Sharing the surplus with clients: the protection of bank proprietary information and loan pricing

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Abstract

We examine the effect of increased protection of banks' proprietary information on loan contract terms. Our identification strategy utilizes the passage of Inevitable Disclosure Doctrine (IDD) that prevents the bank's former employees from leaking proprietary information to rivals. The result shows that banks offer lower interest rates and longer maturity to their customers if the banks can better protect their trade secret. The decline in loan spread is more pronounced when banks have previous lending relationships with borrowers, when the bank-borrower distance is shorter, and when banks are faced with higher level of competition. Further, firms respond to better loan terms by shifting their debt structure to including more bank debt and less public debt. Our findings suggest that IDD increases the value of borrower information acquired in lending relationships; as a response, banks share part of the surplus with their borrowers. Our paper also adds to the literature on the supply-side effect of loan contract terms.

Keywords: *proprietary information; trade secret; loan contract; relationship lending*

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1. Introduction

The proprietary information has been the central discussion in relationship banking literature during the past decades (Bhattacharya and Thakor, 1993; Boot, 2000; Ongena and Smith, 2000; Gorton and Winton, 2003; Srinivasan, 2014) Through repeated interactions with its customer, a bank can obtain more proprietary information about this customer than other banks, which enables the bank to have inter-temporal smoothing in loan contract terms (Haubrich, 1989; Greenbaum et al., 1989) and a preferable position in competing for future businesses (Drucker and Puri, 2005; Bharath et al, 2007). Therefore, keeping customer's proprietary information from competitors is essential in relationship lending.[1] Relationship bank's information advantage could also benefit the borrower – without an information advantage, banks cannot share any future surplus with the borrower, which can result in borrowers not receiving credit at all (Rajan, 1992; Peterson and Rajan, 1994).

On potential threat of leaking proprietary information is the labor mobility. In practice, the proprietary information regarding a specific customer is acquired through the contact between the loan officer and the borrower management (Uchida et al., 2012). However, the information bearing officer can switch to a new bank. In this circumstance, the former employer's proprietary information can be leaked to the new bank, aggravating lending market competition and jeopardizing the existing bank-borrower relationship (Peterson and Rajan, 1995). In other words, the protection on banks' proprietary information is essential in relationship banking. In spite of this importance, little formal empirical analysis has been conducted on this issue.

[1] Padilla and Pagano (1997) discuss an equilibrium where certain degree of information sharing can emerge when banks have the incentive to increase effort by the entrepreneur owner of the borrowing firm, even though profits via rent extraction would reduce.

In this paper, we seek to examine how the protection of proprietary information would affect lenders' behaviors in determining loan contract terms. We exploit the staggered recognition of the Inevitable Disclosure Doctrine (IDD) by U.S. state courts that increases the protection of a firm's trade secrets by preventing the firm's workers who know its trade secrets from leaking the trade secret to a rival firm. Specifically, the recognition of the IDD gives the right of former employer to sue former employee when facing potential trade secret leakage by the employee.[2] Given such a legal liability, leaving staffs of a bank are discouraged to leak customers' proprietary information to the bank's competitors. In other words, proprietary information obtained in any lending relationships about borrowers is expected to produce profits over a *longer* period of time, after the passage of IDD.

On one hand, a majority of relationship banking studies suggest that banks would share the surplus with relationship borrowers via a lower loan spread. Such a value-sharing is consistent with the notion of Pareto improvement (e.g., Boot and Thakor, 1994; Bharath et al., 2007; Bharath et al., 2011). Along this line, the passage of IDD would promote bank's acquisition of proprietary information, facilitate the long-run lending relationship and further encourage the value-sharing between the bank and the borrower. As such, we would expect a reduction in loan spread after the passage of IDD. On the other hand, another stream of literature suggests that a strengthened bank-borrower relationship needs not improve borrowers' welfare. Banks with proprietary information about the client can exploit the client via creating entry barriers (Dell'Ariccia, Friedman and Marquez, 1999; Santos and Winton, 2008). Degryse and Van Cayseele (2000) also find that the loan rate increases with the relationship duration. In this respect, trade secret protection is likely to lead to banks' information monopoly about a borrower, which exacerbates the hold-up

[2] IDD also enhances enforcement of existing non-competing agreement (Klasa et al. 2015). In this respect, IDD is a complement, rather than a substitution of non-competing agreement.

problem. Therefore, how the increased protection of trade secret would change banks' lending behavior is still an empirical question.

Our identification strategy relies on the quasi-natural experiment instituted by the passage of IDD on the state that the *bank* is located. Klasa et al (2015) show that the passage of IDD on the state that the *borrower* is located would reduce the down-side risk of the borrower, thereby resulting in a lower loan spread. While Klasa et al (2015) focus on the demand side (i.e., the borrower), our paper seeks to examine the supply-side effect (i.e., the bank). To rule out demand side effect, we delete borrowers that are located in a same state as their banks.[3] To further isolate the bank supply channel from other factors, we include a large set of fixed effects to absorb borrower-specific fundamentals. In particular, we include borrower state × year fixed effect. We also saturate the specification with industry × year fixed effect. By doing so, we can control exhaustively for unobserved time-varying shocks to the borrowers such as their risks or growth opportunities. We find that, on average, banks in states that passed IDD charge a 17.8 to 29.7 basis point lower spread compared to banks in other states. We further examine the effect of IDD on other loan contract terms. Our results show that banks affected by IDD also offer loan contracts with longer maturity. In contrast, we find limited effect on other non-pricing contract terms, including collateral requirement, number of covenants, and the loan amount. In sum, our findings are consistent with Bharath et al (2011) that banks share part of the value stemming from an increase in proprietary information protection.

To further pin-down the supply-side effect and the value-sharing between the bank and relationship borrowers, we conduct multiple sets of cross-sectional analysis. We interact the effect of proprietary information protection (i.e., IDD) with various attributes of bank-

[3] Hereafter, "the passage of IDD" is inter-changeable to "the passage of IDD on the state that the bank is located".

borrower relationship. In the first set of test, we seek to compare relationship lending to non-relationship lending. Customer proprietary information is more valuable in long-term lending relationships, since the information can be reused by banks for multiple periods. In addition, banks are willing to share benefits with borrowers *only* when they expect to extract more future rents from this borrower, which is feasible when they are engaged in more exclusive lending relationships (Bharath et al., 2007). Following Bharath et al (2007), we construct the relationship loan indicator based on the lending from the bank to the borrower in the past 3 years (5 years). For relationship loan, we find a 25.8 basis point reduction in the loan spread that banks charge in states that passed IDD, compared with that of banks in other states. This magnitude is statistically and economically significant. If bank relationships are observable, rivals could have incentive to make preferable offers to entice relationship borrowers. In this respect, we may also find a reduction in loan spread in non-relationship lending after the passage of IDD. For non-relationship loan, we find a 13.2 basis point reduction in loan spread but this magnitude is not statistically significant. If we take the triple-difference (25.8 – 13.2), our result implies that long-run relationship can lead to a 12.6 basis point reduction in loan spread, which is quantitatively similar to the finding of Bharath et al (2011).

In the second set of test, we use the geographic distance to proxy for the cost of acquiring proprietary information (Petersen and Rajan, 2002). A lower cost of information acquisition can encourage the bank to collect more borrower-specific information. The passage of IDD would act as a safeguard to protect the collected proprietary information. As such, we would expect a complementary effect stemming from the passage of IDD. Consistent with this prediction, we find a more pronounced reduction in loan spread when the geographic distance is shorter. This finding is generally consistent with Petersen and Rajan (2002).

In the third set of test, we examine the incremental effect of lending market entry barriers. Information leakage would not be a concern when a bank becomes the solo eligible credit supplier in a segmented market (i.e., geographic monopoly). Therefore, we would expect a more pronounced value-sharing effect stemming from the passage of IDD in the state with less entry barriers. Consistent with this conjecture, we find that the decline in interest rates is more pronounced when banks are facing fiercer competition brought by interstate bank branching. This evidence is also consistent with existing literature that banking competition reduces banks' ability of rent-extraction, thus leading to a lower loan spread (Petersen and Rajan, 1995; Dell'Ariccia and Marquez, 2004), and consistent with the argument that firms faced with multiple sources of financing, or, lower switching costs, are less likely to be held up by banks (Santos and Winton, 2008; Hale and Santos, 2009; Schenone, 2010; Saunders and Steffen, 2011).

Finally, we examine how firms respond to the shifted bank lending scheme. With banks more willing to provide better loan terms, firms should react by shifting a larger proportion of borrowing to bank debt. Consistently, we find that after the passage of IDD, firms reduce their frequency of bond issues and instead borrow more bank loans. As a result, the public debt takes a smaller proportion in their debt structure.

Our paper is closely related to the relationship banking literature, which is debating on the benefits versus hold-up cost associated with long-run lending relationship (Boot and Thakor, 1993; Rajan, 1992; Santos and Winton, 2008; Ioannidou and Ongena, 2010). The approach generally taken in prior literature is to develop some proxy for benefits (hold-up) and then to examine variation in bank behaviors under different scenarios. The proxies that have been used to measure the firm's susceptibility to hold-up include presence of ratings (Santos and Winton, 2008), size and analyst coverage (Bharath et al, 2011), distance between a borrower and lender (Dass and Massa, 2011), and duration of lending

relationships (Peterson and Rajan, 1994 and Berger and Udell, 1995). As documented by Srinivasan (2014), the empirical challenge lies in that these proxies can be varied or controlled by the borrower firm in response to capital and product market conditions, hence cannot be exogenous to dependent variables. For example, the positive association between the relationship variable and loan spread could reflect the self-selection of high risk borrowers into relationships, whereas a negative association could reflect the opposite. Our paper overcomes the endogeneity problem by utilizing the quasi-natural experiment instituted by the adoption of IDD in the state that bank is located in. The passage of IDD is unlikely driven by any client-specific characteristics.[4] In addition, it may not affect or be affected by banks' financial conditions. In this respect, the state level adoption of IDD would directly affect the bank-client proprietary information protection and the distribution of surplus between banks and their clients (e.g., Peterson and Rajan, 1994). Thus, we can directly observe the value-sharing (or hold-up) between banks and their borrowers via examining loan contract terms.

