** (0.227)
SOE	-0.566*** (0.0986)	-0.707*** (0.152)	-0.290* (0.174)
Lose*SOE	-0.741*** (0.147)	-0.681*** (0.193)	-0.772*** (0.229)
High law institutions	-0.165**	-0.237**	-0.0362

	(0.0801)	(0.101)	(0.151)
Lose*High law institutions	-0.276*	-0.318*	-0.824***
	(0.141)	(0.176)	(0.241)
Chi-sq (Lose)		(High SC, Low SC)= 4.25**	
(P-value)		(0.0393)	
Chi-sq (Lose*SOE)		(High SC, Low SC)= 0.10	
(P-value)		(0.7501)	
Chi-sq (Lose*High law institutions)		(High SC, Low SC)= 3.16*	
(P-value)		(0.0754)	
Other bond features	Yes	Yes	Yes
Other firm features	Yes	Yes	Yes
Cons	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Obs.	496	262	234
R-sq.	0.557	0.690	0.655

Panel C Lawsuit Type and Bond Pricing

This table reports the results of the regressions examining how the reputational penalty depends on the lawsuit type (contract or tort/others related) as well as its crossover effects from the other two legs of the trust triangle, i.e. legal institutions and social capital. Column (2)-(3) split the sample into regions with high and low social capital based on the index of number of NGOs. *Contract*, is defined as 1 if the lawsuit is contract related, and 0 otherwise. All the other variables are defined in appendix table A.1. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Dep. Var	<i>Bond Yield Spread At Issue</i>		
		High SC	Low SC
	(1)	(2)	(3)
Contract	0.390*** (0.144)	0.320** (0.154)	0.283 (0.219)
SOE	-0.686*** (0.118)	-0.985*** (0.176)	-0.393** (0.186)
Contract*SOE	-0.473*** (0.141)	-0.377** (0.156)	-0.296 (0.218)
High law institutions	-0.246** (0.106)	-0.434*** (0.120)	-0.156 (0.189)
Contract*High law institutions	-0.0537 (0.127)	0.212 (0.148)	-0.411** (0.209)
Chi-sq (Contract)		(High SC, Low SC)= 0.13	
(P-value)		(0.6051)	
Chi-sq (Lose*SOE)		(High SC, Low SC)= 0.41	
(P-value)		(0.4031)	
Chi-sq (Lose*High law institutions)		(High SC, Low SC)= 6.39**	
(P-value)		(0.0115)	
Other bond features	Yes	Yes	Yes
Other firm features	Yes	Yes	Yes
Cons	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Obs.	621	325	296
R-sq.	0.534	0.633	0.650

Table 8 Excess Bond Return (EBR) and Trading Volume around Lawsuit Announcements

This table reports the comparative excess bond return and excess bond daily trading volume in the analysis. The sample consists of 134 treated bonds from firms with lawsuits and 134 control bonds from those without lawsuits. We identify the control bonds via the one-to-one propensity-score-matching algorithm based on characteristics including bond rating, time to maturity, and coupon rate. All the other variables are defined in appendix table A.1. Standard deviations are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A Bond Daily Returns Around Lawsuit Announcements

	Obs.	Treated bonds (1)	Control bonds (2)	Difference (3)
Day (-1, 0]	134	-0.0030 (0.0013)	-0.0008 (0.0006)	-0.0022** (0.0012)
Days[-1,+1]	402	-0.0009 (0.0004)	-0.0004 (0.0003)	-0.0005** (0.0002)

Panel B Bond Daily Trading Volume Around Lawsuit Announcements

	Obs.	Treated Bonds (thd RMB) (1)	Control Bonds (thd RMB) (2)	Difference (thd RMB) (3)
Days (-1, 0]	134	8,813.4 (1,875.8)	6,224.8 (1,066.3)	2,588.5 (2,215.1)
Days[-1,+1]	402	12,703.1 (2,091.4)	6,753.5 (790.2)	5,949.6*** (2,233.8)

