

# What's My Share? Information Acquisition by Loan Syndicate Participants

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## **Abstract**

Participant lenders in syndicated loans generally rely on the lead arranger for borrower screening and monitoring because the lead arranger is primarily responsible for interactions with the borrower. This gives rise to both moral hazard and adverse selection concerns. We investigate whether participant lenders independently acquire borrower accounting reports to help mitigate these information frictions. We find that participant lenders' SEC EDGAR searches of borrower filings are positively associated with their shares of the syndicated loan, consistent with mitigation of intra-syndicate information asymmetry. This association is weaker when the lead arranger has a better reputation, when participant lenders have a prior lending relationship with the borrower, and when the borrower's information environment is richer, suggesting information frictions are less acute in such cases. This novel direct evidence enhances our understanding of the role of accounting information in facilitating deal formation in syndicated loan markets.

*Keywords:* moral hazard, adverse selection, syndicated loans, loan participants, EDGAR

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## 1. Introduction

Syndicated loans are an important source of funding for businesses in the economy. In contrast to single-lender loans, syndicated loans are characterized by a lead arranger-participant structure, wherein the lead arranger is primarily responsible for interactions with the borrower. During deal formation, the lead arranger presents borrower information to potential participant lenders in the form of a “confidential information memorandum,” which generally includes a subset of the borrower’s financial information and other details as summarized by the lead arranger. Participant lenders then decide what share of the loan they are willing to accept during the deal formation process. Because of the lead arranger’s preferential access to borrower information, moral hazard and adverse selection concerns arise from the perspective of participant lenders (e.g., Dennis and Mullineaux 2000; Sufi 2007). While some extant studies and practitioner literature presume that participant lenders rely on the loan documentation provided by the lead arranger (e.g., Simons 1993), other studies suggest that participant lenders could mitigate these inherent information frictions by independently acquiring borrowers’ accounting reports to supplement the information they receive from the lead arranger (hereafter referred to as an “independent search” by a participant lender).<sup>1</sup> We are not aware of research that directly investigates this potential mechanism, and accordingly aim to fill this gap in the literature.

In syndicated loans, the lead arranger is primarily responsible for evaluating the borrower’s credit risk during the loan inception phase and monitoring the borrower after loan syndication, while syndicate participants typically maintain an arms-length relationship with the borrower (e.g., Sufi 2007; Ivashina 2009). This structure introduces information asymmetry between the lead

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<sup>1</sup> We use the term “accounting report” to refer broadly to any publicly disclosed report that is required by the SEC (e.g., 10-K, 10-Q, 8-K). We also use the terms “participant,” “participant lender,” and “participant bank” interchangeably to refer to syndicate participants that are not classified as lead arrangers.

arranger and syndicate participants at loan inception, which takes two forms.<sup>2</sup> Moral hazard arises because due diligence to evaluate borrower credit risk requires costly effort by the lead arranger (which is unobservable by syndicate participants), and the lead arranger does not bear the full cost of shirking since syndicate participants will share the cost of bad loans. There is also an adverse selection problem, because the lead bank generally has more information about the borrower, and therefore has the incentive to distribute a larger share of low-quality loans to syndicate participants.

Syndicate participants mitigate the effects of these information asymmetries by forcing lead arrangers to retain a larger share of syndicated loans, which reduces lead arrangers' incentives to shirk during due diligence and to originate low-quality loans (e.g., Sufi 2007). However, forcing the lead arranger to hold a larger share of the loan increases its portfolio risk, which leads to a higher interest rate demanded from the borrower (Ivashina 2009). Further, forcing the lead arranger to retain a higher loan share likely results in more concentrated syndicates because some candidate participant lenders who would otherwise bid for a share of the loan may decide to not participate (Sufi 2007). Thus, these frictions could easily lead to suboptimal deal outcomes. This intuitively raises the question of whether participant lenders mitigate these information frictions themselves by independently obtaining borrower accounting reports to supplement information they receive from the lead arranger's information memorandum, thereby reducing their reliance on the lead arranger for initial borrower screening.

Existing literature *implicitly* suggests that the independent acquisition of borrower accounting reports by participant lenders is a plausible mechanism to resolve effects of intra-syndicate information asymmetries (e.g., Sufi 2007; Ball et al. 2008, fn 3). Also, several studies

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<sup>2</sup> We focus on the inception phase rather than the monitoring phase because it is less obvious how syndicate participants' use of borrower accounting information can overcome moral hazard problems during the monitoring of the loan (Ball et al. 2008).

provide evidence that better borrower “accounting quality” is associated with lower lead arranger retained shares (e.g., Ball et al. 2008; Kim and Song 2011). Although these findings are consistent with participant lenders’ independent acquisition of borrower accounting reports, alternative mechanisms can also drive these results. For example, better borrower accounting quality may enable the lead arranger to better perform its due diligence (which mitigates participants’ concerns about moral hazard) or give participants greater confidence in the financial information contained in the lead arranger’s confidential information memorandum.

Our research question is whether participant lenders use independent searches of borrower accounting reports to mitigate information asymmetries vis-à-vis the lead arranger in syndicated loans. To measure syndicate participants’ independent searches of borrower accounting reports, we collect data on specific participant lenders’ searches of borrower SEC EDGAR filings during the loan evaluation (“syndication”) period. To examine whether such information is effective at mitigating intra-syndicate information asymmetries, we examine the resulting shares of the syndicated loan accepted by the participant lenders, under the premise that participant lenders with less concerns about information asymmetries with the lead arranger will accept a greater share of the loan, *ceteris paribus*.<sup>3</sup>

Our basic research design involves estimation of cross-sectional and time-series pooled OLS regressions with strict fixed effect structures, using a 2004-2017 sample period. We first show that participant lender search volume of a borrower’s SEC EDGAR filings during the loan syndication phase (i.e., 31 to 90 days prior to loan inception) is positively associated with the share of the ultimately issued loan that the participant accepts. As a falsification test, we also show no

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<sup>3</sup> The loan amount and non-pricing features of the loan (e.g. covenants, collateral, maturity) are fixed before the syndication process (e.g., Ivashina 2009). Typically, loan spread and the amount of the loan accepted by each participant lender are the only dimensions that vary during the syndication process.

significant association between participant lender EDGAR searches during the loan *documentation* phase (i.e., 1 to 30 days prior to loan inception) and their ultimate loan share, which is intuitive because participant allocations are likely already determined at that time. We also perform additional tests and our results are robust to excluding the financial crisis period, loan amendments, and multiple loans issued within a 90-day window.

Motivated by literature that provides evidence that intra-syndicate information asymmetry effects are mitigated when the lead arranger has a good reputation, we next document that the association between participant lenders' EDGAR searches and their ultimate loan shares (which we refer to as the "participant search-share relation") is attenuated when the lead arranger is a top lead arranger in the syndicated loan market. This cross-sectional analysis is consistent with participant lenders having a reduced need to mitigate information asymmetry via independent search of borrower accounting reports when lead arranger characteristics already reduce information asymmetry concerns. Similarly, we expect participant lenders to rely less on borrowers' accounting reports as an information-asymmetry-mitigating mechanism when the participant lender has a prior lending relationship with the borrower. As predicted, we find that a participant's prior lending relationships with the borrower (either as a lead arranger or as a participant in another syndicate) attenuates the positive participant search-share relation.

In a related fashion, we examine whether participant lenders' use of borrower accounting reports to mitigate information asymmetry is attenuated when the borrower has a richer information environment. Indeed, we find that the participant search-share relation is weakened when the borrower has higher analyst following, more media coverage, and credit rating availability. These findings are consistent with two possible explanations. Either the richer information environment provides participant lenders with alternative sources for information

about the borrower (thus reducing their need to obtain borrower accounting reports from EDGAR), or the richer information environment reassures the participant lenders that the lead arranger will do proper due diligence (because due diligence is less “costly” for the lead arranger when the borrower has a good information environment). Although we cannot distinguish between these two explanations, this analysis provides corroboration for our primary inference.

Our results thus far document a robust association between individual participant lenders’ loan share and their independent EDGAR searches of borrowers’ accounting reports. What is not clear from these analyses is whether participant search volume leads to lower loan share held by the lead arranger (i.e., higher loan share held by participants in the aggregate), or if our results merely capture a reallocation of loan share from one participant in the syndicate to another, leaving the lead arranger’s ultimate share unaffected. To address this question, we next examine the association between aggregate participant EDGAR search volume for a given borrower and the share of that loan retained by the lead arranger. We find that aggregate participant search volume is indeed negatively associated with the share of the loan retained by the lead arranger.