Our paper is also related to the supply-side determinant of loan contract terms. The literature has focused primarily on the demand side determinants of loan contract terms. For example, when evaluating a firm in terms of borrowing capability, banks may expect high profitability, low leverage, high tangibility, high current ratio and low market-to-book ratio as signs of credible borrowers. These characteristics assure firms to hold a higher probability of getting loans and a higher chance to bargain with banks on the loan terms. Much fewer have examined the determinants from the bank's side. A notable exception is Murfin (2012), who provides evidence that banks' screening ability can affect the loan

[4] Note that we require borrowers to be located in a different state from banks'.

covenant strictness. Our paper, examining the protection of bank's trade secrets, adds to this line of research.

The remaining the article is organized as follows. Section 2 discusses a case about trade secret lawsuit involving the chief loan officer of a bank. Section 3 discusses theoretical predictions and testable implications. Section 4 describes the data and sample selection. Research methodology and results are shown in Section 5. We conclude in Section 6.

2. Institutional background

2.1. Trade secret of banks: a lawsuit case

A bank's proprietary information on its customer is its trade secret and perhaps the most valuable intangible asset. The *American Banker* on May 5, 2014, highlights that bank trade secret is "bank's customer list" and "knowledge of a specific bank's risk tolerance and risk management". These kinds of information, possessed by high-ranking employees, are an extraordinarily valuable piece of knowledge for competitors.[5] Such importance of customer's proprietary information is better illustrated in the ongoing lawsuit between TD bank and its former employees.

The former loan officer of TD Bank is accused of misappropriating sensitive customer information, such as tax returns and credit approval limits in the weeks before leaving his position in New Jersey in 2014. He then sent the information to Kearny Federal Savings Bank, which is his new employer, and a competitor of TD bank. TD Bank argues that this information is a highly sensitive one that Kearny Federal Savings Bank could use to solicit the clients of TD Bank. Based on the statement of the complaint, Kearny Federal executives planned in advance for the loan officer's leave from TD Bank and his new

[5] Andy Peters, *American Banker*, May 5, 2014

position in Kearny while discussing TD Bank customers and deals, competition strategy for stealing business from TD Bank. Undoubtedly, leaking important customer-specific information to the rival greatly jeopardizes TD Bank. In fact, the problem of information leakage is not unusual in banking industry (*American Banker*, 2014). As stated by Gregory Fleming, the president of Morgan Stanley's wealth-management arm, "While the situation is disappointing, it is always difficult to prevent harm caused by those willing to steal". [6]

Most banks have to rely on the non-disclosure agreement (NDA) and/or a covenant not to compete (CNC) to protect their business secret. However, one has to note that the protection by NDAs is limited as violations must be detected and proved before the bank can initiate legal action. The protection of CNC is also limited as it is not effective when the former employee seek to switch to a new job in another state (Klasa et al., 2015; Malsberger, 2004).

2.2. The Inevitable Disclosure Doctrine

Compared with NDAs and CNCs, Inevitable Disclosure Doctrine (IDD) provides incremental protection of firm trade secret. Firm could sue former employee who could leak its trade secret to competitors. There are three conditions needed for using this law. (i) The employee had access to its trade secrets, (ii) the employee's duties at the new employer would be so similar to those she had at the firm that in performing them she will inevitably use or disclose the trade secrets, and (iii) the disclosure of the trade secrets would produce irreparable economic harm to its business.

The law is applicable even if the employee did not sign a non-compete or non-disclosure agreement with the firm, there is no evidence of bad faith or actual wrongdoing, or the rival

[6] Justin Baer, *Wall Street Journal*. January 5th 2015.

is located in another state. Regarding the reason for passing IDD by state rather than one-cut, Godfrey (2004)} and Harris (2000) show change in the IDD is a balance between employers' interests in protecting trade secrets and employee mobility freedom.

Law academic papers normally use precedent case (the first time a law is brought to court by a plaintiff) as the official effective date of a law. In a precedent case, the court will explain how, when, and where the law could be applied. For example, the IDD was passed in a precedent case in state Illinois on 1989 February 9. Therefore, the banks in state Illinois are not affected by this law change shock before 1989 February 9. Since 1989 February 9, banks could use this law to protect their trade secrets by suing their former employees who may potentially leak their customer lists, soliciting their customers, which may inevitably make their trade secrets be disclosed.

3. Hypothesis development

Proprietary information about the borrowers is critical for a bank to produce profits from a lending relationship and compete in financial market. Banks thus spend resources in acquiring private information about the future prospects of their customers, and meanwhile are subject to the risk of leakage of such information. A primary channel of information leakage is employee mobility. The passage of IDD is aimed at prevent employees who have access to the proprietary information from moving to a competitor. While it is obvious that this events increases the information advantage of banks engaging in lending business, it is not clear that how this shapes banks' lending behavior, which in turn has implications on the welfare of borrowing firms in the economy.

Increased information protection reduces the proprietary information maintenance cost and generates extra surplus for a lender. Sharing this surplus with client can be a Pareto

improvement as banks can win more future mandates (Boot and Thakor, 1994; Drucker and Puri, 2005; Bharath et al., 2007; Bharath et al., 2011). If the value-sharing effect dominates, we would expect a reduction in the loan spread when the bank can better protect its proprietary information via IDD.

On the other hand, the hold-up problem can be exacerbated by the IDD. Since increased protection of internal information also enhances the information monopoly of a bank, it can use this monopolistic power to strategically hold up the borrower and extract a higher rent (Santos and Winton, 2008; Hale and Santos, 2009). In this respect, we expect trade secret protection to lead to higher loan spread. Therefore, the passage of IDD enables us to direct test the benefits-sharing versus hold-up problem associated with lending relationship. We develop our hypothesis as follows:

H1a (Benefits-sharing **hypothesis):** *Banks that are protected by the passage of IDD offer a lower loan spread to customers.*

H1b (Hold-up hypothesis): *Banks that are protected by the passage of IDD charge a higher loan spread to customers.*

5. Data and Sample selection

Information about loan contract terms are from LPC Dealscan. Dealscan has been widely used for research on the private debt market. The loan information is collected through the self-reporting of lenders, SEC 10-K files, and staff reporters by LPC. Dealscan provides detailed information on loan contract terms, e.g. loan spread, maturity, loan size, collateral, etc. Although the information on loan terms is comprehensive in Dealscan, the information on borrowers is scarce. So we use the Dealscan-Compustat link file, provided by Chava and Roberts (2008), to merge Dealscan data with the accounting variables for the given borrower firms in Compustat.

Since most of the Dealscan loan deals are large loans, many of them are syndicated by multiple lenders. To identify the lead lending bank in each loan, we follow Sufi (2007) and use "Lead Arranger Credit" variable in Dealscan database. Specifically, if the variable takes a value of "Yes", we define this bank to be a lead bank. Banks that are classified as lead arrangers usually hold a large fraction of a loan, and are often single arrangers of a loan (Bharath et al., 2009). Following Bharath et al. (2009), lenders with the role of "participant" are eliminated. After this step, nearly 90% of loans in our sample have a single lead bank.[7]

For some facilities, there is more than one lead bank in the syndication. These lead banks from different states may have different timings of passing IDD. To ensure that we identify the genuine effect of trade secret protection, we exclude loans where lead banks have different status of IDD treatment.[8]

The information of the IDD passage date comes from Klasa et al. (2015). Our sample period is 1981-2011, and it starts one year before Pennsylvania adopted the IDD in 1982 and ends five years after Kansas adopted the IDD in 2006. During our sample period, courts in 16 states adopt the IDD and courts in three states reject the IDD they had adopted in prior years. Our sample period excludes the events associated with the adoption of the IDD by a few states in earlier years because the coverage of earlier years in Compustat is sparser, especially in the 1960's when Delaware, Florida, and Michigan adopted the IDD (the data does not go back to 1919, when New York adopted the IDD). Hence, earlier recognition events do not affect a significant number of firms and have little

[7] Bharath et al. (2011) also include banks with roles of "agent", "administrative agent", "arranger", "lead bank" as lead banks if their retained shares of the loan are greater than 25%. We use this alternative definition of lead banks and our results are robust.
[8] Including these loans and defining them as having received treatment of IDD does not alter our results.

power for identification. The precedent-setting legal cases adopting or rejecting the Inevitable Disclosure Doctrine is shown in Appendix B.

We winsorize all variables at 1% and 99% to rule out the bias due to outliers. All money variables are deflated to constant 2000 dollars. Firms involved in major mergers (Compustat footnote code AB) are excluded. Also excluded are non-U.S. firms, firms with missing stock price, shares outstanding, headquarter state, book value of assets, and firms that reported format codes 4, 5, or 6. Observations with missing lender firm headquarter states are also excluded. The final sample contains 11257 facility-lender-borrower observations.

Table 1 shows the summary statistics of various loan and borrower characteristics. Panel A reports key borrower characteristics, panel B reports loan characteristics, and panel C presents the status for IDD passage. The average borrower size is $27.8 million (the median level is $5.5 million), and they are highly levered with an average debt ratio of 43% (median 44%). In the same sample, the average loan spread is 189 bps (median 175 bps), and the average maturity is 44 months. The average loan size is $2.33 million, while the median level is much smaller ($0.98 million).

6. Empirical strategy and results

6.1. Empirical Strategy

To exploit the staggered passage of IDD across different states, we use a difference-in-differences method (diff-in-diff). After the recognition of the IDD by state courts, banks headquartered in the same state are better protected in terms of proprietary information, since their employees face a higher litigation cost from working in a rival bank. Loans issued by such banks are treated as affected loans, and are compared with loans issued by

banks located in other states.[9] In other words, what we are interested in is the supply-side effect of loan terms. To ensure that our results are not driven by the demand-side effect (e.g. borrowers located in the same state and thus are simultaneously affected IDD), we exclude loans in which borrower and lender are located in the same state. In other words, our primary focus is banks that are involved in cross-state lending. However, the results in this paper are robust to including loans in which borrower and lender are from the same state.