Panel C The Effect of Lawsuit Announcements on Excess Bond Returns: Regression Analysis

This table reports the results of the regression examining how lawsuits affect excess bond returns (*EBR*) during various event windows. The key explanatory variable is *Treated*, which equals 1 if the bond is from a litigated firm, and 0 otherwise. *Lag exc trading* is the standardized pre-period excess trading volume. All the other variables are defined in appendix table A.1. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

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Online Appendix for

“Institutions and Corporate Reputation: Evidence from Public Debt Markets”

Xian Gu, Iftekhar Hasan, Haitian Lu

Table A.1 Variable Definitions

Variable	Definition
Log (Issuance vol.)	= logarithm of bond issuance volume.
Coupon rate	= annual coupon rate of the bond.
Bond yield at issue	= at-issue yield of the bond.
Bond yield spread at issue	= difference between the at-issue yield of the bond and the treasury bond yield matched by maturity in the same month of issuance.
Log (Maturity)	= logarithm of the bond maturity (in years).
Callable	= 1 if the issue is callable on a predetermined schedule; 0 otherwise.
Collateral	= 1 if the issue is based on collateral; 0 otherwise.
Bond rating score	= numeric score of the bond rating (e.g. 9 for AAA+, 8 for AAA, etc.)
Bond price	= daily closing bond price.
Bond trading vol.	= daily bond trading volume in thousands of RMB.
Time to maturity	= number of years between the trading date and the maturity date.
Daily bond return	= actual daily bond return, calculated as: $BR_t = \frac{BP_{t+1} + C_t - BP_t}{BP_t}$ where BP_{t+1} is the bond price on day $t+1$; BP_t is the bond price on day t ; C_t is the coupon payments between day t and $t+1$.
Clean daily bond return	= daily bond return calculated by $BR_t = \frac{BP_{t+1} - BP_t}{BP_t}$ where BP_{t+1} is the bond price on day $t+1$; BP_t is the bond price on day t ;
Excess bond return (EBR)	= difference between the treated firm's and its control firm's daily bond returns.
Premium bond return (PBR)	= daily bond return minus the return on a matched treasury security (TR).
Abnormal bond return (ABR)	= premium bond return minus average PBR in the previous month.
Excess trading vol.	= difference between the treated firm and its control firm's daily trading volume in thousands of RMB.
Lag exc trading	= standardized pre-period (event windows constructed) excess trading volume.
ABR_stock	= abnormal stock return of issuers.
Firm size	= logarithm of total assets.
Firm age	= logarithm of the difference between the issuance/trading year and the year of firm's incorporation.
Profitability	= ratio of net profit to total assets.
Leverage	= ratio of total debt to total assets.

Tangibility	= ratio of fixed assets to total assets.
SOE	= 1 if the firm is state-owned enterprise (SOE); 0 otherwise.
POE	=1 if the firm is privately owned enterprise (POE); and 0 otherwise.
Central SOE	= 1 if the firm is central SOE; 0 otherwise.
Local SOE	= 1 if the firm is local SOE; 0 otherwise.
Log (Litigation stake)	= logarithm of the amount of the plaintiff's claims.
Sued by bank	= 1 if the firm is sued by a bank; 0 otherwise.
Lose	=1 if the disclosing firm lost the case; 0 otherwise.
Contract	=1 if the disclosing firm was involved in a contract related case; 0 otherwise (involved in a tort related case).
Lawsuit Num.	= number of lawsuits in which the firm has been involved.
Ch/Lstake	= ratio of cash holding at the beginning of the year when the case is filed to the litigation stake.
Short gap	= 1 if the time gap between the litigation announcement and bond issuance is equal to or less than four years, and 0 otherwise.
High law institutions	= 1 if the firm is located in a province with stronger legal environment. We use the sample mean of Producer Property Rights Index (Fan, Wang and Zhu, 2011) in 2009 to define stronger/weaker legal environment.
High NGO	= 1 if the firm is located in a province where the number of people registered in NGOs per thousand population is above the sample mean.
High blood	= 1 if the firm is located in a province where the voluntary blood donation without compensation per thousand population is above the sample mean.
High rice wheat	=1 if logarithm of the rice index over wheat index is above mean; 0 otherwise. The indices suggest the crop suitability for wetland rice and low rain-fed wheat, respectively. The data are from the Food and Agriculture Organization of the United Nations. http://www.fao.org/nr/gaez/en/