Finally, we examine the association between aggregate participant EDGAR search volume and loan spread. Prior research discusses the idea that there can be a trade-off between loan share held by the lead arranger and loan spread (e.g., Sufi 2007; Ivashina 2009). We want to ensure that the participant search-share relation that we document does not simply reflect a trade-off in terms, where participants agree to take a higher share of the loan in exchange for higher loan spread. We do not find a significant association between aggregate participant EDGAR searches and loan spread, which reinforces our primary inference that participants’ EDGAR searches resolve intra-syndicate information frictions.

We make several contributions to the literature. First, many studies in the syndicated loan arena suggest, either explicitly or implicitly, that participant lenders can independently acquire borrower accounting reports to mitigate the effects of intra-syndicate information asymmetries. While intuitively appealing, it is not clear whether participant lenders rely on information provided by lead arrangers in the information memorandum, or indeed conduct an independent search of borrower accounting reports. By providing direct evidence of a participant search-share relation, we contribute to the debt contracting literature by validating this mechanism.

Second, we document that participant lenders' independent search of borrower accounting reports directly affects syndicated deal structure by enabling participant lenders (lead arrangers) to hold a greater (lesser) share of syndicated loans. This contributes to research that documents the usefulness of accounting information in resolving capital market frictions, which ostensibly leads to better resource allocation and risk-sharing in the economy. We also extend the syndicated loan literature by examining dynamics associated with individual syndicate participant lender behavior, while prior research mainly examines participant lenders in the aggregate. Further, our findings suggest that *public* disclosures play an important role in alleviating information asymmetry in credit markets, as opposed to the conventional wisdom that debtholders mostly rely on private information.

Finally, our study contributes more generally to the emerging literature on how public information acquisition can reduce information asymmetry and facilitate decision making (e.g., Bernard et al. 2019; Blankespoor et al. 2019). Our study extends this stream of research by focusing on the use of EDGAR by credit market participants.

The remainder of the study proceeds as follows: Section 2 discusses our motivation and related literature. Section 3 describes our data and research design. Section 4 presents our primary

and cross-sectional empirical analyses, while Section 5 presents results from additional analyses. Section 6 concludes.

## **2. Motivation and Related Literature**

### *2.1. Loan Syndication Background*

A syndicated loan involves a group of lenders consisting of a lead arranger(s) and participant lenders, where the loan is governed by a single loan contract with identical terms for each member of the syndicate. The lead arranger establishes and maintains the relationship with the borrower and is responsible for a wide assortment of functions in the lending process, including collecting information and performing due diligence, negotiating the loan agreement, coordinating the documentation process and loan closing, funding loan advances, administering repayments, and monitoring the borrower after loan inception. The lead arranger collects an upfront fee from the borrower for these services.

In general, the loan syndication process proceeds in a structured manner, and includes “contracting,” “syndication,” and “documentation” phases prior to loan inception. The process begins with the borrower identifying and selecting a lead arranger. The lead arranger performs due diligence and signs a mandate with the borrower, which is a preliminary loan agreement that outlines the terms of the loan such as the loan amount, interest rate range, covenants, fees, maturity, and collateral. The lead arranger then prepares a “Confidential Information Memorandum” (CIM), which generally includes summarized information about the company, industry, transaction, financials, and management team, to supply potential participant lenders with information about the borrowing firm.

The lead arranger next sends the CIM with invitations for loan share commitments to a group of potential participant lenders. Invitations are generally sent to more lenders than those that

ultimately participate (e.g., Champagne and Kryzanowski 2007), and recipients of the CIM sign a confidentiality agreement. Often, the lead arranger will host a meeting or conference call to give potential participant lenders the opportunity to meet the management team and to learn more about the potential loan. After receiving and reviewing commitments from participant lenders who wish to join the syndicate, the lead arranger finalizes the loan share allocations and distributes the credit agreement to all syndicate participants. Participants are given the opportunity to provide comments on the credit agreement. However, participants are not involved in the negotiations with the borrower. Once all participants sign the agreement, the loan is closed and funded. The syndication and documentation processes take approximately 90 days in total (e.g., Murfin 2012). Figure 1 illustrates a loan syndication timeline.

*[Insert Figure 1]*

## *2.2. Information Asymmetries in Syndicated Loans*

As discussed above, the lead arranger is an intermediary between the borrower and the participant lenders, as illustrated in Figure 2. This structure results in information asymmetries between the borrower and the lead arranger, and between the lead arranger and participant lenders (i.e., intra-syndicate information asymmetry). Intra-syndicate information asymmetry manifests both during the loan syndication phase (prior to loan inception) and during the monitoring phase (after loan inception) (e.g., Ball et al. 2008).

*[Insert Figure 2]*

Before the contract is signed, there is an adverse selection problem between the lead arranger and syndicate participants because the lead arranger has more information about the borrower stemming from their exclusive relationship. Syndicate participants may have concerns that the lead arranger will exploit private information and retain a larger (smaller) share of high-

quality (low-quality) loans. There is also a moral hazard problem at inception because lead arrangers are responsible for performing due diligence on the borrower (i.e., evaluating borrower credit risk) prior to the loan inception. There is potential for shirking in these due diligence efforts, because exercising due diligence is costly and lead arranger effort is unobservable to syndicate participants. In addition, the lead arranger does not have to bear the full consequences of shirking because they pass much of the loan on to syndicate participants. The lead arranger can also shirk in its efforts to monitor the borrower after loan inception. However, it is less clear how participant lenders can use borrower accounting reports to mitigate this *ex post* monitoring problem, because the deal structure is already determined at that point (Ball et al. 2008). Therefore, we focus on participant lenders' independent search of borrowers' accounting reports to resolve *ex-ante* information asymmetries within the syndicate.

### 2.3. *Participant Information Acquisition*

Numerous studies have examined dynamics related to syndicate structures which focus on the information frictions we discuss above (i.e., moral hazard and adverse selection). A small subset of this extant literature implies that the independent use of borrower accounting reports by participant lenders could mitigate these information frictions.

Ball et al. (2008) find that the lead arranger holds a smaller share of syndicated loans (i.e., the participants hold a larger share) when the borrower's accounting information can better predict credit quality deterioration in a timely manner. In footnote 3, Ball et al. (2008) explicitly discuss a plausible mechanism they have in mind: "...accounting reports can reduce *ex ante* adverse selection by enabling syndicate participants to assess whether the lead bank is misleading them..., and to reduce concerns with the lead shirking on *ex ante* due diligence activities. The key is that, before the contract is signed, the participants have the power to directly act on accounting information by

demanding changes in terms or backing out of the deal.” This is a rather direct suggestion that participant lenders may use borrower accounting reports to supplement the information provided to them by the lead arranger.

Sufi (2007) finds that the lead arranger retains a larger share of the loan (i.e., participant lenders hold a smaller share of the loan) when borrowers require more intense due diligence (and monitoring) by the lead arranger, ostensibly because of participants lenders’ concerns about moral hazard and adverse selection. Sufi (2007) uses the availability of borrower SEC filings to proxy for the ‘requirement for due diligence by the lead arranger.’ Specifically, Sufi (2007) states “the identifying assumption is that participant lenders are more dependent on the lead arranger for...its ability to collect detailed information when the borrowing firm is not registered with the SEC” (p. 642). Stated differently, this statement posits that participant lenders are less dependent on the lead arranger for borrower credit evaluation when borrower SEC filings are available. This premise suggests that participant lenders may independently use SEC filings to evaluate the borrower and mitigate moral hazard and adverse selection concerns about the lead arranger at loan inception.<sup>4</sup>

Kim and Song (2011) approach the same conceptual question using borrower audit quality. Specifically, they find that lead arrangers hold less (and therefore participant lenders hold more) of the syndicated loan when the borrower has better audit quality (i.e., has its financial statements audited by a Big 4 auditor). In their hypothesis development, Kim and Song (2011) argue that during the loan inception phase, the increased borrower transparency associated with higher financial statement audit quality helps participant lenders “better understand the borrowers’ financial position and performance. This in turn reduces the reliance of potential participant

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<sup>4</sup> Similarly, Dennis and Mullineaux (2000) provide evidence that lead arrangers hold smaller portions of syndicated loans for borrowers who are publicly traded, and reason that the ability of the lead arranger to sell more of such loans to syndicate participants is because they are less “information-problematic.”

lenders on lead arrangers when evaluating borrower credit quality. In this sense, external audits alleviate the information asymmetry between potential non-lead banks and lead banks” (p. 75).