Klasa et al. (2015) show that passage of the IDD reduces the mobility of firms' key employees, which effectively protects firm trade secrets. As noted earlier, banks' main trade secret is their borrowers' proprietary information. Thus, our test, examining the protection of banks' proprietary information, would generate implications on whether banks are willing to share the surplus resulted from less leakage of customer information.

More precisely, our diff-in-diff approach employs the following regression model:

$$Loan\ term_{i,s,t} = \beta_1 IDD_{s,t} + \sum \beta_j Borrower\ characteristics_{j,t} + \sum \beta_i Loan\ characteristics_{i,t} + \omega_s + \mu_{s\prime t} + \varphi_k + \epsilon_{i,j,s,s\prime,k,t} \quad (1)$$

where i denotes loan, s denotes the state of the lenders′ denotes the state of the borrower, t denotes the year the loan issued, j denotes the borrower of the loan, k denotes the industry of the borrower. *IDD* is a dummy variable that equals 1 if the state, where the lender is located passed IDD in a certain year, and equals 0 otherwise. If IDD is rejected in a precedent lawsuit case, we define IDD to revert back to 0 in the state. Therefore, in some state the dummy variable may vary from 0 to 1 to 0, while in some state the dummy

[9] Banks may have branches outside the headquarter state, which are not affected by IDD. If loans in a non-headquarter state are mainly issued by branches in that state rather than headquarter banks, our identification would fail. However, since Dealscan mainly includes large loan deals originated by loan officers from bank headquarters, this is less of a concern in the present study.

variable may stay 0 for the whole time period. *Loan terms* include loan spread (AISD),[10] log(loan maturity), etc.; ω_s is the lender state fixed effect , $\mu_{s't}$is the borrower state-year fixed effect, φ_k is the borrower industry fixed effect and $\epsilon_{i,j,s,s',k,t}$ is the residual term. Following Li et al. (2013), *Borrower characteristics* include borrower firm size, book leverage, profitability, tangibility, current ratio, market-to-book ratio. *Loan characteristics* include loan spread, maturity, loan size, and collateral. Lender, facility, and year uniquely determine each observation. Other variable definitions are in Appendix A.

The passage of the IDD should affect bank lending only through the degree of protection of trade secrets. In other words, any residual variations in IDD (after controlling for all variables) should be uncorrelated with unobservable factors that affect bank lending. This assumption will fail if unobserved local economic conditions can simultaneously drive the passage of IDD and local banks' incentives of offering better loan terms. We control for lender state and year fixed effects (as part of borrower state-year fixed effect) to mitigate this concern. To further control for unobserved local economic conditions, we conduct alternative tests in which we find each treated state an adjacent state, which works as the control group, and re-estimate the diff-in-diff regression.

One may concern that a law passed in one state will affect people's expectation in another state (possibly the state where borrowers are located), which in turn affects our outcome variables. This is not true in general. Trade secret laws are states court law, which means that only if the local state accept the law, and set an effective date, then a precedent case exists, could we assume the law is applicable in this state. Also, different states have

[10] AISD is all-in-spread (drawn), which is the bank's interest rate spread over the U.S. Prime rate or the London Inter-Bank Offered (LIBOR) rate. It is called drawn since it includes all costs of the loan such as the fees the bank charges annually. Another variable to proxy for loan costs is all-in-spread (undrawn), which does not include cost such as fess the bank charges annually. We choose all-in-spread (drawn) as a proper proxy since this variable is available for more loan contract observations.

very distinct law system which we do not assume to converge. Another concern is that state changes in IDD status could be caused, or cause, other laws adopted in the same time that impact bank lending. For example, interstate banking restrictions. We show, as discussed in later section, that explicitly controlling for the passage of interstate banking law does not affect our results.

6.2. Results

6.2.1. The effect of IDD on loan terms

To test the hypothesis, we implement the diff-in-diff strategy as specified in equation (1). Table 2 shows the results from this test, where loan spread (i.e., AISD) is the dependent variable. Regression in the first column controls for borrower controls, lender fixed effects, year fixed effects, and does not control for loan terms other than loan spread. The coefficient on IDD is negative and significant, suggesting that the passage of IDD significantly reduces loan spread by 27.57 bps for affected banks relative to unaffected banks. In the second column, we additionally control for other loan terms, yielding a coefficient on IDD with smaller magnitude (-23.69), but remain statistically significant. In columns (3), we add borrower state fixed effects and the result remain highly similar. To further mitigate the concern that our result could be driven by demand-side (borrowers) effect, we explicitly control for borrower industry-year fixed effects in column (4), and borrower state-year and borrower industry fixed effects in column (5). These tests further reduce the coefficient on IDD, but it remains statistically significant and economically meaningful. Therefore, we reject the hypothesis that protection of proprietary information will lead banks to hold up their borrowers. On the contrary, the results imply that banks

with a better proprietary information protection are willing to offer better loan terms to borrowers.

We next examine the non-pricing terms of loans. In Table 3, we test if the passage of IDD affects loan maturity. The dependent variable is log(maturity). Using the similar pattern of adding control variables and fixed effects, the result shows that the passage of IDD significantly increases loan maturity. After controlling for lender state fixed effects, borrower industry fixed effects, and borrower state-year fixed effects, the maturity of loans from affected banks increases by 11.7% relative to those by banks unaffected by IDD. Since loan terms are simultaneously determined, we also examine the change in other non-pricing terms such as covenant slack, covenant strictness (by Murfin, 2012), and collateral requirement. Results in Table 4 show that there is no significant change in any of these loan terms.

Therefore, our results indicate that banks offer lower loan spread and longer maturity after the passage of IDD. This evidence is consistent with the view that banks that receive a favorable shock in proprietary information are willing to share part of the surplus with their customers.

6.2.2. The incremental effect of relationship lending

If banks only expect a one-time transaction with a borrower, they would have no incentive to share any benefits from heightened information protection. Banks are willing to do so only if the expected future rents from the current borrower outweigh the shared benefits. This requires repeated future transactions between the bank and the borrower, (i.e., a long-term relationship between the two parties). In other words, the effect of trade

secrets protection should be more pronounced when a long-term lending relationship presents.

Following Bharath et al (2007), as long as the two parties of the loan were engaged in at least one lending deal during the past five years, this loan is defined as a relationship lending (*Rel(dummy)* = 1). We then split our sample into two subsamples: relationship loans and non-relationship loans. Next we estimate equation (1) separately on these two subsamples and examine if the results are different across subsamples. Panel A of Table 5 presents the results, the first two columns reporting results for loan spread and the last two columns reporting results for loan maturity. The reduction in loan spread is larger for relationship loans, which is consistent with our argument that banks are more willing to share the surplus resulted from information protection when they expect to extract more rents through repeated interactions with their clients. To test whether the coefficients for two subsamples are different, we use chi-test and find that the pairwise difference is significantly different from zero with a *p*-value of 8 %. In testing the differential effect of IDD with varying lending relationships on loan maturity, we find that the coefficients across subsamples are essentially the same (with *p*-value equal to 59 %), which implies that the increase in loan maturity is not sensitive to past lending relationships.

We also examine the effect of the "exclusiveness" of lending relationship. If a borrower's information is acquired or shared by several banks, the information monopoly for each bank is diluted, leading to a diluted value of surplus stemming from lending relationship. Banks in this case would have a weaker incentive to offer better loan terms after the protection of proprietary information. However, the opposite would apply if a borrower's information is exclusively acquired by a single bank. Therefore, we expect our results to be the strongest when the lending relationship is the most exclusive.

We define the level of "*exclusiveness"* in lending relationship as the loan amount (number of loan) provided by the lender as a fraction of total loan amount (number of loan) that the borrower received during the past five years. Then, we split the relationship lending loans into two groups based on the median value of "*exclusiveness*": loans with more exclusive lending relationship banks and loans with less exclusive lending relationship banks. Results, reported in panel B, show that the reduction in loan spread and the increase in maturity are more pronounced for *more exclusive* subsample. The chi-test shows that the coefficients for two subsamples are significantly different (at 6% level for spread and 0.1% level for maturity). In panel C, we use the number of loans to construct the measure of "exclusiveness" and re-conduct the above tests. We find a qualitatively similar result.

6.2.3. The effect of banking competition

Product market competition has been shown to be an important determinant on the value of proprietary information (e.g., Wagenhofer; 1990; Dedman and Lennox, 2009; Ellis et al. 2012). Given that the proprietary information can aid rivals to obtain competition advantages, firms facing a severe product market threat would have stronger incentive to protect their trade secret. In line with this argument, Dedman and Lennox (2009) and Ellis et al. (2012) find that firms facing more competition threat would reduce their disclosure quality to a greater extend.

In the context of IDD, the incremental value stemming from trade secret protection (i.e., the passage of IDD) would be larger when the lending market competition is severer. This conjecture can be better illustrated by an extreme case in which a bank becomes the solo eligible credit supplier in a segmented market (e.g., geographic monopoly). Given the

existence of entry barriers, the leakage of proprietary information to other banks, which are not eligible to enter the segmented market, would not affect the lending market competition or impose significant effect on the existing lending relationship. Therefore, the passage of IDD unlikely fosters a significant incremental surplus when geographic monopoly exists.

We employ the regulation of interstate bank branching to proxy for the state-level entry barriers in credit market. States could set regulations on interstate branching with respect to four provisions: (i) the minimum age of the target institution; (ii) de novo interstate branching; (iii) the acquisition of individual branches; and (iv)a statewide deposit cap. We create a variable, *Index*, to capture the degree of interstate branching restriction: when a state adds any of the above four barriers, we add one to Index. It ranges from zero to four with zero indicating the most open stance toward interstate entry and four indicating the most restrictive stance toward interstate entry.

To examine the incremental effect of the passage of interstate branching laws on the effect of IDD, we split our sample into two groups: one with competitive lending market (index = 0) and the other with less competitive market (index > 0). Results are presented in Table 5. Consistent with our argument, the reduction in loan spread is larger in states with a competitive lending market. However, for maturity, the coefficients on two groups are quantitatively similar. This evidence suggests that with higher degree of competition (lower Index), banks are more disciplined and are more willing to offer better pricing terms to their borrowers. The interpretation could also be that banks are more eager to compete for a better client by sharing part of the surplus.