Table A.2 Effect of Lawsuits on Non-pricing Terms (Call option and Collateralization) of Bond Contracts

This table reports the results of the regressions examining how lawsuits affect the additional nonpricing terms, i.e. call options and collateralization of bond contracts. The key explanatory variable is *Treated bond*, which equals 1 if the bond is issued by litigated firm, and 0 otherwise. Columns (1) and (3) use the sample including defendants and unlitigated firms (838 bonds) and columns (2) and (4) use the full sample of 1,048 bonds, including bonds issued by litigated firms (plaintiffs and defendants) and unlitigated firms. All the other variables are defined in appendix table A.1. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

<i>Dep. Var.</i>	<i>Callable</i>		<i>Collateral</i>	
	Excl. plaintiff	Full sample	Excl. plaintiff	Full sample
	(1)	(2)	(3)	(4)
Treated bond	0.0425 (0.0333)	0.0471* (0.0281)	-0.0851** (0.0385)	-0.0701** (0.0311)
SOE	-0.118*** (0.0388)	-0.152*** (0.0361)	0.106*** (0.0399)	0.0725** (0.0368)
Treated bond * SOE	-0.163*** (0.0595)	-0.104** (0.0486)	0.225*** (0.0583)	0.167*** (0.0488)
Bond rating score	-0.0775*** (0.0184)	-0.0774*** (0.0164)	0.154*** (0.0158)	0.168*** (0.0133)
Callable	- -	- -	-0.150*** (0.0379)	-0.135*** (0.0325)
Collateral	-0.148*** (0.0367)	-0.136*** (0.0329)	- -	- -
Log(Maturity)	0.577*** (0.0624)	0.566*** (0.0563)	0.0583 (0.0622)	0.0304 (0.0566)
Log(Issuance vol.)	0.0983*** (0.0283)	0.0707*** (0.0257)	0.000133 (0.0279)	0.00101 (0.0227)
Firm size	-0.153*** (0.0217)	-0.143*** (0.0195)	-0.124*** (0.0245)	-0.135*** (0.0218)
Firm age	-0.00426* (0.00256)	-0.00253 (0.00237)	0.000725 (0.00252)	0.00205 (0.00238)
Leverage	0.465*** (0.124)	0.489*** (0.103)	0.468*** (0.129)	0.542*** (0.118)
Profitability	0.460 (0.541)	0.628 (0.460)	-0.609 (0.467)	-0.641 (0.406)
Tangibility	-0.0596 (0.114)	-0.0519 (0.0775)	-0.106 (0.105)	-0.137* (0.0737)
Cons	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Obs	838	1,048	838	1,048
R-sq.	0.373	0.350	0.405	0.413

Table A.3 Comparative Descriptive Statistics by Group: One-to-One Matched Sample

This table reports summary statistics for the matched bond sample. The full bond sample consists of 1,048 bonds. Of these bonds, 469 are issued by listed firms with lawsuits before issuance and 579 bonds are issued by those without lawsuits before the issuance. We employ the one-to-one propensity score matching on the full sample. In order to do this, we run a logit model of the treatment (litigation) on bond rating and firm features including firm size, firm age, tangibility, leverage, and profitability. Then we choose a bond from the control sample with the closest propensity score without replacement for each treated bond as the control bond. The matched sample consists of 469 treated bonds and 469 control bonds. Bond ratings are from leading Chinese rating agencies, converted to integer values ranging from 9 for AAA+ to 5 for AA-. Standard deviations are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Definitions of all the variables are in table A.1 of the appendix.

