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Enforcement Actions and the Structure of Loan Syndicates

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Enforcement Actions and the Structure of Loan Syndicates

Abstract

A decrease in the reputation of a loan syndicate's lead arranger, caused by a regulatory enforcement action for non-compliance with laws and regulations, disincentivizes potential syndicate participants from co-financing the loan. We formally argue that in such cases, the lead arranger must increase his share of the loan in order to make the loan sufficiently attractive to potential participants. We provide strong empirical evidence to support our theoretical argument, using the full sample of enforcement actions enacted on U.S. banks from 2000 through 2010 as well as syndicated loan-level data.

JEL classification: D82; G21; G28

Keywords: Syndicated loan market; Syndicate structure; Reputation of lead arranger; Enforcement actions; Incomplete and asymmetric information; Loan-level data

I. Introduction

What reputational effect do regulatory enforcement actions, enacted on banks for breaches of laws and regulations, have on loan syndicate structure? In the syndicated loan market, a number of banks—namely, the lead (principal) arranger (lender) and the participants—form a syndicate to provide large corporate loans that a single bank cannot (or is unwilling to) finance alone. Global syndicated lending is a massive market, reaching US$4.7 trillion in 2014 with nearly 10,500 transactions. In the U.S., the loan volume represents about 50% of the global volume, making the syndicated loan market the most significant source of corporate finance after the capital markets, especially for large firms. Regulatory enforcement actions enacted on lead arrangers impose an important reputational burden on these banks and may significantly affect loan syndicate structure. Our study is the first to explore the effects of the reputational burden of regulatory enforcement actions on loan syndicate structure.

We begin by building a formal argument that links syndicate designer's reputation to syndicate structure. Our setup includes three players: the lead arranger, the participant bank, and the borrowing firm. The interesting case occurs when the lead arranger and the participant decide to finance the firm's project. After this decision, the lead arranger also decides how much costly monitoring effort to input. The participant has no way to observe the monitoring effort exerted by the lead arranger, implying incomplete information. We first show that, all else constant, the principal arranger's optimal monitoring effort, and subsequently the project's success, strictly increase with the lead arranger's participation share. This relationship is quite intuitive, because a larger participation share makes a lead arranger care more about the project's prospects and, hence, induces the lead arranger to invest more effort in its success. This part of our theoretical argument is in line with the empirical findings of Khalil and Parigi (1998), Kang et al. (2000), Lee and Mullineaux

(2004), Sufi (2007), and Ahn and Choi (2009) who, each in a different context, show that a bank monitors a firm more intensively when the loan amount to the firm is larger.

Importantly, a regulator audits the lead arranger and reveals a signal based on the lead arranger's compliance with regulatory law on the books (Agarwal et al., 2014; Delis et al., 2016). This signal relates to the presence, or absence, of an enforcement action, which becomes publicly available information. We consider that the participant bank bears a reputational risk by joining a syndicate designed by a punished lead arranger. According to the Office of the Comptroller of the Currency (OCC) a reputational risk is "the current and prospective risk to earnings or capital arising from negative public opinion."

Joint ventures with "problematic" business partners generate negative public opinion regarding a bank's/firm's financial future through a variety of channels (Dollinger et al., 1997; Morrison and White, 2013). In the admittedly extreme, but still suggestive case of the Lehman Brothers' failure, banks that were participating in syndicate loans with them during 2008 suffered more in the period after their collapse (Ivashina and Scharfstein 2010). This was mainly due to the fact that these banks had to complement the Lehman Brothers' share in existing credit-lines and, thus, to reduce the financing of new projects. In other words, joining a syndicate designed by a punished lead arranger (that is, by a lead arranger who is publicly perceived to be more prone to induce, maybe not extreme, but still significant costs to its collaborators) decreases a bank's reputation as a reliable lender: the mere contractual association with a potentially problematic partner involves a non-negligible cost.

In the context of this argument, the described reputational risk should be proportional to the amount of the syndicated loan that is covered by the participant: the exposure of a participant to the threats that the lead arranger faces is increasing in the amount of the syndicated loan financed by the participant. Moreover, in a different context (software industry), Banerjee and Duflo (2000) show that entering in a contractual relationship with a

low-reputation firm, one should expect larger overruns (larger costs compared to those specified in the contract) compared to collaborating with a high-reputation firm. Hence, the mere signing of a contract with a low-reputation partner directly harms one's business reputation as, in expected terms, it deteriorates one's financial position.

A punished lead arranger thus needs to further incentivize participant banks to co-finance the project. To do so, the lead arranger must hold a larger share of the loan compared to the participants, essentially committing the arranger to a great deal of monitoring effort and, thus, to increasing the project's success potential. Our solution to the game is a perfect Bayesian equilibrium, the comparative statics of which, with respect to the reputation component, suggest that an increase in reputational risk induces an increase in the lead arranger's equilibrium participation share in the syndicate. By doing that, the lead-arranger provides incentives to herself to exert extra monitoring effort and thus to improve the success potential of the project. This informal, but nonetheless credible, commitment compensates the syndicate participants for the reputational risk that they undertake by collaborating with a punished bank and allow for the formation of the syndicate.

We stress that our reasoning is in line both with the theoretical argument of Khalil and Parigi (1998) and with the empirical findings of Banerjee and Duflo (2000). The latter document that reputation plays a crucial role in shaping the incentives' structure of signed contracts: low-reputation firms (that is, firms that are more likely to induce extra costs to their clients) sign contracts that provide them with more incentives to limit the total overruns (in our case, this is similar to improving the success potential of the financed project) compared to the contracts signed by high-reputation firms.

To summarize, our theoretical model predicts that the principal arranger's optimal monitoring effort, and subsequently the project's success, strictly increases with the lead

arranger's participation share. Thus, a lead arranger with an enforcement action must hold a larger share of the loan to incentivize participant banks to co-finance the project.

We empirically examine the validity of this argument using data from four different sources. Specifically, we use data on U.S. syndicated loans from DealScan, data for the borrowing firms from Compustat, data for the lead arrangers and participants from the Call Reports, and information on enforcement actions from a hand-collected dataset by Delis et al. (2015). Our data set spans the period 2000 through 2010. Looking at the summary statistics of our data, we observe that for syndicated loans originated prior to an enforcement action, the average lead lender's share is 17%, the deal amount held by the lead lender is approximately US$79 million, the equivalent numbers following an enforcement action on a lead lender are 27%, US$101 million.

Our empirical model aims to establish causality running from the enforcement action to the structure of the syndicated loan. We examine the effect of a dummy variable that takes the value of one for loans originated within the first (or alternatively in the first two) year(s) after the enforcement action and zero otherwise on a number of alternative variables characterizing syndicate structure. More closely related to our theoretical model, we use as a dependent variable the lead arranger's share of the loan. In alternative specifications, we also use as dependent variables a Herfindahl–Hirschman index (HHI) to analyze the concentration of holdings within the syndicate, the dollar amount held by the lead arranger, the dollar amount held by the lead arranger as a share of this lead arranger's total assets, and the number of lenders participating in the syndicate.

Our identification method accounts for potential unobserved variables, especially the bank- and firm-level ones that might bias the coefficient estimates on the enforcement action dummy. Specifically, our dataset's structure (cross-section of loans originated by the same lead lender in a specific year and across a number of years) allows us to explore a number of

fixed effects (bank, firm, year, loan type, loan purpose). Among these fixed effects, the bank and firm fixed effects are particularly important. In a pre-analysis, we show that using bank fixed effects to explain the enforcement action dummy within a specific period around the action, renders bank-level determinants that capture the reasons for regulatory action (e.g., capital and liquidity adequacy, asset quality, earnings management, inadequate audit systems, etc.) insignificant. Thus, bank fixed effects thoroughly control for the reasons the regulators impose enforcement actions and allow us to identify the (reputational) effect of enforcement actions on syndicate structure independently from these reasons. Similar arguments can be made for reasons stemming from firms or loan type, which we control for using the equivalent firm, loan type, and loan purpose fixed effects.

Our empirical results align completely with the theoretical model's findings. Specifically, our baseline specification shows that an enforcement action enacted on a lead arranger increases that lender's share by approximately 4.5 percentage points, a very large increase compared with the 19.3% average lead lender share in our sample. The HHI of the syndicate and the deal amount held by the lead arranger also increase considerably, and a relatively less significant decrease occurs in the number of syndicate lenders. Thus, we conclude that the main effect of an enforcement on the loan syndicate is that the participants require the punished lead arranger to retain a larger share of the loan. This result is aligned with the reputational impact of the enforcement action and the associated increased monitoring effort required from the lead arranger by the participants.

Our results are robust to the use of sub-samples and model re-specifications. One important test is to focus on the set of loans in which the syndicate members (banks and firms) are repeated and, in addition to other controls and types of fixed effects, use lead bank*firm or firm*syndicate fixed effects. Importantly, these models control for the potential goal of lead arrangers to reduce their risk by lending to more prudent firms following the

enforcement action. By obtaining identification through loans given by the same lead bank (or same syndicate) to the same firm both before and after the enforcement action (and within the three-year time window), we limit the possibility that results are attributed to the lower risk-taking of lead banks following an enforcement action because the same firm is involved in the lending process. This also insulates our findings from a borrower-driven explanation of our findings. Last but not least, we control for alternative measures of reputation such as the market power of banks, to alleviate concerns that enforcement actions capture the effect of such measures.