6.2.4. The effect of borrower-lender geographical distance

It has been documented that geographical proximity can lower the cost of acquiring borrower-specific information (Petersen and Rajan, 2002). Therefore, banks close to their clients usually possess more proprietary information about the borrowers than banks from afar. The passage of IDD would act as a safeguard to protect the collected proprietary information. As such, we would expect a complementary effect stemming from the passage of IDD.

We collect detailed data on the exact location of lenders and borrowers, and then computed the straight-line distance between the bank and the borrower for each loan in our sample. Then we partition our whole sample into two groups of loans: those with a shorter borrower-bank distance and those with a longer one (partitioned based on sample median). We re-estimate the regression of loan terms on IDD passage separately on both groups, and compare the estimated coefficients.

Results are presented in Table 7. For loan spread regressions, the reduction in spread is economically more significant for *Short distance* loans than that for find that *Longer-distance* loans, consistent with our conjecture that IDD enhances the value of proprietary information acquired in shorter distance and thus leads to more preferable loan pricing. For maturity regressions, however, both coefficients on IDD are not statistically significant; also, they are economically similar to each other. The evidence based on borrower-bank distance is consistent with Petersen and Rajan (2002).

6.2.5. Firms' choice between loans and bonds

We have shown that an enhanced protection of bank proprietary information leads to better credit terms offered by the bank. As bank loan is an important source of external financing, we expect this supply-side shock to have notable consequences on borrowers'

demand. Faced with better contract terms, it is sensible for firms to shift more of their borrowing to bank loans. In particular, borrowers in states where lenders are affected by the passage of IDD should find it more attractive to borrower from banks than from public debt market. As a result, we expect fewer bond issues, more loan borrowings, and consequently a larger (smaller) proportion of loans (bonds) in these borrowers' debt structure.

We test this argument by examining the bond initiation decisions and the debt structure of borrowers whose states are affected by IDD (thus lenders in the same state are affected). Although borrowers can lower the downside risk due to the passage of IDD in their states (Klasa et al. 2015), there is no strong theoretical link between the downside risk and the choice between loans and bonds. In this respect, the shift in a borrower's choice between loans and bonds can be largely attributed to the effect of IDD on the same-state lenders.

We compute bond ratio as total bonds, defined as the sum of senior bonds and notes, subordinated bonds and notes and commercial paper, divided by total debt. We then regress bond ratio on borrower characteristics and year fixed effects. The first two columns in Table 8 report the results. Borrowers in IDD-adopted states experience a 1.6% decline in bond ratio relative to borrowers in other states. Adding a lagged term of bond ratio in the control variables to absorb the persistency of bond ratio leads to an even larger estimate of reduction (2.5%).

We then examine the effect of IDD on borrowers' bond and loan initiation decisions. Evidence has shown that firms shift their debt structure toward loans when lenders in the same state are affected by IDD. This could be driven by firms with no bank debt starting to borrow from the banks and firms with existing bank debt using more bank debt. We test whether banks' trade secret protection impacts debt structure on the extensive margin: whether firms that do not have any loan (bond) in the previous year start to use loan (bond)

in the current year after the passage of IDD. The third column of Table 8 reports the result of loan initiation where a firm-year is included in the regression only if the firm has zero loan in the previous year. The dependent variable is an indicator variable equal to 1 if bank debt is positive and 0 otherwise. The result shows that after banks experienced the passage of IDD, borrowers are more likely to start to borrower from banks. The last column presents the result for bond initiation, and suggests that borrowers are less likely to start to borrower from public debt market after the passage of IDD. These findings imply that the increased protection of banks' trade secrets translates into borrowers' financing choice decisions through better loan terms or the benefits that lenders are willing to offer.

6.3. Robustness checks

In this subsection, we further address several issues that possibly arise in our study. First, we extend our sample to including borrowers located in the bank's state. Second, we use adjacent-state matching to address potential omitted variable bias. Third, we use state-level regression to overcome the imbalance of our data. Fourth, we address the reverse-causality issue by examining the dynamic effect of IDD.

We conduct several robustness checks for the effect of IDD on loan terms. First, instead of excluding loan deals where lender and borrower are from the same state, we use the whole sample to re-estimate all regressions. The results, presented in Table 8, are qualitatively similar to only including out-of-state loan deals.

Second, to further attenuate the concern that local economic conditions could cause the passage of IDD and the shift of loan terms simultaneously, we conduct an alternative diff-in-diff analysis using adjacent states of the IDD passing states as the control group. More precisely, we match lender adjacent states to lenders in each IDD-adopted state without

replacement. This procedure yields 13 matched groups as follows: (NY:VT); (FL: AL); (DE: DC, MD); (NC: VA, SC, TN); (MN: ND, SD,WI); (IL: KY); (TX: NM, OK, LA); (MA: RI, NH); (IA: NE); (AR: MS); (WA: OR, ID); (UT: NV, CO, WY, AZ); (OH: WV). Regression specifications include all borrower characteristics, other loan terms, borrower industry fixed effects, borrower state-year fixed effects, and matched pair fixed effects. As shown in Table 9, the result remains largely unchanged from that from the previous specification.

We also conduct the adjacent-state matching for borrower states, which can help us further rule out the demand-side story (borrower states' unobserved economic conditions or time trend drive the shift in loan terms), because borrowers are matched with firms with similar local economic conditions. The assignment of adjacent states follows that for lenders' adjacent-state matching. Again, we control for all borrower characteristics and other loan terms. Fixed effects are included at the level of borrower industry, matched pair, lender state and year. The last two columns of Table 9 report the result, which is weaker than that from the previous specification, but still statistically and economically significant.

Our results could suffer from data imbalance issue. Bank loans could be distributed unevenly across state, resulting in different weights assigned to different states. Consequently, weight that assigned to each IDD adoption is highly imbalanced, which could bias our estimate of the effect of IDD. To mitigate this concern, we design a state-level regression, in which we focus on variations of IDD effect across states in a more balanced panel. More precisely, we first regress loan terms, spread and log (maturity), on all control variables, borrower industry fixed effect, borrower state fixed effect and lender fixed effect. Then we collapse the residuals of this regression to lender state-year mean, which can be called the *abnormal* variations in state-level loan terms. Finally, we use these state-level abnormal loan terms as the dependent variable and IDD dummy as the independent variable to investigate how much the change in IDD contributes to the abnormal change in

state-level loan terms. The first two columns of panel A, Table 10 shows the results. When loan spread is the dependent variable, the coefficient on IDD is negative and statistically significant, with a magnitude highly close to that estimated in the loan-level regressions. When log (maturity) is the dependent variable, the coefficient on IDD is positive, but not statistically significant. In the last two columns, we also examine the event of IDD rejection separately as a reverse experiment of IDD passage, and expect the coefficients to exhibit opposite sign to those using IDD passage. Generally consistent with our conjecture, the results show a positive coefficient on IDD for loan spread, and a negative coefficient for maturity, both with significance levels close to 10%. The low significance level of the coefficients are likely driven by the small sample size for rejection events.

Fourth, we investigate issues of reverse causality. If banks lobby the passage of IDD, the change we document in this study could emerge before the passage of IDD. That is to say, it is likely that banks' own demand will cause the simultaneous change in the status of IDD and their loan contract terms. To address this issue, we study in greater detail the dynamic effects of IDD on loan terms. More specifically, we replace the IDD dummy with four dummy variables: IDD^{-1} is a dummy variable that equals one for a state that will adopt IDD in one year, IDD^{0} is a dummy variable that equals one for a state that passes IDD in that year, IDD^{1} is a dummy variable that equals one for a state that passed IDD last year, and IDD^{2} is a dummy variable that equals one for a state that passed IDD two years ago. If reserve causality is indeed present, we should observe changes in loan terms prior to IDD events. To ensure that the dynamic effects are not biased by imbalanced weight assignment, we continue using the balanced sample of state-level abnormal loan terms. Panel B of Table 10 reports the results. For loan spread, the estimated coefficient on IDD^{-1} is statistically insignificant, and the economic magnitude, compared to the coefficients on IDD^{1} and IDD^{2}, is smaller. Consistent with the causal interpretation of our baseline results, we find that

IDD^0 is also economically and statistically insignificant. We further test if the sum of the coefficients on IDD^1 and IDD^2 is different from zero. The statistics of F-test implies that we cannot reject the null (p-value = 0.735). On the contrary, the sum of the coefficients on IDD^1 and IDD^2, according to the F-test, is significantly different from zero (p-value = 0.067). This evidence implies that the correlation between IDD and loan terms starts to emerge only in the period *after* the passage of IDD, a fact that is unlikely caused by reverse causality. In the second column, we estimate a similar regression for loan maturity. But we are not able to observe any clear pattern according to the estimated dynamics. Again we also estimate the dynamic effect of IDD rejections separately in the last two columns. The sample reduces dramatically, and we found insignificant effect either before or after the events.

Finally, we conduct placebo test by generating pseudo IDD adoption date to rerun our results. For each state that has adopted IDD, we randomly draw an IDD adopting year from 1919(the first date of the passage of IDD) to 2011(the end of our sample period) following uniform distribution. Within a draw we estimate our baseline regression as in Table2 on loan spread (Table3 on loan maturity), column (5) using the pseudo IDD adoption date. We repeat this exercise 500 times and obtain the distribution of the pseudo coefficients of regression in Figure 1. The black line embedded in the graph represents the regression coefficient obtained using the actual IDD adoption date in specification (5) of Table 2. We compare the observed coefficient using the actual data against the pseudo distribution. The results in Figure 1.A and Figure 1.B suggests that the coefficient of actual result represented by the black line is significantly different from the pseudo coefficient distribution. The t-test shows that the collection of pseudo coefficients are not significantly different from zero.