However, none of these cited studies directly test the proposition that participant lenders indeed independently search for borrower accounting reports to reduce their reliance on the lead arranger at loan inception, and thereby mitigate the associated information frictions. Moreover, the evidence presented is consistent with several alternative mechanisms. For example, the existence of borrower SEC filings may ease participant lenders’ concerns about moral hazard and adverse selection simply because SEC filings imply that additional monitors (e.g., the SEC itself) are present (in addition to the lead arranger), or because participant lenders perceive that the availability of public information about the borrower will reduce the lead arranger cost/effort of doing its due diligence. Similarly, participants may simply perceive that borrowers’ high-quality accounting information will enable the lead arranger to do a better job screening and monitoring, which mitigates the moral hazard problem at loan inception.

#### 2.4. *SEC EDGAR Filing Searches*

The SEC began an electronic disclosure system in the early 1980s. Previously, only hard-copy filings were available. The SEC adopted a three-year phase-in schedule to require electronic filing in early 1993. By May 1996, all domestic registrants were required to file electronically on the SEC’s Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system (e.g., Griffin 2003; Securities and Exchange Commission 2006), which compiles firm filings in a public database available to all users at no cost. The SEC has a web server log file that tracks the IP address of each EDGAR search, which in recent years has enabled researchers to study the demand for SEC filings by various market participants. The SEC masks a portion of the IP address and provides public access to the EDGAR log files with a delay.

Studies exploiting EDGAR search data suggest that investors, on average, search EDGAR information in a sophisticated manner. Drake et al. (2015) provide evidence that the frequency of 10-K/10-Q/8-K searches from EDGAR around earnings announcement dates is positively associated with the initial announcement-window earnings response coefficient (ERC) and negatively associated with the subsequent post-earnings announcement drift. Several concurrent studies examine users of EDGAR information by linking IP address ownership to the EDGAR log data. These studies look at the effects of EDGAR searches by various market participants. For example, Gibbons et al. (2019) show that analysts' EDGAR searches are positively associated with earnings forecast accuracy. EDGAR searches by auditors increase the comparability of client footnotes (Drake et al. 2019), and EDGAR searches by the Internal Revenue Service increased (decreased) after public (private) tax disclosures – FIN 48 (Schedule UTP) – were mandated (Bozanic et al. 2017). EDGAR searches by sophisticated investors, such as hedge funds and mutual funds, are associated with higher abnormal returns (e.g., Crane et al. 2018; Chen 2018; Iliev et al. 2018). Bernard et al. (2019) also show that peer firms search rival firms' EDGAR filings and use this information for investment decisions and product strategies. Overall, these studies suggest that market participants acquire public information via EDGAR both to mitigate information uncertainty and to make decisions. We extend this literature into the syndicated loan domain.

### **3. Data and Research Design**

#### *3.1. Sample Construction*

We obtain EDGAR search data from the SEC's Division of Economic and Risk Analysis.<sup>5</sup> The EDGAR server log contains a count of SEC filings searched by users. Each log entry contains the following: (1) the IP address of the requesting user with the first three octets of the IP address

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<sup>5</sup> <http://www.sec.gov/dera/data/edgar-log-file-data-set.html>

and the fourth octet masked with three unique letters (i.e., 68.4.102.bdc), (2) the date and time of the request, (3) the Central Index Key (CIK) of the company that filed the form, (4) the accession number of the document requested, and (5) the SEC filing date. We use the CIK to identify borrower firms and match the accession number with the Master Index File to identify the SEC filing requested.<sup>6,7</sup> We follow Drake et al. (2015, 2016) and remove the index and image of a particular filing from the log since these records result in redundancies. We also remove observations where the IP address has more than five requests per 60-second interval or more than 1,000 requests per day because these are likely searches from automated web crawler programs.

We obtain syndicated loan data from DealScan. The most primitive unit of observation in DealScan is a loan “facility,” where multiple facilities (i.e., tranches) can be included in a given loan agreement (referred to as the loan “package”) between a borrower and the lending syndicate. DealScan further identifies the lead arranger(s), participant lenders, and the share of the loan held by each lender. Each loan facility within a package can have different pricing characteristics and syndicate share structure.<sup>8</sup> Accordingly, our basic unit of analysis is at the participant-facility level.

To examine EDGAR searches by participant lenders, we first identify syndicate lender IP addresses and then match them to the EDGAR log data. Due to the intensity of effort associated with this data collection, we limit our attention to the top 100 banks in DealScan, because they comprise a majority of the reported lending activity. We manually search for each bank’s IP address range using the bank’s name and its website in the myip.ms database. We were not able to

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<sup>6</sup> CIK lookup is available at <https://www.sec.gov/edgar/searchedgar/cik.htm>

<sup>7</sup> The EDGAR Master Index File is available at <https://www.sec.gov/Archives/edgar/full-index/>

<sup>8</sup> It is possible that a syndicate participant holds different shares of different facilities in the same package. Although relatively unusual, our data contains such observations. All subsequently reported inferences are unchanged if we cluster standard errors by loan package, rather than by borrower.

identify the IP address range for a number of banks that use proxy servers to mask their identity, so we exclude these banks from the sample. We then match the bank IP ranges with the first three octets in the EDGAR server log to identify search activity.<sup>9</sup> This process results in a final sample of 77 banks with EDGAR search activity. These 77 banks are involved in 81.4% of the facilities (as either a lead arranger or a syndicate participant) in DealScan during our sample period.

We obtain borrower data from Compustat, IBES, and RavenPack. To be included in our final sample, we require each loan facility to have non-missing syndicate share data, along with data on basic firm and loan characteristics. We further require each facility to have non-missing share data for at least two participant lenders, because we include facility fixed effects in our analyses. This restriction biases our sample towards larger syndicates, but we do not have a reason to believe this would affect our overall inferences. Our EDGAR log data sample begins in January 2004, because SEC filing requests were scarce in 2003 (Loughran and McDonald 2017). Our DealScan sample begins in April 2004, because we require EDGAR search data during the 90 days prior to loan inception. Our sample ends in June 2017 because that is the most recent EDGAR log data available.<sup>10</sup> This process yields a sample of 18,796 participant-facility observations spanning 3,243 unique loan facilities.

### 3.2. *Research Design*

We predict a positive association between participant lenders' searches of borrowers' EDGAR filings and the participant lenders' share of the associated syndicated loans (i.e., the participant search-share relation). To test this association, we estimate the following equation:

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<sup>9</sup> Because we cannot observe the fourth octet of IP addresses, it is possible that some banks may not own all of the IP addresses within that block. EDGAR searches from unrelated entities should not be related to participant share and should bias against an association between EDGAR searches and participant share.

<sup>10</sup> The SEC acknowledges that log files between September 24, 2005, and May 10, 2006, are either missing or corrupt (e.g., Loughran and McDonald 2017). Because we use a 90-day search window, we exclude loan facilities that originated between September 24, 2005, and August 10, 2006.

$$PartShare_{p,f} = \beta_0 + \beta_1 ESV\_S_{p,f} + BorrowerControls + LoanControls + FixEffs + \varepsilon_{p,f}, \quad (1)$$

where our unit of analysis is at the facility-participant level, and we cluster standard errors by borrower.<sup>11</sup> *PartShare* is defined as syndicate participant *p*'s share (in percentage points) of loan facility *f*. *ESV\_S* is the natural logarithm of one plus the count of the number of participant *p*'s EDGAR searches for filings of the borrower on loan facility *f* during the loan syndication period (i.e., from 31 to 90 days prior to loan inception). We expect the coefficient on *ESV\_S* to be positive.<sup>12</sup>

We include two sets of control variables. *BorrowerControls* is a vector of borrower-specific characteristics, including borrower size (*Size*), return on assets (*ROA*), leverage (*Leverage*), market-to-book (*BtM*), and asset tangibility (*Tangibility*), taken from the borrower's most recent annual report prior to loan inception. *LoanControls* is a vector of loan facility-specific characteristics, including facility amount (*FacilityAmt*), loan maturity (*Maturity*), number of lead arrangers (*NLeadArrangers*), number of participant lenders (*NParticipants*), an indicator for whether the loan is collateralized (*Secured*), loan spread (*Spread*), number of covenants (*NCovenants*), and lead arranger shares (*LeadShare*). We also include facility fixed effects, which enables us to compare participant lender EDGAR searches *within* a facility while holding firm-specific characteristics and facility-specific characteristics (e.g., loan purpose) constant. All

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<sup>11</sup> We do not choose a “search determinants model” (i.e., where search volume is the dependent variable) as our research design for two key reasons. First, banks ostensibly search for various reasons, including file documentation. We are interested in making inferences about searches that are specifically used to mitigate syndicate information asymmetries; the relation between searches and loan share is the most direct way to draw such inferences. Second, we are not primarily interested in the extent to which ex ante information asymmetry affects participant search volume—instead, we are interested in whether participants use independent searches to mitigate ex ante information asymmetries, which is revealed by the association between EDGAR searches and realized loan shares.