	<i>Treated firms</i>		<i>Control firms</i>		<i>Difference</i>
Bond yield at issue	5.783 (0.053)	469	5.666 (0.056)	469	0.116* (0.077)
Bond yield spread at issue	2.663 (0.052)	469	2.592 (0.054)	469	0.071* (0.042)
Bond rating score	6.893 (0.054)	469	6.957 (0.056)	469	-0.064 (0.078)
Callable	0.723 (0.021)	469	0.742 (0.020)	469	-0.019 (0.028)
Collateral	0.380 (0.022)	469	0.313 (0.021)	469	0.066** (0.031)
Log(Maturity)	1.639 (0.234)	469	1.668 (0.013)	469	-0.028** (0.017)
Log(issuance vol.)	2.207 (0.033)	469	2.242 (0.036)	469	-0.036 (0.049)
Firm size	23.267 (0.055)	469	23.454 (0.063)	469	-0.187** (0.083)
Firm age	18.322 (0.208)	469	16.624 (0.269)	469	1.697*** (0.340)
Leverage	0.586 (0.008)	469	0.585 (0.008)	469	0.000 (0.011)
Profitability	0.039 (0.002)	469	0.040 (0.001)	469	-0.001 (0.002)
Tangibility	0.174 (0.008)	469	0.203 (0.009)	469	-0.029** (0.011)

Table A.4 Effect of Lawsuits on Bond Yield Spreads at Issue: One-to-One Matched Sample

This table reports the results of the regressions examining how lawsuits on at-issue bond yield spreads, using the one-to-one matched sample. The key explanatory variable is *Treated bond*, which equals 1 if the bond is from a litigated firm, and 0 otherwise. All the other variables are defined in appendix table A.1. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Dep. Var.	<i>Bond yield spread</i>		<i>Log(Maturity)</i>		<i>Log(Issuance vol.)</i>		<i>Callable</i>		<i>Collateral</i>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treated bond	0.126** (0.0546)	0.304*** (0.0901)	-0.0219 (0.0155)	-0.0386** (0.0176)	0.0141 (0.0326)	-0.0799* (0.0475)	-0.0101 (0.0244)	0.0586** (0.0288)	0.0232 (0.0246)	-0.0538* (0.0318)
SOE	-0.986*** (0.0628)	-0.824*** (0.0833)	0.111*** (0.0170)	0.0953*** (0.0226)	0.0411 (0.0373)	-0.0447 (0.0473)	-0.193*** (0.0298)	-0.129*** (0.0381)	0.126*** (0.0328)	0.0551 (0.0402)
Treated * SOE		-0.357*** (0.114)		0.0337 (0.0316)		0.189*** (0.0665)		-0.138*** (0.0507)		0.154*** (0.0520)
Bond rating	-0.351*** (0.0307)	-0.347*** (0.0304)	0.0323*** (0.0100)	0.0318*** (0.0100)	-0.0175 (0.0201)	-0.0199 (0.0200)	-0.0786*** (0.0185)	-0.0760*** (0.0185)	0.201*** (0.0130)	0.197*** (0.0134)
Callable	-0.118* (0.0616)	-0.139** (0.0620)	0.217*** (0.0224)	0.219*** (0.0227)	0.0912** (0.0457)	0.102** (0.0469)	- (0.0348)	- (0.0355)	-0.138*** (0.0343)	-0.127*** (0.0348)
Collateral	0.225*** (0.0744)	0.249*** (0.0739)	0.00590 (0.0220)	0.00364 (0.0222)	0.0367 (0.0400)	0.0238 (0.0399)	-0.138*** (0.0348)	-0.127*** (0.0355)	- (0.0343)	- (0.0348)
Log(Maturity)	0.435*** (0.128)	0.449*** (0.126)	- (0.0000)	- (0.0000)	-0.0353 (0.0758)	-0.0425 (0.0773)	0.597*** (0.0609)	0.598*** (0.0612)	0.0162 (0.0602)	0.00993 (0.0604)
Log(Iss vol.)	-0.0909* (0.0517)	-0.0739 (0.0508)	-0.00751 (0.0162)	-0.00911 (0.0167)	- (0.0000)	- (0.0000)	0.0532* (0.0274)	0.0594** (0.0283)	0.0215 (0.0234)	0.0139 (0.0232)
Firm size	-0.139*** (0.0416)	-0.163*** (0.0419)	0.0492*** (0.0151)	0.0514*** (0.0156)	0.544*** (0.0203)	0.552*** (0.0207)	-0.134*** (0.0238)	-0.142*** (0.0244)	-0.201*** (0.0199)	-0.189*** (0.0205)
Firm age	-0.0122** (0.00484)	-0.0130*** (0.00481)	0.000279 (0.00163)	0.000347 (0.00162)	0.00618** (0.00311)	0.00651** (0.00313)	-0.00133 (0.00255)	-0.00161 (0.00257)	-0.00101 (0.00263)	-0.000686 (0.00256)
Leverage	0.746*** (0.248)	0.861*** (0.255)	-0.106 (0.0757)	-0.117 (0.0766)	-0.775*** (0.146)	-0.829*** (0.150)	0.461*** (0.120)	0.501*** (0.121)	0.824*** (0.121)	0.766*** (0.124)
Profitability	-4.182*** (1.119)	-3.562*** (1.143)	-0.488** (0.245)	-0.546** (0.253)	-0.152 (0.623)	-0.478 (0.631)	0.689 (0.481)	0.923* (0.487)	-0.588 (0.486)	-0.850* (0.498)
Tangibility	-0.110 (0.167)	-0.168 (0.170)	0.0128 (0.0518)	0.0182 (0.0513)	-0.799*** (0.0973)	-0.761*** (0.0959)	-0.0235 (0.0866)	-0.0457 (0.0864)	-0.145* (0.0817)	-0.118 (0.0820)
Cons	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	938	938	938	938	938	938	938	938	938	938
R-sq.	0.511	0.516	0.299	0.299	0.609	0.612	0.336	0.341	0.425	0.431