We also show empirically that there are specific loan characteristics that moderate the positive effect of enforcement actions on the lead lender's participation share. Evidently, loan characteristics aiming at lower informational asymmetries, such as the inclusion of collateral and guarantees, lower the positive impact of enforcement actions on the lead lender's share to less than half of the equivalent of our baseline model. Similarly, the inclusion of performance pricing provisions in the loan contract, lowers the positive impact of enforcement actions to about half of the equivalent of our baseline model. Other loan characteristics, such as letter-of-credit fees, covenants, and a previous lending relationship between the lead bank and the borrower, have less potent moderating effects.

Our paper is related to, but also quite distinct from, at least four strands of literature.[1] The most relevant studies examine the sources of loan syndicate structure. Sufi (2007) empirically shows that when borrowing firms require more-intense monitoring, the lead arranger retains a larger share of the loan and forms a more concentrated syndicate. Regarding the metric most relevant to our analysis, Sufi (2007) also shows a positive effect of the lead arranger's reputation, as measured by lead arranger's market share, on the loan share held by the lead arranger. Lee and Mullineaux (2004) and Jones et al. (2005) find that

[1] We do not intend to be fully exhaustive with respect to these three strands of literature and refer only to the most relevant studies for our analysis.

syndicates are more concentrated when the quality of information on borrowing firms is low. Gatev and Strahan (2009) analyze the effect of liquidity risk on syndicated loan structure and find that risk-management considerations matter more for participants than for lead arrangers. Dennis and Mullineaux (2000) use repeated syndicate members and bank ratings as measures of reputation and examine their effect on the origination or not of a syndicated loan.

Beyond the important element that this study is the first to provide an explicit theoretical framework for the role of reputation in the syndicated loan structure, it also differs from the foregoing research because we focus on the reputational effects of enforcement actions. Notably, these actions are exogenous to borrowers and participant lenders, and they thus provide a case for the study of the effect of bank supervision on loan syndicate structures.

A second strand of literature analyzes the effect of enforcement actions on banks' risk and performance. The most relevant study is that of Delis et al. (2015), who document that enforcement actions only moderately reduce the risk-weighted assets and non-performing loans ratios of punished banks, with no accompanying increase in the level of regulatory capital. Delis and Staikouras (2011) use aggregate data on the number of enforcement actions across countries and document similar results. Danisewicz et al. (2014) suggest that enforcement actions have adverse short-term effects on the macro-economy. Nguyen et al. (2016) show that both board monitoring is effective in reducing the probability that banks receive enforcement actions from regulators. A more dated literature (e.g., Brous and Leggett, 1996; Slovin et al., 1999) provides similar findings on the effect of enforcement actions on bank risk.

A third strand of literature concerns the setup and findings of our theoretical model within the framework of contract theory. In our model, the contract designer is the party that must exhibit the monitoring effort, and the participant contributes only part of the loan. This

model thus relates to studies that analyze potentially reversed principal–agent relationships. In the standard principal–agent framework, the principal designs a contract and the agent exerts a non-verifiable effort that affects both players' payoffs (moral hazard). Hence, the principal introduces, in the contract, incentives for the agent to exert as much effort as possible. Bhattacharyya and Lafontaine (1995), Kim and Wang (1998), and Demski and Sappington (1999) refer to many cases in which the principal must exert a costly effort that affects both players' payoffs and, hence, must include in the contract clauses that provide her with the appropriate incentives in order to convince the agent that she will exert the desired level of effort. Indeed, as we show in the context of syndicated loans, these self-directed incentives of the contract designer can take a very intuitive form: The designer convinces the potential participants that she will exert the necessary monitoring effort by committing to finance a sufficiently large part of the project.

Finally, the tradeoff we establish between reputation and lead arranger shares has analogies in corporate governance more broadly. For example Calomiris and Carlson (2016) show that bank manager ownership is a substitute for formal corporate governance tools to ensure proper effort by the manager. In general, bank managers who have large stakes in their banks' performance could exert greater effort in managing risk to preserve their own financial wealth (Demsetz et al., 1997; Laeven and Levine, 2009). Thus, the analysis conducted here for lead lender shares has a broad theoretical basis that goes back to at least Holmstrom and Tirole (1997).

Our paper proceeds as follows. The next section discusses our theoretical model and, based on its implications, specifies our testable hypothesis. Section III describes the empirical model and our identification method, followed by a discussion of the empirical results. Section IV concludes.

II. Reputation and Loan Syndicate Structure: A Formal Argument

In this section, we formulate a theoretical argument that stresses the role of reputation of the lead arranger in the structure of a loan syndicate, with reputation emerging from a regulator's decision in whether or not to enact an enforcement action. The set of players is given by $\{B, A, P\}$, where B is the borrower (firm), A is the lead (principal) arranger (the bank that designs the contract), and P is the potential participant (the bank that is offered the contract).[2]

The borrower wants to finance a project that costs one dollar but lacks funds. Hence, he requests financing from the principal arranger. The principal arranger might want to (i) lend the borrower the entire amount, (ii) partially finance the project herself, or (iii) not finance the project at all. In the first case, she provides a loan of one dollar to the borrower. In the second, she asks another potential participant to participate in providing the borrower a syndicate loan of one dollar. In the third case, she turns down the borrower's loan application. If the loan (individual or syndicate) is approved, the lead arranger monitors the use of the borrower's funds.

The timing of the game is as follows:

Stage 1. The borrower applies for a loan of one dollar at a fixed interest rate, r, to finance a project.

Stage 2. If the principal arranger does not want to finance this project at all, the game ends here. If the principal arranger wants to finance the project (even partially), the principal arranger writes a contract (a_A, a_P) such that $a_A + a_P = 1$ and $a_i \geq 0$ for every $i \in \{A, P\}$. We use a_i to denote the participation share of player i in the loan (the share of the loan that this player finances). Given that $a_P = 1 - a_A$, we usually refer to a loan contract only by the share held by the lead arranger.

[2] We assume that an arbitrary number of potential participants provides no additional intuition to our analysis and only complicates formal arguments.

Stage 3. The potential participant observes the contract and decides whether or not to sign it. We consider a contract approved if the potential participant signs the contract.

Stage 4. If the contract is not approved, the game ends here (no loan is given). If the contract is approved, the project is financed and the principal arranger decides how much monitoring effort to exert.

Stage 5. The returns of the project are made public information.

Stage 6. Players receive their payoffs.

The project's success is subject to uncertainty. Formally, we assume that the project's quality will be the outcome of a random draw from a uniform distribution on [0, $s(e)$], where $s(e) = s + e$.[3] Parameter $s \geq 1 + r$ can be viewed as the project's inherent success potential, and it is assumed to be common information, while $e \geq 0$ measures the lead arranger's monitoring effort. The larger the lead arranger's monitoring effort, the larger the project's success prospects. Therefore, a potential participant would like the principal arranger to exert as much monitoring effort as possible. We stress, however, that there is no third party that can enforce any level of monitoring effort, and hence the monitoring effort that the principal arranger will exert after the loan is approved cannot be part of the contract. This scenario represents a possible source of moral hazard, and the principal arranger must form rational expectations about it based on the information available to her.

If the project is financed and its quality turns out to be $\gamma \geq 1 + r$, then the payoff of the borrower is 1, the payoff of the lead arranger is $v(a_A(1 + r), a_A) - c(e)$, and the payoff of the potential participant is $v(a_P(1 + r), a_P) + a_P q_A$. In contrast, if the project quality turns out to be $\gamma < 1 + r$, then the payoff of the borrower is 0, the payoff of the principal arranger is $v(0, a_A) - c(e)$, and the payoff of the potential participant is $v(0, a_P) + a_P q_A$,

[3] The uniform distribution is just an auxiliary device that greatly simplifies analysis and has no substantial implication on our findings. Indeed, what is vital for our results, is that the project's success probability is increasing in the monitoring effort of the principal arranger. The precise way that one chooses to model this outcome through a distribution is essentially inconsequential as far as the main structure of the underlying incentives is concerned.

where $q_A \in \{-q, q\}$ for some $q > 0$. To make the analysis easier to follow, we consider that $v(x, y) = x - y^{\xi}$, where $\xi > 1$ and that $c(x) = x^2$. We stress though that all our qualitative findings are robust to more general formulations.[4]

The parameter q_A approximates the characteristics of player *A*—and it is hence known to *A*—that affect the potential participant's willingness to do business with *A*, but q_A need not be known to the potential participant. When the potential participant is unaware of the particular value of q_A, we consider that she believes that its value is $-q$ with probability ½ and q with probability ½. When there is no uncertainty, q_A takes one of the two admissible values. This parameter can be interpreted as the reputational risk of doing business with *A*.

In this study, we closely link the lead arranger's reputation with the regulator's signal on the lead arranger's compliance with regulatory law on the books. Specifically, if a principal arranger has recently been audited by the regulator and found to have engaged in legal or regulatory misconduct, then she receives an enforcement action that is publicly announced. It is then natural to assume that q_A is known and takes the value $-q$. This implies that potential participants incur costs by forming loan syndicates with principal arrangers with bad reputations (i.e., those punished by the regulator).

On the other hand, when *A* has been audited and found to comply with laws and regulations, then q_A is also known but takes the value q. This essentially implies that potential participants gain reputation by associating with principal arrangers with good reputations. Finally, when little is known regarding q_A, we can assume that the potential participant assigns equal probability to any of the two eventualities, which is identical to conducting business with a principal arranger of intermediate reputation.

[4] For example, we can replicate the analysis considering general forms of *u* and *c*—for our results to hold, it is essential that the lead arranger's expected utility is strictly concave in the size of her share and that *c* is strictly convex in effort—without adding anything to the intuition that we obtain from analyzing the current specification. However, this exercise bears considerable cost in the complexity of formal arguments.

Overall, we consider that reputational risk is proportional to the degree of association. If the potential participant contributes a small (large) amount to a loan designed by *A*, it undertakes little (great) reputational risks associated with this loan. This relationship is the reason why we multiply q_A with a_P in the payoff of *P*.

