Banking on Disagreement: Heterogeneous Credit Risk Assessments in Syndicated Lending*

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Abstract

Using confidential supervisory data, we measure disagreement among bank syndicate lenders about borrowers' credit risk by exploiting dispersion in probability-of-default (PD) estimates that banks report to the Federal Reserve for the same borrower-loan pair. Consistent with theory, disagreement is greater for larger loans and syndicates. At origination, loans with higher disagreement carry significantly higher spreads, even after controlling for borrower and loan risk characteristics. Although disagreement does not affect the number of covenants, it lowers the likelihood that contracts include performance-pricing provisions, consistent with lenders seeking to avoid future coordination frictions. After origination, banks with more pessimistic PD assessments are more likely to exit the syndicate, and greater disagreement lowers the probability of loan amendments following both positive and negative shocks to borrower fundamentals. However, successful renegotiations narrow subsequent disagreement. Overall, our evidence shows that within-syndicate coordination frictions shape loan pricing, contract design, syndicate composition, and renegotiation outcomes.

Keywords: Syndicated bank lending, Bank disagreement, Probability of default estimates, Loan contracting
JEL Classifications: G21; G23; G32; M41

1. Introduction

Banks commonly form loan syndicates to share the risk of extending large loans to firms with uncertain investment opportunities. Because syndicate members must agree on a single set of contractual terms, they must exchange borrower-specific information and coordinate their assessments of borrower credit quality, which are ultimately reflected in those terms. The literature emphasizes two main frictions that can arise in this process. The first stems from information asymmetry between the lead arranger and participant lenders. The lead arranger interacts directly with the borrower and leads the due diligence process, gaining an informational advantage over other syndicate members. This asymmetry creates an adverse selection problem, which is mitigated when the lead arranger retains a larger share of the loan as a signal of deal quality (Gorton and Pennacchi, 1995; Ball et al., 2008; Ivashina, 2009; Down et al., 2024; Leland and Pyle, 1977). The second friction arises from coordination challenges within the syndicate itself. Larger groups require greater communication and alignment, both when setting terms ex ante and when renegotiating ex post. Coordination becomes increasingly difficult as each additional lender brings its own credit risk model, regulatory constraints, and portfolio objectives, making it harder to achieve consensus on a borrower's contract terms (Berlin et al., 2020; Caskey et al., 2026; Gertner and Scharfstein, 1991).

Our paper focuses on the second friction—coordination challenges that arise among syndicate lenders. Because coordination is unobservable, prior research has relied on syndicate size or lender characteristics such as size, type, or syndicate position to infer potential disagreements that generate coordination costs (e.g., Caskey et al., 2026; Zhong, 2021). We extend this literature by directly observing lenders' assessments of borrower credit risk. Using confidential supervisory data from the Federal Reserve, we obtain internal one-year probability-of-default (PD) estimates that large U.S. banks report quarterly for each corporate borrower. These data provide a rare opportunity to observe, rather than infer, heterogeneity in lenders' perceptions of borrower credit risk, a fundamental but previously unobservable source of within-syndicate coordination problems. Linking these internal

PD assessments to syndicated loan contracts enables us to analyze how belief dispersion (i.e., disagreement) among syndicate lenders shapes debt contract design both ex ante and ex post.[1]

There are competing arguments as to whether and how disagreement would affect debt contracting. On one hand, in a syndicated loan setting, coordination costs among lenders in contract design and monitoring are amplified. Theoretical models of multi-creditor financing show that when lenders hold differing signals or priors about borrower quality, reaching efficient collective decisions becomes costly (e.g., Gertner and Scharfstein, 1991; Bolton and Scharfstein, 1996). Such disagreement can delay deal completion, reduce consensus on pricing, and limit the inclusion of contingent contractual features (e.g., performance-based pricing). When syndicate members interpret borrower risk differently despite receiving the same information, the lead arranger will reflect these conflicting views in syndicate formation and pricing dynamics.[2] Disagreement also impacts lender coordination after origination. Because loan amendments and covenant waivers often require near-unanimous consent, heterogeneous assessments of borrower risk can increase renegotiation costs and slow contract adjustments in response to new information (Aghion and Bolton, 1992; Caskey et al., 2026). Thus, within-syndicate disagreement represents not only an origination-stage contracting problem but also a persistent source of friction ex post.

On the other hand, several institutional features of the syndicated loan market may mitigate or even fully offset the coordination frictions arising from lender disagreement. First, lead arrangers act as information intermediaries that aggregate and certify borrower information through due diligence, ongoing relationships, and repeated-market reputation. By centralizing screening and

[1]Throughout the paper, we use the terms *belief dispersion* and *bank disagreement* interchangeably to describe the cross-sectional variation in lenders' credit risk perceptions for the same borrower at the same point in time. The construct captures heterogeneity in how lenders interpret a shared information set, rather than differences in the availability of borrower information.

[2]Lead arrangers typically use "market-flex language," which allows them to adjust loan pricing (i.e., spreads and fees) based on lender demand (Leveraged Commentary & Data, 2024). This language also permits shifts in the allocation of amounts between various loan tranches. Loans are usually launched with a range of spreads, and syndicate participants often make tiered commitments based on these spreads in a blind auction bidding process. For example, a participant might commit $25 million at a 275 basis point spread or $15 million at 250 basis points. Once all commitments are received, the arranger totals them and determines the final loan pricing. Greater heterogeneity in lender beliefs can widen the dispersion in these bids.

monitoring, lead arrangers could persuade participant banks to accept proposed loan terms even when initial assessments of borrower risk diverge. Second, participant banks face strong incentives to conform to the arranger's terms to secure syndicate inclusion, particularly in competitive lending environments where access to high-quality deals and long-term relationships is valuable.[3] Standardized loan documentation and established market conventions further promote convergence in perceived borrower risk. Third, although lenders may begin with differing priors, joint monitoring and information sharing expose them to complementary expertise, fostering convergence in risk assessments. In this sense, belief diversity can be partially self-correcting: awareness that disagreement can enhance collective monitoring efficiency encourages greater alignment ex ante (Berglöf and Von Thadden, 1994). Consequently, whether within-syndicate disagreement materially affects loan pricing, contract design, or post-origination outcomes remains an empirical question that our data allow us to examine directly.

The Federal Reserve's stress testing program requires large U.S. banks to report independently borrower-level credit-risk assessments for every corporate and commercial real estate loan exceeding $1 million. These disclosures are submitted through the FR Y-14Q regulatory reports, which are mandated for all bank holding companies with total consolidated assets of at least $100 billion, as well as for the intermediate holding companies of foreign banks subject to the U.S. supervisory stress tests. The FR Y-14Q reports contain detailed information on banks' individual loan exposures, risk profiles, and financial conditions and serve as a key input to supervisory stress tests. We draw on the quarterly FR Y-14Q C&I loan schedule (Schedule H.1), focusing on syndicated credit facilities to U.S. public and private borrowers for which at least two bank lenders report holdings of the same loan. Our final sample includes approximately 7,000 syndicated loans, which are mainly revolving

[3]Several studies show evidence consistent with this in the syndicated loan setting. Ivashina and Sun (2011) finds that lender demand pressure lowers loan prices. Maydew et al. (2025) find that capital supply inelasticity by lenders compel them to partially offset the financial impact of tax increases.

facilities.[4]

The FR Y-14Q data provide a unique lens on within-syndicate information frictions because each participating bank reports its own, independently derived assessment of borrower credit risk for the *same* borrower, the *same* loan, and at the *same* point in time. Specifically, banks are required to estimate the one-year probability that a borrower will default on its obligations (the probability of default, hereafter PD) based on their internal credit models. These PD estimates reflect each bank's proprietary modeling framework, historical experience, and qualitative assessments of borrower risk. By comparing PD estimates across banks participating in the same syndicate for the same borrower, we obtain a direct measure of lenders' belief dispersion, which we refer to as *bank disagreement*. This approach isolates variation in perceived credit risk that arises within the syndicate, holding constant borrower fundamentals, loan characteristics, and macroeconomic conditions.

For each loan in our sample, we measure disagreement as the range between the highest and lowest PD estimates reported by syndicate banks (*Max–Min PD*).[5] For tests of initial loan pricing, we use the PDs submitted in the first FR Y-14Q filing after loan origination, capturing residual heterogeneity *after* the arranger has shared information and contract terms are finalized.[6] Most loans display meaningful dispersion in PD assessments even at this post-origination stage, consistent with persistent disagreement among lenders.

We begin by examining which loan and borrower characteristics are associated with greater dispersion in banks' credit-risk assessments. Across specifications, disagreement is larger for loans that are bigger, involve more lenders, and are extended to smaller, more leveraged borrowers. These patterns are consistent with belief heterogeneity increasing when more capital is needed,

[4]Because the FR Y-14Q data cover only banks, we can measure disagreement among bank members of a loan syndicate but not among non-bank institutional investors. To limit potential bias from this restriction, our analysis focuses on revolving credit facilities, which are predominantly held by banks. Non-bank institutional lenders usually invest in term loans (Wittenberg-Moerman, 2008; Blickle et al., 2020; Phillips, 2025).

[5]We compute the measure with and without the PD estimate of the lead arranging bank. We find that our results are largely insensitive to this measurement choice.

[6]We do not observe PD estimates during the book-building phase or any changes throughout the syndication process.

borrower fundamentals are harder to assess, or the syndicate brings together more institutions with diverse models and risk preferences. The positive association with both loan size and the number of lenders aligns with theoretical predictions that coordination costs rise in larger creditor groups (e.g., Gertner and Scharfstein, 1991). We find limited evidence that disagreement systematically reflects information asymmetry between the lead arranger and participant lenders. The coefficients on the lead-arranger share and the indicator for the lead's PD being above the syndicate average are small and statistically weak. This lack of association indicates that disagreement primarily captures differences in how lenders interpret common information, rather than a possible information advantage held by the lead arranger. Together, these results are consistent with disagreement representing a direct measure of within-syndicate coordination frictions, rather than a proxy for underlying borrower risk or adverse selection.

Building on the determinants analysis, we next examine how within-syndicate disagreement affects loan contracting and subsequent loan outcomes. In a first set of tests, we investigate whether within-syndicate disagreement is reflected in loan pricing and non-pricing terms. We find that loans with greater bank disagreement have higher spreads at origination. This finding indicates that when lenders hold materially different beliefs about borrower risk, the lead arranger must set a rate high enough to satisfy the most pessimistic participants, consistent with higher coordination costs during syndicate formation. The additional yield likely compensates both for differences in opinion about the borrower's inherent credit quality and for the anticipated difficulty of reaching consensus over the loan's maturity.

We find no association between disagreement and the presence of financial covenants, which are typically negotiated between the lead arranger and the borrower with more limited syndicate involvement. The absence of a link supports the interpretation that disagreement reflects heterogene-

ity among lenders rather than elevated borrower risk.[7] However, we find a strong negative relation between disagreement and the use of performance-based pricing provisions. These clauses link loan spreads to borrower performance metrics and require lenders to agree ex ante on performance thresholds and monitoring procedures. Consistent with Asquith et al. (2005), the lower prevalence of performance pricing when beliefs diverge suggests that lenders seek to avoid contingent pricing grids that would require future coordination on financial triggers.

We next conduct a series of validation tests to assess whether our measure of bank disagreement indeed captures lender-specific belief heterogeneity rather than alternative sources of information asymmetry. Across several tests, we find no evidence that the pricing premium associated with disagreement is driven by borrower opacity, the lead arranger's information advantage, or the lead arranger's incentives. First, we test whether disagreement simply proxies for borrower opacity by interacting it with an indicator for private firms. The interaction is insignificant, suggesting that disagreement is not related to the availability of public information but rather to how lenders interpret the same underlying borrower data.[8] Second, we examine whether greater lead-arranger loan stake retention mitigates the pricing premium associated with disagreement. The coefficient on the interaction is again insignificant, implying that retaining a larger share of the loan, typically viewed as a mechanism for signaling borrower quality, does not alleviate the coordination frictions created by divergent risk assessments. Finally, we test whether the lead arranger's own assessment moderates the relationship between disagreement and pricing. When the arranger's internal PD is higher than the syndicate average, the interaction remains insignificant, indicating that the lead arranger's risk aversion does not systematically offset the effects of dispersed beliefs. Taken together, these analyses show that disagreement primarily reflects heterogeneity in lenders' internal

[7] If disagreement merely reflected borrower risk, we would expect to observe both higher spreads and tighter covenant structures. Prior work also suggests that lenders trade off between price and non-price protections when contractual monitoring is costly or difficult to enforce (Sridhar and Magee, 1996; Costello and Wittenberg-Moerman, 2011; Donovan et al., 2024).

[8] Private borrowers provide extensive non-public disclosures to lenders, including projections and management updates (Bushman et al., 2010; Carrizosa and Ryan, 2017). Some institutional investors deliberately limit such access to avoid insider-trading restrictions (Amiraslani et al., 2023).

assessments of the borrower, rather than borrower opacity or arranger-specific information.

In a second set of tests, we examine how bank disagreement relates to syndicate composition after origination. Because private loans mature over a period of several years, they often require coordinated responses to new borrower information. As a result, persistent belief heterogeneity is likely to influence both the stability of syndicate membership and the group's ability to renegotiate terms when conditions change. We first test whether banks' individual risk assessments predict their subsequent participation in the loan. We find that lenders whose internal PDs are above the syndicate median at origination are significantly more likely to sell their exposure to the loan in subsequent quarters. These banks appear unwilling to remain in positions they perceive as under-priced relative to their own risk assessments. The pattern implies that disagreement at origination translates into syndicate attrition over time, as pessimistic lenders withdraw and leave behind a more homogeneous and optimistic set of lenders. This adjustment mechanism partially alleviates the initial coordination frictions present at the time of issuance.