<sup>12</sup> We consider search volume to be the best proxy for a participant banks' independent accounting report search intensity. In untabulated analyses, our inferences are robust to the use of an indicator variable that equals 1 if the participant bank searched borrower accounting reports during the syndication period (and equals 0 otherwise).

continuous variables are winsorized at 1 and 99 percent. We provide detailed variable definitions in Appendix A.

We provide descriptive statistics in Table 1. On average, a syndicate has 3.5 lead arrangers and 12 participants. It is common for syndicates to have multiple lead arrangers, with each being responsible for different administrative tasks in the loan syndication. For example, one lead arranger is typically responsible for drafting loan documents, another is responsible for calculating interest and collecting loan repayments, and yet another is responsible for the pledged collateral (e.g., François and Missonier-Piera 2007). The interquartile range of number of syndicate participants is 9, which suggests high variation in syndicate structure. The mean (median) individual participant's loan share (*PartShare*) is 5.69% (5.00%). Notably, the number of participant lender EDGAR searches during the syndication phase is zero for much of the distribution, with an average search of 0.12 filings across the sample. The maximum participant bank EDGAR search volume during the syndication phase is 61 filings (untabulated).<sup>13,14</sup> The average (median) interest rate spread is 153.8 (150) basis points.

*[Insert Table 1]*

Table 2 presents the distribution of SEC EDGAR filings searches by participant lenders during the syndication (documentation) period from 31 to 90 (1 to 30) days prior to loan inception. Panel A shows that participant bank searches are concentrated on filings that relate to financial reporting and current events. Syndicate participants search annual 10-K (42%), quarterly 10-Q (31%), and 8-K (17%) filings more frequently than other types of SEC filings during the

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<sup>13</sup> *ESV\_S* in Table 2 is the raw number of EDGAR searches during the syndication period. We use the natural log of (1+ this value) in our regression analyses.

<sup>14</sup> Because the bank IP range captures EDGAR searches by the entire bank, it is possible that *ESV\_S* captures EDGAR search activity from both the commercial bank and investment bank divisions. Activity from the investment bank division is measurement error and would bias against finding an association between EDGAR searches and participant loan share.

syndication period.<sup>15</sup> Interestingly, there is a similar number of searches during the 30-day documentation period compared to the 60-day syndication period, suggesting more intensive search activity during the documentation period. However, we predict that these documentation-period searches are not used to resolve information frictions within the syndicate—a prediction that we examine in our subsequent multivariate analyses.

In Panel B, we observe that participant lenders request SEC filings filed within 360 days (72%) more often than SEC filings (28%) filed more than 360 days ago.<sup>16</sup> With regard to the timing of searches, Panel C shows that participant searches are more frequent (and fairly evenly distributed) on weekdays and are relatively infrequent on weekends, which is consistent with prior literature. In Panel D, we observe that participant lenders do not conduct an independent search of borrowers' EDGAR filings for the vast majority of loan observations, consistent with participants' relying on the information provided by the lead arranger.<sup>17</sup> Of the observations with non-zero search activity, it is most common that a given participant conducts 1-2 searches of the borrower's EDGAR filings in both the syndication and documentation periods.<sup>18</sup>

*[Insert Table 2]*

We provide the correlation among variables used in our primary analyses in Table 3. Participant share (*PartShare*) does not seem to be correlated with EDGAR searches (*ESV\_S*) in

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<sup>15</sup> In comparison, EDGAR filing searches by all users are more evenly distributed. Drake et al. (2015) in Table 2 Panel B show that the frequency of the most searched filings are as follows: Form 10-K (21%), Form 10-Q (16%), Form 8-K (19%) and Form 4 (9%).

<sup>16</sup> We define the request for SEC filings as current-period (prior-period) when a filing is publicly available less than (greater or equal to) 360 days from the date of request following Drake et al. (2016).

<sup>17</sup> We cannot rule out the possibility that participant lenders independently search for borrower accounting reports using non-EDGAR sources (e.g., borrowers' websites). Unfortunately, searches from alternative sources are unobservable to researchers. While descriptive data have significant limitations, we are more interested in whether the searches that we can observe (i.e., EDGAR) are associated with loan shares.

<sup>18</sup> Our current data configuration does not reveal the precise nature of these searches. For example, for an instance of "2" EDGAR searches by a participant lender on a given loan, we do not distinguish between cases where (a) the same filing was searched twice on the same day, (b) the same filing was searched twice, but on different days, (c) two different filings were searched on the same day, or (d) two different filings were searched on different days.

the univariates. However, this does not account for other factors that may affect participant shares. Most notably, *PartShare* is negatively correlated with the number of lead arrangers and the number of participants, which is expected because each participant will likely take a smaller share of a loan when there is a larger syndicate. *PartShare* is negatively correlated with the size of the loan facility (*FacilityAmt*), which is consistent with banks' desire for diversification in their loan portfolios. We control for these factors in our multivariate analyses, as discussed in the following section. Correlations between *PartShare* and most other variables are relatively low.

[Insert Table 3]

## 4. Empirical Analyses and Results

### 4.1. Participant Searches of Borrower SEC filings and Loan Share

We present the results from estimating Eq. (1) in Table 4. We include four different specifications of our main test, which regresses participant loan share (*PartShare*) on EDGAR searches (*ESV\_S*) along with different control variables and fixed effect structures. Column (1) includes control variables for borrower characteristics along with industry and year fixed effects. Column (2) includes control variables for borrower and loan characteristics along with industry and year fixed effects.<sup>19</sup> Column (3) includes facility and year fixed effects, and column (4) includes facility, participant and year fixed effects. The specification in column (3) holds facility-specific characteristics constant, which enables us to compare participant EDGAR searches *within* a facility. The fixed effects included in column (4) allows us to compare participant EDGAR searches *within* a facility while holding participant-specific characteristics constant. All control

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<sup>19</sup> Although we don't explicitly control for borrower credit risk because of resulting loss of observations, our borrower-level control variables include several determinants of credit risk. In untabulated analysis, we confirm that our inferences are unaltered if we additionally control for the borrowers' market-based default probability, calculated following Hillegeist et al. (2004).

variables in columns (3) and (4) are absorbed because borrower and loan characteristics do not vary within a given loan facility.<sup>20</sup>

We find a significantly positive association between *ESV\_S* and *PartShare* in all four specifications, which suggests that participant lenders' searches of borrower accounting reports on EDGAR are useful in determining the participants' share of the loan. We focus on Column (1) to gauge economic significance: a one standard deviation increase in an individual participant's EDGAR search volume is associated with a 1.4% increase in that participant's loan share.<sup>21</sup> Because the specification with both participant and facility fixed effects is the strictest specification, we conduct cross-sectional analyses based on the specification in column (4). In summary, our initial results offer evidence suggesting that syndicate participant lenders independently search and process information from borrowers' accounting reports to make loan participation decisions.

[Insert Table 4]

#### 4.2. Cross-sectional Analyses

In the previous section, we find that participant lenders' EDGAR searches are positively and significantly associated with the participants' share of syndicated loans. In this section, we explore whether the participant search-share relation differs predictably when information frictions between the participant and the lead arranger vary. Specifically, we examine the effects of lead arrangers' reputation, participant lenders' prior lending relationships with the borrower, and the borrower's information environment. For these analyses, we use an interaction-based structure, under the premise that if ex ante information asymmetry within the lending syndicate is relatively

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<sup>20</sup> We conduct a sensitivity analysis with participant-year fixed effects to control for any time-varying participant characteristics, and inferences are unaffected (untabulated).

<sup>21</sup> We calculate this by multiplying the coefficient on *ESV\_S* (0.296) in Table 4 Column (1) by the standard deviation of *ESV\_S* (0.263) in natural logarithm (untabulated), divided by *PartShare* (5.689) sample mean reported in Table 1.

low, there will be a weaker association between participant lenders' search volume and their ultimate loan share. In other words, if information asymmetry is lower, participant lenders may be less inclined to perform their own independent borrower credit evaluation, reducing participants' demand for accounting reports. We estimate OLS regressions of the following form:

$$\begin{aligned}
 PartShare_{p,f} = & \beta_0 + \beta_1 ESV\_S_{p,f} + \beta_2 XSVar + \beta_3 ESV\_S * XSVar \\
 & + BorrowerControls + LoanControls + FixEffs + \varepsilon_{p,f},
 \end{aligned}
 \tag{2}$$

where *XSVar* refers to a number of alternative cross-sectional variables, as described in the following sections.