Because this is a game of incomplete (the monitoring effort exerted by the principal arranger is unobservable) and asymmetric (the principal arranger is better informed about q_A than the potential participant) information, the natural solution concept is a perfect Bayesian equilibrium (PBE). For a proper characterization of such an equilibrium, one should identify a profile of players' strategies along with a consistent system of beliefs such that Bayes' rule is applied whenever possible. To investigate how a PBE should look like in this framework, we start by focusing on the fourth stage of the game.

After a contract (a_A, a_P) is approved in stage 3, the last decision of the game occurs in stage 4: The principal arranger decides how much monitoring effort to exert. Given our assumptions, therefore, at this stage the principal arranger solves the following problem:

$$max_{e\geq 0}\left\{\int_{1+r}^{s+e}\left[\frac{1}{s+e}(1+r)a_A\right]d\gamma - a_A^{\xi} - e^2\right\}. \quad (1)$$

Equation (1) simply amounts to the lead arranger deciding $e \geq 0$ in order to maximize her expected payoff, given that the contract (a_A, a_P) was approved. Simple algebra establishes that, for any positive participation share on behalf of the principal arranger, $a_A > 0$, there exists a unique interior solution $e^* > 0$, which is characterized by

$$2e^*(e^* + s)^2 = a_A(1+r)^2 \quad (2)$$

and it is such that:

$$\frac{\partial e^*}{\partial a_A} = \frac{(1+r)^2}{(s+e^*)^2\left(2+\frac{2a_A(1+r)^2}{(s+e^*)^3}\right)} > 0. \quad (3)$$

Observation 1: All else constant, the principal arranger's monitoring effort, and subsequently the project's cumulative success potential, strictly increases along with the principal arranger's participation share, a_A.

Observation 1 is quite intuitive, because the principal arranger has much greater incentive to improve the project's success potential when she has financed a large part of it compared with when she holds only a small part of the loan. To study what happens in the contract design stage, we put forward a formal assumption regarding when the potential participant signs a proposed contract and when she declines.

Assumption 1: We assume that the potential participant signs the contract if and only if her expected payoff from doing so is larger than investing the same amount of money in an outside option with success probability $w \in (0,1)$.

Taking into account that the only reasonable expectations regarding the monitoring effort that *A* will exert in the fourth stage of the game are uniquely defined for every admissible triplet (s, a_A, r), the participation constraint of the potential participant is

$$\int_{1+r}^{s+e^*(s,a_A,r)} \left[\frac{1}{s+e^*(s,a_A,r)}(1+r)a_P\right] d\gamma - a_P^{\xi} + a_P E(q_A) \geq w(1+r)a_P - a_P^{\xi}. \quad (4)$$

All these suggest that a PBE of this game is characterized by a solution of the following maximization problem:

$$max_{a_A \in [0,1]} \left\{\int_{1+r}^{s+e^*(s,a_A,r)} \left[\frac{1}{s+e^*(s,a_A,r)}(1+r)a_A\right] d\gamma - a_A^{\xi} - e^*(s,a_A,r)^2\right\} \quad (5)$$

s.t.

$$\int_{1+r}^{s+e^*(s,a_A,r)} \left[\frac{1}{s+e^*(s,a_A,r)}(1+r)\right] d\gamma + E(q_A) \geq w(1+r) \quad (6)$$

or

$$a_A \in \{0,1\}. \tag{7}$$

This maximization problem is well defined and hence always admits a unique solution—that is, we always have a unique equilibrium. When $a_A^* = 0$, no contract is offered, and when $a_A^* = 1$, the principal arranger finances the whole project (so approval of the contract by any other potential participant is unnecessary). Thus only the case in which $a_A^* \in (0,1)$ is interesting. Notice that the syndicate loan case $a_A^* \in (0,1)$ is generic: When *s* is larger than $1 + r$, but not excessively large, then the principal arranger wants to finance part of the project; and when *w* is sufficiently small, then the potential participant is willing to participate too. When $a_A^* \in (0,1)$, the constraint could be binding or not.

The question of interest relates to the comparative statics of this solution with respect to a discrete variable, namely $E(q_A)$. Notice that $E(q_A) \in \{-q, 0, q\}$ because either *P* knows the value of q_A—and hence we have either $E(q_A) = -q$ or $E(q_A) = q$—or she does not, in which case we have $E(q_A) = 0$. In other words, *P* either knows or does not know whether *A* has been subject to an enforcement action.

Consider first that $E(q_A) = 0$ and that the solution, a_A^*, is such that the constraint is not binding. Then,

$$\int_{1+r}^{s+e^*(s,a_A^*,r)} \left[\frac{1}{s+e^*(s,a_A^*,r)}(1+r)\right] d\gamma \geq w(1+r) \tag{8}$$

and the equilibrium contract, a_A^*, is characterized by

$$s + e^*(s, a_A^*, r) = \frac{a_A^*(1+r)^2}{a_A^* + a_A^* r - {a_A^*}^{-\xi}\xi}. \tag{9}$$

Intuitively, this case is not as interesting from a real-world viewpoint because enforcement actions are public information.[5]

[5] There are certain informal enforcement actions imposed on banks that are not made public, which we discuss below. One can also think of the special case where $E(q_A) = 0$ as when participants only suspect that a principal arranger has been subject to informal action.

So what happens if we keep everything constant but change the value of $E(q_A)$ from zero to $-q$? In that case, if the constraint is still satisfied when computed for the initial contract, a_A^*, then the equilibrium contract should remain identical to the initial one. This is because in such a case, the solution should coincide with the principal arranger's ideal contract, $\hat{a}_A$ (understood as the solution of the principal arranger's unconstrained maximization problem). As we saw earlier, this ideal contract never depends on the exact value of $E(q_A)$.

Because $E(q_A)$ changes from zero to a negative value, however, it might be the case that the contract, a_A^*, is such that

$$\int_{1+r}^{s+e^*(s,a_A^*,r)} \left[\frac{1}{s+e^*(s,a_A^*,r)}(1+r)\right] d\gamma - q \not\geq w(1+r), \tag{10}$$

which suggests that the new solution, a_A^{**}, involves a binding constraint. In such a case,

$$\int_{1+r}^{s+e^*(s,a_A^{**},r)} \left[\frac{1}{s+e^*(s,a_A^{**},r)}(1+r)\right] d\gamma - w(1+r) = q. \tag{11}$$

We notice that

$$\partial\left(\int_{1+r}^{s+e^*(s,a_A,r)} \left[\frac{1}{s+e^*(s,a_A,r)}(1+r)\right] d\gamma\right)/\partial a_A = \left(\frac{1+r}{s+e^*(s,a_A,r)}\right)^2 \frac{\partial e^*}{\partial a_A} > 0. \tag{12}$$

In other words, the constraint can switch from being not binding to being binding if and only if $a_A^{**} > a_A^*$. The intuition is clear: When the reputational risks increase because of the enactment of an enforcement action ($E(q_A)$ jumps from zero to $-q$), a potential participant either still finds the principal arranger's initial contract, a_A^*, appealing enough to sign it or she refuses to sign unless the principal arranger increases the project's success probability and hence compensates for the extra reputational risk that *P* now undertakes. The only way that *A* can credibly commit to increasing the project's success probability is by taking a larger share of the loan herself, thus increasing her incentive to exert more monitoring effort after the contract is signed. Of course, if q is very large, then we could have that $a_A^{**} = 0$ (i.e., no contract is offered), because it might be impossible for *A* to propose a deal that is both

profitable for her and good enough for *P* to participate. But for non-extreme values of *q*, one should expect *A* to propose a contract with a strictly larger a_A.

Now consider that $E(q_A) = 0$ and that the solution, a_A^*, is such that the constraint is binding. It is obvious that if we change the value of $E(q_A)$ from zero to –*q*, then it cannot be the case this constraint still holds for the same contract. The arguments presented above should make clear that in this case, the new solution, a_A^{**}, is such that the left-hand side of Equation (11) is equal to q and, hence, $a_A^{**} > a_A^*$. Again, all these are conditional on q not being extremely large, because in such case we could have $a_A^{**} = 0$. Hence, again, the principal arranger reacts to a decrease in $E(q_A)$ by taking a larger share of the loan in order to commit herself to do more to improve the loan's success potential.

All the above hold for any decrease in $E(q_A)$, not just for changes from zero to –*q*. Symmetric arguments guarantee that an increase in $E(q_A)$ (for example, a change from zero to *q*) will cause *A* either to decrease the share of the loan that she finances or to leave the contract unchanged.

Observation 2: All else constant, a decrease (increase) in $E(q_A)$ induces an increase (decrease) in the lead arranger's equilibrium participation share in a syndicate loan.

Given the two observations and the fact that this game always admits a *unique* PBE, we have strong grounds to state the following testable hypothesis:

Hypothesis: Signed contracts designed by lead arrangers that pose reputational risks to their associates should be such that the lead arranger's participation share is larger compared with the lead arranger's participation shares in other signed contracts.