We then test whether disagreement constrains the syndicate's ability to renegotiate when the borrower's credit conditions do change. Because amendments and covenant waivers typically require broad lender consent, persistent disagreement should increase coordination costs and delay collective responses (Aghion and Bolton, 1992; Roberts and Sufi, 2009). We proxy for shifts in borrower credit conditions using upgrades and downgrades in banks' internal credit ratings and changes in profitability, which represent fundamental shocks that are plausibly exogenous to lenders' private information. These events provide a natural setting to observe how disagreement affects coordination outcomes conditional on a common updated signal about borrower fundamentals. Consistent with the coordination frictions arising from disagreement, we find that the probability of a loan amendment following a rating change or profitability shock is significantly *lower* when disagreement among lenders is high. [9] Because large changes in credit ratings and profitability are

[9]The illiquidity and opacity of the secondary loan market, which limits lenders' ability to exit at favorable prices, may contribute to the heightened collective-action problems during renegotiation, especially when ownership is dispersed across many syndicate participants (see Berlin et al. (2020)).

plausibly external to the syndicate's private information set, this result provides stronger evidence that disagreement causally impedes lenders' ability to coordinate debt contracting. This finding aligns with theoretical predictions that heterogeneous beliefs raise coordination costs even when the efficient response to new information is unambiguous (e.g., Gertner and Scharfstein, 1991; Bolton and Scharfstein, 1996; Berglöf and Von Thadden, 1994; Caskey et al., 2026).

We also examine what happens after amendments take place. For the subset of loans that are successfully renegotiated, disagreement narrows sharply in the quarters immediately following the amendment and remains lower for several subsequent periods. This convergence suggests that the renegotiation process itself facilitates information sharing and consensus formation. In other words, while initial disagreement hinders collective action, the act of successful renegotiation realigns lenders' assessments of borrower risk once coordination is achieved.

The primary threat to our interpretation that disagreement increases coordination frictions in debt contracting is that the observed relation between disagreement and loan outcomes could reflect higher underlying credit risk or general uncertainty rather than differences in lenders' beliefs. Borrowers that are objectively riskier or operate in more volatile conditions might prompt greater dispersion in PD estimates and simultaneously face higher spreads or lower amendment success. We address this concern in several ways. First, we explicitly control for multiple dimensions of credit risk and volatility, including borrowers' internal credit ratings, leverage, profitability, and both industry and idiosyncratic return volatility. The pricing and amendment results remain unchanged, indicating that disagreement does not merely proxy for riskier borrowers or for uncertainty in their operating environment. Second, we examine whether disagreement predicts future deterioration in loan performance or borrower default risk. We find no positive association between disagreement and declines in credit quality, suggesting that the dispersion in PD estimates reflects differences in interpretation rather than differences in information about borrowers' true credit quality. Taken together, these analyses indicate that bank disagreement does not capture borrower opacity, shared uncertainty, or underlying credit risk.

A related concern is that the observed PD dispersion may reflect differences in banks' internal rating methodologies rather than heterogeneous interpretations of borrower-specific creditworthiness. Banks vary in whether they adopt a through-the-cycle (TTC) approach, which smooths PD estimates across macroeconomic cycles, or a point-in-time (PIT) approach, which adjusts PDs more aggressively in response to current conditions. If our disagreement measure primarily captures TTC versus PIT heterogeneity, syndicates mixing both types of lenders would mechanically exhibit wider PD dispersion during stressed periods, and this cyclical variation could confound our inferences about coordination frictions. We address this concern through two complementary tests. First, we construct bank-specific measures of PD cyclical sensitivity using each institution's complete FR Y-14Q portfolio and control for syndicate-level variation in rating cyclicality. Second, we test whether disagreement effects are concentrated in periods of macroeconomic stress by interacting our disagreement measure with indicators for high-stress quarters. Across both approaches, we find that controlling for rating cyclicality leaves our core results unchanged, and disagreement effects remain stable across the business cycle. These patterns indicate that our measure captures heterogeneity in lenders' credit-risk assessments rather than mechanical differences in rating methodology.

Several caveats should be considered when interpreting our findings. First, our analysis focuses on large bank holding companies subject to the Federal Reserve's stress testing requirements. These institutions dominate the syndicated loan market, and thus, our evidence may not generalize to smaller or non-bank lenders, whose internal risk-assessment practices and coordination mechanisms may differ. Second, although the FR Y-14Q data provide an unusually rich view of banks' internal credit assessments, we cannot fully disentangle whether disagreement arises from differences in the ability to process information, private information collection, or institutional preferences. Our findings should therefore be interpreted as reflecting the overall effect of heterogeneity in lenders' assessments rather than any single underlying channel. Third, while our empirical design holds the borrower, loan, and macroeconomic environment constant, we cannot entirely rule out all alternative explanations related to unobservable uncertainty or risk factors. Nonetheless, by

considering our results across multiple settings, including quasi-exogenous fundamental shocks and post-amendment belief alignment, we believe our evidence as a whole is most consistent with coordination costs arising from lender disagreement imposing frictions in debt contracting during and after loan origination.

Subject to these caveats, our study advances the literature on coordination costs in lending by providing direct evidence of belief heterogeneity among syndicated loan lenders, as measured by dispersion in their PD estimates, and by documenting its effects on loan pricing, renegotiation outcomes, and syndicate composition. Whereas prior research has largely inferred heterogeneity in lender assessments using indirect proxies such as loan structure or pricing (Gorton and Pennacchi, 1995; Ivashina, 2009; Ball et al., 2008; Caskey et al., 2026), we offer direct empirical validation of theoretical predictions that coordination frictions within lending syndicates have economically meaningful consequences. In particular, our findings show that such frictions increase the cost of syndicated lending for borrowers, consistent with recent theoretical work (Down et al., 2024; Berlin et al., 2020).

We also extend the literature by examining syndicate membership dynamics and loan renegotiation during the post-contracting period. While prior research has explored the role of lead arrangers in mitigating information asymmetry at origination (Ball et al., 2008; Phillips, 2025), we show that lender disagreement persists beyond origination, with significant consequences for syndicate composition. Specifically, we document that banks with more pessimistic risk assessments are significantly more likely to exit the syndicate post-origination, leading to a self-selection process that gradually reshapes the syndicate's composition. Additionally, greater lender disagreement reduces the lenders' ability to agree on amended terms following shocks to the borrower's financial performance and condition. Thus, bank disagreements not only raise borrowing costs but also heighten uncertainty regarding both syndicate stability and loan terms in the post-contracting period.

2. Related Literature

Syndicated lending requires multiple lenders to coordinate on a common set of contractual terms, yet this process is shaped by two distinct frictions: information asymmetry between the lead arranger and participant lenders, and coordination frictions among lenders themselves. A substantial body of research examines the first friction and the role of the lead arranger in mitigating information gaps with and between participant lenders. Because the lead arranger has privileged access to borrower-specific information, it acts as the informational intermediary that structures the loan and communicates risk assessments to the syndicate. However, this advantage introduces an adverse selection problem because the lead arranger must convince less-informed participants that the loan is of sufficient quality to secure their capital commitments. Prior work shows that lead arrangers use contractual mechanisms such as covenants and collateral to alleviate this problem and reduce the information asymmetry premium imposed by participants (Gorton and Pennacchi, 1995; Sufi, 2007). Ivashina (2009) estimates that this premium accounts for roughly 4 percent of borrowers' total financing costs.

In addition, arrangers often retain a larger share of the loan as a credible signal of borrower quality. Consistent with signaling theory, lead banks increase their retained share when information problems are more severe (Sufi, 2007). Ball et al. (2008) further show that arrangers retain larger portions when accounting information has lower debt-contracting value, limiting participants' ability to assess borrower risk independently. Yet arrangers do not always act as neutral information intermediaries. Down et al. (2024) find that lead banks retain smaller loan shares when they possess private regulatory information (e.g., FDA inspections), indicating selective disclosure to participants. Consequently, participant lenders balance reliance on arranger signals with their own risk assessments, sometimes drawing on private information acquired through prior borrower relationships (Sufi, 2007).

While this literature provides extensive evidence on information asymmetry between arrangers

and participants, less attention has been paid to the second friction—*coordination challenges that arise among syndicate lenders themselves*, even when all possess the same borrower information. Lenders may differ systematically in how they interpret identical information or apply internal credit models. More generally, belief dispersion can stem from differences in internal modeling frameworks, portfolio constraints, prior lending relationships, or industry specialization (Berg and Koziol, 2017).[10] Regulatory guidance similarly notes wide differences in banks' model-risk-management practices, reinforcing the expectation that credit assessments will vary even across sophisticated institutions.[11]

Theoretical work in corporate finance and contract theory highlights that coordination costs among multi-creditor capital structures are a fundamental constraint on efficient lending. When lenders must act collectively, each creditor internalizes only a fraction of the surplus from successful coordination but bears the full cost of negotiation delay or disagreement. Empirically, coordination frictions have been shown to increase with the number and diversity of creditors (Berlin et al., 2020; Caskey et al., 2026), consistent with the idea that lender heterogeneity complicates joint action.

At origination, theory argues that when lenders hold heterogeneous signals or priors about borrower quality, reaching efficient collective decisions becomes costly because each creditor has different continuation values and bargaining incentives (e.g., Gertner and Scharfstein, 1991; Bolton and Scharfstein, 1996). Greater heterogeneity can delay deal completion, increase loan spreads to compensate for negotiation risk, and constrain the inclusion of contingent features such as performance-based pricing.

After origination, coordination frictions can impede a syndicate's ability to respond efficiently to

[10]For example, Agarwal and Hauswald (2010) show that geographic proximity affects private information collection; Stomper (2006) demonstrate that industry expertise allows banks to extract rents consistent with information advantages. Relationship lending also accumulates borrower-specific soft information (Bharath et al., 2007, 2009; Petersen and Rajan, 1994; Schenone, 2010; Liberti and Petersen, 2019). Banks may also differ in their collection of information produced externally relative to the borrower, such as stock prices, the media, or financial analysts (De George et al., 2025; Bushman et al., 2017; Binz et al., 2025; Call et al., 2022). Finally, bank health can influence monitoring intensity and contract design (Chodorow-Reich and Falato, 2022).

[11]`https://www.occ.treas.gov/publications-and-resources/publications/comptrollers-handbook/files/model-risk-management/pub-ch-model-risk.pdf`

new borrower information. This collective-action problem can generate inefficient holdout behavior and under-investment in monitoring (e.g., Gertner and Scharfstein, 1991; Berglöf and Von Thadden, 1994; Bolton and Scharfstein, 1996). In addition, because amendments and covenant waivers often require near-unanimous consent, heterogeneous beliefs increase renegotiation costs and slow contractual adjustments (Aghion and Bolton, 1992; Caskey et al., 2026). Empirical work confirms that amendments are frequent and economically important (Roberts and Sufi, 2009; Roberts, 2015; Nikolaev, 2018; Dou, 2020; Chen et al., 2025), yet we know relatively little about how disagreement within syndicates affects this process. Over time, these dynamics can lead to inefficient credit adjustments and value losses for both borrowers and lenders.[12]

Taken together, the literature suggests that divergent assessments of borrower risk can influence both the *ex-ante* design of loan terms and the *ex-post* flexibility to renegotiate and amend those terms. Our paper provides direct evidence on these coordination frictions by using supervisory data on banks' internal credit-risk assessments. In contrast to prior studies that infer heterogeneity from loan structure or pricing outcomes, we observe each bank's internal probability-of-default (PD) estimate for the same borrower and loan at the same time. These data allow us to quantify belief dispersion, which we refer to as *bank disagreement*, and to examine how it shapes loan pricing, contract design, and renegotiation outcomes.

3. Data and Syndicate Disagreement Measurement

3.1. Stress Test Reporting and FR Y-14Q

Following the passage of the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act), systemically important financial institutions in the U.S. became subject to annual supervisory stress tests. As part of the stress testing exercise, firms are required to

[12]Lenders recognize and react to this. For example, Berlin et al. (2020) identify that syndicated loan arrangements with bank facilities (e.g., revolving credit facilities and non-bank facilities, such as institutional term loans) concentrate control rights in the bank facility to reduce coordination frictions arising from disagreement among non-bank lenders.

submit quarterly loan-level holdings data to the Federal Reserve in Form FR Y-14Q filings starting from 2012.[13]

We focus our analyses on Schedule H.1, which contains detailed information on banks' commercial and industrial (C&I) loans with a committed balance greater than or equal to $1 million (Caglio et al., 2022). In Schedule H.1, banks are also required to report certain fundamental characteristics of the borrower (as of the most recent trailing twelve months) as well as loan terms, loan performance, and their estimates of the borrower's credit risk. The vast majority of corporate lending in the U.S. (about 70%) is covered by these reporting requirements (Bidder et al., 2021; Howes and Weitzner, 2026), including syndicated lending facilities. Banks are required to report syndicated loan exposures as soon as they have signed a commitment letter to the borrower, even if the borrower has not countersigned. Banks are also required to report loan exposures that have been disposed of within the quarter of the current reporting period. Thus, we are able to capture syndicated loan data provided by banks, regardless of whether they intend to keep or sell their loan shares.

As part of the loan-level disclosures, banks must report a probability of default (PD) estimate for each borrower. This PD represents the likelihood that a borrower will default on their loan obligations *within one year*. The PD is a critical metric in assessing credit risk and reflects the bank's judgment of the borrower's financial health and ability to meet debt payments. Relatively higher PD estimates imply that the bank has assessed the borrower as being less creditworthy, indicating a greater risk of default. Conversely, lower PD estimates suggest that the bank views the borrower as relatively stable and financially sound, with a lower risk of default. These PD estimates serve as a key input in determining the loan's terms, such as the interest rate, collateral requirements, and covenants, with higher PDs typically leading to more stringent loan terms to compensate for the increased risk.