#### 4.2.1. Lead-arranger reputation

Because the syndicated loan market is characterized by repeated interactions, lead arranger reputation may mitigate some of the intra-syndicate information frictions by overcoming moral hazard concerns (e.g., Sufi 2007). Following Sufi (2007), we measure lead arranger reputation using the market share of the lead arranger in the year of the loan inception. We define *TopNLead* as an indicator variable that equals one if the lead arranger of the facility is a top “N” (3, 5, and 10, alternately) lead arranger based on market share, and equals zero otherwise. We present descriptive statistics for the reputation variable in Panel A of Table 5. Approximately 56% (63% and 73%) of our loan facilities are arranged by a Top 3 (5 and 10) lender.

In our multivariate analyses, we estimate Eq. (2) with *TopNLead* taking the place of *XSVar*. We expect the coefficient on the interaction term to be negative if lead arranger reputation mitigates intra-syndicate information asymmetry. We present the results of the multivariate analysis in Panel B of Table 5. First, the coefficient on *ESV\_S* itself remains significantly positive, which is consistent with our main result that EDGAR search activity by participant lenders increases participant loan share. Note that the main effect of lead arranger reputation (*TopNLead*) is absorbed because we include facility and participant fixed effects, and lead arranger reputation

does not vary within a facility. More importantly for this analysis, the interaction term  $ESV\_S * TopNLead$  is significantly negative across all columns. Thus, the participant search-share relation is attenuated in the presence of a reputable lead arranger. Because lead arranger reputation mitigates concerns about information asymmetries between the lead arranger and participant lenders, participant lenders are less inclined to independently search for borrower accounting reports when making participation decisions.

[Insert Table 5]

#### 4.2.2. Previous banking relationships

Prior research has established that “inside lenders” have an information advantage (e.g., Fama 1985). Accordingly, we expect that intra-syndicate information asymmetry is mitigated when a participant lender has a prior lending relationship with a given borrower (e.g., Ball et al. 2008; Bushman et al. 2010). In contrast, participant lenders without a prior borrower relationship are typically at an information disadvantage, relative to participants with a prior relationship. As a result, we expect participants with prior borrower relationships to rely less on independent searches of borrower accounting reports when making loan participation decisions on the current loan.<sup>22</sup>

We use the following three variables in place of  $XSVar$  in Eq. (2) to measure prior participant lender-borrower relationships: whether the participant lender and borrower have *any* prior lending relationship ( $PreFac$ ), whether the participant lender served as a lead arranger in a prior facility for the borrower ( $PreFacLead$ ), and whether the participant lender served as a participant in a prior facility for the borrower ( $PreFacPart$ ). Each of these variables is constructed as the natural logarithm of one plus the number of facilities that the participant and borrower were

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<sup>22</sup> Consistent with intuition, participants without a prior borrower relationship (i.e.,  $PreFac=0$ ) are slightly more likely to search prior-period filings (30%) than participants with a prior borrower relationship (i.e.,  $PreFac=1$ ) (27%) (untabulated).

engaged in before the current loan inception. We provide descriptive statistics for the relationship variables in Panel A of Table 6. On average, each participant syndicated 1.28 facilities with the borrower prior to the current loan inception.<sup>23</sup>

We present the multivariate analysis in Panel B of Table 6. We include each of the relationship variables individually in columns (1) through (3) and then include both the prior lead arranger and prior participant variables in column (4). We expect the coefficient on the interaction of *ESV\_S* and the relationship variable to be negative. The association between *ESV\_S* and *PartShare*, which represents the effect of participant lenders' EDGAR information searches on loan share for participant lenders with no prior relationships with the borrower, is significantly positive and consistent with our primary analysis.

Note that we include the main effects of the relationship variables in this specification, because the relationship status between participants and the borrower can vary within a facility even when we have facility and participant fixed effects. Consistent with Ball et al. (2008), the prior relationship variable is positively significant in all specifications, which indicates that participant lenders with a prior borrower relationship accept a higher share of the borrower's current loan, *ceteris paribus*. More importantly for this analysis, and consistent with our expectations, the interaction of *ESV\_S* and the relationship variable (*PreFac*, *PreFacLead*, *PreFacPart*) is negatively significant in all specifications. These results are consistent with the notion that a prior borrower relationship mitigates intra-syndicate information asymmetry, which reduces participant lenders' need for independent searches of borrower accounting reports in the current loan.

[Insert Table 6]

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<sup>23</sup> This discussion refers to the raw values of *PreFac* while the variables in the descriptive statistics and regression analyses are natural logarithms:  $\exp(0.824) - 1 = 1.28$ .

#### 4.2.3. Borrower information environment

Our primary results suggest that participant lenders independently search borrower accounting reports to mitigate information frictions within the syndicate and determine their loan shares. Additional analyses on lead arranger reputation and prior borrower relationships show that this association is attenuated when there are fewer information frictions within the syndicate. In our final analysis along these lines, we examine whether a richer borrower information environment reduces the need for independent search of borrower accounting reports by participant lenders. Specifically, we consider the effects of equity analyst following, media coverage, and the availability of credit ratings. Prior research suggests that equity analysts are informative to lenders (e.g., Guntay and Hackbarth 2010; Mansi et al. 2011). In addition, Bushman et al. (2017) find that media reduces relative information asymmetries across lenders and influences syndicate structure by providing credit-relevant information that is incremental to information received from other sources. Firms without credit ratings are relatively opaque, and lead arrangers are required to hold a larger share of associated syndicated loans (Sufi 2007).

We measure equity analyst following ( $N_{Analyst}$ ) as the natural logarithm of one plus the number of analysts that issue earnings forecasts for the borrower in the most recent fiscal year before loan inception. We use RavenPack to measure media coverage ( $N_{News}$ ), which is defined as the natural logarithm of one plus the number of news articles about the borrower from the top business press (*Wall Street Journal*, *New York Times*, *USA Today*, and *Washington Post*) in the most recent fiscal year before inception.<sup>24</sup> The availability of credit ratings ( $CR_{Dummy}$ ) is measured as an indicator variable that equals one if the borrower has a long-term credit rating at the end of its most recent fiscal year before loan inception. We present descriptive statistics in

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<sup>24</sup> Our RavenPack data end in December 2016, which results in a sample of 18,679 observations for this analysis compared to 18,796 observations in other analyses.

Panel A of Table 7. On average, each borrower has approximately 8.21 equity analysts, 3.81 news articles in the fiscal year prior to the loan inception and 69% of borrower firm years have a credit rating.<sup>25</sup>

We present our multivariate analysis in Panel B of Table 7 following the Eq. (2) structure, with each borrower information environment variable separately considered in columns (1) through (3), and all variables together in column (4). Note that the main effects for *NAnalyst*, *NNews*, *CRDummy* are absorbed because there is no variation in the borrower information environment when we include facility fixed effects. The coefficients on the interactions of *ESV\_S* with *NAnal*, *NNews*, and *CRDummy* are significantly negative, suggesting that participant lenders rely less on independent search of borrowers' accounting reports to reduce intra-syndicate information asymmetry when the borrower has a relatively good information environment. We note that this particular analysis is subject to two possible interpretations: (1) the participant lenders obtain borrower information from these alternative sources and are therefore less reliant on EDGAR filings, or (2) the borrower's better information environment makes participant lenders less concerned about the ability/willingness of the lead arranger to do proper due diligence, which makes participant lenders less concerned about *ex ante* information asymmetry and therefore less likely to do an independent search of borrower accounting reports. We are unable to distinguish between these two interpretations, but in either case consider these results to be corroborative with respect to our primary analyses.

[Insert Table 7]

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<sup>25</sup> This discussion refers to the raw values of *NAnalyst* and *NNews*, while the variables in the descriptive statistics and regression analyses are natural logarithms:  $\exp(2.22) - 1 = 8.21$ ;  $\exp(1.57) - 1 = 3.81$ .

## 5. Additional Analyses

### 5.1. Aggregate Participant EDGAR Searches

In the preceding section, our analyses focus on documenting the positive effects of an individual participant lender's EDGAR searches of the borrower's accounting reports on that individual participant lender's share of the loan. What remains unclear from the preceding analyses is whether participant lenders' EDGAR searches enable the lead arranger to hold a lower share of the loan. The following question remains: do individual participant lenders' EDGAR searches (1) increase the share of the syndicated loan allocated to the participant lender group in the aggregate, or (2) simply result in a reallocation of loan share from one participant in the syndicate to another, leaving the lead arranger's ultimate share unaffected? In this section, we examine this question.