III. Empirical Model, Data, and Identification Strategy

A. Empirical Specification and Variables

To empirically test the hypothesis of our theoretical model, we use the following equation:

$$S = a_f + a'_b + a''_l + a'''_t + a_1 PEL_{bt} + a_2 F_{f,t-1} + a_3 L_{l,t} + u_{fblt}. \quad (13)$$

Table I defines the main variables used in the empirical analysis. Our sample includes only those lead arrangers that at some point during the 2000–2010 period received an enforcement action.[6] In Equation (13), S represents the syndicate loan structure. The variable of main interest is *PEL (Post-enforcement loan)*, which is a dummy taking the value one for loans originated in the first (or alternatively the first two years) after the year t of the enforcement action enacted on lead bank *b*, zero for loans originated in the year (or in the two years) before the enforcement action, and has missing observations for the rest of the loans (see also Table I). Thus, each regression is estimated for a three- or a five-year time window around the enforcement action. A positive value on a_1 implies that once a lead arranger is punished, the structure of a syndicated loan in the year after the enforcement action changes so that the lead arranger holds a significantly larger share relative to a lead arranger without an enforcement action. F and L are vectors of firm and loan characteristics used as control variables. In turn, $a_f, a'_b, a''_l,$ and a'''_t denote firm, bank, loan-type and/or loan-purpose, and year fixed effects, respectively, while *u* is the remainder disturbance.

[Insert Table I about here]

To estimate Equation (13), we combine information from four different sources. First, we obtain data for U.S. syndicated loans from DealScan. Following the literature (e.g., Sufi, 2007), we measure the syndicate loan structure with several alternative measures. First, we use the share of the loan held by the lead lender, which is the dependent variable most

[6] We decided to restrict our analysis to this period because there are important banking regulatory reforms before 2000 (Gramm-Leach-Bliley Act of 1999 and other earlier ones) and in 2010 (Dodd-Frank Act of 2010) that clearly affect both the enactment of sanctions and the structure of syndicated loans.

directly relevant to the theoretical model. Two closely related variables are the (HHI), which shows the concentration of holdings within a loan syndicate, and the lead arranger's exposure, which is the loan amount divided by the lead arranger's total assets. Finally, we also examine the total number of lenders participating in the syndicate to explore whether average syndicate size decreases following an enforcement action on a lead arranger.

For the enforcement actions, we use the data set provided by Delis et al. (2015), which contains hand-collected information on formal enforcement actions between 2000 and 2010. The information is obtained from the websites of the three main banking supervisors in the United States: the Federal Reserve System (Fed), the Federal Deposit Insurance Corporation (FDIC), and the Office of the Comptroller of the Currency (OCC).

In general, the supervisory organization conducts a full-scope on-site examination of each insured depository institution at least once every 12 months.[7] This examination involves an audit procedure necessary to evaluate all components of the Uniform Financial Institutions Ratings Systems (UFIRS) or the CAMELS rating system assigned to each bank.[8] The findings from the on-site examinations and CAMELS determine whether a formal or an informal enforcement action will be enacted. Informal actions are not disclosed to the public, so information on them thus is private and does not contain reputational risk. Such actions mostly are voluntary commitments made by a bank's board members to correct problems and consist of commitment letters, memoranda of understanding, and approved safety and soundness plans.

When informal actions are inadequate to correct a problem, formal enforcement actions take place. These are legally enforced, more severe, and disclosed to the public. Thus,

[7] Different on-site audit frequencies can apply to banks that have been examined by the state authorities, to well-capitalized and well-managed small banks, to banks in operation for less than five years, and to bank holding companies depending on their size and complexity. In our sample, most of the banks are large and are under relatively uniform inspection by regulators, most of the time involving the regulators maintaining offices inside the banks' headquarters.

[8] The components of CAMELS are capital adequacy (C), asset quality (A), management (M), earnings (E), liquidity (L), and sensitivity to market risk (S).

formal enforcement actions relate directly to reputational risk (Nguyen et al., 2015). Delis et al. (2015) group the formal enforcement actions according to their rationale into a number of groups, mostly reflecting the action's severity. In most of our analysis we use all of the formal enforcement actions, because they should carry reputational risk weight, but we also demonstrate that our results are robust to including only those actions that relate to the financial safety and soundness of banks based on the Basel Committee Core Principles for Effective Banking Supervision (Basel, 2012).

We match information from DealScan and for enforcement actions with bank-level accounting data from the Call Reports and firm-level accounting data from Compustat. This matching process allows us to identify the accounting characteristics of banks and firms involved in the loan and to use these characteristics as control variables. We experiment with a very large number of control variables but ultimately select the following ones, which we find to be the most influential determinants of syndicate structure.[9]

At the firm level, we use a number of variables as proxies for "information opacity," in the sense of the amount of publicly available information (Sufi, 2007). These variables include the debt ratings from Standard & Poor's (*firm opacity*), *firm size*, *profitability*, *book leverage*, *Z-score*, *cash flow volatility*, *asset tangibility*, and the *Tobin's q* ratio. Furthermore, we control for various loan characteristics such as the *maturity* and amount of the loan. *Downgrading* is a dummy variable equal to one if the loan is downgraded and zero otherwise. In a similar fashion, we use *performance pricing*, *collateral*, and *relationship lending*, which are also dummy variables, taking a value equal to one if the loan has performance pricing provisions, is secured with collateral, and the lead arranger has made a loan to the same borrower in the past five years before the current loan, respectively, and zero otherwise.

[9] We should note *a priori* that the inclusion of firm and bank fixed effects renders most of these control variables insignificant determinants of the syndicate loan structure. That is, the fixed effects are sufficient to capture the bank and firm characteristics affecting loan structure. Our empirical analysis illustrates this point.

Finally, we experiment with many bank control variables but find that using bank fixed effects renders all such variables statistically insignificant. This result is intuitive, because the bank fixed effects collectively capture the reasons behind the enforcement actions and fully control for any related observed and unobserved characteristics, especially within the limited three-year window.

Table II provides basic descriptive statistics for the full sample (Panel A), as well as for the main variables for the pre- and post-enforcement periods (Panel B). The summary statistics of Panel B are particularly interesting. They reveal a statistically significant 10% point difference in the lead lender's share between the pre- and post-enforcement action period, alongside a considerably higher deal amount (US$ 22 million) held by the lead lender after the action, an 11% higher lead arranger's exposure, a 9% higher HHI, and a lower number of lenders (3). In our empirical analysis, we aim to examine whether these effects are causal.

[Insert Table II about here]

B. Econometric Identification

Our empirical model rests on the assumption that an enforcement action enacted on a lead arranger hampers the lead arranger's reputation. In our context, we cannot imagine reasons for selection bias, because an enforcement action is not enacted in response to the structure of a specific loan or any other characteristic of that specific loan. Identifying the causal effect of an enforcement action on syndicate structure can be impeded, however, by omitted variables that the enforcement action dummy could capture erroneously. That is, specific bank characteristics or characteristics of the bank-firm relationship might be correlated with both the enforcement action and, independently, with the lead bank's decision to hold a larger share of the syndicate.

Our dataset's structure provides a solution to this problem. We first note that the individual loan facilities are non-repeated but that lead lenders originate multiple loans within a year. On the one hand, this characteristic of our data set implies that enforcement actions are enacted at different times for different banks, and the inclusion of year fixed effects accounts for common shocks across all banks and firms (e.g., the effects of the subprime crisis). Further, the differences in the timing of the enactment across banks implies that the existence of a systematic omitted variable affecting both *post enforcement loan* and the structure of the syndicate is unlikely. Further, we can include firm fixed effects to capture unobserved firm-specific characteristics affecting the structure of the loan syndicate, and loan-type and loan-purpose fixed effects to control for the respective loan types (see Sufi, 2007).

On the other hand, and quite importantly, the repeated observations on specific banks allow including bank fixed effects. The bank fixed effects are not perfectly collinear with *post enforcement loan* because they take the value one for a specific bank (and zero otherwise), whereas *post enforcement loan* takes the value one only after the year of the enforcement action. Our premise is that bank fixed effects almost fully capture the unobserved bank-specific characteristics that could render the effect of *post enforcement loan* endogenous.

To support this premise, we conduct a pre-analysis by estimating a model in which we regress *post enforcement loan* on the lags of a number of bank-year variables directly relating to components of CAMELS ratings (e.g., Flannery, 1998) and the Basel Core Principles for Effective Banking Supervision (Basel, 2012). Specifically, we estimate

$$Post\ enforcement\ loan_{ibt} = d_0 + d_1 C_{b,t-1} + \varepsilon_{ibt}, \tag{14}$$

where *C* is a vector of important bank-specific time-variant variables. We use the ratio of Tier 1 + Tier 2 capital to risk-weighted assets (*risk-weighted capital*) as a proxy for bank

capitalization; the ratio of non-performing loans to total loans (*non-performing loans*) as a measure of credit risk; the ratio of loan-loss provisions to total loans (*loan-loss provisions*) as a measure for the quality of risk management; the Sharpe ratio as a measure for risk-adjusted earnings; and the ratio of liquid assets to total assets (*liquid assets*) as a measure of liquidity. To capture the systemic risk component, we use year fixed effects, and we also control for loan-purpose fixed effects to avoid attributing our results to specific types of loans.

We posit that a strong indication for robustness to endogeneity stemming from bank-related omitted variables would be that the estimation of Equation (14) without bank fixed effects yields significant coefficient estimates on the variables in the vector *C*, whereas these estimates would become insignificant when we add bank fixed effects. Phrased differently, we aim to purify the reputational effect of enforcement actions on loan syndicate structure from bank characteristics that independently bear reputational effects.

We report the results from the pre-analysis in Table III.[10] In columns I and III, we estimate the models without bank fixed effects, with the former model including only *risk-weighted capital* and *non-performing loans* and the latter all bank characteristics. In line with expectations, we find that the enactment of an enforcement action is negatively correlated with higher capital, liquidity, and Sharpe ratios. The impact of *loan-loss provisions* is also negative but statistically significant only at the 10% level. In contrast, there is higher probability that *post enforcement loan* equals one for loans made by banks with higher *non-performing loans*.