7. Conclusion

This paper provides clear-cut evidence for the impact of banks' proprietary information on lending behaviors. Using a difference-in-difference method, we investigate the effect of a better protection on banks' proprietary information via passage of Inevitable Disclosure Doctrine on loan contract terms that banks offer. We find that an increased protection of trade secrets encourages banks to give more privileged loan contract terms to their borrowers. More specifically, banks charge lower interest rate and offer longer maturity after the passage of the IDD, especially when they are having a long-term relationship with the borrower. Firms respond to these better loan terms by borrowing more from banks and less from the public debt market, resulting in a reduced bond ratio in their debt structure. Apart from Klasa et al (2015) that examine the effect of the borrower-specific risk due to the passage of IDD on the borrowers' capital structure decision, we focus on how the protection in banks' proprietary information, instituted by the passage of IDD, affects banks' incentive to share surplus with clients via privileged loan contract terms. Our paper contributes to the relationship banking literature that centers on benefits versus hold-up cost of long-run lending relationship (Boot and Thakor, 1993; Rajan, 1992; Bharath et al, 2007; Santos and Winton, 2008; Ioannidou and Ongena, 2010; Srinivansan, 2014).

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Table 1. Summary Statistics

The table provides summary statistics of various loan and borrower characteristics. Sample period is 1985-2011. Financial firms are excluded. Panel A reports means and medians for borrower characteristics. Panel B reports means and medians for loan characteristics. Panel C reports means and medians for IDD status. Definitions of all variables are in the Appendix. Variables are winsorized at 1% level in both tails.

Panel A: Summary statistics for borrower characteristics

	N	Mean	Median
Assets($millions)	11257	27.81	5.47
Book leverage	11257	0.43	0.44
Profitability	11257	0.12	0.12
Tangibility	11257	0.35	0.29
Current ratio	11257	1.83	1.59
Market-to-book ratio	11257	1.57	1.31
State GDP	11257	2.97	3.20
State unemployment (%)	11257	5.51	5.40
Credit rating	11257	0.24	0.00

Panel B: Summary statistics for loan characteristics

	N	Mean	Median
AISD(basis points)	11257	189.27	175.00
Maturity of loan(months)	11257	43.87	44.00
Loan facility amount($millions)	11257	2.33	0.98
Collateral	11257	0.53	1.00
Strictness	3964	0.10	0.00
Slack	3964	-0.96	-0.17

Panel C: Summary statistics for IDD status

	N	Mean	Median
IDD	11257	0.86	1.00
IDD borrower state	11257	0.50	0.00
IDD rejection	11257	0.01	0.00

Table 2. IDD effect on loan spread

This table presents regressions of bank loan spreads on the passage of IDD. The sample consists of firm-year observations between 1985 and 2011. Financial firms are excluded. The dependent variable is loan spread. *IDD* is a dummy variable that equals 1 if a lender's headquarter state has passed the inevitable disclosure doctrine and 0 otherwise. Definitions of all variables are in the Appendix. *t*-statistics (reported in parentheses) are based on standard errors adjusted for within-lender state correlation. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

	(1)	(2)	(3)	(4)	(5)
IDD $_{t}$	**-27.565*** **	**-23.691*** **	**-23.242*** **	**-19.646*** **	**-18.422***
	(-3.91)	**(-3.59)**	**(-3.58)**	**(-2.84)**	**(-1.99)**
Firm size $_{t-1}$	-21.980***	-9.098***	-9.232***	-8.908***	-9.125***
	(-8.93)	(-3.82)	(-4.47)	(-5.18)	(-7.35)
Book leverage $_{t-1}$	68.713***	62.228***	63.578***	72.219***	75.526***
	(13.32)	(10.86)	(11.99)	(7.39)	(13.86)
Profitability $_{t-1}$	-176.305***	-142.509***	-141.574***	-188.746***	-170.589***
	(-5.94)	(-4.78)	(-5.03)	(-5.14)	(-5.41)
Tangibility $_{t-1}$	-10.321	-5.216	-7.123	-22.426*	-32.933***
	(-1.29)	(-0.55)	(-0.59)	(-1.97)	(-3.03)
Current ratio $_{t-1}$	-1.986*	-1.610	-1.772	-0.851	-1.826
	(-1.79)	(-1.53)	(-1.59)	(-0.49)	(-1.17)
Market-to-book ratio $_{t-1}$	-5.972***	-4.589***	-4.995***	-3.853**	-4.312***
	(-4.53)	(-3.08)	(-3.79)	(-2.60)	(-2.73)
Log(1+coverage) $_{t-1}$	-10.483***	-8.167***	-8.123***	-10.373***	-9.372***
	(-4.71)	(-4.25)	(-4.00)	(-5.19)	(-5.45)
State GDP $_{t-1}$	-1.546	-1.326	-1.400	-1.645	-0.342
	(-1.01)	(-0.85)	(-0.93)	(-0.99)	(-0.20)
State unemployment $_{t-1}$	-0.402	-1.765	-1.872	-2.807	-4.936**
	(-0.20)	(-0.74)	(-0.78)	(-1.18)	(-2.49)
Log(maturity) $_{t}$		-3.221*	-3.445**	-2.287	-1.962
		(-1.91)	(-2.39)	(-1.34)	(-1.38)
Log(loan size) $_{t}$		-13.784***	-14.071***	-16.810***	-16.450***
		(-8.57)	(-8.92)	(-8.89)	(-10.82)
Collateral $_{t}$		55.414***	54.205***	56.743***	57.043***
		(16.44)	(17.22)	(9.97)	(12.18)
Constant	332.072***	274.661***	305.261***	175.560***	216.557***
	(17.24)	(14.52)	(10.04)	(8.22)	(5.95)
Borrower industry FE	No	No	No	No	Yes
Borrower industry-year FE	No	No	No	Yes	No
Borrower state-year FE	No	No	No	No	Yes
Year FE	Yes	Yes	Yes	No	No
Borrower state FE	No	No	Yes	No	No
Lender state FE	No	No	No	Yes	Yes
Lender ID FE	Yes	Yes	Yes	No	No
Rate FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.56	0.59	0.60	0.58	0.58
N. of Obs.	10779	10777	10777	10777	10777

Table 3. IDD effect on loan maturity

This table presents regressions of bank loan maturity on the passage of IDD. The sample consists of firm-year observations between 1985 and 2011. Financial firms are excluded. The dependent variable is log(maturity). *IDD* is a dummy variable that equals 1 if a lender's headquarter state has passed the inevitable disclosure doctrine and 0 otherwise. Definitions of all variables are in the Appendix. *t*-statistics (reported in parentheses) are based on standard errors adjusted for within-lender state correlation. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
IDD $_{t}$	**0.097****	**0.095****	**0.089***	**0.120****	**0.117****
	(2.22)	**(2.14)**	**(1.89)**	**(2.39)**	**(2.62)**
Firm size $_{t-1}$	-0.022*	-0.078***	-0.082***	-0.068***	-0.070***
	(-1.68)	(-5.79)	(-6.18)	(-4.78)	(-4.62)
Book leverage $_{t-1}$	0.063	0.070	0.063	0.074*	0.093*
	(1.18)	(1.39)	(1.13)	(1.97)	(1.95)
Profitability $_{t-1}$	1.078***	0.841***	0.775***	0.717***	0.643***
	(4.92)	(3.28)	(2.93)	(3.33)	(3.27)
Tangibility $_{t-1}$	0.041	0.044	0.070**	0.113**	0.190***
	(1.21)	(1.54)	(2.03)	(2.52)	(3.71)
Current ratio $_{t-1}$	0.035**	0.031**	0.029**	0.024*	0.029*
	(2.33)	(2.03)	(2.15)	(1.85)	(1.85)
Market-to-book ratio $_{t-1}$	-0.052***	-0.058***	-0.058***	-0.071***	-0.067***
	(-6.15)	(-6.81)	(-6.10)	(-7.78)	(-6.51)
Log(1+coverage) $_{t-1}$	-0.014	-0.002	-0.001	0.002	0.008
	(-0.91)	(-0.13)	(-0.09)	(0.12)	(0.54)
State GDP $_{t-1}$	-0.008	-0.008*	-0.008**	0.001	-0.003
	(-1.45)	(-1.72)	(-2.05)	(0.14)	(-0.54)
State unemployment $_{t-1}$	-0.014	-0.011	-0.011	-0.001	-0.013
	(-0.74)	(-0.64)	(-0.64)	(-0.06)	(-0.62)
Spread (basis points) $_{t}$		-0.000**	-0.000**	-0.000	-0.000
		(-2.08)	(-2.59)	(-1.43)	(-1.47)
Log(loan size) $_{t}$		0.102***	0.101***	0.103***	0.104***
		(3.99)	(3.87)	(4.78)	(5.32)
Collateral $_{t}$		0.185***	0.184***	0.180***	0.181***
		(7.48)	(8.69)	(7.21)	(11.53)
Constant	3.535***	3.575***	3.508***	3.623***	3.393***
	(28.20)	(29.99)	(15.52)	(23.10)	(16.80)
Borrower industry FE	No	No	No	No	Yes
Borrower industry-year FE	No	No	No	Yes	No
Borrower state-year FE	No	No	No	No	Yes
Year FE	Yes	Yes	Yes	No	No
Borrower state FE	No	No	Yes	No	No
Lender state FE	No	No	No	Yes	Yes
Lender ID FE	Yes	Yes	Yes	No	No
Rate FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.173	0.201	0.205	0.205	0.260
N. of Obs.	10777	10777	10777	10777	10777