[13]Financial institutions with total consolidated assets above $50 billion were subject to supervisory stress from 2011 until 2019. In 2019, the reporting threshold was raised to $100 billion USD.

Two features of these PD estimates make them ideal for capturing disagreement among syndicate banks. First, the Basel Committee framework requires that each bank within the syndicate independently reports its PD estimate based on its internal credit risk models.[14] Such models incorporate current and historical quantitative data, forward-looking projections, and "soft" information gathered by loan officers about the borrower or similar borrowers. They also take into account factors such as industry conditions and macroeconomic trends. The excerpt below from the Basel III framework (CRE36:33) discusses a bank's use of relevant information in credit risk assessment:

"Credit scoring models and other mechanical rating procedures generally use only a subset of available information. Although mechanical rating procedures may sometimes avoid some of the idiosyncratic errors made by rating systems in which human judgment plays a large role, mechanical use of limited information also is a source of rating errors. Credit scoring models and other mechanical procedures are permissible as the primary or partial basis of rating assignments, and may play a role in the estimation of loss characteristics. Sufficient human judgment and human oversight is necessary to ensure that all relevant and material information, including that which is outside the scope of the model, is also taken into consideration, and that the model is used appropriately."

Building on the foregoing discussion, we posit that cross-bank variation in PD estimates for a given borrower captures heterogeneous inputs along three fronts: (i) each bank's prior interactions with and proprietary information about the borrower; (ii) discretionary modeling choices embedded in internal credit systems; and (iii) institution-specific constraints, including portfolio-diversification targets, sectoral risk appetites, and regulatory capital requirements.

The second feature that makes PDs ideal for capturing disagreement within a bank syndicate is

[14]This requirement implies that banks use the Advanced Internal Ratings-Based approach to estimate PDs. Under this approach, banks can use their internal models to estimate PDs, subject to regulatory approval. This approach is generally employed by the large and sophisticated banks. There is a second, Standardized or Non-Advanced approach, which does not allow banks to use internal models. Instead, they must rely on predefined risk weights for borrower categories provided by the regulator when estimating PDs. The majority of banks in our sample use the Advanced approach. Controlling for the share of banks using the Advanced approach does not affect our findings.

that banks have significant incentives to ensure accurate PD estimates. Systematic errors or bias in PD estimates can result in disciplinary actions by the Federal Reserve, including forced recognition of additional loss reserves and restrictions on dividend payments, among other consequences (Howes and Weitzner, 2026). The threat of regulatory enforcement, along with the regular quarterly reporting of these estimates, ensures that they accurately and timely reflect banks' views on borrowers' credit risk profiles.[15]

3.2. Sample

Our sample is constructed by matching syndicated loan data from the FR Y-14Q, Schedule H.1 regulatory filings with loan information from LPC Dealscan over the period 2014:Q4 to 2025:Q2.[16] The FR Y-14Q filings provide detailed quarterly loan-level data reported by large bank holding companies and intermediate holding companies, while Dealscan contains syndicated loan contract data. By combining these datasets, we can analyze lender disagreement and its effects on syndicated loan outcomes.

To match lenders across the two datasets, we conduct a hand-match of 35 FR Y-14 parent banks to Dealscan lenders using bank names. Borrowers are matched using a name-cleaning process that standardizes borrower names by removing ancillary words such as "Corporation," "Inc.," and "Products." After standardizing the names, we conduct a fuzzy name match on borrower names using multiple string distance algorithms, including exact name matching, Jaro-Winkler string similarity, and Weighted Jaccard similarity.

[15] Nonetheless, there are prior studies that show some evidence of strategic bias in PD estimates (e.g., Firestone and Rezende, 2016; Plosser and Santos, 2018). For example, Owens and Sokolowski (2025) find evidence of a discontinuity in bank PD ratings relative to external ratings around 0, with banks being relatively more optimistic than external rating agencies. Importantly, our study examines the range of PD estimates while controlling for the level of external ratings, allowing us to wash out any on-average bias affecting banks' ratings. Moreover, any differences in the preferences of banks that are biasing their ratings would reflect their heterogeneous preferences and still could lead to contracting frictions to the extent they motivate the biased bank to pursue loan outcomes that fit its circumstances (Caskey et al., 2026).

[16] We conduct the matching process with data starting in 2012:Q1, but restrict the sample to observations after 2014:Q4 later due to PDs being largely unpopulated prior to then.

After joining FR Y-14Q and Dealscan loans based on the matched lenders and borrowers, we apply three filters to ensure consistency between the datasets and confidence in the loan-level match of the sample. First, we impose that the reported facility types (e.g., credit lines, term loan A) across the two datasets must match exactly. Then, we retain matches where the origination date in FR Y-14Q is within 5 days of the tranche active date field in Dealscan. If the origination dates do not exactly align, we retain matches where the participation share, calculated as the committed amount in FR Y-14Q divided by the tranche amount in Dealscan, is within half a percentage point of the participation interest field reported in FR Y-14Q. Lastly, we remove matches where the borrower four-digit industry code (NAIC or SIC) and three-digit ZIP code reported in FR Y-14Q and Dealscan never match during the lifetime of the loan.

We retain the data under two structures: (1) a sample of PD estimates at origination and (2) a time-series of PD estimates from origination through the maturity of the syndicated loan. This allows us to examine the contractual consequences of ex ante and ex post disagreement, including a detailed examination of lender disagreement, loan pricing, and renegotiation outcomes. Table 1 Panel A shows our sample construction and attrition.

3.3. Descriptive Statistics

Table 1 Panel B indicates substantial cross-lender dispersion in internal PDs even at origination: the main measure (*Max–Min PD*) has a median of about 0.51% and an interquartile range that implies meaningful heterogeneity across participating banks. For perspective, average default rates for syndicated loans are between 1% and 5% depending on the credit cycle (PitchBook, 2025). Our second measure, which excludes the lead arranger's PD from the set of PDs used in the calculation (*Max–Min PD (No Lead)*), has a median of 0.4% and is smaller in magnitude than our main measure. Despite this, we continue to observe similar heterogeneity in PD estimates among just non-lead participating banks. Facilities are economically large and multi-lender: the median number of reporting banks in FR Y-14Q is 3, while Dealscan reports a median of 8 lenders. The median

all-in-drawn spread is 175 bps, and the median maturity is 4.8 years. Borrowers are profitable on average (median ROA $\approx 7\%$) and moderately levered (median leverage ≈ 0.31). Approximately 47% of the borrowers in the sample are private firms. Overall, the table confirms that disagreement is common at issuance and that it arises in sizable, multi-bank facilities where coordination costs are most likely to matter.

4. Determinants of Lender Disagreement

We begin by examining which loan, borrower, and syndicate characteristics are associated with variation in lenders' credit-risk assessments. Understanding these determinants provides descriptive evidence on how within-syndicate disagreement arises. Specifically, we estimate the following regression model:

$$\begin{aligned} Disagreement_l = {} & \beta_1 \ln(Total\ Exposure)_l + \beta_2 Maturity_l + \beta_3 Private_l + \beta_4 N\ Lender_l \\ & + \beta_5 Industry\ Return\ Volatility_l + \beta_6 ROA_l + \beta_7 Size_l \\ & + \beta_8 Leverage_l + \beta_9 High\ Share_l + \beta_{10} Lead\ Above_l + \gamma_t + \gamma_b + \varepsilon_l, \end{aligned} \tag{1}$$

where we measure lender disagreement for loan l at origination using *Max–Min PD* and *Max–Min PD (No Lead)*. *Max–Min PD* is defined as the range between the highest and lowest internal PD estimates reported by syndicate members for the same borrower and loan in a given quarter. *Max–Min PD (No Lead)* computes the same range but excludes the lead arranger's PD from the set of internal PD estimates. We do this because the lead arranger is likely better informed than the syndicate, and thus may not always represent disagreement with the marginal syndicate participant bank. We use the range rather than the standard deviation to capture lender disagreement for two main reasons. First, the range directly reflects the distance between the most optimistic and most pessimistic risk assessments within the syndicate. Because lead arrangers must reconcile the views of these extreme participants, the range provides a more economically relevant measure of the

coordination challenge than the standard deviation, which gives equal weight to all observations. Second, the number of banks reporting PDs varies across loans, often with only two or three observations per syndicate. In such cases, standard deviations can be less informative and more sensitive to sample size, whereas the range remains well-defined and comparable across syndicates.[17]

We estimate Equation 1 using a set of loan, borrower, and syndicate characteristics, controlling for year–quarter of origination and borrower-rating fixed effects. Standard errors are clustered at the loan level. Table 2 reports the results. Disagreement is significantly higher for larger loans (*ln(Total Exposure)*) and a greater number of participating lenders (*N Lender*). These patterns indicate that larger and more diffuse syndicates exhibit wider dispersion in banks' internal risk assessments, consistent with greater heterogeneity in modeling approaches and credit-risk views when more institutions participate in underwriting.

Borrower fundamentals are also related to disagreement. Disagreement is higher for firms that are smaller, less profitable, and more leveraged, suggesting that weaker fundamentals make credit risk harder to assess consistently across lenders. In contrast, disagreement shows no reliable association with maturity or borrower privacy status, implying that these characteristics do not materially influence the alignment of lenders' PD estimates once borrower fundamentals are held constant. Importantly, our disagreement measures have no statistical association with borrower industry volatility, which suggests that disagreement is not driven by elevated uncertainty of the borrower.

Finally, from the set of indicators of the lead arranger's position, including *High Share* and *Lead Above*, only *Lead Above* is statistically significantly negatively associated with disagreement amongst non-lead participants. *High Share* is an indicator equal to one if the lead arranger has the highest share of the loan, and zero otherwise. This captures loans where the lead arranger may need to keep more of the loan to offset adverse selection risks for participant lenders. *Lead Above* is an

[17] Our results are robust to using other measures of disagreement, including the standard deviation of PDs (*SD(PD)*) and scaling *Max–Min PD* by the average PD of the borrower's associated internal rating, (*Max–Min PD (Scaled)*).

indicator equal to one if the lead arranger's PD is higher than the median PD of the syndicate, and zero otherwise. This captures potential adverse selection risk where the lead arranger has a private assessment of the loan that is worse than the rest of the syndicate. If *Lead Above* was positively associated with disagreement, then the disagreement measure could be capturing adverse selection concerns across the participants. Instead, the negative association indicates that disagreement is not driven by adverse selection risks imposed by information asymmetry between the lead arranger and syndicate participants.

Overall, the evidence from columns (1)–(4) indicates that lender disagreement is primarily explained by loan size, borrower fundamentals, and syndicate composition. Larger facilities and bigger syndicates are associated with greater dispersion in perceived borrower risk, whereas stronger borrower performance corresponds to greater consensus across lenders.

5. Consequences of Lender Disagreement at Loan Origination

We next examine whether bank disagreement is associated with variation in debt contract terms, focusing on two dimensions of syndicated loan design: pricing and non-price provisions. These tests assess whether belief dispersion among syndicate members is related to the structure of the costs and contingencies in credit agreements.

5.1. Loan Pricing

We first assess whether greater lender disagreement is associated with higher loan spreads, reflecting the cost of coordination and heterogeneity in risk perceptions. The dependent variable is the natural logarithm of the all-in-drawn loan spread, and the key independent variables are *Max–Min PD* and *Max–Min PD (No Lead)*, which measure the range of internal probability-of-default (PD) estimates across syndicate lenders for the same borrower. Descriptively, Figure 1 shows a monotonic increase in the natural log of spread for each decile increase in disagreement (*Max–Min PD*), providing initial evidence that disagreement is associated with loan pricing. In our

multivariate model, we control for borrower and loan characteristics, and include year–quarter of origination and borrower-rating fixed effects, clustering standard errors at the loan level.

Table 3 reports the baseline results relating lender disagreement to loan pricing. Columns (1)–(4) show a positive and statistically significant association between dispersion in lenders' internal PD estimates and loan spreads. Economically, facilities in which syndicate members hold more divergent views about borrower credit risk are priced at higher spreads. This pattern is consistent with a coordination-based pricing mechanism: when beliefs are heterogeneous, lead arrangers must set spreads high enough to attract participation from the most conservative lenders, while also compensating syndicate members for the additional costs of reaching agreement and monitoring under disagreement. In this sense, spreads reflect not only expected credit risk, but also the friction associated with aligning lenders with differing risk assessments. Taken together, these results provide evidence that belief heterogeneity within lending syndicates increases the cost of credit in syndicated loan markets.

5.2. Other Contractual Terms

We next examine whether lender disagreement influences non-price contract features that govern borrower behavior and monitoring, including the number of financial covenants and the use of performance-based pricing provisions. Both features require syndicate-wide agreement on borrower thresholds and monitoring mechanisms, so belief dispersion could make such coordination more difficult.

Table 4 presents the results. Columns (1) and (2) show no significant relationship between lender disagreement and the number of financial covenants. This suggests that when lenders diverge in their risk assessments, they do not systematically compensate by imposing additional restrictions. In contrast, columns (3)-(4) reveal a strong negative association between disagreement and the likelihood of including performance-based pricing provisions. When lenders disagree more sharply about borrower risk, they appear reluctant to rely on pricing grids that require future consensus

about performance triggers. Instead, arrangers adopt fixed-rate pricing to lock in compensation ex ante, reducing the potential for future disputes. This result complements the positive spread effect, indicating that disagreement not only raises borrowing costs but also pushes contracts toward simpler, less flexible terms.