[Insert Table III about here]

In columns II and IV of Table III, we introduce bank fixed effects, and all of the previously significant coefficients on the CAMELS-related variables become insignificant at conventional levels. This result is a strong indication that bank fixed effects control for the

[10] Our estimation method is OLS with high-dimensional fixed effects. Because of the large number of fixed effects required, maximum-likelihood logit or probit models have convergence difficulties.

reputational effects behind specific bank characteristics. We experiment with many other independent variables in these regressions, including other measures of credit and liquidity risk, other capital ratios, profitability ratios, proxies for off-balance-sheet items, sensitivity to market fluctuations, corporate governance (board) characteristics of banks, and so on. We find no significant changes in our results and thus conclude that when controlling for bank fixed effects, we significantly limit the endogeneity of *post enforcement loan* stemming from unobserved bank-level characteristics.

In even more restrictive specifications, we include bank*firm or firm*syndicate fixed effects. Bank*firm fixed effects control for the matching of specific lead banks and firms that could potentially include information for the lead bank-firm relationships in the formation of the loan syndicate. The firm*syndicate fixed effects refer to cases where the whole syndicate (and not just the lead arranger) are the same. These models further reduce the possibility that the observed increase in the lead lender shares and associated changes in other response variables is due to a reduction in the risk-taking of lead banks, materialized by lending to less risky firms following the enforcement action. The bank*firm (syndicate*firm) fixed effects allow obtaining identification through loans given by the same lead bank (same syndicate) to the same firm both before and after the enforcement action. Thus, this analysis limits the possibility that results are attributed to the lower risk-taking of lead banks following an enforcement action because the same firm is involved in the lending process within the three-year time window.

C. Baseline Empirical Results

Table IV reports our baseline results. In all specifications, the effect of the enforcement action on various measures of syndicate structure in the first year after enactment is statistically significant at conventional levels (at the 1% level for the most important

dependent variables). The results in column I show that an enforcement action increases the lead lender's share (the dependent variable most closely related to our theoretical predictions) in the syndicate by approximately 4.5 percentage points. For the lead lender with an average share (equal to 19.3% in our sample), this finding implies a very large increase of approximately 23.3%. Further, the results in columns II and III show that the amount held by the lead lender increases by approximately US$26.9 million (or 30.8% for the lead lender with an average deal amount), and the lead lender's exposure increases by 4.6 percentage points.

[Insert Table IV about here]

A very similar picture appears when using as our dependent variables the HHI of the loan syndicate and the number of lenders. We find that an enforcement action increases the concentration of holdings within the syndicate by 3.8 percentage points or 21.5% for a lead bank with an average HHI in our sample. Concerning the number of lenders, we find a reduction of approximately 0.88 lenders following an enforcement action. This reduction is still statistically significant but economically smaller compared with the previous variables. Thus, although there is a decrease in the number of lenders that participate in a loan syndicate when the lead arranger receives an enforcement action, the most significant effect comes from the lead arranger taking up a larger share of the loan.

The implications of our results are completely aligned with observation 2 and our hypothesis. Specifically, once a lead arranger is punished, the structure of the syndicated loan changes so that the lead arranger holds a significantly larger share, *ceteris paribus*. The main economic mechanism for this development must be that the enforcement action hurts the lead arranger's reputation, so that the participant banks demand that the principal arranger hold a larger portion of the loan. With the larger share held by the lead bank, the participants are potentially less concerned with respect to the monitoring effort to be exerted by the lead

arranger and thus the project's success. In Section D Below, we empirically dig deeper into this conjecture regarding the lead arranger's monitoring effort.

For brevity and comparability, we report in Table A.I (Appendix) the results from specifications without any fixed effects as well as specifications where we sequentially add fixed effects. The model without fixed effects (column I) shows that the coefficient estimate on *post enforcement loan* is larger in magnitude compared to the results in Table IV. This confirms the fact that adding various fixed effects captures unobserved determinants of the syndicate loan structure and lowers the coefficient estimates to the levels observed in Table IV. We also find larger estimates when using models without fixed effects and the rest of the response variables (see Panel B of Table A.I).

Our baseline results in Table IV are robust to a number of re-specifications and other robustness tests. We report the results only for the lead lender's share, which is our main dependent variable, in Table V (for brevity we exclude the results on the control variables). First, in column I we use bank*firm fixed effects to control for time-invariant characteristics specific to the matching of specific lead banks and firms that might influence the structure of the loan syndicate. Moreover, in column II we use firm*syndicate effects (i.e., all the syndicate members, both banks and firms, are repeated). These are powerful tests for the effect of the enforcement action on lead lender shares because the results on *post enforcement loan* cannot be attributed to a change in the risk-taking strategy of lead banks (or syndicates) given that the borrower is the same firm within the three-year window. These models also exclude other unobserved borrower (demand-side) driven explanations of our findings. The results are equivalent to those of the baseline specification.

In column III we restrict our sample only to participant banks with an enforcement action, in order to disentangle changes in the structure of the loan syndicates transmitted from participants to lead arrangers. This essentially is a placebo test for the potential effect arising

from the side of the participants. Evidently, the effect of *Post enforcement loan* is small and statistically insignificant, implying that enforcement actions on participant lenders do not play a role in the structure of the loan syndicate.

Notably, three banks, namely Citibank, JP Morgan Chase, and Bank of America, dominate the market for syndicated loans. In column IV, following the approach of Bharath et al. (2011), we use the dummy variable *Big-3 banks,* which equals to one if the lead arranger is any of these three banks and zero otherwise. The coefficient on *Post enforcement loan* is 3.9% (significant at the 1% level). This result suggests that that the effect of enforcement actions on the lead lender shares is not driven by the top-3 banks.

In column V we examine the sensitivity of our findings when we exclude loans for leveraged buyouts (LBOs) and for mergers and acquisitions (M&As). These loans present, in principle, more complete information because the syndicate has acquired private information about the borrowing firm from prior transactions (Ivashina and Kovner, 2011). Thus, we expect that the participant banks would be even more reluctant to fully engage in loans that exclude LBOs and M&As (i.e., the participants would require higher participation shares from the lead lender compared with our baseline findings). Indeed, the coefficient estimates on *post enforcement loan* are economically more significant when we exclude loans for LBOs and M&As, reflecting the importance of incomplete information in forming the effect of enforcement actions on loan syndicate structure.

In column VI, we use a two-year window before and after the enactment of the enforcement action. The empirical findings and their implications are equivalent to those of column I of Table IV, although the economic significance is somewhat smaller (to be expected given the longer time frame of the window). Further, in column VII we use only the enforcement actions directly related to the guidelines of the Basel Committee Core Principles

for Effective Banking Supervision (Basel, 2012), which bear a higher reputational risk on the punished bank (Vallascas and Hagendorff, 2013). Again, changes in the results are minimal.

[Insert Table V about here]

Moreover, our results do not change significantly (neither quantitatively nor qualitatively) when including bank-level controls (see column VIII) or when we control for alternative measures of market-based reputation for the lead lender (Sufi, 2007), such as the market share of banks (column IX), Lerner index (column X), and bank opacity (column XI).[11] As we previously suggested, the inclusion of bank and firm fixed effects renders most of the equivalent control variables statistically insignificant, and the results very similar to those in Table IV.[12] Our results are also very similar when we cluster the standard errors only by bank.

D. The Role of Reducing Informational Asymmetries and Improving Monitoring

Banks clearly want to avoid enforcement actions, but after they occur, a lead bank in a loan syndicate must deal with its reputation and the syndicate structure. The emerging question is whether there exists a strategy that a punished lead arranger can follow (or actually follows) to moderate the effect of the enforcement action on loan syndicate structure. An important issue in this respect is the alleviation of informational asymmetry problems among the participants, the lead arranger, and the borrower, so that the participant banks will perceive the loan as less risky. Further, there is a role of monitoring as related to Observation 1 of our model: Given the model's assumptions, the lead arranger's monitoring effort and participation share should be positively related. In a nutshell, we expect that loan characteristics related to lower informational asymmetry and increased monitoring effort (or

[11] We thoroughly define these measures in Table I.

[12] The fact that *risk-weighted capital* and *loan-loss provisions* significantly determine the lead lender's share of the loan does not imply endogeneity, because these variables do not affect post enforcement loan once we control for bank fixed effects, as illustrated in Table 3. We experimented with about 30 other bank and firm control variables and found most of these to be insignificant determinants of *lead lender shares*.

rather, increased monitoring efficiency in the empirical sense of these characteristics) might have a moderating effect in the positive nexus between enforcement actions and the lead lender's share.

We first consider the role of securitization of loans with collateral. We expect that securitization will lower the effect of *post enforcement loan* on the lead lender's share, given that informational asymmetry problems are more severe among unsecured loans than secured ones (e.g., Sufi, 2007). In column I of Table VI, we introduce an interaction term between *post enforcement loan* and *collateral*. Below the coefficient estimates we report the marginal effect of *post enforcement loan* for each specification. All specifications include the control variables of Table IV, although we do not report these estimates because of space considerations. We find that the use of collateral as a means of loan securitization lowers the effect of *post enforcement loan* to 1.35 percentage points (from 4.5 percentage points in the baseline specification). Similar moderating effects prevail when we use the rest of the dependent variables included in Table IV.

[Insert Table VI about here]

Similarly, in column II of Table VI, we introduce an interaction term between *post enforcement loan* and *guarantee.* Loan guarantees play a similar role to collateral in lowering a loan's riskiness in case of adverse developments for the borrower. The interaction term is negative and significant at the 1% level, and the marginal effect of *post enforcement loan* is 1.23 percentage points. Further, in the third column of Table VI, we introduce an interaction term between *post enforcement loan* and *letter-of-credit fee* (in basis points). Again, the results show that the higher the letter-of-credit fee, the lower the effect of enforcement actions on the lead lender's share. For a bank with an average letter-of-credit fee (equal to approximately 62 basis points), however, the reduction of the impact of *post enforcement loan* is not as large, with the marginal effect being 3.6 percentage points.