Table 4. IDD effect on other loan terms

This table presents regressions of bank loan terms other than spread on the passage of IDD. The sample consists of firm-year observations between 1985 and 2011. Financial firms are excluded. *Collateral* is a dummy variable that equals 1 if the loan facility was with collateral and 0 otherwise. *Slack* is measured as the difference between the observed ratio and the minimum allowable ratio (or the negative of the difference in the case of a maximum ratio), both taken in natural logs for the following reported covenants. *Strictness* is a measure following Murfin (2012) that incorporates covenant slackness, the number of financial covenants, and covariations between financial ratios. *IDD* is a dummy variable that equals 1 if a lender's headquarter state has passed the inevitable disclosure doctrine and 0 otherwise. Definitions of all variables are in the Appendix. *t*-statistics (reported in parentheses) are based on standard errors adjusted for within-lender state correlation. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1) Log(loan size)	(2) Collateral	(3) Slack	(4) Strictness
IDD $_{t}$	**0.068**	**0.038**	**-0.569**	**0.007**
	(0.90)	**(0.87)**	**(-0.86)**	**(0.30)**
Firm size $_{t-1}$	0.634***	-0.067***	-0.088	-0.001
	(27.31)	(-13.20)	(-0.47)	(-0.07)
Book leverage $_{t-1}$	0.068	0.035	-6.315***	0.109**
	(0.61)	(0.93)	(-9.71)	(2.25)
Profitability $_{t-1}$	1.362***	0.003	0.555	-0.075
	(5.67)	(0.02)	(0.26)	(-0.82)
Tangibility $_{t-1}$	-0.081	-0.077	1.762*	0.028
	(-1.49)	(-1.23)	(1.82)	(0.84)
Current ratio $_{t-1}$	0.000	-0.001	0.030	-0.004
	(0.05)	(-0.33)	(0.21)	(-1.22)
Market-to-book ratio $_{t-1}$	0.066***	-0.008	0.418***	0.003
	(3.61)	(-1.25)	(4.05)	(0.52)
Log(1+coverage) $_{t-1}$	-0.024	-0.033***	0.278	0.004
	(-0.97)	(-2.88)	(1.52)	(0.55)
State GDP $_{t-1}$	-0.000	-0.005	-0.007	0.004
	(-0.02)	(-0.64)	(-0.07)	(0.75)
State unemployment $_{t-1}$	-0.011	0.030***	-0.463***	0.013
	(-0.49)	(3.42)	(-2.82)	(1.30)
Log(maturity) $_{t}$	-0.002***	0.001***	-0.014***	0.000***
	(-12.97)	(16.13)	(-10.90)	(5.72)
Log(loan size) $_{t}$	0.192***	0.064***	-0.732***	0.009*
	(4.86)	(11.31)	(-6.56)	(1.75)
Spread (basis points) $_{t}$	0.082***		-0.981**	0.011
	(3.73)		(-2.53)	(0.82)
Collateral $_{t}$		0.016***	-0.440*	0.002
		(4.12)	(-1.75)	(0.98)
Constant	-2.305***	0.392***	9.740**	-0.149
	(-11.37)	(3.17)	(2.33)	(-1.14)
Lender state FE	Yes	Yes	Yes	Yes
Borrower industry FE	Yes	Yes	Yes	Yes
Borrower state-year FE	Yes	Yes	Yes	Yes
Rate FE	Yes	Yes	Yes	Yes
R-squared	0.683	0.424	0.399	0.204
N. of Obs.	10777	10777	3864	3864

Table 5. Sample splits based on lending relationships

This table presents regressions of bank loan terms on the passage of IDD in subsamples of relationship loans and non-relationship loans. The sample consists of firm-year observations between 1985 and 2011. Financial firms are excluded. The dependent variable is loan spread and log(maturity), respectively. *Rel* (dummy) is a dummy that equals 1 if there is a relationship with any of the lead banks in the last five years before the present loan and 0 otherwise. *Rel* (number) is the ratio of number of deals with the lead bank(s) to the total number of loans borrowed by the firm in the last five years before the current loan. *Rel* (amount) is the ratio of dollar value of deals with the lead bank(s) to the total dollar value of loans borrowed by the firm in the last five years before the current loan. Panel A splits the sample based on the presence of lending relationships. Panel B uses the relationship loan subsample and splits the sample based on median level of *Rel* (number). Panel C uses the relationship loan subsample and splits the sample based on mean level of *Rel* (amount). *IDD* is a dummy variable that equals 1 if a lender's headquarter state has passed the inevitable disclosure doctrine and 0 otherwise. Definitions of all variables are in the Appendix. *t*-statistics (reported in parentheses) are based on standard errors adjusted for within-lender state correlation. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Dollar amounts are adjusted for inflation in year 2000 amount.

Panel A: IDD effect on loan terms: relationship loans VS non-relationship loans

	Spread		Log(maturity)	
	(3)	(4)	(3)	(4)
	Rel(dummy)=0	Rel(dummy)=1	Rel(dummy)=0	Rel(dummy)=1
IDD $_t$	**-14.442***	**-31.654*****	**0.086****	**0.158**
	(-1.75)	**(-2.98)**	**(2.06)**	**(1.20)**
Other controls	Yes	Yes	Yes	Yes
Lender state FE	Yes	Yes	Yes	Yes
Borrower industry FE	Yes	Yes	Yes	Yes
Borrower state-year FE	Yes	Yes	Yes	Yes
Rate FE	Yes	Yes	Yes	Yes
R-squared	0.560	0.628	0.187	0.260
N. of Obs.	5401	4898	5401	4898

Chi test of coefficient difference for Spread p-value = 0.0816
Chi test of coefficient difference for log(maturity) p-value = 0.5894

Panel B: IDD effect on relationship loan terms: partition by *Rel* (number)

	Spread		Log(maturity)	
	(1)	(2)	(3)	(4)
	Low	High	Low	High
	Rel(number)	Rel(number)	Rel(number)	Rel(number)
IDD $_t$	**-22.687**	**-55.115*****	**-0.118**	**0.300****
	(-1.15)	**(-4.30)**	**(-0.67)**	**(2.17)**
Other controls	Yes	Yes	Yes	Yes
Lender state FE	Yes	Yes	Yes	Yes
Borrower industry FE	Yes	Yes	Yes	Yes
Borrower state-year FE	Yes	Yes	Yes	Yes
Rate FE	Yes	Yes	Yes	Yes
R-squared	0.642	0.673	0.287	0.284
N. of Obs.	2641	2257	2641	2257

Chi test of coefficient difference for Spread p-value = 0.0909
Chi test of coefficient difference for log(maturity) p-value = 0.0032

Panel C: IDD effect on relationship loan terms: partition by *Rel* (amount)

	Spread		Log(maturity)	
	(1)	(2)	(3)	(4)
	Low Rel(amount)	High Rel(amount)	Low Rel(amount)	High Rel(amount)
IDD	**-26.092**	**-58.157*** **	**-0.107**	**0.284***
	(-1.38)	**(-4.55)**	**(-0.77)**	**(1.80)**
Other controls	Yes	Yes	Yes	Yes
Lender state FE	Yes	Yes	Yes	Yes
Borrower industry FE	Yes	Yes	Yes	Yes
Borrower state-year FE	Yes	Yes	Yes	Yes
Rate FE	Yes	Yes	Yes	Yes
R-squared	0.631	0.665	0.280	0.278
N. of Obs.	2541	2357	2541	2357

Chi test of coefficient difference for Spread p-value = 0.0576
Chi test of coefficient difference for log(maturity) p-value = 0.0006

Table 6. Sample splits based on interstate banking restriction

This table presents regressions of bank loan terms on the passage of IDD in subsamples based on interstate banking index. The sample consists of firm-year observations between 1985 and 2011. Financial firms are excluded. The dependent variable is loan spread and log(maturity), respectively. Index is a number that captures the degree of interstate branching restriction. It ranges from zero to four with zero indicating the most open stance toward interstate entry and four indicating the most restrictive stance toward interstate entry. States could set regulations on interstate branching with respect to four provisions: (i) the minimum age of the target institution; (ii) de novo interstate branching; (iii) the acquisition of individual branches; and (iv) a statewide deposit cap. When a state adds any of the above four barriers, we add one to index. IDD is a dummy variable that equals 1 if a lender's headquarter state has passed the inevitable disclosure doctrine and 0 otherwise. Definitions of all variables are in the Appendix. *t*-statistics (reported in parentheses) are based on standard errors adjusted for within-lender state correlation. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Spread		Log(maturity)	
	(1)	(2)	(3)	(4)
	Index>0	Index=0	Index>0	Index=0
IDD $_t$	**-14.495*** **	**-25.864*** **	**0.049**	**0.048**
	(-2.88)	**(-2.72)**	**(1.08)**	**(0.62)**
Other controls	Yes	Yes	Yes	Yes
Lender state FE	Yes	Yes	Yes	Yes
Borrower industry FE	Yes	Yes	Yes	Yes
Borrower state-year FE	Yes	Yes	Yes	Yes
Rate FE	Yes	Yes	Yes	Yes
R-squared	0.532	0.592	0.258	0.147
N. of Obs.	6076	4701	6076	4701

Chi test of coefficient difference for Spread p-value = 0.3450
Chi test of coefficient difference for log(maturity) p-value = 0.9851

Table 7. Sample splits based on geographical distance between bank and borrower states

This table presents regressions of bank loan terms on the passage of IDD in subsamples partitioned by the median level of lender-borrower distance. The sample consists of firm-year observations between 1985 and 2011. Financial firms are excluded. The dependent variable is loan spread and log(maturity), respectively. *Distance* is the geographic distance between lender and borrower states. *IDD* is a dummy variable that equals 1 if a lender's headquarter state has passed the inevitable disclosure doctrine and 0 otherwise. Definitions of all variables are in the Appendix. *t*-statistics (reported in parentheses) are based on standard errors adjusted for within-lender state correlation. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Spread		log(maturity)	
	(1)	(2)	(3)	(4)
	Long distance	Short distance	Long distance	Short distance
IDD $_t$	**-14.387**	**-22.142****	**0.098**	**0.070**
	(-0.81)	**(-2.66)**	**(1.32)**	**(1.03)**
Other controls	Yes	Yes	Yes	Yes
Lender state FE	Yes	Yes	Yes	Yes
Borrower industry FE	Yes	Yes	Yes	Yes
Borrower state-year FE	Yes	Yes	Yes	Yes
Rate FE	Yes	Yes	Yes	Yes
R-squared	0.641	0.582	0.211	0.207
N. of Obs.	4887	5045	4887	5045

Chi test of coefficient difference for Spread *p*-value = 0.6294
Chi test of coefficient difference for log(maturity) *p*-value = 0.7597