Taken together, these findings show that lender disagreement has meaningful implications for how syndicated loans are priced and structured at origination. Greater dispersion in internal credit assessments leads to higher loan spreads and a lower likelihood of including contingent pricing mechanisms, consistent with the belief heterogeneity increasing coordination costs among syndicate members.

5.3. Cross-Sectional Validation: Information Asymmetry and Lead Arranger Effects

We next conduct a series of validation tests to assess whether our measure of bank disagreement captures lender-specific belief heterogeneity rather than alternative sources of information asymmetry. Specifically, we examine whether the positive relationship between lender disagreement and loan pricing is explained by borrower opacity, the lead arranger's balance sheet commitment, or the arranger's private information. Because loan spreads provide the most direct and statistically robust reflection of coordination costs, we focus on pricing outcomes for these tests rather than on contractual features.

Table 5 presents the results. In columns (1) and (4), we test whether disagreement simply proxies for borrower opacity by interacting our disagreement measure (*Max–Min PD* and *Max–Min PD (No Lead)*) with an indicator for private firms. If disagreement arises because lenders possess differing amounts of information, the spread–disagreement relation should be stronger for private borrowers, who face less public disclosure. The interaction term is statistically insignificant. Despite lower transparency, private borrowers do not exhibit higher disagreement premiums. This finding suggests that disagreement reflects variation in how banks interpret a shared information set rather than

potential differences in access to information or just limited available information.[18]

In columns (2) and (5), we test whether greater lead-arranger loan retention attenuates the pricing premium associated with disagreement. Lead arrangers structure and distribute the facility, set opening terms, and channel borrower information across syndicate members (Ivashina, 2009). By retaining a larger share of the loan, they can, in principle, signal borrower quality and reduce adverse-selection concerns (Gorton and Pennacchi, 1995; Ball et al., 2008). However, the interaction between our disagreement measures and *High Share* is insignificant, implying that "skin in the game" does not mitigate the impact of coordination frictions that arise from divergent risk assessments.

Finally, in columns (3) and (6), we examine whether the lead arranger's private view of borrower risk explains the relationship between disagreement and loan spreads. *Lead Above* equals one if the arranger's internal PD exceeds the syndicate median, indicating that the arranger is more pessimistic than its peers. Disagreement may result from how lead arrangers present information about borrowers when adverse selection concerns are acute (such as when they privately believe the borrower is less creditworthy) for participant lenders. The interaction term is again insignificant, suggesting that our results are not primarily attributable to adverse selection risk.

Taken together, these validation tests confirm that the pricing effects of disagreement are not driven by borrower opacity, the lead arranger's stake, or adverse selection risks. Instead, they reflect persistent heterogeneity in how lenders interpret common borrower information. Having established that disagreement is associated with contracting outcomes at issuance, we next examine whether coordination frictions also have consequences after origination. Specifically, we analyze how disagreement relates to syndicate membership dynamics and loan amendments, as well as how disagreement can be resolved among syndicate members.

[18]Private borrowers provide extensive non-public disclosures to syndicate lenders, including financial projections and management updates (Bushman et al., 2010; Carrizosa and Ryan, 2017). However, some institutional investors that trade in public markets deliberately avoid accessing this information to reduce the risk of insider trading (Amiraslani et al., 2023).

6. Disagreement and Ex Post Loan Outcomes

6.1. Bank Exits and Lender Disagreement

One implication of within-syndicate disagreement is that lenders with more pessimistic assessments of borrower creditworthiness may choose to withdraw rather than remain exposed to loans they perceive as underpriced relative to their internal models. To test this implication, we examine whether a lender's relative risk assessment predicts its likelihood of exiting the syndicate in the quarters following origination. Unlike prior analyses that focus on loan-level contract terms at issuance, this test is conducted at the bank–loan–quarter level, allowing us to trace how individual lender beliefs translate into changes in syndicate composition.

We estimate a series of linear probability models in which the dependent variable, *Exit*, equals one if a bank exits the loan syndicate within the next n quarters and zero otherwise, where $n \in \{1,2,3,4\}$. The key independent variable, *PD Diff*, measures the difference between a syndicate bank's internal probability-of-default (PD) estimate and the average PD across all lenders in the same loan and quarter. Positive (negative) values indicate that the lender is more pessimistic (optimistic) than the syndicate mean. A positive coefficient on *PD Diff*, therefore, implies that banks with relatively more pessimistic assessments are more likely to exit in subsequent quarters. We estimate the following equation:

$$Exit_{btl} = \beta_1 PD\ Diff_{btl} + X_{lt}\Gamma + \gamma_t + \delta_b + \omega_r + \varepsilon_{btl}, \tag{2}$$

where $Exit_{btl}$ is an indicator for whether bank b in quarter t exits the syndicate for loan l within n quarters. The vector X_{lt} represents borrower and loan characteristics including *ln(Total Exposure)*, *Maturity*, *Private*, *N Lender*, *Industry Return Volatility*, *ROA*, *Size*, *Leverage*, *High Share*, and *Lead Above*. The specification includes year–quarter fixed effects (γ_t) to absorb macroeconomic shocks, borrower rating fixed effects to capture credit risk (ω_r), and bank fixed effects (δ_b) to capture

time-invariant differences in each bank's exit propensity. Standard errors are clustered at the loan level.

Table 6A presents the results. Across all four exit horizons, the coefficient on *PD Diff* is positive and statistically significant at the 1% level, indicating that banks with more pessimistic internal credit risk assessments are consistently more likely to exit the syndicate within one to four quarters. Intuitively, when a lender views the borrower as riskier than its syndicate peers, continued participation becomes less attractive: the lender faces higher perceived downside risk while being constrained by contract terms and collective decision-making. Exiting the syndicate allows pessimistic banks to reduce exposure and avoid future coordination frictions, particularly in settings where renegotiation or active monitoring may be required. These results are consistent with belief heterogeneity driving endogenous sorting within syndicates, as lenders with divergent risk assessments adjust their participation over time.

We also estimate the likelihood of bank exit using a Cox proportional hazards model with time-varying covariates to determine whether *PD Diff* influences the instantaneous risk of bank exit. In particular, we estimate the following model:

$$h(t) = h_0(t) \cdot \exp(\beta_1 PD\ Diff_{btl} + X_{lt}\Gamma), \tag{3}$$

This model assumes the hazard rate of bank exit at quarter t is the product of the baseline hazard rate, $h_0(t)$, and the function of risk factors X_{lt}, which include time-varying loan and borrower characteristics following prior analyses. Note that β_1 represents the log hazard ratio for *PD Diff*. Given the results from Table 6A, we would expect β_1 to be greater one, suggesting that banks with higher relative pessimism about the borrower have a higher hazard of exiting the syndicate.

Table 6B presents the results of the hazard model. Across bank and borrower stratifications, the logged hazard ratio on *PD Diff* is above one and statistically significant, reinforcing the claim that banks with more pessimistic internal assessments are consistently more likely to leave.

These results support the view that disagreement imposes ongoing coordination frictions in syndicated lending. When lenders interpret borrower risk differently, pessimistic banks are more inclined to withdraw, leaving a more homogeneous and optimistic group of lenders behind. Over time, this sorting process reduces within-syndicate heterogeneity and likely facilitates smoother coordination in subsequent renegotiations.

6.2. Fundamental Shocks, Lender Disagreement, and Amendments

Next, we test whether within-syndicate disagreement constrains the syndicate's ability to amend loan contracts following shifts in borrower fundamentals. Both borrower rating changes and changes in operating performance provide natural settings in which the incentive to renegotiate terms is heightened, either because improving conditions lead borrowers to request more favorable terms or deteriorating conditions prompt lenders to tighten covenants or seek additional protections. We therefore treat these events as measures of fundamental shocks that increase the expected probability of contract renegotiation.

We estimate the following linear probability model at the loan–quarter level:

$$\begin{aligned} Amendment_{lt+1} = & \beta_1 Disagreement_{lt} + \beta_2 Shock_{lt} + \\ & \beta_3 \left(Disagreement_{lt} \times Shock_{lt} \right) + X_{lt}\Gamma + \gamma_t + \gamma_b + \varepsilon_{lt}, \end{aligned} \tag{4}$$

where the dependent variable, $Amendment_{t+1}$, equals one if the loan l in quarter t is renegotiated in the following quarter $(t+1)$ and zero otherwise. *Disagreement* is measured using either *Max–Min PD* or *Max–Min PD (No Lead)*, the range between the highest and lowest internal PDs across syndicate members. *Shock* captures exogenous shifts in borrower fundamentals and is measured in three ways: (i) an indicator for any internal borrower risk rating change (including rating upgrades and downgrades), (ii) the year-over-year change in industry-level ROA (ΔROA), and (iii) the absolute value of that change ($|\Delta ROA|$), which captures the magnitude of both positive and negative performance shocks. X_{lt} includes loan and borrower characteristics following prior

analyses. All specifications include year–quarter fixed effects (γ_t) and borrower-rating fixed effects (γ_b), and standard errors are clustered at the loan level.

Table 7 presents the results. Across nearly all specifications, the coefficient on *Disagreement* × *Shock* is negative and statistically significant, indicating that when the borrower's fundamentals change, whether improving or deteriorating, loan syndicates marked by greater internal disagreement are less able to act in the subsequent quarter. Intuitively, this finding captures the idea that heterogeneity among lenders creates collective-action frictions. In syndicates where member banks hold different risk assessments (high *Max–Min PD*), each creditor may have its own view of how urgent or necessary a contract amendment is. When fundamentals deteriorate, some lenders may push for tighter covenants or collateral, while others, believing the borrower remains in good financial condition, prefer to maintain existing terms to avoid jeopardizing the relationship. Conversely, when fundamentals improve, more optimistic lenders may favor relaxing covenants or repricing downward, while more conservative members resist concessions. The greater the dispersion in beliefs, the harder it becomes to reach the unanimous consent typically required for amendments in syndicated loans.

Taken altogether, these results demonstrate that disagreement not only increases ex-ante contracting frictions but also generates persistent ex-post coordination costs.

6.3. Loan Amendments and the Resolution of Bank Disagreements

We next analyze how disagreement evolves following amendments to assess whether renegotiations help resolve coordination frictions within lending syndicates. Theoretical models suggest that amendments serve as coordination mechanisms through which lenders share information, update beliefs, and realign their credit assessments (Aghion and Bolton, 1992). If so, disagreement should decline in the quarters following a successful amendment, as syndicate members converge on a common view of borrower creditworthiness.

Descriptively, Figures 2A and 2B reveal a clear and systematic pattern in lender disagreement

around loan amendments. In the periods leading up to amendments, both average default risk and dispersion in lenders' PD estimates rise sharply, consistent with deteriorating borrower fundamentals that heighten uncertainty and exacerbate coordination frictions among syndicate members. As firm conditions worsen, lenders not only reassess risk upward but also diverge more in their views about the severity and implications of that risk. Following an amendment, however, disagreement declines even though average default risk remains elevated. This pattern suggests that the amendment process itself (through information sharing, negotiation, and the formal resolution of contractual terms) helps align lenders' beliefs, reducing heterogeneity in risk assessments without immediately improving the borrower's underlying credit quality.

In additional tests, we estimate the following regression model at the loan–quarter level:

$$Disagreement_{lt} = \beta\, Quarters\ After\ Amend_{lt} + X_{lt}\Gamma + \gamma_t + \gamma_b + \varepsilon_{lt}, \tag{5}$$

where the dependent variable, *Disagreement*, is measured using either *Max–Min PD* or *Max-Min PD (No Lead)*, defined as the range between the highest and lowest internal PD estimates across syndicate members for the same borrower and loan. The key independent variable, *Quarters After Amend*, captures the number of quarters since the amendment, taking zero during the quarter of the amendment. We restrict the sample to loan-quarter observations that take place exactly during an amendment or the one to three quarters immediately following one, which effectively imposes a within-loan design. Due to this sample restriction, *Quarters After Amend* can take values equal to 0, 1, 2, or 3. The vector X_{lt} includes the same loan and borrower controls used in prior analyses, and all specifications include year–quarter and borrower-rating fixed effects with standard errors clustered at the loan level.

Table 8 presents regression results that complement the descriptive patterns shown in Figures 2A and 2B. Each column corresponds to a different post-amendment window, with the number of quarters in each sample indicated at the top of the table. Except for column (4), the coefficient on

Quarters After Amend is negative and statistically significant, which is generally strong evidence that lender disagreement systematically declines in the periods following a loan amendment. Economically, this result implies that, conditional on elevated credit risk, the amendment process itself contributes to reducing heterogeneity in lenders' risk assessments. Renegotiations require syndicate members to exchange information, update expectations, and agree on revised contractual terms, which appears to promote belief convergence. The magnitude and persistence of the estimated decline suggest that amendments function as effective coordination mechanisms rather than merely reflecting short-lived adjustments or mechanical changes in syndicate composition.

Overall, these results indicate that lender disagreement acts as a friction that reduces the likelihood of renegotiation, but that when amendments do occur, they serve as an effective mechanism for resolving those frictions by facilitating information sharing and aligning lenders' credit-risk assessments.

7. Robustness

7.1. Future Credit Risk

A natural alternative interpretation of our findings is that lender disagreement reflects differential foresight about future borrower deterioration rather than coordination frictions. In this view, banks assigning higher internal PDs may simply be more accurate in anticipating subsequent increases in credit risk, implying that disagreement captures genuine heterogeneity in borrower fundamentals rather than inefficiencies in aggregating information within the syndicate. To assess this possibility, we examine whether disagreement predicts (1) subsequent changes in the syndicate's average assessment of borrower credit risk and (2) realized loan default. By testing these implications, we evaluate whether disagreement primarily reflects the superior forecasting ability of some banks in the syndicate or instead operates through coordination frictions.