Table A.5 Lawsuits and Bond Call Options and Collateralization: Subsample for Firms with Bond Offerings Both Before and After Lawsuits

This table reports the results of the regressions on how lawsuits affect bond contract terms of call options and collateral requirements using the subsample of firms that issued bonds both before and after lawsuit announcements. *After* equals 1 if the bond is issued after the litigation announcement, or 0 otherwise. *Lawsuit Num* equals the number of lawsuits involving the disclosing firm. *POE* equals 1 if the disclosing firm is a non-SOE, or 0 otherwise. All the other variables are defined in appendix table A.1. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	<i>Dep. Var.: At-Issue Bond Yield Spread</i>			
	<i>Callable</i>		<i>Collateral</i>	
	(1)	(2)	(3)	(4)
After * POE	0.222*** (0.0758)	0.205** (0.0859)	-0.0293 (0.0770)	0.0181 (0.0840)
POE	0.113 (0.0794)	0.122 (0.0817)	-0.634*** (0.0629)	-0.588*** (0.0662)
Lawsuit Num.		0.00866*** (0.00332)		0.0100*** (0.00368)
Lawsuit Num.* After		0.00711* (0.00406)		0.00954*** (0.00345)
Lawsuit Num * After * POE		-0.000888 (0.0139)		-0.0195** (0.00846)
Bond rating score	-0.0533* (0.0275)	-0.0520* (0.0276)	-0.0182 (0.0225)	-0.0143 (0.0227)
Callable	- -	- -	-0.0454 (0.0472)	-0.0690 (0.0469)
Collateral	-0.0651 (0.0690)	-0.101 (0.0680)	- -	- -
Log(Maturity)	0.281** (0.110)	0.373*** (0.116)	0.180* (0.0984)	0.259*** (0.0848)
Log(Issuance vol.)	0.182*** (0.0451)	0.163*** (0.0460)	0.0798** (0.0403)	0.0600 (0.0405)
Firm size	-0.234*** (0.0315)	-0.225*** (0.0321)	-0.0560** (0.0271)	-0.0447 (0.0282)
Firm age	0.00969* (0.00559)	0.00708 (0.00580)	0.0138** (0.00625)	0.0102 (0.00659)
Leverage	-0.0377 (0.222)	-0.188 (0.246)	0.475*** (0.169)	0.233 (0.183)
Profitability	-0.180 (1.056)	-0.550 (1.060)	-4.137*** (0.998)	-4.582*** (1.013)
Tangibility	0.122 (0.189)	0.148 (0.188)	-0.414** (0.178)	-0.348* (0.185)
Cons	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Obs.	281	281	281	281
R-sq.	0.561	0.569	0.719	0.728