Table 8. IDD effect on borrowers' debt structure

This table presents borrowers' reaction to the passage of IDD in terms of bond-loan choice. The sample consists of firm-year observations between 1985 and 2011. Financial firms are excluded. The dependent variable is bond ratio, bond initiation dummy, and loan initiation dummy, respectively. *Bond ratio* is the sum of the ratios of senior bonds and notes, subordinated bonds and notes and commercial paper denominated by total debt. For regressions of bond (loan) initiation dummy, a firm-year is included in the regression only if the firm has zero bond (loan) in the previous year. The bond (loan) initiation equals 1 if firm's bond (loan) is positive and 0 otherwise. *IDD* is a dummy variable that equals 1 if a lender's headquarter state has passed the inevitable disclosure doctrine and 0 otherwise. Definitions of all variables are in the Appendix. *t*-statistics (reported in parentheses) are based on standard errors adjusted for within-lender state correlation. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Bond ratio	Bond ratio	Bond initiation	Bank initiation
IDD $_{t}$	**-1.599*** **	**-2.488*** **	**-0.074** **	**0.064** **
	(-2.71)	**(-4.30)**	**(-2.17)**	**(2.13)**
Firm size $_{t-1}$	0.974*	0.874	0.065	-0.002
	(1.74)	(1.57)	(1.24)	(-0.06)
Book leverage $_{t-1}$	5.197***	5.092***	0.361***	0.019
	(4.23)	(3.91)	(2.88)	(0.17)
Profitability $_{t-1}$	6.458	4.279	-0.051	-0.191
	(1.62)	(1.05)	(-0.23)	(-0.65)
Tangibility $_{t-1}$	-3.877	-3.039	0.046	0.255
	(-1.47)	(-1.10)	(0.22)	(0.96)
Current ratio $_{t-1}$	0.456***	0.041	0.014	-0.030**
	(3.58)	(0.34)	(1.47)	(-2.60)
Market-to-book ratio $_{t-1}$	-0.106	-0.101	0.012	-0.015
	(-0.62)	(-0.39)	(0.90)	(-1.54)
Log(1+coverage) $_{t-1}$	-0.361	-0.153	-0.001	0.004
	(-1.26)	(-0.51)	(-0.06)	(0.23)
Total Bank Debt (% of	-0.854***	-0.816***		
Total Debt) $_{t}$	(-48.60)	(-39.43)		
Bond ratio $_{t-1}$		0.100***		
		(5.88)		
Constant $_{t}$	90.057***	83.293***	0.005	0.317**
	(51.46)	(29.61)	(0.04)	(2.61)
Year FE	Yes	Yes	Yes	Yes
Rate FE	Yes	Yes	Yes	Yes
r2	0.946	0.951	0.602	0.593
N	15136	12013	3018	3005

Table 9. Controlling for local economic conditions based on adjacent-state matching

This table presents regressions of bank loan terms on the passage of IDD on matched samples. The sample consists of firm-year observations between 1985 and 2011. Financial firms are excluded. The dependent variable is loan spread and log (maturity), respectively. We match lender (borrower) adjacent states to each adopted lender (borrower) state without replacement. This procedure yields 13 matched groups. The 13 groups are as follows: (NY:VT); (FL: AL); (DE: DC, MD); (NC: VA, SC, TN); (MN: ND, SD,WI); (IL: KY); (TX: NM, OK, LA); (MA: RI, NH); (IA: NE); (AR: MS); (WA: OR, ID); (UT: NV, CO, WY, AZ); (OH: WV). *IDD* is a dummy variable that equals 1 if a lender's headquarter state has passed the inevitable disclosure doctrine and 0 otherwise. Definitions of all variables are in the Appendix. *t*-statistics (reported in parentheses) are based on standard errors adjusted for within-lender state correlation. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Lender adjacent states		Borrower adjacent states	
	(1)	(2)	(3)	(4)
	Spread	Log(maturity)	Spread	Log(maturity)
IDD_t	**-21.027****	**0.087****	**-15.311***	**0.089***
	(-2.41)	**(2.13)**	**(-1.73)**	**(1.85)**
Other controls	Yes	Yes	Yes	Yes
Matched-group FE	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes
Borrower industry FE	Yes	Yes	Yes	Yes
Borrower state-year FE	Yes	Yes	No	No
Lender state FE	No	No	Yes	Yes
Rate FE	Yes	Yes	Yes	Yes
R-squared	0.572	0.202	0.544	0.189
N. of Obs.	10777	10777	10777	10777

Table 10. Dynamics effect of IDD: state-level regressions

This table presents state-level regressions of bank loan terms on the passage of IDD. The sample consists of firm-year observations between 1985 and 2011. Financial firms are excluded. For the state-level regression, first we regress the dependent variables, i.e. spread and log(maturity), on all control variables, borrower industry fixed effect, borrower state fixed effect and lender ID fixed effect. Then we collapse the residuals of this regression to lender state-year mean. We use the lender state-year mean residual as the dependent variable and *IDD* (*IDD reject*), in panel A, or IDD dynamics dummy, in panel B, as independent variables to see reaction of loan terms to IDD. We control for lender state fixed effect and year fixed effect in the second stage. IDD dynamics dummies are defined as follows: IDD^{-1} is a dummy variable that equals 1 if a lender's headquarter state will pass IDD in a year and 0 otherwise. IDD^{0} is a dummy variable that equals 1 if a lender's headquarter state has passed IDD in the current year and 0 otherwise. IDD^{1} is a dummy variable that equals 1 if a lender's headquarter state passed IDD one year ago and 0 otherwise. IDD^{2} is a dummy variable that equals 1 if a lender's headquarter state passed IDD two years ago and 0 otherwise. *IDD reject* is a dummy variable that equals 1 if a lender's headquarter state has rejected IDD and 0 otherwise. For IDD rejection dynamics, $IDD^{-1/0/1/2}$ is a dummy variable that equals 1 if a lender's headquarter state will pass/has passed/passed/passed IDD in a year/in the current year/one year ago/two years ago. Definitions of all variables are in the Appendix. *t*-statistics (reported in parentheses) are based on standard errors adjusted for within-lender state correlation. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: State-level regression

	Spread	Log(maturity)	Spread	Log(maturity)
IDD	-20.276***	0.028		
	(-2.96)	(0.53)		
IDD reject			26.400	-0.169
			(1.64)	(-1.54)
Constant	0.202	0.027	-62.337	0.176
	(0.01)	(0.11)	(-0.54)	(0.21)
Lender state FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
R-squared	0.238	0.0711	0.195	-0.141
N. of Obs.	301	301	56	56

Panel B: Dynamics effect of IDD

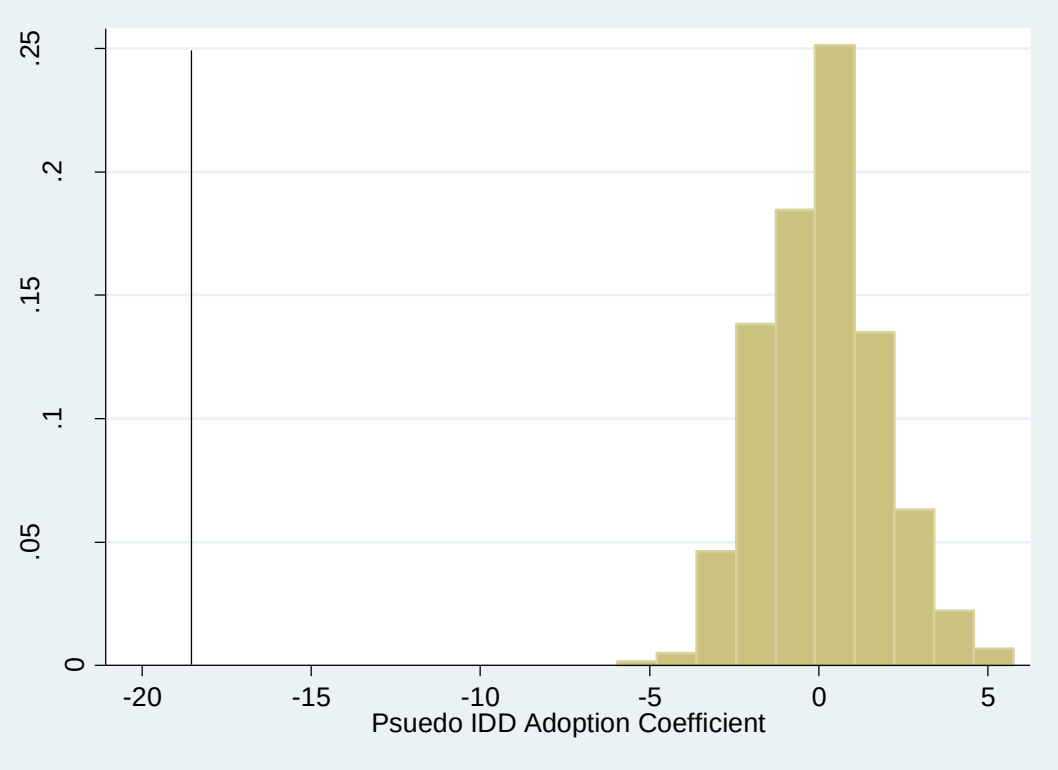
	Spread	Log(maturity)	Spread	Log(maturity)
IDD $^{-1}$	-3.752	0.081		
	(-0.28)	(0.65)		
IDD ^{0}	-5.102	-0.314		
	(-0.26)	(-1.16)		
IDD ^{1}	-18.388	0.068		
	(-1.24)	(0.62)		
IDD ^{2}	-20.995**	-0.018		
	(-1.98)	(-0.19)		
IDD rej $^{-1}$			-6.612	0.186
			(-0.25)	(1.09)
IDD rej ^{0}			36.019	0.249
			(0.51)	(1.31)
IDD rej ^{1}			26.595	0.043
			(0.46)	(0.22)
IDD rej ^{2}			19.564	0.505***
			(0.95)	(4.64)
Constant	1.526	0.065	-63.311	0.130
	(0.05)	(0.28)	(-0.55)	(0.16)
Lender state FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
R-squared	0.216	0.0938	0.147	-0.168
N. of Obs.	301	301	56	56

F test for IDD^{-1} + IDD ^{0}=0, *p* value = 0.735
F test for IDD ^{1} + IDD ^{2}=0, *p* value = 0.067
F test for IDD rej^{-1} + IDD rej ^{0}=0, P value = 0.455
F test for IDD rej ^{1} + IDD rej ^{2}=0, P value = 0.775