We first estimate the following regression model at the loan origination level:

$$\Delta Avg\,PD_l = \beta\, Disagreement_l + X_l\Gamma + \gamma_t + \varepsilon_l, \tag{6}$$

where the dependent variable, $\Delta Avg\,PD$, is the change in the syndicate's average internal PD over the next $k \in \{1,2,3,4\}$ years from origination for loan l. The variable *Disagreement* is measured using *Max–Min PD* and *Max–Min PD (No Lead)* at origination. The control vector X_i includes borrower and loan characteristics consistent with prior specifications, and all models include year–quarter of origination fixed effects with standard errors clustered at the loan level.

Table 9 reports the results. Across all horizons, the coefficient on *Disagreement* is negative and statistically significant for the one-, two-, and three-year windows, indicating that higher disagreement at origination does not predict subsequent deterioration in borrower credit quality. If anything, loans characterized by greater initial disagreement experience smaller increases (or larger declines) in the syndicate's average PD over subsequent years. This pattern runs counter to an informed-pessimism interpretation, under which disagreement would be expected to precede worsening fundamentals. Instead, the results suggest that disagreement reflects differences in beliefs rather than superior forecasting ability, and that lenders with more conservative assessments are not systematically more accurate in predicting future credit risk. Taken together, these findings support our interpretation of disagreement as a coordination friction rather than a proxy for unobserved borrower risk.

While the preceding analysis shows that disagreement does not forecast subsequent increases in lenders' average assessments of borrower credit risk, it remains possible that disagreement predicts adverse realized outcomes that are not fully captured by banks' subsequent PD revisions. To further examine this possibility, we test whether disagreement at origination is associated with future

realized loan defaults by estimating the following regression model at the loan origination level:

$$\mathbb{1}\{Default_l\} = \beta\, Disagreement_l + X_l\Gamma + \gamma_t + \varepsilon_l, \tag{7}$$

where the dependent variable, $\mathbb{1}\{Default_l\}$, is an indicator for whether the borrower defaults within the lifetime of the loan or within $k \in \{1,2,4\}$ years from origination for loan l. The variable *Disagreement* is again measured using *Max–Min PD* and *Max–Min PD (No Lead)* at origination. The control vector X_l again includes borrower and loan characteristics consistent with prior specifications, and all models include year–quarter of origination fixed effects with standard errors clustered at the loan level.

Table 10 reports the results. Across all horizons, the coefficient on *Disagreement* is statistically insignificant, with the exception of column (2), which shows a weakly significant negative association. Overall, these estimates indicate that higher disagreement at origination does not predict a greater likelihood of realized loan default. If anything, the point estimates suggest the opposite. When combined with the evidence in Tables 9 and 10, these findings are difficult to reconcile with an informed-pessimism interpretation in which disagreement reflects superior foresight about future borrower deterioration. Instead, taken together, the results support our interpretation of disagreement as reflecting belief heterogeneity and coordination frictions among lenders rather than unobserved differences in underlying borrower fundamentals.

7.2. Through-the-Cycle vs. Point-in-Time Rating Methodologies

A potential concern with our interpretation is that observed PD dispersion may reflect differences in banks' internal rating philosophies rather than heterogeneous interpretations of borrower creditworthiness. Specifically, banks vary in whether they adopt a through-the-cycle (TTC) or point-in-time (PIT) approach to credit risk assessment. TTC banks estimate PDs that remain relatively stable across macroeconomic cycles, smoothing through transitory shocks to capture long-run

default probabilities. In contrast, PIT banks adjust their PDs more aggressively in response to current macroeconomic conditions and near-term information. These differences in rating philosophy are well-documented in regulatory guidance and can generate persistent dispersion in PD estimates even when banks observe identical borrower information.

If our disagreement measure primarily captures TTC vs. PIT heterogeneity rather than coordination frictions, this would have important implications for our results. First, syndicates mixing TTC and PIT lenders would mechanically exhibit wider PD dispersion during stressed periods, when PIT banks' estimates rise sharply while TTC banks' estimates remain relatively flat. Because loan spreads, contract terms, and renegotiation activity also vary with macroeconomic conditions, the observed associations between disagreement and these outcomes could reflect cyclical patterns rather than coordination costs. Second, around fundamental shocks to borrower creditworthiness, PIT lenders may update their assessments more rapidly than TTC lenders, creating temporary dispersion precisely when amendments are most likely, even if coordination itself is unimpaired.

We address this concern through two complementary empirical approaches. First, we construct bank-specific measures of PD cyclical sensitivity using each bank's complete FR Y-14Q C&I portfolio. For each bank independently, we (1) estimate the responsiveness of borrower-level PDs to three macroeconomic indicators, including the Federal Funds rate, the VIX, and the unemployment rate, and (2) use borrower fixed effects to absorb time-invariant differences in credit quality. We measure sensitivity using the current quarter level, the lagged level, and the quarter-over-quarter change for each indicator, yielding nine bank-specific "beta" coefficients that capture each institution's degree of PIT methodology. Banks with higher positive betas exhibit greater PD cyclicality and thus operate closer to a PIT philosophy. We then aggregate these bank-level measures to the syndicate level, computing the average sensitivity, standard deviation, and range (max–min) across syndicate members. If TTC/PIT differences drive our results, controlling for syndicate-level variation in rating cyclicality should substantially attenuate our disagreement coefficients.

Across all specifications, including controls for the average, dispersion, and range of bank-level

cyclical sensitivities, leaves our core findings unchanged. The coefficient on disagreement in the spread regression remains positive, statistically significant, and economically similar in magnitude. This pattern holds regardless of which macroeconomic indicator we use to measure PD sensitivity or whether we control for the level, lag, or change in that sensitivity. These results indicate that our disagreement measure captures variation in lenders' credit assessments beyond systematic differences in rating cyclicality.

Second, we test whether the effects of disagreement are concentrated in periods of macroeconomic stress, when TTC and PIT rating philosophies would diverge most sharply. We interact our disagreement measure with indicators for high-stress quarters, defined as periods in the top 10% or top 25% of changes in the Federal Funds rate, VIX, or unemployment rate. If TTC/PIT heterogeneity drives our pricing results, the disagreement premium should be significantly larger during stressed periods when PIT banks' PDs spike relative to TTC banks. However, we find that interactions are uniformly small and statistically insignificant. The main effect of disagreement on loan spreads is stable across both calm and stressed macroeconomic environments, further supporting our interpretation that dispersion reflects persistent differences in how banks assess borrower-specific risk rather than mechanical differences in rating cyclicality.

Taken together, these tests provide strong evidence that our disagreement measure captures genuine heterogeneity in lenders' credit-risk assessments rather than differences in rating philosophy. While banks certainly vary in their sensitivity to macroeconomic conditions, this variation does not explain the pricing premium, contractual patterns, or renegotiation frictions we document. Instead, our results reflect coordination costs that arise when syndicate members interpret the same borrower information differently, consistent with our core interpretation that belief dispersion creates inefficiencies in debt contracting.

8. Conclusion

This study investigates how disagreement among lenders shapes the structure and dynamics of syndicated lending. Drawing on confidential supervisory data from the Federal Reserve's stress testing program, we construct direct measures of belief dispersion based on variation in banks' internal probability-of-default (PD) estimates for the same borrower. We show that disagreement arises systematically with observable loan and borrower characteristics and has meaningful consequences for both contract design and syndicate behavior. Loans characterized by greater lender disagreement carry higher spreads at origination, exhibit higher rates of lender withdrawal, and are less likely to be renegotiated when borrower conditions change. Moreover, disagreement declines after renegotiation, suggesting that amendments serve as coordination mechanisms through which lenders can reconcile different risk assessments.

Our results contribute to a growing literature on information frictions in credit markets by providing the first direct evidence on the consequences of within-syndicate belief heterogeneity. Unlike prior studies that infer informational asymmetries from syndicate structure or pricing patterns, we observe lenders' internal assessments of borrower credit risk and isolate the effects of belief dispersion from those of underlying fundamentals. In doing so, we show that disagreement itself represents an independent and meaningful source of coordination costs in syndicated lending.

Future research could extend these findings along several dimensions. A first avenue is to examine how persistent within-syndicate disagreement may affect borrowers' activities. For example, do firms whose lenders hold more dispersed risk assessments exhibit greater investment conservatism, higher precautionary cash holdings, or delayed adjustment to new information? Such analysis would clarify whether coordination frictions in credit markets translate into under-investment or inefficient capital allocation at the firm level. A second avenue of future work could explore how disagreement may shape information flows and borrower disclosure incentives, both toward lenders and to external capital markets, as borrowers may strategically adjust transparency when faced

with divided creditors. A third direction is to investigate the contractual and institutional design features that may mitigate the costs of dispersed lender beliefs. Finally, the dynamics we document raise broader implications for systemic and macro-financial stability. In periods of heightened macroeconomic or policy uncertainty when banks' models and forecasts diverge most, collective lender inaction could amplify credit rigidity and propagate distress across interconnected institutions. Future work integrating measures of belief dispersion into models of credit supply cyclicality or financial network resilience (e.g., Acharya et al., 2013) could help assess the aggregate significance of these coordination frictions.

Declaration of Generative AI and AI-Assisted Technologies in the Manuscript Preparation Process

During the preparation of this work the authors used Claude and ChatGPT in order to assist with copyediting and programming code development. After using these tools, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

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A. Variable definitions

Variable	Definition	Source
Max-Min PD	The difference between the maximum and minimum value of a loan's PD at a given point in time (for loans with at least two bank lenders) in percentage points	FR Y-14Q, Schedule H.1 and authors calculations
Max-Min PD (No Lead)	The difference between the maximum and minimum value of a loan's PD—now excluding the lead arranger's PD—at a given point in time (for loans with at least two bank lenders) in percentage points	FR Y-14Q, Schedule H.1 and authors calculations
PD Diff	The difference between the syndicate bank's PD estimate and the average PD estimate across all syndicated banks in percentage points	FR Y-14Q, Schedule H.1 and authors calculations
ln(Total Exposure)	Loan size measured as the natural logarithm of the loan amount	Dealscan
Maturity	Loan maturity (in years)	FR Y-14Q, Schedule H.1
Private	An indicator variable which is equal to one if a borrower is a private firm and zero otherwise	FR Y-14Q, Schedule H.1 and authors calculations
N Lender	The number of lenders for which there is a PD estimate for the syndicated loan	FR Y-14Q, Schedule H1 and authors calculations
ROA	The ratio of the borrower's net operating income to total assets	FR Y-14Q, Schedule H.1 and authors calculations
Size	The natural logarithm of the borrower's total assets	FR Y-14Q, Schedule H.1 and authors calculations
Leverage	The ratio of the borrower's total debt to total assets	FR Y-14Q, Schedule H.1 and authors calculations
Industry Return Volatility	The standard deviation of the firm's industry's daily stock returns across one quarter (lagged by one year), aggregated to either the three- or four-digit NAICS.	CRSP Daily Stock File and authors calculations
High Share	An indicator variable which takes the value of one if the lead arranger has the highest exposure to a given loan in a syndicate and zero otherwise	FR Y-14Q, Schedule H.1 and authors calculations
Lead Above	An indicator variable which takes the value of one if the lead arranger's PD for a given loan is above the median PD of the syndicate and zero otherwise	FR Y-14Q, Schedule H.1 and authors calculations
Borrower Rating	The minimum of the banks' internal risk rating of the borrower (where each banks' internal risk rating system has been mapped to a unified system)	FR Y-14Q, Schedule H.1
ln(Interest Rate Spread)	Interest rate spread for the syndicated loan	Dealscan
Number of Financial Covenants	The number of financial covenants for the syndicated loan	Dealscan
Performance Pricing	An indicator variable equal to one if the syndicated loan has a performance pricing provision and zero otherwise	Dealscan
Bank Exits Within n Qtrs	An indicator equal to one if the bank in quarter t leaves the loan syndicate in the next n quarters and zero otherwise	FR Y-14Q, Schedule H.1 and authors calculations
Rating Change	An indicator equal to one if the borrower rating changes from one year prior	FR Y-14Q, Schedule H.1 and authors calculations
ΔROA	The year-over-year change in ROA for the borrower's industry (3 digit NAICS)	FR Y-14Q, Schedule H.1 and authors calculations
$\lvert\Delta ROA\rvert$	The absolute year-over-year change in ROA for the borrower's industry (3 digit NAICS)	FR Y-14Q, Schedule H.1 and authors calculations
$Amendment_{t+1}$	An indicator equal to one if the loan is renegotiated in the next quarter and zero otherwise	FR Y-14Q, Schedule H.1 and authors calculations
Quarters After Amend	The number of quarters since an amendment, which equals 0 if the quarter observed is an amendment quarter	FR Y-14Q, Schedule H.1 and authors calculations
Δ *Avg PD in n Years*	The difference between the syndicate's average internal PD n years from origination and the syndicate's average internal PD at origination	FR Y-14Q, Schedule H.1 and authors calculations
Default within n years	An indicator equal to one if the lead arranger reports the loan as 90 days past due, reports nonzero charge-offs, or reports a non-accrual date once n years after origination and zero otherwise	FR Y-14Q, Schedule H.1 and authors calculations