At the loan facility level, we regress lead arranger share (*LeadShare*) on the aggregate EDGAR search volume of borrower accounting reports by all participants in the syndicate (*ESVA\_S*), as follows:

$$LeadShare_f = \alpha_0 + \alpha_1 ESVA\_S_f + BorrowerControls + LoanControls + FixEffs + \varepsilon_f. \quad (3)$$

As reported in Panel A of Table 8, there is a significant negative coefficient on *ESVA\_S*, indicating that EDGAR search activity by syndicate participants reduces the share of the loan held by the lead arranger. Thus, the results of our primary analysis do not simply reflect reallocation among participant lenders.

Prior literature suggests that intra-syndicate information asymmetry can affect not only loan share, but also loan spread (e.g., Sufi 2007; Ivashina 2009). Therefore, a remaining concern is whether our primary result indeed captures a reduction in intra-syndicate information asymmetry, or whether syndicate participants agree to accept a higher loan share in exchange for

a higher loan spread (in which case, we would observe a positive association between participant lenders' search volume and loan spread). To address this concern, we next examine whether participant lenders' EDGAR searches are associated with loan facility spread by estimating the following regression:

$$Spread_f = \alpha_0 + \alpha_1 ESVA\_S_f + BorrowerControls + LoanControls + FixEfts + \varepsilon_f \quad (4)$$

where a non-positive association between participant lenders' EDGAR searches and loan spread would suggest that participant lenders are not merely trading off between loan share and spread. We present the results of Eq. (4) in Table 8 Panel B.<sup>26</sup> We find no association between aggregate participant EDGAR searches (*ESVA\_S*) and facility spread, which reinforces our inference (based on our loan share results) that participants' use of borrower accounting reports is a mechanism to mitigate intra-syndicate information asymmetry.<sup>27</sup>

[Insert Table 8]

## 5.2. *Falsification Test: Participant EDGAR Searches During the Documentation Phase*

In our primary analyses, we focus on participant lenders' EDGAR searches that occur during the 31 to 90 days before loan inception, as this window is our proxy for the loan syndication period during which participant lenders are making their share participation decisions (e.g., Murfin 2012). That is, if participant lenders conduct independent searches of borrower accounting reports to supplement the information provided by the lead arranger in determining the share of the loan they are willing to accept, it is the EDGAR searches *during the syndication period* that are most

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<sup>26</sup> Consistent with prior literature (e.g., Berger and Udell 1990; Bharath et al. 2008; Amiram and Owens 2018), there is a strong positive relationship between collateral requirement (*Secured*) and spread. These relations reflect a complex set of unobservable tradeoffs in the loan contracting process.

<sup>27</sup> In untabulated analyses we re-estimate Eqs. (3) and (4) after including a market-based measure of the borrower's default probability computed at the end of the month most recently preceding loan inception. Although our sample size is reduced slightly, our inferences are unaffected.

likely used for that purpose. In contrast, any EDGAR searches by participant lenders during the documentation period (i.e., where share allocation decisions have already been determined) are likely done for file documentation purposes, and not to mitigate intra-syndicate information asymmetry. Accordingly, we do not expect to see a significant participant search-share relation during the documentation period. The Loan Market Association (2018) recommended timeline for settlement of syndicated loans is 27 business days between the allocation notification date and the loan inception date. Hence, we do not expect participant lenders' EDGAR searches in the 30-day window immediately prior to loan inception to be significantly associated with participant lenders' loan share.

Empirically, we replace  $ESV\_S$  with  $ESV\_D$  (i.e., individual participant lenders' EDGAR search volume during the documentation period) in Eq. (1) and re-estimate our Table 4 analysis. As shown in Table 9, EDGAR searches by participant lenders during the 30-day window immediately preceding loan inception are consistently *not* significantly related to *PartShare* across all specifications. This non-result provides additional corroboration for our primary inferences.

*[Insert Table 9]*

### 5.3. *Robustness Tests*

We perform several additional tests to provide assurance that our results are not sensitive to our research design and data structure. Specifically, we consider potential effects of the financial crisis, loan amendments, and multiple loans to the same borrower with overlapping syndication period windows.

Credit markets are more difficult to access during crisis periods. Shocks to bank capital can restrict the supply of loans in the U.S. syndicated loan market, which will affect shares held by the lead bank and the required loan spread (e.g., Ivashina and Scharfstein 2010a; 2010b; Santos 2010).

Because our sample period spans the financial crisis period, we re-estimate our primary analysis after excluding loans initiated during the window 2008:Q3 – 2010:Q1, following Gambacorta and Mistrulli (2014) and Bolton et al. (2016). We report the results in Panel A of Table 10, which show that the participant search-share relation remains significantly positive.

We use DealScan to identify loans. One issue with DealScan loan data is that some of the observations that appear on their face to be new loan inceptions are actually amendments to existing loans (e.g., Roberts and Sufi 2009). In syndicated loans, non-material amendments must be approved by a simple majority of syndicate members while changes to the rate, amortization, term, security, or collateral require a unanimous vote. Importantly, amendments do not result in changes to loan allocations among syndicate participants. However, participant lenders with larger loan shares may be more likely to independently search EDGAR filings for borrower information prior to approving a proposed loan amendment. To address this potential issue, we re-estimate our primary analysis after excluding observations that reflect loan amendments (as captured by an amendment flag in DealScan). As reported in Panel B of Table 10, the participant search-share relation remains significantly positive.

We associate participant lenders' loan shares with their EDGAR searches going back 90 days prior to loan inception. Although uncommon in the data, a borrower may occasionally obtain multiple (different) loans that involve the same participant lender within a given 90-day window. This circumstance would introduce noise into our analysis, because it is not clear which EDGAR searches of the borrower's accounting reports pertain to each loan. Moreover, the distinction between searches during the syndication period and the documentation period may be convoluted. To address this concern, we exclude observations from our sample if the same borrower initiated a different loan within 90 days (before or after) of loan inception and re-estimate our main analysis.

As reported in Panel C of Table 10, the participant search-share relation remains significantly positive.

*[Insert Table 10]*

## **6. Conclusion**

We examine whether participant lenders in syndicated loans mitigate information frictions (i.e., moral hazard and adverse selection) with the lead arranger during the loan inception process by independently searching borrower accounting reports, thereby reducing their reliance on the lead arranger for such information. Using detailed individual participant lender-level searches of borrowing firms' SEC EDGAR filings, we document that the frequency of searches during the loan syndication phase is positively associated with the share of the syndicated loan accepted by a participant lender. Further, we provide evidence that this association varies predictably in the cross-section based on proxies for the extent of information asymmetries between the lead arranger and syndicate participants (e.g., lead arranger reputation, prior borrower relationships with the participant lenders, and the borrowers' information environment). Moreover, we document that the use of borrower accounting reports by syndicate participants in aggregate is associated with a lower share of the loan retained by the lead arranger.

Our study is subject to inherent limitations concerning causality. To address these limitations, we use a lead-lag research design by examining the association between participant EDGAR searches that occur prior to loan participation decisions and subsequent loan share allocations. We also include various fixed effect structures to rule out unobservable factors. Finally, we perform a falsification test and find as expected that there is no significant association between participant loan share and their EDGAR searches during the loan documentation period (i.e., after share allocation decisions have been made).

Notwithstanding these natural caveats, we provide new insights on how accounting information shapes syndicated loan deal structures by providing direct evidence that syndicate participant lenders' independent search and use of borrowers' accounting reports play a role in syndicate participants' loan allocation decisions. Our findings likewise contribute to the general debt contracting literature, which has suggested that participant lenders' independent search of borrower financial information is a plausible information-asymmetry-reducing mechanism vis-à-vis the lead arranger, but there has been no direct evidence provided to date. This paper fills that gap in the literature. More broadly, we contribute to the general literature that documents the usefulness of accounting information in resolving capital market frictions, which ostensibly leads to better resource allocation and risk-sharing in the economy.