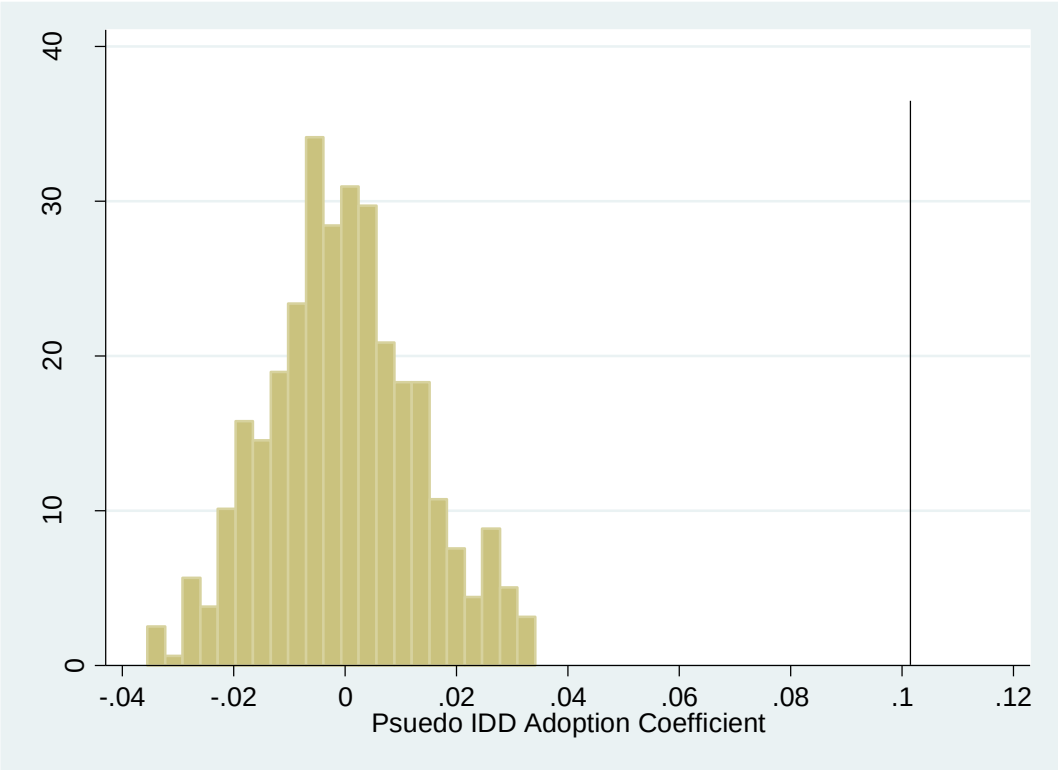
Figure 1. Distribution of the coefficient on Placebo IDD adoption date

The figure below provides the regression results of a randomized assignment of IDD adoption. For each state that has adopted IDD, we randomly draw an IDD adopting year from 1919(the first date of IDD passage) to 2011(the end of our sample period) following uniform distribution. Within a draw we estimate our baseline regression as in Table2 on loan spread, column (5) using the pseudo IDD adoption date. We do this 500 times and plot the distribution of the pseudo coefficients of regression. The black line embedded in the graph represents the regression coefficient obtained using the actual IDD adoption date in specification (5) of Table 2. We compare the observed coefficient in the data against the pseudo distribution.

1A: Distribution of the coefficient on loan spread



1B: Distribution of the coefficient on log (maturity)



APPENDIX 1
Variable Definitions

IDD: a dummy variable that equals 1 if the headquarter state of the lender has passed the inevitable disclosure doctrine and 0 otherwise.

Firm size: the natural log of the book value of borrower's assets adjusted for inflation in year 2000 dollars.

Leverage: book value of total debt divided by the book value of assets.

Log(1+Coverage): the natural log of (1 +EBITDA/Interest expenses).

Profitability: EBITDA divided by total sales.

Tangibility: property, plant, and equipment (PPE) divided by total assets.

Current ratio: current assets divided by current liabilities.

Market-to-book: (book value of assets - book value of equity + market value of equity)/book value of assets.

AISD: "all-in-spread drawn", which is the all-inclusive cost of a drawn loan to the borrower. This equals the coupon spread over LIBOR on the drawn amount plus the annual fee and is reported in basis points.

Log(maturity): the natural log of the loan maturity in months.

Log(loan size): the natural log of the loan amount adjusted for inflation in year 2000 dollars.

Slack: measured in the first period of the contract as the difference between the observed ratio and the minimum allowable ratio (or the negative of the difference in the case of a maximum ratio), both taken in natural logs for the following reported covenants: minimum EBITDA to debt, current ratio, quick ratio, tangible net worth, total net worth, EBITDA, fixed charge coverage, interest coverage, maximum debt to equity, debt to tangible net worth, and capital expenditure.

Strictness: following Murfin (2012), this measure incorporates covenant slackness, the number of financial covenants, and covariations between financial ratios.

Rating: S&P senior long-term debt rating.

Collateral: a dummy variable that equals 1 if the loan facility was with collateral and 0 otherwise.

Distance: the geographic distance between lender and borrower states.

Index: a dummy that captures the degree of interstate branching restriction. It ranges from zero to four with zero indicating the most open stance toward interstate entry and four indicating the most restrictive stance toward interstate entry. States could set regulations on interstate branching with respect to four provisions: (i), the minimum age of the target institution; (ii), de novo interstate branching; (iii), the acquisition of individual branches; and (iv) a statewide deposit cap. When a state adds any of the above four barriers, we add one to index.

Rel (dummy): a dummy that equals 1 if there is a relationship with any of the lead banks in the last five years before the present loan and 0 otherwise.

Rel (number): the ratio of number of deals with the lead bank(s) to the total number of loans borrowed by the firm in the last five years before the current loan

Rel (amount): the ratio of dollar value of deals with the lead bank(s) to the total dollar value of loans borrowed by the firm in the last five years before the current loan.

Bond ratio: the sum of the ratio of senior bonds and notes, subordinated bonds and notes and commercial paper denominated by total debt.

Bond dummy: a dummy variable that equals 1 if firm bond debt is positive and 0 otherwise for the firm year.

Bank dummy: a dummy variable that equals 1 if firm bank debt is positive and 0 otherwise for the firm year.

APPENDIX 2
Precedent-Setting Legal Cases Adopting or Rejecting the Inevitable Disclosure Doctrine

State	Precedent-Setting Cases	Date	Decision
AR	Southwestern Energy Co. v. Eickenhorst, 955 F. Supp. 1078 (W.D. Ark. 1997)	3/18/1997	Adopt
CT	Branson Ultrasonics Corp. v. Stratman, 921 F. Supp. 909 (D. Conn. 1996)	2/28/1996	Adopt
DE	E.I. duPont de Nemours & Co. v. American Potash & Chem. Corp., 200 A.2d 428 (Del. Ch.	5/5/1964	Adopt
FL	Fountain v. Hudson Cush-N-Foam Corp., 122 So. 2d 232 (Fla. Dist. Ct. App. 1960)	7/11/1960	Adopt
FL	Del Monte Fresh Produce Co. v. Dole Food Co. Inc., 148 F. Supp. 2d 1326 (S.D. Fla. 2001)	5/21/2001	Reject
GA	Essex Group Inc. v. Southwire Co., 501 S.E.2d 501 (Ga. 1998)	6/29/1998	Adopt
IL	Teradyne Inc. v. Clear Communications Corp., 707 F. Supp. 353 (N.D. 111. 1989)	2/9/1989	Adopt
IN	Ackerman v. Kimball Int'l Inc., 652 N.E.2d 507 (Ind. 1995)	7/12/1995	Adopt
IA	Uncle B's Bakery v. O'Rourke, 920 F. Supp. 1405 (N.D. Iowa 1996)	4/1/1996	Adopt
KS	Bradbury Co. v. Teissier-duCros, 413 F. Supp. 2d 1203 (D. Kan. 2006)	2/2/2006	Adopt
MA	Bard v. Intoccia, 1994 U.S. Dist. LEXIS 15368 (D. Mass. 1994)	10/13/1994	Adopt
MI	Allis-Chalmers Manuf. Co. v. Continental Aviation & Eng. Corp., 255 F. Supp. 645 (E.D. Mich.	2/17/1966	Adopt
MI	CMI Int'l, Inc. v. Intermet Int'l Corp., 649 N.W.2d 808 (Mich. Ct. App. 2002)	4/30/2002	Reject
MN	Surgidev Corp. v. Eye Technology Inc., 648 F. Supp. 661 (D. Minn. 1986)	10/10/1986	Adopt
MO	H&R Block Eastern Tax Servs. Inc. v. Enchura, 122 F. Supp. 2d 1067 (W.D. Mo. 2000)	11/2/2000	Adopt
NJ	Nat'l Starch & Chem. Corp. v. Parker Chem. Corp., 530 A.2d 31 (N.J. Super. Ct. 1987)	4/27/1987	Adopt
NY	Eastman Kodak Co. v. Powers Film Prod., 189 A.D. 556 (N.Y.A.D. 1919)	12/5/1919	Adopt
NC	Travenol Laboratories Inc. v. Turner, 228 S.E.2d 478 (N.C. Ct. App. 1976)	6/17/1976	Adopt
OH	Procter & Gamble Co. v. Stoneham, 747 N.E.2d 268 (Ohio Ct. App. 2000)	9/29/2000	Adopt
PA	Air Products & Chemical Inc. v. Johnson, 442 A.2d 1114 (Pa. Super. Ct. 1982)	2/19/1982	Adopt
TX	Rugen v. Interactive Business Systems Inc., 864 S.W.2d 548 (Tex. App. 1993)	5/28/1993	Adopt
TX	Cardinal Health Staffing Network Inc. v. Bowen, 106 S.W.3d 230 (Tex. App. 2003)	4/3/2003	Reject
UT	Novell Inc. v. Timpanogos Research Group Inc., 46 U.S.P.Q.2d 1197 (Utah D.C. 1998)	1/30/1998	Adopt
WA	Solutec Corp. Inc. v. Agnew, 88 Wash. App. 1067 (Wash. Ct. App. 1997)	12/30/1997	Adopt

This appendix is a replication of Table 1 in Klasa et al. (2014).