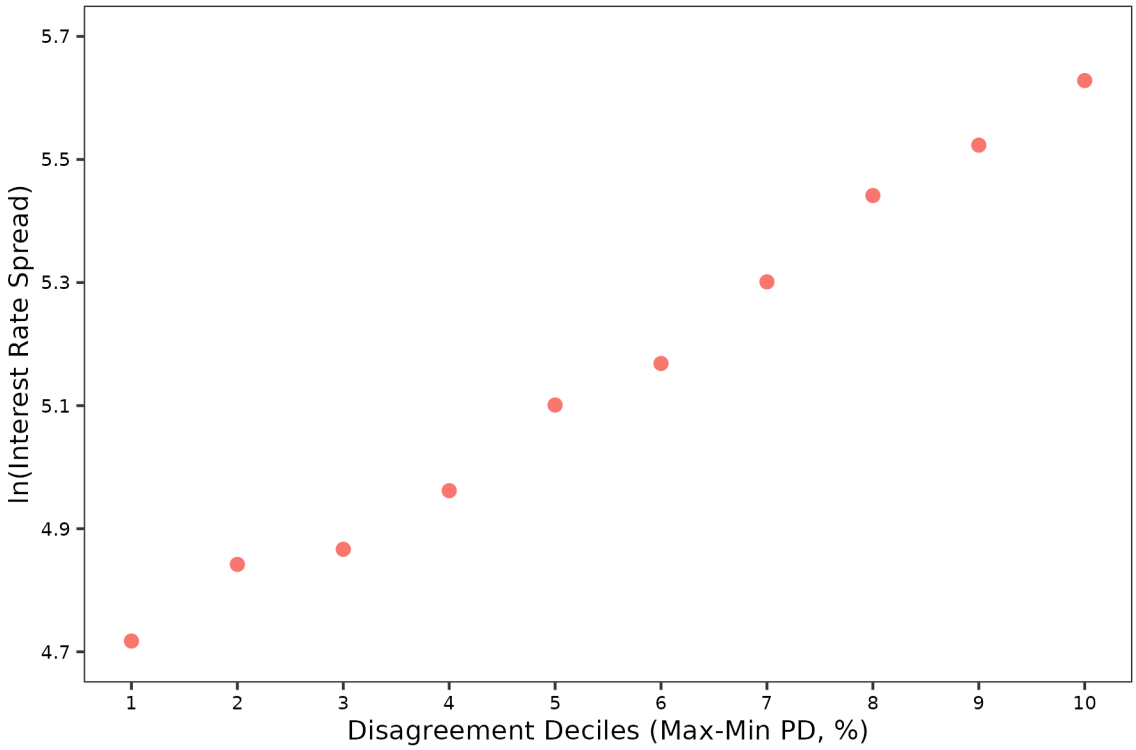
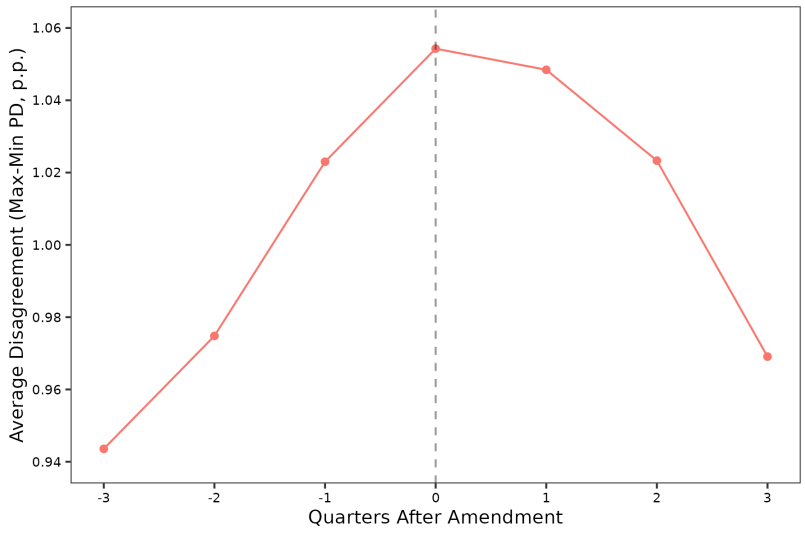
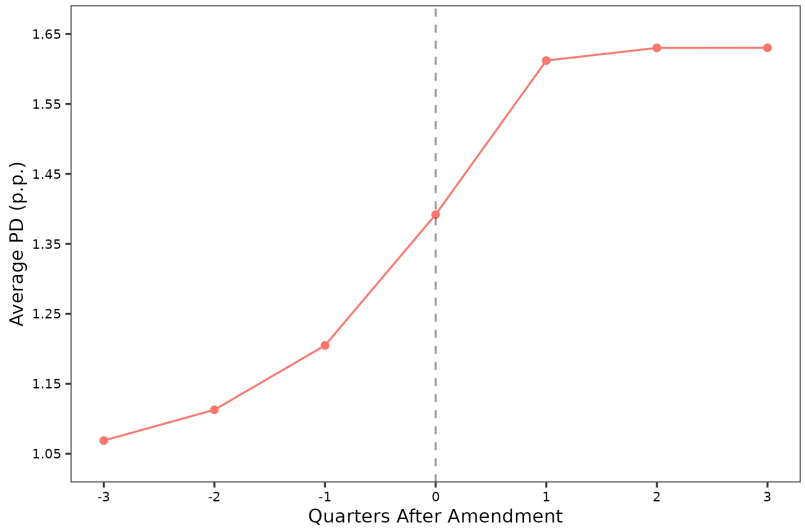


Figure 1: Average Spread (logged) across Disagreement Quantiles

This figure plots the average logged interest rate spread across each decile of our measure of disagreement, *Max-Min PD*. The analysis is conducted at the loan origination level. We take the logged interest rate spread to be the natural logarithm of the all-in-drawn spread from Dealscan. We take quantiles of *Max-Min PD*, which measures lender disagreement by taking the range between the highest and lowest probability of default (PD) estimates among syndicate members. All continuous variables are winsorized at the 1% and 99% levels and are defined in Appendix A.



(A) Disagreement around Amendments



(B) Credit Risk Assessment around Amendments

Figure 2: Disagreement and Credit Risk Assessment around Amendments

Panel A plots the average level of disagreement around the quarters before, during, and after an amendment. Panel B plots the average credit risk assessment of the borrower around the quarters before, during, and after an amendment. The analysis is conducted at the loan-time level. Our measure of disagreement is *Max-Min PD* which measures lender disagreement by taking the range between the highest and lowest probability of default (PD) estimates among syndicate members. We measure the average credit risk assessment as the average probability of default (PD) estimate across syndicate members. We define an amendment in Y-14 as a change in the origination date or renewal date as consistent with the reporting form. All continuous variables are winsorized at the 1% and 99% levels and are defined in Appendix A.

Table 1: Sample and Descriptive Statistics

This table presents our sample construction in Panel A and the summary statistics for variables used for the analyses in the paper in Panel B. Note that for Panel A, we conduct the matching process with data starting in 2012:Q1, but restrict the sample in the main analysis to after 2014:Q4 due to PDs being largely unpopulated prior to then. Descriptive statistics are calculated whenever there are non-missing data available. The sample descriptives are at the loan origination level. All continuous variables are winsorized at the 1% and 99% levels and are defined in Appendix A.

Panel A: Sample Construction

Description	Number of observations
Matching Sample	
Starting sample of FR Y-14Q, Schedule H.1 (2012:Q1-2025:Q2)	19,365,017
Starting sample of LPC Dealscan (2012:Q1-2025:Q2)	1,306,188
Name-matched sample of Dealscan - FR Y-14Q	8,758,009
Filtered match sample of Dealscan - FR Y-14Q	1,039,369
Panel Level Collapsing	
Starting sample	1,039,369
Filter where # of Lenders reporting PDs >= 2	830,897
Collapse to Syndicate × BHC × Year-Quarter level	628,929
Collapse to Syndicate × Year-Quarter level	153,404
Filter where Max-Min PD <= 10%	146,178
Filter to originations	7,034

Panel B: Descriptive Statistics (at Origination)

	N	Mean	SD	P25	P50	P75
Max-Min PD	7034	1.06	1.39	0.18	0.51	1.33
Max-Min PD (No Lead)	4292	0.84	1.22	0.13	0.40	0.99
Lead Arranger's PD	5593	1.09	3.32	0.16	0.45	1.10
Avg PD	7034	1.03	1.22	0.23	0.57	1.32
Borrower Rating	7034	6.02	1.10	5.00	6.00	7.00
ln(Total Exposure)	7034	5.61	1.54	4.61	5.70	6.62
Interest Rate Spread	5688	202.84	109.06	125.00	175.00	250.00
Maturity	7034	4.02	1.27	3.20	4.74	4.90
N Lender	7034	3.73	2.19	2.00	3.00	5.00
N Lender (Dealscan)	7034	9.70	7.36	4.00	8.00	13.00
ROA	5453	0.10	0.13	0.04	0.07	0.13
Borrower Size	5594	20.29	4.07	19.26	20.81	22.44
Leverage	5400	0.35	0.24	0.18	0.31	0.47
Private	7034	0.47	0.50	0.00	0.00	1.00
Industry Return Volatility	7034	0.91	0.51	0.61	0.80	1.04
High Share	6567	0.85	0.36	1.00	1.00	1.00
Lead Arranger's Share	6567	0.28	0.83	0.10	0.18	0.32
Lead Above	6392	0.54	0.50	0.00	1.00	1.00

Table 2: Determinants of Bank Disagreement

This table presents regression results examining the determinants of lender disagreement in syndicated loans. The analysis is conducted at the loan origination level. The dependent variable is our disagreement measure, *Max-Min PD* or *Max-Min PD (No Lead)*, which measures the extent of disagreement among syndicate members regarding borrower credit risk. *Max-Min PD* captures the range between the highest and lowest probability of default (PD) estimates among syndicate members. *Max-Min PD (No Lead)* is formulated similarly but excludes the lead arranger's PD estimate from the computation set. Columns (1) and (3) analyze loan-level general determinants of lender disagreement, while columns (2) and (4) explore the role of borrower fundamentals and syndicate characteristics. Loan and borrower characteristics are included as independent variables. All regressions include year-quarter and borrower rating fixed effects. Standard errors are clustered at the loan level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All continuous variables are winsorized at the 1% and 99% levels and are defined in Appendix A.

Dep Var:	Max-Min PD		Max-Min PD (No Lead)	
	(1)	(2)	(3)	(4)
ln(Total Exposure)	0.037***	0.063***	0.027**	0.029
	(4.03)	(4.34)	(2.28)	(1.62)
Maturity	-0.010	0.011	0.014	0.049***
	(-1.02)	(0.87)	(1.13)	(3.41)
Private	0.044	0.024	0.024	0.010
	(1.49)	(0.59)	(0.63)	(0.21)
N Lender	0.049***	0.049***	0.066***	0.089***
	(8.53)	(6.80)	(9.46)	(10.73)
Industry Return Volatility	-0.879	3.212	4.020	5.038
	(-0.31)	(1.13)	(1.13)	(1.20)
ROA		-0.533***		-0.513***
		(-4.48)		(-3.06)
Borrower Size		-0.034***		-0.023**
		(-3.78)		(-2.22)
Leverage		0.289***		0.306***
		(3.88)		(3.19)
High Share		0.024		-0.026
		(0.70)		(-0.69)
Lead Above		0.030		-0.231***
		(1.03)		(-6.95)
Year-Quarter FE	Yes	Yes	Yes	Yes
Borrower Rating FE	Yes	Yes	Yes	Yes
R^2	0.519	0.524	0.443	0.448
N	7,034	4,968	4,292	3,242

Table 3: Bank Disagreement and Interest Rates

This table presents regression results examining the relationship between lender disagreement and syndicated loan interest rate spreads. The analysis is conducted at the loan origination level. The dependent variable is *ln(Spread)*, which captures the natural logarithm of the loan's interest rate spread. *Max-Min PD* measures lender disagreement, which represents the range between the highest and lowest probability of default (PD) estimates among syndicate members. *Max-Min PD (No Lead)* is formulated similarly but excludes the lead arranger's PD estimate from the computation set. Loan and borrower characteristics are included as controls. All regressions include year-quarter and borrower rating fixed effects. Standard errors are clustered at the loan level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All continuous variables are winsorized at the 1% and 99% levels and are defined in Appendix A.

Dep Var:	ln(Spread)			
	(1)	(2)	(3)	(4)
Max-Min PD	0.036***	0.034***		
	(6.72)	(5.64)		
Max-Min PD (No Lead)			0.038***	0.031***
			(6.22)	(4.54)
ln(Total Exposure)	-0.073***	-0.070***	-0.070***	-0.067***
	(-17.35)	(-14.39)	(-13.73)	(-11.95)
Maturity	0.040***	0.042***	0.018***	0.030***
	(8.57)	(7.97)	(3.22)	(5.05)
Private	0.108***	0.068***	0.104***	0.076***
	(8.99)	(5.01)	(7.68)	(5.07)
N Lender	-0.018***	-0.017***	-0.015***	-0.013***
	(-8.48)	(-7.40)	(-6.57)	(-4.78)
Industry Return Volatility	0.195	0.085	-1.549	-0.923
	(0.22)	(0.09)	(-1.37)	(-0.82)
ROA		-0.081		-0.045
		(-1.54)		(-0.93)
Borrower Size		-0.010***		-0.009***
		(-3.75)		(-3.34)
Leverage		0.233***		0.210***
		(9.89)		(7.74)
High Share		-0.019		-0.007
		(-1.54)		(-0.56)
Lead Above		0.029***		0.021*
		(2.99)		(1.88)
Year-Quarter FE	Yes	Yes	Yes	Yes
Borrower Rating FE	Yes	Yes	Yes	Yes
R^2	0.557	0.607	0.574	0.631
N	5,688	4,369	3,708	2,954

Table 4: Bank Disagreement and Contractual Terms

This table presents regression results examining the relationship between lender disagreement and two contractual features of syndicated loans: financial covenants and performance-based pricing. The analysis is conducted at the loan origination level. The dependent variable in columns (1) and (2) is the *Number of Financial Covenants*, which captures the total count of financial covenants in the loan agreement. In columns (3) and (4), the dependent variable is *Performance Pricing*, an indicator equal to one if the loan includes a pricing provision that adjusts the interest rate based on the borrower's performance and zero otherwise. *Max-Min PD* measures lender disagreement, which represents the range between the highest and lowest probability of default (PD) estimates among syndicate members. *Max-Min PD (No Lead)* is formulated similarly but excludes the lead arranger's PD estimate from the computation set. Loan and borrower characteristics are included as controls. All regressions include year-quarter and borrower rating fixed effects. Standard errors are clustered at the loan level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All continuous variables are winsorized at the 1% and 99% levels and are defined in Appendix A.