Clearly, the lead arranger can significantly moderate the effect of enforcement actions on his loan share mainly by securitizing loans with collateral or by requesting a guarantee facility, indirectly passing the cost to the borrower. In a similar fashion, actions related to loan monitoring can moderate the effect of enforcement actions. To examine the role of these loan characteristics, we estimate an additional set of models, introducing interaction terms between *post enforcement loan* and variables that characterize loan monitoring. Specifically, we use information on (i) whether the loan has performance pricing provisions, (ii) the number of general loan covenants, and (iii) whether the lead arranger has lent to the same borrower in the last five years (see Table I for formal definitions of all of these variables).[13]

We report the results in Table VII. In all three specifications, the interaction terms between *post enforcement loan* and the variables related to loan monitoring are negative and statistically significant. The largest moderating effect in this set of models comes from the inclusion of performance pricing provisions, with the marginal effect of *post enforcement loan* being 2.54 percentage points (results reported in column I). The equivalent marginal effects for the models including interaction terms with *general covenants* and *relationship lending* are approximately 3.6 percentage points and 3.7 percentage points, respectively (see columns II and III). Thus, it is mainly the inclusion of performance pricing provisions, among the monitoring-related variables, that moderates an enforcement action's effect on syndicated loan structure.

IV. Conclusions and Extensions

We study both theoretically and empirically the role of important regulatory enforcement actions, enacted on banks for breaches of laws and regulations, on loan syndicate formation.

[13] Clearly, a previous lending relationship can be considered both as an element of the bank-borrower relationship that lowers information asymmetries and as an element improving the capacity to monitor. We do not intend here to distinguish between the two attributes of relationship lending and we could have used this variable in Table V alongside the letter-of-credit fee (for a discussion of the importance of a relationship lending for lower letter-of-credit fees in syndicated loans, see Berg et al., 2015).

We first study a theoretical model with three players: the principal arranger, a participant bank, and the borrowing firm. The sequence of the game leads to the possibility that the principal arranger and the participant decide to originate the loan. Importantly, we link the quality (reputational) characteristics of the principal arranger with the regulator's signal on the lead arranger's compliance with laws on the books. The participant bank uses this information to decide on its participation share. Our solution to the game is a perfect Bayesian equilibrium, the comparative statics of which with respect to the reputation component suggest that an increase in reputational risk induces an increase in the lead arranger's equilibrium participation share in the syndicate.

Subsequently, we match hand-collected data on enforcement actions with data for syndicated loans, as well as data for characteristics of the lead arrangers and the borrowing firms, and we conduct an empirical analysis to validate our theoretical findings. We show that loans originated by a principal arranger after an enforcement action have a significantly higher participation share by the lead arranger. According to our baseline specification, an enforcement action increases the lead lender's share by approximately 4.5 percentage points, a 23% increase for the lead lender with an average share. The empirical results are very similar when we consider the dollar amount held by the lead arranger, the HHI of the syndicate, the number of lenders in the syndicate, and so on.

We further empirically show that this strong effect of an enforcement action can be mitigated, mainly by including collateral, guarantees, and performance pricing provisions in the loan contract. These decisions apparently ease participant lenders' concerns resulting from the lower informational asymmetry and higher monitoring efficiency of these loan contracts, elements that significantly reduce enforcement actions' reputational effects.

Our study opens up new avenues for research in the field of regulatory enforcement actions and/or syndicated lending. Two such avenues are particularly interesting. First, we do

not explore in this paper the effect of enforcement actions on syndicated loan pricing. On one hand, enforcement actions might trigger more-competitive pricing to prevent losing business in light of reputational effects. On the other hand, the banks might pass along the cost of enforcement actions to borrowers, especially if banks have some market power in niche markets and specific industries or strong relationships with specific firms.

Second, the reasons behind enactment of enforcement actions are potentially interesting. Examining the price and non-price terms of syndicated loans for punished lead banks vis-à-vis the price and non-price terms of syndicated loans enacted on lead arrangers with similar CAMELS ratings that did not receive an enforcement action, might highlight important effects stemming from differences between regulators, networks of banks, political connections, and so on. Such a study would be constrained by the fact that regulatory decisions for enforcement actions are to some extent discretionary, which is endogenous and difficult to measure. Because we have covered a lot of ground already in this paper, we leave these ideas for future research.

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Table I
Variable Definitions and Sources

Variable	Description	Source
Dependent variables:		
Lead lender shares (%)	The share of the loan held by the lead lender.	DealScan
Deal amount held by lead ($M)	The loan amount in $M held by the lead lender.	DealScan
Lead exposure (%)	The amount of the loan held by the lead lender divided by the total assets of the lead lender.	DealScan and Call Reports
HHI (%)	A Herfindahl–Hirschman index used as a measure of concentration of holdings within the loan syndicate. Higher values reflect higher concentration.	DealScan
Number of lenders	The total number of lenders participating in the loan syndicate.	DealScan
Main explanatory variable:		
Post enforcement loan	A dummy variable taking the value one for a loan originated by a lead bank in the year after a lead bank receives an enforcement action, a value zero for the loans originated by the lead bank in the year of the enforcement action or in the year before the enforcement action, and has missing values for the rest of the loans. This allows a three-year time window around the event. Alternatively, we also use an equivalent five-year window. The enforcement actions include all actions (penalties) enacted on lead arrangers for breaches of laws and regulations in a number of cases. These cases include laws and regulations related to the Basel Committee Core Principles for Effective Banking Supervision (i.e., capital adequacy and liquidity, asset quality, provisions and reserves, large exposures and exposures related to parties, internal control and audit systems, money laundering, bank secrecy, consumer protection, and foreign assets control). They also include breaches of the requirements concerning the fitness and propriety of banks' board members and senior management, as well as other persons closely associated with banks (institution affiliated parties), and typical infringements of specific laws (e.g., Home Mortgage Disclosure Act, Flood Insurance Act, Flood Disaster Protection Act).	Websites of FED, FDIC, and OCC
Firm-level explanatory variables:		
Firm size	The natural logarithm of total assets.	Compustat
Profitability	The ratio of earnings before interest, taxes, depreciation, and amortization to total assets.	Compustat
Book leverage	The ratio of total debt on the books to total assets.	Compustat
Firm Z-score	The firm Z-score equals 3.3A + 0.99B + 0.6C + 1.2D + 1.4E. *A* = earnings before interest and taxes/total assets; *B* = net sales/total assets; *C* = market value of equity/total liabilities; *D* = working capital/total assets; *E* = retained earnings/total assets.	Compustat
Cash-flow volatility	The standard deviation of quarterly cash flow over the last five fiscal years prior to the year of the loan origination, divided by total assets.	Compustat
Tangibility	The ratio of tangible assets to total assets.	Compustat
Tobin's q	The natural logarithm of market-to-book value.	Compustat
Firm opacity	Firms' rating by Standard and Poor's.	Compustat
Loan-level explanatory variables:		
Maturity	The natural logarithm of loan maturity in months.	DealScan
Facility amount	The natural logarithm of the loan (facility) amount.	DealScan
Downgrading	Dummy variable equal to one if the loan is downgraded and zero	DealScan

	otherwise.	
Performance pricing	Dummy variable equal to one if the loan has performance pricing provisions and zero otherwise.	DealScan
Collateral	Dummy variable equal to one if the loan is secured with collateral and zero otherwise.	DealScan
Relationship lending	Dummy variable equal to one if the lead arranger lent to the same borrower in the past five years and zero otherwise.	DealScan
General covenants	The number of covenants in the loan contract.	DealScan
Letter-of-credit fee	The fee charged for a letter of credit to be issued.	DealScan
Guarantee	A facility backing the assumption of accountability for payment of a debt or performance of a person or entity obligation if the liable party fails to comply with expectations.	DealScan
Bank-level variables:		
Big-3 banks	Dummy variable equal to one if the lead bank is Citibank, JP Morgan Chase, or Bank of America.	Dealscan
Risk-weighted capital	The ratio of Tier 1 and Tier 2 capital to risk-weighted assets.	Call Reports
Non-performing loans	The ratios of non-performing loans to total loans.	Call Reports
Loan-loss provisions	The ratio of loan-loss provisions to total loans.	Call Reports
Sharpe ratio	$\frac{\text{ROA}}{\sigma(ROA)}$, where *ROA* is the return on assets and σ*(ROA)* is the standard deviation of return on assets calculated over a five-year rolling window.	Call Reports
Liquid assets	The ratio of liquid assets to total assets.	Call Reports
Market share	The market share of each bank in the US market.	Call Reports
Lerner index	$LI_{bt} = \frac{P_{bt}-MC_{bt}}{P_{bt}} * W_{bt}$, where *P* is the price of bank output *b* at time *t* and MC is the marginal cost of the production of this output weighted by the share W of each bank in the syndicated loan. Marginal cost is estimated using a semi-parametric approach with a log-linear production function and bank output is measured by total earning assets.	Own estimations based on data from the Call Reports
Bank opacity	Banks' rating by Standard and Poor's.	Dealscan

Table II

Summary Statistics

The table reports summary statistics for the variables used in the empirical analysis. The variables are defined in Table I. Panel B reports the *t-test* obtained from the difference between the means among groups.