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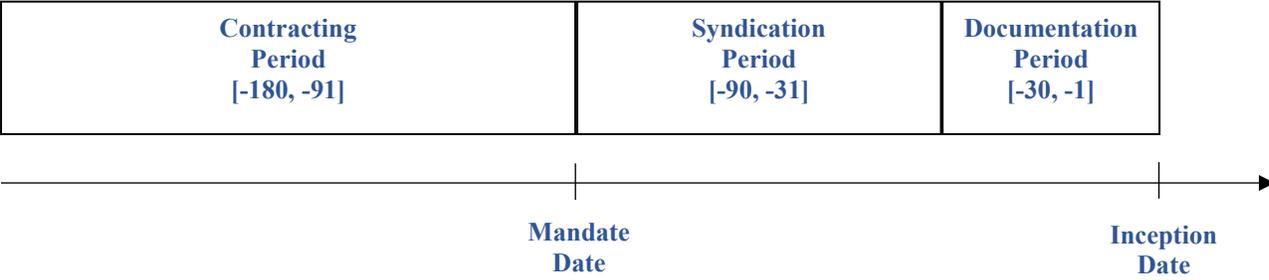
## APPENDIX A: Variable Definitions

Variable	Definition	Data Source
<b>Measures of EDGAR Search Volume</b>		
$ESV_{S_{p,f}}$	The natural logarithm of one plus the count of the number of individual syndicate participant $p$ 's requests for EDGAR filings of the borrower on loan facility $f$ from 90 days before loan inception to 31 days before loan inception.	SEC EDGAR
$ESVA_{S_f}$	The natural logarithm of one plus the count of the number of aggregate syndicate participants' requests for EDGAR filings of the borrower on loan facility $f$ from 90 days before loan inception to 31 days before loan inception.	SEC EDGAR
$ESV_{D_{p,f}}$	The natural logarithm of one plus the count of the number of individual syndicate participant $p$ 's requests for EDGAR filings of the borrower on loan facility $f$ from 30 days before loan inception to 1 day before loan inception.	SEC EDGAR
<b>Measures of Participant Share</b>		
$PartShare_{p,f}$	Participant $p$ 's share (in percentage points) of loan facility $f$ .	DealScan
<b>Borrower Characteristics</b>		
$BtM$	The ratio of the borrower's book value of equity to market value of equity, measured at the end of the most recent fiscal year before loan inception.	Compustat
$Leverage$	The ratio of the borrower's long-term debt to total assets, measured at the end of the most recent fiscal year before loan inception.	Compustat
$ROA$	The ratio of the borrower's net income before extraordinary items to total assets, measured at the end of the most recent fiscal year before loan inception.	Compustat
$Size$	The natural logarithm of the borrower's market value of equity, measured at the end of the most recent fiscal year before loan inception.	Compustat
$Tangibility$	The ratio of the borrower's net PP&E to total assets, measured at the end of the most recent fiscal year before loan inception.	Compustat
<b>Loan Characteristics</b>		
$FacilityAmt$	The natural logarithm of one plus dollar amount of the loan facility (in millions).	DealScan
$LeadShare$	The total lead arranger share (in percentage points) of the facility.	DealScan
$Maturity$	The natural logarithm of one plus the number of months the facility will be outstanding from inception date to maturity date.	DealScan
$NLeadArrangers$	The number of lead arrangers in the facility.	DealScan
$NParticipants$	The number of syndicate participants in the facility.	DealScan
$Secured$	An indicator variable equal to one if a facility is secured by collateral; zero otherwise.	DealScan

<i>Spread</i>	The all-in drawn spread the borrower pays in basis points over LIBOR.	DealScan
<b>Cross-sectional Variables for Lead Arranger Reputation (Table 5)</b>		
<i>TopNLead</i>	An indicator variable equal to one if any of the lead arrangers of the facility is a top <i>N</i> (three, five or ten) lead arranger based on market share; zero otherwise. Market share is measured by the dollar amount of loans that the lender syndicated as lead arranger in the year of loan inception.	DealScan
<b>Cross-sectional Variables for Previous Syndicate Relationships (Table 6)</b>		
<i>PreFac</i>	The natural logarithm of one plus the number of facilities that the participant syndicated for the borrower before the current loan inception.	DealScan
<i>PreFacLead</i>	The natural logarithm of one plus the number of facilities that the participant syndicated as a lead arranger for the borrower before the current loan inception.	DealScan
<i>PreFacPart</i>	The natural logarithm of one plus the number of facilities that the participant syndicated as a participant for the borrower before the current loan inception.	DealScan
<b>Cross-sectional Variables for Alternative Information Channel (Table 7)</b>		
<i>CRDummy</i>	An indicator variable equal to one if the borrower has a long-term credit rating at the end of the most recent fiscal year before loan inception; zero otherwise.	Compustat S&P Ratings
<i>NAnalyst</i>	The natural logarithm of one plus the number of analysts that issue an earnings forecast for the borrower in the most recent fiscal year before loan inception.	I/B/E/S
<i>NNews</i>	The natural logarithm of one plus the number of news articles from the <i>Wall Street Journal</i> , <i>New York Times</i> , <i>USA Today</i> , and <i>Washington Post</i> about the borrower in the most recent fiscal year before loan inception.	RavenPack

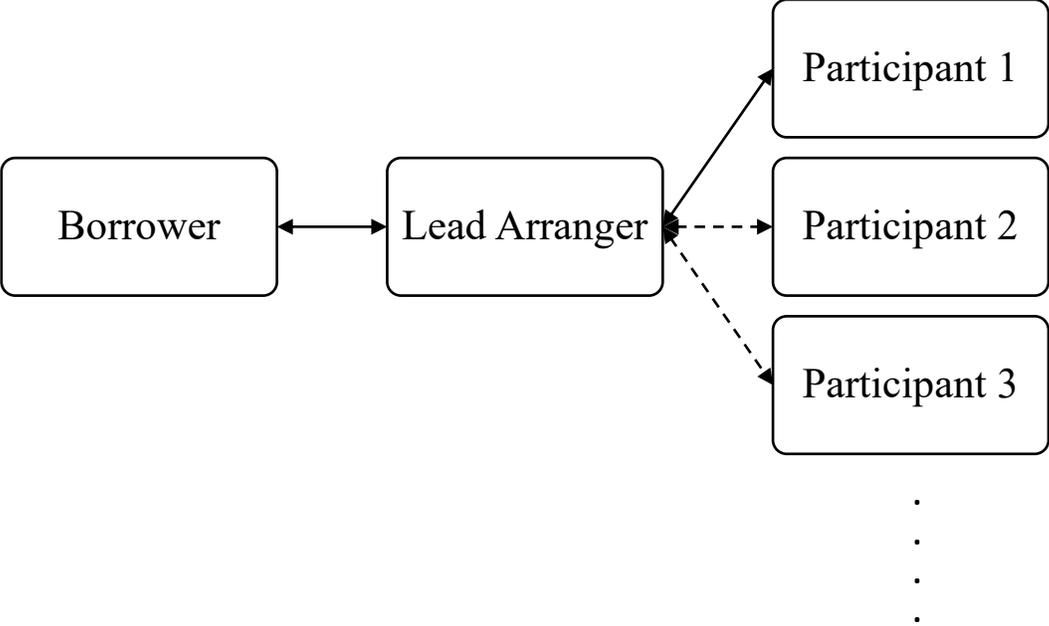
**Figure 1**  
**Loan Syndication Timeline**

Figure 1 provides an overview of the syndication process timeline. Loan syndications include contracting, syndication, and documentation periods. The lead arranger establishes a relationship and screens the borrower during the contracting period. Syndication is initiated when the borrower grants a mandate to the lead arranger. Potential participants evaluate the borrower and the proposed loan and make participation decisions during the syndication period. Syndicate participants review, circulate, and comment on the credit agreement during the documentation period. The loan is issued on the inception date.



**Figure 2**  
**Loan Syndicate Structure**

Figure 2 illustrates the relationship between the borrower, lead arranger and participants in a syndicated loan.



**Table 1**  
**Summary Statistics**

Table 1 presents summary statistics variables used in the regression analyses. All variables are defined in Appendix A.

	N	Mean	Std	P25	Median	P75
<b>Participant Characteristics</b>						
<i>PartShare<sub>p,f</sub></i>	18,796	5.689	3.734	3.080	5.000	7.480
<i>ESV S<sub>p,f</sub>(raw)</i>	18,796	0.118	0.643	0.000	0.000	0.000
<b>Firm Characteristics</b>						
<i>Size<sub>f</sub></i>	3,243	8.299	1.467	7.280	8.272	9.331
<i>ROA<sub>f</sub></i>	3,243	0.057	0.063	0.025	0.051	0.086
<i>Leverage<sub>f</sub></i>	3,243	0.246	0.151	0.137	0.238	0.340
<i>BtM<sub>f</sub></i>	3,243	0.518	0.337	0.282	0.457	0.696
<i>Tangibility<sub>f</sub></i>	3,243	0.327	0.273	0.099	0.231	0.553
<b>Loan Characteristics</b>						
<i>FacilityAmt<sub>f</sub></i>	3,243	6.242	1.062	5.525	6.217	6.909
<i>Maturity<sub>f</sub></i>	3,243	3.870	0.460	3.850	4.111	4.111
<i>NLeadArrangers<sub>f</sub></i>	3,243	3.451	2.354	2.000	3.000	4.000
<i>NParticipants<sub>f</sub></i>	3,243	12.064	7.445	7.000	10.000	16.000
<i>Secured<sub>f</sub></i>	3,243	0.328	0.470	0.000	0.000	1.000
<i>Spread<sub>f</sub></i>	3,243	153.815	85.974	100.000	150.000	200.000
<i>NCovenants<sub>f</sub></i>	3,243	1.576	1.057	1.000	2.000	2.000
<i>LeadShare<sub>f</sub></i>	3,243	37.478	16.994	25.000	35.000	48.450

**Table 2**  
**Participant Access of SEC Filings in EDGAR**

Table 2 presents descriptive information about borrower SEC EDGAR filings searched by participant banks from 1 to 90 days prior to loan inception (day 0), where the syndication (documentation) period is 31 (1) to 90 (30) days prior to loan inception. The sample period is from January 1st, 2004, to June 30th, 2017.