Dep Var:	Number of Financial Covenants		$\mathbb{1}\{$Performance Pricing$\}$	
	(1)	(2)	(3)	(4)
Max-Min PD	-0.010		-0.018***	
	(-1.09)		(-4.50)	
Max-Min PD (No Lead)		-0.011		-0.011*
		(-0.80)		(-1.85)
ln(Total Exposure)	-0.004	-0.010	0.022***	0.026***
	(-0.50)	(-0.80)	(4.67)	(3.83)
Maturity	0.009	0.019	-0.003	-0.008
	(1.05)	(1.61)	(-0.64)	(-1.18)
Private	-0.511***	-0.560***	-0.201***	-0.228***
	(-20.04)	(-16.93)	(-17.95)	(-15.77)
N Lender	0.041***	0.037***	0.024***	0.021***
	(6.98)	(4.68)	(8.08)	(5.25)
Industry Return Volatility	-2.221**	-4.215**	-1.738**	-1.884**
	(-2.57)	(-2.50)	(-2.37)	(-2.35)
ROA	-0.083	-0.046	0.094***	0.138***
	(-1.47)	(-0.52)	(2.79)	(2.85)
Borrower Size	-0.018***	-0.021***	-0.001	0.001
	(-3.51)	(-2.80)	(-0.37)	(0.32)
Leverage	0.030	0.096*	-0.003	-0.008
	(0.88)	(1.74)	(-0.17)	(-0.29)
High Share	0.012	-0.012	0.004	-0.008
	(0.44)	(-0.34)	(0.28)	(-0.44)
Lead Above	0.001	0.021	0.020**	0.029**
	(0.06)	(0.76)	(2.08)	(2.11)
Year-Quarter FE	Yes	Yes	Yes	Yes
Borrower Rating FE	Yes	Yes	Yes	Yes
R^2	0.206	0.208	0.266	0.278
N	4,968	3,242	4,968	3,242

Table 5: Cross-Sectional Validation: Information Asymmetry and Lead Arranger Effects

This table presents regression results examining the relationship between lender disagreement, borrower opacity, syndicated loan characteristics, and syndicated loan interest rate spreads. The analysis is conducted at the loan origination level. The dependent variable is *ln(Spread)*, which captures the natural logarithm of the loan's interest rate spread. *Max-Min PD* measures lender disagreement, which represents the range between the highest and lowest probability of default (PD) estimates among syndicate members. *Max-Min PD (No Lead)* is formulated similarly but excludes the lead arranger's PD estimate from the computation set. Columns (1) and (4) examine the interactions of lender disagreement with *Private*, an indicator equal to one if the borrower is a private firm. Columns (2) and (5) examine the interactions of lender disagreement with lead arrangers' share on loan pricing, while columns (3) and (6) explore interactions with the lead arrangers private PD assessment relative to those of the rest of the syndicate. *High Share* is an indicator equal to one if the lead arranger holds the highest loan exposure in the syndicate, and *Lead Above* is an indicator equal to one if the lead arranger's PD estimate is higher than the syndicate median. Loan and borrower characteristics are included as controls. All regressions include year-quarter and borrower rating fixed effects. Standard errors are clustered at the loan level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All continuous variables are winsorized at the 1% and 99% levels and are defined in Appendix A.

Dep Var:	ln(Spread)					
	Max-Min PD			Max-Min PD (No Lead)		
	(1)	(2)	(3)	(4)	(5)	(6)
Disagreement	0.040***	0.045***	0.036***	0.039***	0.039***	0.035***
	(4.98)	(4.08)	(5.13)	(4.28)	(3.26)	(4.58)
Disagreement × Private	-0.011			-0.015		
	(-1.31)			(-1.42)		
Disagreement × High Share		-0.013			-0.009	
		(-1.16)			(-0.79)	
Disagreement × Lead Above			-0.005			-0.012
			(-0.66)			(-1.14)
Private	0.082***	0.068***	0.068***	0.091***	0.076***	0.076***
	(4.80)	(5.00)	(5.03)	(5.11)	(5.06)	(5.06)
High Share	-0.020	-0.007	-0.019	-0.008	0.001	-0.007
	(-1.58)	(-0.40)	(-1.53)	(-0.59)	(0.03)	(-0.55)
Lead Above	0.030***	0.030***	0.035***	0.021*	0.021*	0.030**
	(3.01)	(3.01)	(2.73)	(1.86)	(1.87)	(2.25)
ln(Total Exposure)	-0.070***	-0.071***	-0.070***	-0.067***	-0.067***	-0.067***
	(-14.30)	(-14.42)	(-14.38)	(-11.92)	(-11.96)	(-11.94)
Maturity	0.042***	0.042***	0.042***	0.030***	0.030***	0.030***
	(7.94)	(7.96)	(8.00)	(5.01)	(5.04)	(5.09)
N Lender	-0.017***	-0.017***	-0.018***	-0.013***	-0.013***	-0.012***
	(-7.39)	(-7.37)	(-7.40)	(-4.80)	(-4.76)	(-4.75)
Industry Return Volatility	0.068	0.079	0.077	-0.985	-0.939	-0.943
	(0.07)	(0.08)	(0.08)	(-0.87)	(-0.84)	(-0.83)
ROA	-0.084	-0.081	-0.082	-0.045	-0.044	-0.046
	(-1.60)	(-1.54)	(-1.55)	(-0.94)	(-0.92)	(-0.95)
Borrower Size	-0.010***	-0.010***	-0.010***	-0.009***	-0.009***	-0.009***
	(-3.78)	(-3.73)	(-3.77)	(-3.36)	(-3.32)	(-3.37)
Leverage	0.234***	0.233***	0.232***	0.211***	0.210***	0.208***
	(9.96)	(9.90)	(9.90)	(7.80)	(7.74)	(7.67)
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Borrower Rating FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.607	0.607	0.607	0.632	0.631	0.632
N	4,369	4,369	4,369	2,954	2,954	2,954

Table 6A: Bank Exits Following Disagreement

This table presents regression results examining the relationship between lender disagreement and the likelihood of a bank in quarter t exiting the syndicate within one to four quarters (i.e., between $t+1$ and $t+4$). The analysis is at the bank-quarter-loan level and includes all quarterly observations for the loan that are available post origination. The dependent variable is an indicator equal to one if a bank exits the syndicate within the number of quarters associated with each column and zero otherwise (*Exit*). *PD Diff* captures the difference between a syndicate bank's probability of default (PD) estimate and the average PD estimate across all lenders in the syndicate. Loan and borrower characteristics are included as controls. Columns (1)-(4) capture bank exit between one to four quarters ($t+1$ to $t+4$) respectively. All regressions include year-quarter, bank, and borrower rating fixed effects. Standard errors are presented in parentheses and clustered at the loan level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All continuous variables are winsorized at the 1% and 99% levels and are defined in Appendix A.

Dep Var:	Bank Exits Within the Next-			
	1 Qtr	2 Qtrs	3 Qtrs	4 Qtrs
	(1)	(2)	(3)	(4)
PD Diff	0.001***	0.001***	0.002***	0.002***
	(3.58)	(4.05)	(4.36)	(4.11)
ln(Total Exposure)	-0.000	-0.001	-0.001	-0.001
	(-0.53)	(-0.89)	(-0.91)	(-0.94)
Maturity	-0.018***	-0.025***	-0.030***	-0.034***
	(-33.93)	(-32.79)	(-31.21)	(-29.75)
Private	-0.007***	-0.008***	-0.010***	-0.010***
	(-5.62)	(-4.88)	(-4.27)	(-3.86)
N Lender	0.003***	0.005***	0.006***	0.008***
	(9.86)	(10.85)	(11.43)	(11.84)
Industry Return Volatility	-0.032	-0.013	0.002	0.000
	(-0.56)	(-0.18)	(0.02)	(0.00)
ROA	0.021***	0.030***	0.035***	0.041***
	(4.47)	(4.35)	(4.00)	(3.78)
Borrower Size	0.002***	0.003***	0.004***	0.005***
	(4.61)	(5.25)	(5.22)	(5.20)
Leverage	-0.004**	-0.005*	-0.007*	-0.009*
	(-2.03)	(-1.78)	(-1.72)	(-1.77)
High Share	-0.006***	-0.005**	-0.003	-0.002
	(-4.65)	(-2.42)	(-1.08)	(-0.71)
Lead Above	0.002*	0.003*	0.004**	0.005**
	(1.91)	(1.85)	(1.96)	(2.13)
Year-Quarter FE	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes
Borrower Rating FE	Yes	Yes	Yes	Yes
R^2	0.0352	0.0481	0.0591	0.0678
N	376,496	376,496	376,496	376,496

Table 6B: Bank Exits Following Disagreement

This table presents results examining the relationship between lender disagreement and the likelihood of a bank exiting using a Cox proportional hazard model. The analysis is at the bank-quarter-loan level, and we define the failure event as the quarter during which a bank exits the syndicate prematurely. *PD Diff* captures the difference between a syndicate bank's probability of default (PD) estimate and the average PD estimate across all lenders in the syndicate. Loan and borrower characteristics are included as controls. Regressions use a combination of bank and borrower rating stratifications, which are listed at the bottom of the table. Standard errors are presented in parentheses and clustered at the loan level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All continuous variables are winsorized at the 1% and 99% levels and are defined in Appendix A.

	Hazard of Bank Exit			
	(1)	(2)	(3)	(4)
PD Diff	1.022***	1.022***	1.032***	1.031***
	(2.65)	(2.65)	(3.28)	(2.80)
ln(Total Exposure)	1.029	1.029	1.021	1.027
	(1.21)	(1.21)	(0.88)	(1.14)
Maturity	0.518***	0.518***	0.510***	0.511***
	(-42.98)	(-42.98)	(-43.52)	(-43.18)
Private	0.519***	0.519***	0.506***	0.521***
	(-10.90)	(-10.90)	(-11.28)	(-10.95)
N Lender	1.081***	1.081***	1.102***	1.079***
	(8.62)	(8.62)	(11.14)	(8.68)
Industry Return Volatility	0.838***	0.838***	0.840***	0.854***
	(-5.28)	(-5.28)	(-5.19)	(-4.71)
ROA	1.484**	1.484**	1.801***	1.773***
	(2.00)	(2.00)	(2.92)	(2.73)
Borrower Size	0.914***	0.914***	0.948***	0.935***
	(-5.79)	(-5.79)	(-3.39)	(-4.18)
Leverage	1.041	1.041	1.021	0.972
	(0.47)	(0.47)	(0.24)	(-0.32)
High Share	0.745***	0.745***	0.741***	0.749***
	(-5.84)	(-5.84)	(-5.88)	(-5.78)
Lead Above	1.018	1.018	1.024	1.019
	(0.43)	(0.43)	(0.56)	(0.44)
Bank Strata	No	Yes	No	Yes
Borrower Rating Strata	No	No	Yes	Yes
N	376,496	376,496	376,496	376,496

Table 7: Amendment-Shock Analysis

This table presents regression results examining the relationship between lender disagreement and the likelihood of a loan amendment. This analysis is conducted at the loan–quarter level, where the loan is aggregated to the syndicate level. The dependent variable is an indicator equal to one if the loan in quarter t undergoes renegotiation in quarter $t+1$ and zero otherwise ($Amendment_{t+1}$). *Disagreement* captures disagreement among syndicate lenders regarding borrower credit risk using our measures, *Max-Min PD* and *Max-Min PD (No Lead)*. *Shock* takes on a different type of shock to borrower conditions by column. In columns (1) and (4), *Shock* reflects $\mathbb{1}$*(Rating Change)*, which is an indicator that takes value one when the borrower has experienced a change in the minimum internal risk ratings across banks compared to one year prior (zero otherwise). In columns (2) and (5), *Shock* reflects ΔROA, which is the year-over-year change in the aggregate ROA for the borrower's industry. In columns (3) and (6), *Shock* reflects $|\Delta ROA|$, which now takes the absolute year-over-year change in the aggregate ROA for the borrower's industry. Loan and borrower characteristics are included as controls. All regressions include year-quarter and borrower rating fixed effects. Standard errors are presented in parentheses and clustered at the loan level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All continuous variables are winsorized at the 1% and 99% levels and are defined in Appendix A.