Panel A: Summary Statistics

					Percentile distribution		
Variables	Level	Obs.	Mean	Std. Dev.	25th	Median	75th
Lead lender shares (%)	Bank	5,406	19.319	19.856	8.333	12.500	21.277
Deal amount held by lead ($M)	Bank	5,406	87.259	184.520	23.333	40.590	83.333
Lead exposure (%)	Bank	5,406	17.185	18.841	7.143	11.111	20.000
HHI (%)	Loan	5,406	17.620	19.042	7.143	11.111	20.000
Number of lenders	Loan	5,406	11.671	10.629	5.000	9.000	15.000
Post enforcement loan	Bank	3,444	0.178	0.383	0.000	0.000	0.000
Post enforcement loan (2 yrs.)	Bank	5,406	0.184	0.388	0.000	0.000	0.000
Firm size	Firm	5,406	7.454	1.675	6.305	7.372	8.569
Profitability	Firm	5,400	0.138	0.090	0.093	0.131	0.178
Book leverage	Firm	5,398	0.320	0.254	0.160	0.283	0.424
Firm Z-score	Firm	4,839	3.852	8.596	2.114	3.127	4.702
Cash flow volatility	Firm	5,400	0.044	0.030	0.027	0.038	0.053
Tangibility	Firm	5,406	0.294	0.229	0.117	0.232	0.427
Tobin's q	Firm	4,840	1.782	1.319	1.183	1.481	2.016
Firm opacity	Firm	5,406	15.101	6.443	10.000	14.000	23.000
Maturity	Loan	5,404	3.766	0.636	3.584	4.094	4.094
Facility amount	Loan	5,406	5.410	1.375	4.605	5.521	6.310
Downgrading	Loan	5,406	0.282	0.450	0.000	0.000	1.000
Performance pricing	Loan	5,406	0.573	0.495	0.000	1.000	1.000
Collateral	Loan	5,406	0.491	0.500	0.000	0.000	1.000
Relationship lending	Loan	5,406	0.509	0.500	0.000	1.000	1.000
Guarantee	Loan	5,406	0.114	0.318	0.000	0.000	0.000
General covenant	Loan	5,406	3.562	3.060	0.000	3.000	6.000
Letter-of-credit fee	Loan	5,406	62.080	96.274	0.000	0.000	112.500
Big-3 banks	Bank	5,406	0.297	0.457	0.000	0.000	1.000
Risk-weighted capital	Bank	5,405	0.013	0.084	0.088	0.097	0.013
Non-performing loans	Bank	5,405	0.007	0.006	0.008	0.011	0.007
Loan-loss provisions	Bank	5,405	0.005	0.006	0.007	0.007	0.005
Sharpe ratio	Bank	5,405	2.378	4.270	4.909	6.508	2.378
Liquid assets	Bank	5,405	0.016	0.027	0.029	0.038	0.016
Market share	Bank	2,492	0.510	0.400	0.116	0.391	1.000
Lerner index	Bank	2,492	0.281	0.127	0.132	0.297	0.396
Bank opacity	Bank	4,875	5.030	1.048	4.000	5.000	5.000

Panel B: Summary Statistics of Main Variables Before and After the Enforcement Action

	Post enforcement loan=0 (A)			Post enforcement loan=1 (B)			Difference (Mean)
Variables	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median	(B) – (A)
Lead lender shares (%)	17.377	16.362	12.500	27.036	27.670	16.667	9.658***
Deal amount held by lead ($M)	79.209	166.328	38.889	101.443	259.470	44.722	22.234***
Lead exposure (%)	14.922	15.023	11.111	26.001	26.756	16.667	11.078***
HHI (%)	15.805	15.709	11.111	25.003	26.661	14.286	9.197***
Number of lenders	12.205	11.317	10.000	9.526	10.410	7.000	2.679***

Table III
Pre-Analysis with CAMEL Variables

The table reports coefficients and t-statistics (in brackets) from the estimation of equation (14). The dependent variable is *post enforcement loan*. All the variables are defined in Table I. Each observation in the regressions corresponds to a different loan facility. The *, **, *** marks denote statistical significance at the 10, 5, and 1% level, respectively.

	I	II	III	IV
Risk-weighted capital	-2.572***	-2.048	-2.593***	-2.110
	[-2.790]	[-0.770]	[-3.135]	[-0.504]
Non-performing loans	7.051***	-1.859	6.468***	-0.008
	[3.404]	[-1.083]	[3.142]	[-0.003]
Loan-loss provisions			-4.430**	-3.613
			[-1.965]	[-1.268]
Sharpe ratio			-0.012***	-0.004
			[-2.918]	[-0.622]
Liquid assets			-0.843**	1.482
			[-2.387]	[0.772]
Observations	3,043	3,040	3,043	3,040
Adjusted R-squared	0.154	0.157	0.154	0.157
Year FE	Yes	Yes	Yes	Yes
Loan-purpose FE	Yes	Yes	Yes	Yes
Loan type FE	Yes	Yes	Yes	Yes
Bank FE	No	Yes	No	Yes
Clustered standard errors	Bank	Bank	Bank	Bank

Table IV

Enforcement Actions and Syndicated Loan Structure: Baseline Results

The table reports coefficients and t-statistics (in brackets) from the estimation of equation (13). The dependent variable is reported in the second line of the Table and all variables are defined in Table I. Each observation in the regressions corresponds to a different loan facility. All regressions include bank and firm fixed effects and the standard errors are clustered by firm and bank, as shown in the lower part of the Table. The *, **, *** marks denote statistical significance at the 10, 5, and 1% level, respectively.

	I	II	III	IV	V
Dependent variable:	Lead lender shares (%)	Deal amount held by lead ($M)	Lead exposure (%)	HHI (%)	Number of lenders
Post enforcement loan	4.504***	26.850***	4.629***	3.843***	-0.876**
	[4.989]	[8.263]	[5.190]	[4.493]	[-2.105]
Firm size	-3.439***	22.680	-2.681*	-2.633**	3.675*
	[-3.009]	[0.996]	[-1.804]	[-2.055]	[1.839]
Profitability	11.728**	114.244***	14.724***	9.358	-6.614
	[2.710]	[4.433]	[2.859]	[1.542]	[-1.196]
Book leverage	-6.829***	-69.081	-6.048***	-4.275**	1.683
	[-4.317]	[-1.334]	[-3.127]	[-2.738]	[0.280]
Z-score	-0.357*	3.935***	-0.493***	-0.394***	0.374**
	[-1.770]	[2.924]	[-4.631]	[-2.966]	[2.360]
Cash flow volatility	-0.990	-41.267	-4.121	-9.049	-7.240
	[-0.072]	[-0.493]	[-0.320]	[-0.633]	[-1.081]
Tangibility	-7.743	59.223	-8.187*	-7.384*	1.325
	[-1.353]	[1.443]	[-1.773]	[-1.798]	[0.294]
Tobin's q	-0.507	-13.467***	0.169	0.129	0.558
	[-0.637]	[-3.196]	[0.192]	[0.126]	[0.721]
Firm opacity	0.244**	3.163***	0.205***	0.287***	-0.034
	[2.389]	[3.533]	[3.281]	[3.634]	[-0.381]
Maturity	-3.676***	-26.302	-3.226***	-3.505***	1.223**
	[-3.003]	[-1.397]	[-2.833]	[-2.988]	[2.428]
Facility amount	-0.650**	34.451***	-1.173***	-0.794***	0.472***
	[-2.593]	[12.998]	[-3.222]	[-2.868]	[3.114]
Downgrading	0.544	37.418	0.490	0.435	1.210**
	[1.095]	[1.162]	[1.035]	[1.177]	[2.724]
Performance pricing	-3.364***	-53.254***	-3.520***	-4.328***	2.902***
	[-7.595]	[-11.880]	[-5.104]	[-8.925]	[8.487]
Collateral	-1.100	35.956***	-1.380	-0.751	0.947
	[-0.885]	[4.263]	[-1.066]	[-0.634]	[1.529]
Relationship lending	-2.200***	0.951	-1.663**	-2.172***	1.001***
	[-3.710]	[0.409]	[-2.690]	[-3.893]	[4.748]
Observations	3,044	3,044	3,044	3,044	3,044
Adjusted R-squared	0.727	0.560	0.775	0.736	0.691
Loan-type FE	Yes	Yes	Yes	Yes	Yes
Loan-purpose FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes	Yes
Clustered standard errors	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank

Table V

Enforcement Actions and Syndicated Loan Structure: Sensitivity Tests

The table reports coefficients and t-statistics (in brackets) from the estimation of equation (13). The dependent variable is the *lead lender shares* and all variables are defined in Table I. Each observation in the regressions corresponds to a different loan facility. In column I we control for bank*firm fixed effects the firm-bank relation and in column II for firm*syndicate fixed effects. In column III we conduct the analysis only for participant banks that received an enforcement action. In column IV we control for the top-3 banks in our sample. In column V we exclude loans originated for LBOs and M&As. In column VI, the variable *Post enforcement loan* we use a five-year window around the enforcement action (instead of a three-year window). In column VII, we use only the enforcement actions strictly related to the Basel Committee Core Principles for Effective Banking Supervision (see Table I). In column VIII, we add bank-level control variables. In columns IX, X, and XI we control for alternative measures of reputation using the banks' market shares, Lerner index, and credit rating, respectively. All regressions include different type of fixed effects as noted in the lower part of the table and standard errors are clustered by firm and bank. The *, **, *** marks denote statistical significance at the 10, 5, and 1% level, respectively.