Table A.6 Effect of Lawsuits on Bond Yield Spreads at Issue: A Smaller Sample Keeping One Bond for Each Firm

This table reports the baseline results of the regressions examining how lawsuits affect the at-issue bond yield spread, using a sample including only one bond for each firm. In doing so, we follow Klein and Zur (2011) to choose the most recently issued bond as the representative bond for the firm. The key explanatory variable is *Treated bond*, defined as 1 if the bond is issued by litigated firm, and 0 otherwise. All the other variables are defined in appendix table A.1. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

<i>Dep. Var.</i>	<i>Bond spread</i>	<i>Log(Maturity)</i>	<i>Log Iss amount</i>	<i>Callable</i>	<i>Collateral</i>
	(1)	(2)	(3)	(4)	(5)
Treated	0.0790** (0.0325)	-0.0366 (0.0275)	0.0403 (0.0555)	0.0460 (0.0430)	0.0462 (0.0499)
SOE	-0.842*** (0.0871)	0.101*** (0.0207)	-0.0227 (0.0475)	-0.131*** (0.0390)	0.0591 (0.0418)
Bond rating score	-0.348*** (0.0423)	0.0162 (0.0140)	0.000707 (0.0257)	-0.0644*** (0.0229)	0.185*** (0.0198)
Callable	-0.132 (0.0882)	0.243*** (0.0304)	0.170*** (0.0614)	-	-0.128*** (0.0469)
Collateral	0.338*** (0.0969)	0.0238 (0.0281)	0.0441 (0.0511)	-0.120*** (0.0447)	-
Log(Maturity)	-0.0528 (0.160)	-	-0.0804 (0.109)	0.662*** (0.0829)	0.0689 (0.0800)
Log(Iss vol.)	-0.0992 (0.0742)	-0.0183 (0.0249)	-	0.105*** (0.0383)	0.0291 (0.0332)
Firm size	-0.0897 (0.0592)	0.0625*** (0.0203)	0.594*** (0.0252)	-0.149*** (0.0320)	-0.199*** (0.0329)
Firm age	-0.0112** (0.00553)	0.00115 (0.00189)	-0.00234 (0.00390)	-0.00151 (0.00319)	0.000424 (0.00300)
Leverage	0.734** (0.291)	-0.137 (0.0853)	-0.650*** (0.160)	0.389*** (0.142)	0.529*** (0.154)
Profitability	-2.284* (1.290)	-0.0508 (0.285)	1.917*** (0.692)	-0.211 (0.572)	-1.252** (0.528)
Tangibility	0.0186 (0.207)	0.0209 (0.0622)	-0.603*** (0.125)	-0.00468 (0.107)	-0.0242 (0.100)
Cons	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Obs.	505	505	505	505	505
R-sq.	0.555	0.319	0.667	0.283	0.321

This table reports the results of the regression examining how lawsuits affect abnormal bond return (*ABR*) during various event windows. The key explanatory variable is *Treated* dummy, defined as 1 if the bond is issued by a litigated firm, and 0 otherwise. *Lag exc trading* is the standardized pre-period excess trading volume. All the other variables are defined in appendix table A.1. Robust standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

[illegible]