Dep Var:	Amendment$_{t+1}$					
Disagreement Measure:	Max-Min PD			Max-Min PD (No Lead)		
Shock Type:	$\mathbb{1}$(Rating Change)	Δ ROA	$\lvert\Delta$ ROA$\rvert$	$\mathbb{1}$(Rating Change)	Δ ROA	$\lvert\Delta$ ROA$\rvert$
	(1)	(2)	(3)	(4)	(5)	(6)
Disagreement	0.007***	0.005***	0.006***	0.006**	0.003*	0.006**
	(4.60)	(3.81)	(4.18)	(2.27)	(1.73)	(2.33)
Disagreement × Shock	-0.005***	-0.042**	-0.061**	-0.005*	-0.068**	-0.089*
	(-2.85)	(-2.33)	(-2.02)	(-1.70)	(-2.30)	(-1.83)
Shock	0.010***	0.093**	0.282***	0.012***	0.110**	0.369***
	(3.25)	(2.40)	(4.35)	(2.98)	(2.14)	(4.37)
ln(Total Exposure)	0.016***	0.016***	0.016***	0.019***	0.019***	0.019***
	(10.88)	(10.91)	(10.79)	(9.24)	(9.28)	(9.13)
Maturity	-0.040***	-0.040***	-0.040***	-0.046***	-0.045***	-0.045***
	(-34.16)	(-35.06)	(-35.12)	(-28.43)	(-28.91)	(-28.99)
Private	-0.005	-0.005	-0.005	-0.008	-0.007	-0.008
	(-1.23)	(-1.17)	(-1.23)	(-1.42)	(-1.35)	(-1.43)
N Lender	0.021***	0.021***	0.021***	0.018***	0.018***	0.018***
	(21.44)	(21.38)	(21.54)	(14.45)	(14.42)	(14.59)
Industry Return Volatility	-0.024	0.006	0.000	-0.010	0.036	0.029
	(-0.26)	(0.06)	(0.00)	(-0.08)	(0.28)	(0.22)
ROA	0.026**	0.026*	0.021	0.038**	0.038**	0.030
	(1.99)	(1.96)	(1.58)	(2.07)	(2.06)	(1.63)
Borrower Size	-0.002**	-0.002**	-0.002**	-0.001	-0.001	-0.001
	(-2.09)	(-2.13)	(-2.08)	(-0.65)	(-0.69)	(-0.64)
Leverage	-0.025***	-0.026***	-0.024***	-0.025**	-0.025**	-0.022**
	(-3.72)	(-3.73)	(-3.53)	(-2.50)	(-2.55)	(-2.28)
High Share	-0.008*	-0.007*	-0.008*	-0.007	-0.007	-0.007
	(-1.80)	(-1.77)	(-1.82)	(-1.42)	(-1.40)	(-1.46)
Lead Above	-0.001	-0.001	-0.000	-0.000	-0.000	-0.000
	(-0.19)	(-0.19)	(-0.16)	(-0.08)	(-0.11)	(-0.09)
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Borrower Rating FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0544	0.0543	0.0545	0.0515	0.0514	0.0517
N	103,553	103,545	103,545	67,476	67,468	67,468

Table 8: Post Amendment Disagreement Analysis

This table presents regression results examining the dynamics of disagreement in the quarters immediately after a successful loan amendment. This analysis is conducted at the loan-quarter level, where the loan is aggregated to the syndicate level. The dependent variable is our measure of loan disagreement, *Max-Min PD* or *Max-Min PD (No Lead)*. *Quarters After Amend* captures the number of quarters after an amendment. Loan and borrower characteristics are included as controls. All regressions include year-quarter and borrower rating fixed effects. Standard errors are presented in parentheses and clustered at the loan level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All continuous variables are winsorized at the 1% and 99% levels and are defined in Appendix A.

Dep Var:	Max-Min PD			Max-Min PD (No Lead)		
	0-1 Qtrs After	0-2 Qtrs After	0-3 Qtrs After	0-1 Qtrs After	0-2 Qtrs After	0-3 Qtrs After
	(1)	(2)	(3)	(4)	(5)	(6)
Quarters After Amend	-0.028**	-0.030***	-0.025***	-0.022	-0.024**	-0.017**
	(-2.03)	(-3.51)	(-3.95)	(-1.42)	(-2.55)	(-2.41)
ln(Total Exposure)	0.016	0.014	0.014	0.011	0.013	0.014
	(1.47)	(1.30)	(1.29)	(0.88)	(1.09)	(1.19)
Maturity	-0.050***	-0.049***	-0.048***	-0.030***	-0.029***	-0.030***
	(-5.31)	(-5.36)	(-5.32)	(-2.86)	(-2.88)	(-3.07)
Private	-0.008	-0.022	-0.029	-0.063	-0.060*	-0.064*
	(-0.26)	(-0.73)	(-1.01)	(-1.61)	(-1.65)	(-1.83)
N Lender	0.047***	0.046***	0.046***	0.085***	0.084***	0.085***
	(9.64)	(9.78)	(9.97)	(14.25)	(14.83)	(15.33)
Industry Return Volatility	1.184	1.333	1.626*	1.003	0.674	0.632
	(1.10)	(1.38)	(1.70)	(0.97)	(0.69)	(0.70)
ROA	-0.610***	-0.578***	-0.560***	-0.502***	-0.463***	-0.448***
	(-5.67)	(-5.52)	(-5.44)	(-4.33)	(-4.10)	(-4.02)
Borrower Size	-0.011*	-0.010*	-0.011*	-0.015**	-0.013**	-0.015**
	(-1.77)	(-1.65)	(-1.90)	(-2.22)	(-1.97)	(-2.31)
Leverage	0.281***	0.258***	0.234***	0.256***	0.222***	0.206***
	(4.21)	(4.09)	(3.83)	(3.34)	(3.04)	(2.91)
High Share	0.027	0.031	0.042**	0.028	0.031	0.044*
	(1.20)	(1.47)	(2.01)	(1.14)	(1.34)	(1.91)
Lead Above	0.010	0.017	0.017	-0.229***	-0.230***	-0.229***
	(0.49)	(0.82)	(0.82)	(-9.94)	(-10.54)	(-10.84)
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Borrower Rating FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.575	0.573	0.570	0.482	0.480	0.478
N	21,009	25,689	29,449	15,795	18,915	21,386

Table 9: Disagreement and Future Credit Risk

This table presents regression results examining the relationship between lender disagreement at origination and credit risk assessment of the borrower in the future. The analysis is conducted at the loan origination level. The dependent variable is Δ*Avg PD*, which is the difference between the average internal PD of the borrower after *n* years of origination (denoted at the top of each column) and the average internal PD of the borrower at origination. In other words, Δ*Avg PD* is the change in average PD of the borrower after *n* years. *Max-Min PD* measures lender disagreement at origination, which represents the range between the highest and lowest probability of default (PD) estimates among syndicate members. *Max-Min PD (No Lead)* is formulated similarly but excludes the lead arranger's PD estimate from the computation set. Loan and borrower characteristics are included as controls. All regressions include year-quarter and borrower rating fixed effects. Standard errors are presented in parentheses and clustered at the loan level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All continuous variables are winsorized at the 1% and 99% levels and are defined in Appendix A.

Dep Var:	ΔAvg PD after							
	1 Yr		2 Yrs		3 Yrs		4 Yrs	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Max-Min PD	-0.058***		-0.069*		-0.157***		0.037	
	(-3.78)		(-1.76)		(-2.83)		(0.34)	
Max-Min PD (No Lead)		-0.072***		-0.072*		-0.161***		0.012
		(-3.89)		(-1.91)		(-2.62)		(0.10)
Borrower Rating	-0.029**	-0.027**	-0.117***	-0.082***	-0.288***	-0.216**	-0.237	-0.236
	(-2.29)	(-2.01)	(-3.58)	(-3.24)	(-3.30)	(-2.21)	(-1.57)	(-1.44)
ln(Total Exposure)	-0.045***	-0.033***	-0.076**	-0.026	-0.134**	-0.014	-0.044	0.085
	(-3.69)	(-2.69)	(-2.39)	(-0.91)	(-2.57)	(-0.31)	(-0.56)	(0.99)
Maturity	0.010	0.023**	0.039	0.019	0.095*	0.134**	0.109	0.179**
	(0.77)	(2.09)	(0.99)	(0.76)	(1.65)	(2.54)	(1.29)	(2.32)
Private	0.068**	0.083**	0.080	0.164**	-0.034	0.083	0.069	0.202
	(2.19)	(2.40)	(1.05)	(2.23)	(-0.27)	(0.79)	(0.39)	(1.04)
N Lender	-0.003	-0.000	-0.035***	-0.021*	-0.074***	-0.048***	-0.048*	-0.056**
	(-0.64)	(-0.01)	(-2.89)	(-1.79)	(-3.78)	(-2.80)	(-1.87)	(-1.98)
Industry Return Volatility	0.534	0.481	12.596*	10.365	5.642	10.032	-2.429	7.580
	(0.34)	(0.25)	(1.68)	(1.15)	(0.53)	(0.95)	(-0.16)	(0.46)
ROA	-0.120	0.041	-0.354	-0.330	-0.267	0.058	0.394	1.460
	(-1.12)	(0.31)	(-1.43)	(-1.22)	(-0.83)	(0.14)	(0.43)	(1.24)
Borrower Size	-0.004	-0.004	-0.018	-0.028	0.033	0.011	-0.015	-0.042
	(-0.56)	(-0.65)	(-0.97)	(-1.46)	(1.34)	(0.43)	(-0.26)	(-0.61)
Leverage	-0.012	-0.050	-0.095	0.029	0.143	0.226	0.310	0.168
	(-0.21)	(-0.80)	(-0.65)	(0.23)	(0.64)	(0.97)	(0.75)	(0.33)
High Share	-0.030	-0.018	0.064	0.003	-0.006	0.003	0.062	-0.015
	(-1.03)	(-0.71)	(1.16)	(0.05)	(-0.05)	(0.03)	(0.38)	(-0.09)
Lead Above	0.047*	0.038*	0.167***	0.078	0.138	-0.056	0.064	-0.033
	(1.92)	(1.65)	(2.74)	(1.52)	(1.46)	(-0.64)	(0.43)	(-0.23)
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0545	0.0717	0.0425	0.0480	0.0492	0.0451	0.0483	0.0533
N	4,311	2,924	3,450	2,924	2,566	1,905	1,668	1,280

Table 10: Disagreement and Default

This table presents regression results examining the relationship between lender disagreement at origination and borrower default. The analysis is conducted at the loan origination level. The dependent variable is *Default within n Years*, which is an indicator if the lead arranger has reported the loan as default within *n* years after origination—with *n* denoted at the top of each column. We define the loan as reported as default if the lead reports it 90 days past due, reports nonzero charge-offs, or reports a non-accrual date. *Max-Min PD* measures lender disagreement at origination, which represents the range between the highest and lowest probability of default (PD) estimates among syndicate members. *Max-Min PD (No Lead)* is formulated similarly but excludes the lead arranger's PD estimate from the computation set. Loan and borrower characteristics are included as controls. All regressions include year-quarter and borrower rating fixed effects. Standard errors are presented in parentheses and clustered at the loan level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All continuous variables are winsorized at the 1% and 99% levels. All continuous variables are winsorized at the 1% and 99% levels and are defined in Appendix A.

Dep Var:	Default Within-							
	Lifetime		4 Yrs		2 Yrs		1 Yr	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Max-Min PD	-0.001		-0.001		0.001		0.000	
	(-0.46)		(-1.54)		(0.78)		(0.19)	
Max-Min PD (No Lead)		-0.003*		-0.002		-0.000		-0.001
		(-1.90)		(-1.62)		(-0.37)		(-0.99)
Borrower Rating	-0.006**	-0.007**	-0.001	-0.001	-0.001	-0.000	-0.003	-0.004
	(-2.22)	(-2.12)	(-1.34)	(-1.42)	(-1.04)	(-0.51)	(-1.44)	(-1.38)
ln(Total Exposure)	-0.001	-0.001	-0.000	-0.001	-0.000	-0.000	-0.001	-0.001
	(-0.62)	(-0.44)	(-0.51)	(-0.51)	(-0.39)	(-0.48)	(-1.05)	(-0.77)
Maturity	-0.002	-0.003*	0.001*	0.002*	-0.001	0.001	-0.001	-0.002
	(-1.59)	(-1.68)	(1.66)	(1.72)	(-0.35)	(0.55)	(-0.98)	(-1.09)
Private	0.003	0.006	0.004	0.004	0.003	0.004	0.004	0.007*
	(1.08)	(1.63)	(1.43)	(1.40)	(0.88)	(1.48)	(1.40)	(1.93)
N Lender	0.000	0.001	0.001	0.002	0.001	0.002*	0.001	0.001
	(0.51)	(0.78)	(1.46)	(1.39)	(0.95)	(1.67)	(0.87)	(1.14)
Industry Return Volatility	0.011	-0.061	-0.013	-0.015	0.081	-0.052	0.033	-0.093
	(0.12)	(-0.77)	(-0.67)	(-0.60)	(0.66)	(-1.41)	(0.27)	(-1.16)
ROA	-0.005	-0.004	0.016	0.021	0.002	0.008	-0.003	-0.001
	(-0.79)	(-0.46)	(1.41)	(1.45)	(0.31)	(0.93)	(-0.38)	(-0.16)
Borrower Size	0.001**	0.001*	0.000	0.000	0.000*	0.000	0.001**	0.001*
	(2.56)	(1.89)	(0.47)	(0.24)	(1.79)	(0.43)	(2.44)	(1.84)
Leverage	0.001	0.003	0.012	0.019	0.005	0.009	0.003	0.005
	(0.28)	(0.34)	(1.10)	(1.15)	(0.75)	(0.97)	(0.50)	(0.56)
High Share	-0.002	-0.003	0.003	0.003	0.003	0.002	-0.002	-0.002
	(-0.64)	(-0.75)	(1.36)	(1.38)	(1.28)	(0.81)	(-0.49)	(-0.55)
Lead Above	-0.001	-0.003	-0.003*	-0.004*	0.002	-0.000	0.000	-0.001
	(-0.69)	(-1.48)	(-1.76)	(-1.70)	(0.89)	(-0.10)	(0.08)	(-0.61)
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.0223	0.0318	0.0301	0.0390	0.0187	0.0273	0.0184	0.0242
N	4,991	3,247	1,671	1,280	3,466	2,448	4,330	2,929