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
	Firm-bank relation	Repeated syndicate members	EA for participants	Big-3 banks	Exclude loans for LBOs and M&As	Two-year window	Basel-related actions only	Including bank control	Market structure	Market power	Credit rating
Post enforcement loan	4.724***	2.474*	0.541	3.877***	5.146***	4.478***	4.195***	3.934***	3.564***	3.501***	3.662**
	[5.523]	[1.860]	[1.065]	[4.226]	[4.892]	[7.040]	[7.675]	[3.926]	[4.775]	[4.858]	[5.227]
Big-3 banks				-1.813***							
				[-5.394]							
Risk-weighted capital								-277.264**			
								[-2.333]			
Non-performing loans								201.207			
								[1.386]			
Loan-loss provisions								-274.574**			
								[-2.317]			
Sharpe ratio								127.479			
								[0.910]			
Liquid assets								-0.447			
								[-0.856]			
Market shares									0.568		
									[1.733]		
Lerner index										-4.827	
										[-1.147]	
Bank opacity											-1.579*
											[-3.840]
Observations	3,044	421	3,301	3,044	2,538	4,823	2,780	3,043	1,171	1,171	2,733
Adjusted R-squared	0.721	0.574	0.688	0.728	0.772	0.693	0.680	0.728	0.345	0.345	0.666
Loan and firm controls as per Table IV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Loan-type FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan-purpose FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank FE	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank * Firm FE	Yes	No	No	No	No	No	No	No	No	No	No
Firm * Syndicate FE	No	Yes	No	No	No	No	No	No	No	No	No
Clustered standard errors	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank

Table VI

The Role of Variables Reflecting Informational Asymmetry

The table reports coefficients and t-statistics (in brackets) from the estimation of equation (13). The dependent variable is the lead lender shares, and all variables are defined in Table I. Each observation in the regressions corresponds to a different loan facility. All regressions include bank and firm fixed effects, and the standard errors are clustered by firm and bank, as shown in the last row of the table. The *, **, *** marks denote statistical significance at the 10, 5, and 1% level, respectively.

Dependent variable:	Lead lender shares (%)		
	I	II	III
Post enforcement loan	5.170***	7.090***	5.782***
	[5.909]	[12.009]	[5.826]
Guarantee	3.290		
	[1.684]		
Post enforcement loan * Guarantee	-3.938***		
	[-3.157]		
Collateral		0.177	
		[0.163]	
Post enforcement loan * Collateral		-5.667***	
		[-4.899]	
Letter-of-credit fee			0.008***
			[2.912]
Post enforcement loan * Letter-of-credit fee			-0.022***
			[-6.692]
Marginal effect of post enforcement loan	1.231***	1.422***	3.615***
	[3.711]	[3.720]	[4.461]
Observations	2,559	2,559	2,559
Adjusted R-squared	0.658	0.659	0.657
Firm control characteristics	Yes	Yes	Yes
Loan control characteristics	Yes	Yes	Yes
Loan type FE	Yes	Yes	Yes
Loan-purpose FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes
Clustered standard errors	Firm, Bank	Firm, Bank	Firm, Bank

Table VII

The Role of Variables Reflecting Monitoring

The table reports coefficients and t-statistics (in brackets) from the estimation of equation (13). The dependent variable is the lead lender shares and all variables are defined in Table I. Each observation in the regressions corresponds to a different loan facility. All regressions include bank and firm fixed effects, and the standard errors are clustered by firm and bank, as shown in the last row of the Table. The *, **, *** marks denote statistical significance at the 10, 5, and 1% level, respectively.

Dependent variable:	Lead lender shares (%)		
	I	II	III
Post enforcement loan	7.861***	8.288***	7.967***
	[5.926]	[9.120]	[4.068]
Performance pricing	-2.412***		
	[-5.664]		
Post enforcement loan * Performance pricing	-5.320***		
	[-6.098]		
General covenants		0.228	
		[0.772]	
Post enforcement loan * General covenants		-1.179***	
		[-5.935]	
Relationship lending			-2.588***
			[-4.881]
Post enforcement loan * Relationship lending			-4.254**
			[-2.705]
Marginal effect of post enforcement loan	2.540***	3.573***	3.712***
	[3.777]	[3.701]	[5.841]
Observations	2,559	2,559	2,559
Adjusted R-squared	0.658	0.658	0.658
Firm control characteristics	Yes	Yes	Yes
Loan control characteristics	Yes	Yes	Yes
Loan type FE	Yes	Yes	Yes
Loan-purpose FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes
Clustered standard errors	Firm, Bank	Firm, Bank	Firm, Bank

Appendix

Table A.I

Enforcement Actions and Syndicated Loan Structure: Further Robustness Tests

The table reports coefficients and t-statistics (in brackets) from the estimation of equation (13). The dependent variable is reported in the second line of the Table and all variables are defined in Table I. Each observation in the regressions corresponds to a different loan facility. Column I uses simple OLS without any fixed effects and in columns II-V we sequentially add fixed effects as shown in the lower part of the table. Panel B replicates the results of column I with the different dependent variables as shown in the second line of the table. The *, **, *** marks denote statistical significance at the 10, 5, and 1% level, respectively.

	Panel A					**Panel B**			
	Lead lender shares (%)					Deal amount held by lead ($M)	Lead exposure (%)	HHI (%)	Number of lenders
	I	II	III	IV	V	VI	VII	VIII	IX
Post enforcement loan	8.016***	8.016***	8.212***	7.722***	7.893***	51.709***	9.430***	7.600***	-1.485***
	[7.446]	[7.448]	[7.711]	[7.372]	[5.320]	[4.093]	[9.275]	[7.529]	[-4.345]
Firm size	-1.410***	-1.419***	-1.418***	-1.529***	-1.340***	25.806***	-1.514***	-1.456***	1.879***
	[-3.704]	[-3.740]	[-3.557]	[-3.834]	[-5.072]	[6.455]	[-4.647]	[-3.941]	[3.920]
Profitability	-20.658***	-20.589***	-18.425***	-16.783***	-17.889***	-34.504	-22.074***	-21.684***	-2.937
	[-3.253]	[-3.239]	[-2.904]	[-2.634]	[-2.853]	[-0.997]	[-3.624]	[-3.722]	[-1.445]
Book leverage	-1.431	-1.499	-1.911	-0.594	-1.094	84.066***	-2.043	-1.458	3.740***
	[-0.667]	[-0.701]	[-0.894]	[-0.276]	[-0.798]	[2.614]	[-1.097]	[-0.751]	[2.987]
Z-score	0.518**	0.522**	0.497**	0.556**	0.449*	3.757***	0.470**	0.527**	-0.104
	[2.213]	[2.218]	[2.078]	[2.352]	[2.025]	[2.897]	[2.041]	[2.307]	[-1.456]
Cash flow volatility	51.663***	51.955***	49.964***	55.275***	54.841***	34.536	52.869***	44.637***	4.935
	[3.790]	[3.803]	[3.661]	[4.207]	[2.837]	[0.596]	[3.804]	[3.315]	[0.918]
Tangibility	2.053*	2.102*	1.946	2.344*	2.428***	2.008	1.872	1.495	-1.722**
	[1.676]	[1.714]	[1.538]	[1.840]	[3.720]	[0.220]	[1.603]	[1.288]	[-2.428]
Tobin's q	-0.708	-0.718	-0.745	-1.043*	-0.763	-3.465	-0.312	-0.663	0.381**
	[-1.209]	[-1.220]	[-1.243]	[-1.711]	[-1.355]	[-1.003]	[-0.544]	[-1.165]	[2.056]
Firm opacity	0.077	0.077	0.088	0.075	0.112***	1.566**	-0.008	0.043	0.022
	[1.257]	[1.260]	[1.435]	[1.225]	[3.025]	[2.405]	[-0.144]	[0.759]	[0.452]
Maturity	-4.898***	-4.957***	-5.210***	-5.913***	-5.556***	-3.948	-3.677***	-4.574***	0.700***
	[-7.951]	[-7.930]	[-7.879]	[-8.568]	[-4.268]	[-0.460]	[-6.411]	[-7.877]	[2.630]
Facility amount	-4.521***	-4.499***	-4.271***	-4.370***	-4.152***	31.399***	-4.677***	-4.669***	1.726***
	[-11.078]	[-10.955]	[-10.549]	[-10.824]	[-8.309]	[6.665]	[-12.216]	[-11.865]	[6.618]

Downgrading	0.632	0.633	0.541	0.492	0.372	14.868	0.338	0.747	1.358***
	[0.981]	[0.983]	[0.826]	[0.749]	[1.062]	[1.438]	[0.601]	[1.260]	[3.035]
Performance pricing	-2.082***	-2.023***	-2.380***	-2.453***	-2.458***	-44.690***	-3.044***	-3.253***	2.959***
	[-3.087]	[-2.945]	[-3.254]	[-3.380]	[-4.555]	[-5.336]	[-5.076]	[-5.156]	[7.257]
Collateral	0.354	0.294	0.789	0.331	0.201	29.272***	-0.393	0.725	1.058**
	[0.518]	[0.419]	[1.095]	[0.454]	[0.246]	[2.998]	[-0.629]	[1.124]	[2.346]
Relationship lending	-2.052***	-2.049***	-2.333***	-2.370***	-2.260***	-20.984***	-1.971***	-2.391***	1.196***
	[-3.335]	[-3.330]	[-3.811]	[-3.925]	[-3.975]	[-2.652]	[-3.494]	[-4.181]	[3.597]
Observations	3,044	3,044	3,044	3,044	3,044	3,044	3,044	3,044	3,044
Adjusted R-squared	0.318	0.317	0.325	0.341	0.356	0.144	0.356	0.353	0.273
Loan-type FE	No	Yes	Yes	Yes	Yes	No	No	No	No
Loan-purpose FE	No	No	Yes	Yes	Yes	No	No	No	No
Year FE	No	No	No	Yes	Yes	No	No	No	No
Bank FE	No	No	No	No	Yes	No	No	No	No
Clustered standard errors	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank	Firm, Bank