Panel A: Search distribution among form types

	ESV_S [-90, -31]		ESV_D [-30,-1]	
	Frequency	Percent (%)	Frequency	Percent (%)
10-K	1,171	41.99%	1,108	44.28%
10-Q	864	30.98%	701	28.02%
8-K	472	16.92%	371	14.83%
424	55	1.97%	63	2.52%
S	58	2.08%	57	2.28%
DEF	51	1.83%	39	1.56%
Others	118	4.23%	163	6.51%
Total	2,789	100.00%	2,502	100.00%

Panel B: Search distribution by filing date

	ESV_S [-90, -31]		ESV_D [-30,-1]	
	Frequency	Percent (%)	Frequency	Percent (%)
Current-Period Reports (filings $\leq$ 360 days)	1,995	71.53%	1,801	71.98%
Prior-Period Reports (filings $>$ 360 days)	794	28.47%	701	28.02%
Total	2,789	100.00%	2,502	100.00%

Panel C: Search distribution by weekday

	ESV_S [-90, -31]		ESV_D [-30,-1]	
	Frequency	Percent (%)	Frequency	Percent (%)
Monday	494	17.71%	450	17.99%
Tuesday	494	17.71%	501	20.02%
Wednesday	450	16.13%	404	16.15%
Thursday	474	17.00%	437	17.47%
Friday	487	17.46%	387	15.47%
Saturday	178	6.38%	186	7.43%
Sunday	212	7.60%	137	5.48%
Total	2,789	100.00%	2,502	100.00%

**Table 2, cont'd.**

Panel D: Search frequency distribution

	ESV_S [-90, -31]		ESV_D [-30,-1]	
	Frequency	Percent (%)	Frequency	Percent (%)
No search	17,949	95.49	17,972	95.62
1 to 2 times	498	2.65	499	2.65
3 to 5 times	136	0.72	127	0.68
More than 6 times	213	1.13	198	1.05
Total	18,796	100.00	18,796	100.00

**Table 3**  
**Correlations**

Table 3 presents Pearson correlations for variables used in the regression analyses. Correlations significant at 5 percent are highlighted in bold. All variables are defined in Appendix A.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) <i>PartShare<sub>p,f</sub></i>	1.00														
(2) <i>ESV_S<sub>p,f</sub></i>	0.00	1.00													
(3) <i>Size<sub>f</sub></i>	<b>-0.40</b>	<b>0.07</b>	1.00												
(4) <i>ROA<sub>f</sub></i>	<b>0.02</b>	0.01	<b>0.13</b>	1.00											
(5) <i>Leverage<sub>f</sub></i>	<b>-0.08</b>	<b>0.02</b>	<b>-0.08</b>	<b>-0.17</b>	1.00										
(6) <i>BtM<sub>f</sub></i>	<b>0.05</b>	<b>-0.07</b>	<b>-0.25</b>	<b>-0.36</b>	<b>-0.10</b>	1.00									
(7) <i>Tangibility<sub>f</sub></i>	<b>0.02</b>	<b>-0.03</b>	<b>-0.07</b>	<b>-0.10</b>	<b>0.30</b>	<b>0.11</b>	1.00								
(8) <i>FacilityAmt<sub>f</sub></i>	<b>-0.47</b>	<b>0.06</b>	<b>0.67</b>	-0.01	<b>0.06</b>	<b>-0.10</b>	<b>0.04</b>	1.00							
(9) <i>Maturity<sub>f</sub></i>	<b>-0.02</b>	0.01	<b>-0.18</b>	<b>0.04</b>	<b>0.04</b>	<b>-0.03</b>	-0.01	<b>-0.11</b>	1.00						
(10) <i>NLeadArrangers<sub>f</sub></i>	<b>-0.35</b>	<b>0.06</b>	<b>0.32</b>	<b>-0.02</b>	<b>0.08</b>	-0.01	<b>-0.03</b>	<b>0.29</b>	<b>0.06</b>	1.00					
(11) <i>NParticipants<sub>f</sub></i>	<b>-0.59</b>	-0.01	<b>0.38</b>	<b>-0.04</b>	<b>0.05</b>	<b>-0.03</b>	-0.01	<b>0.46</b>	<b>0.02</b>	<b>0.10</b>	1.00				
(12) <i>Secured<sub>f</sub></i>	<b>0.09</b>	-0.01	<b>-0.46</b>	<b>-0.09</b>	<b>0.14</b>	<b>0.05</b>	<b>0.09</b>	<b>-0.30</b>	<b>0.15</b>	<b>-0.08</b>	<b>-0.02</b>	1.00			
(13) <i>Spread<sub>f</sub></i>	<b>0.09</b>	-0.00	<b>-0.43</b>	<b>-0.23</b>	<b>0.20</b>	<b>0.23</b>	<b>0.13</b>	<b>-0.27</b>	<b>0.03</b>	<b>0.04</b>	<b>-0.08</b>	<b>0.44</b>	1.00		
(14) <i>NCovenants<sub>f</sub></i>	<b>0.14</b>	<b>-0.03</b>	<b>-0.44</b>	<b>0.01</b>	<b>0.03</b>	<b>0.00</b>	<b>-0.08</b>	<b>-0.33</b>	<b>0.18</b>	<b>-0.23</b>	<b>-0.09</b>	<b>0.35</b>	<b>0.20</b>	1.00	
(15) <i>LeadShare<sub>f</sub></i>	<b>0.08</b>	<b>0.07</b>	<b>-0.02</b>	0.00	-0.00	<b>-0.02</b>	<b>-0.11</b>	<b>-0.04</b>	<b>0.02</b>	<b>0.62</b>	<b>-0.46</b>	-0.01	<b>0.12</b>	<b>-0.08</b>	1.00

**Table 4****Participant EDGAR Search Volume and Participant Syndicate Share**

Table 4 reports coefficient estimates from the OLS regressions of participant EDGAR search volume on participant share (i.e., Eq. 1). All variables are defined in Appendix A. Standard errors are clustered by firm, and t-statistics are reported in parentheses. \*\*\*, \*\*, and \* denote two-tailed significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>
<i>ESV_S<sub>p,f</sub></i>	0.296*** (2.61)	0.301*** (3.18)	0.302*** (3.68)	0.198** (2.46)
<i>Size<sub>f</sub></i>	-1.224*** (-21.78)	-0.226*** (-4.01)		
<i>ROA<sub>f</sub></i>	3.130*** (2.74)	0.260 (0.37)		
<i>Leverage<sub>f</sub></i>	-3.763*** (-7.12)	-1.346*** (-3.72)		
<i>BtM<sub>f</sub></i>	-0.939*** (-4.02)	-0.076 (-0.47)		
<i>Tangibility<sub>f</sub></i>	1.043** (2.15)	0.580* (1.90)		
<i>FacilityAmt<sub>f</sub></i>		-0.540*** (-8.48)		
<i>Maturity<sub>f</sub></i>		-0.131 (-1.59)		
<i>NLeadArrangers<sub>f</sub></i>		-0.392*** (-9.33)		
<i>NParticipants<sub>f</sub></i>		-0.209*** (-17.22)		
<i>Secured<sub>f</sub></i>		-0.035 (-0.30)		
<i>Spread<sub>f</sub></i>		-0.001 (-0.61)		
<i>NCovenants<sub>f</sub></i>		-0.094* (-1.89)		
<i>LeadShare<sub>f</sub></i>		-0.002 (-0.40)		
Industry FE	YES	YES	NO	NO
Facility FE	NO	NO	YES	YES
Participant FE	NO	NO	NO	YES
Year FE	YES	YES	YES	YES
# of Obs.	18,796	18,796	18,796	18,796
Adj. R2	0.23	0.47	0.67	0.73

**Table 5****Participant Search-Share Relation: Lead Arranger Reputation**

Panel A of Table 5 reports summary statistics for measures of lead arranger reputation. Panel B of Table 5 reports coefficient estimates from the OLS regressions of participant EDGAR search volume on participant share interacted with lead arranger reputation (i.e., Eq. 2). All variables are defined in Appendix A. Standard errors are clustered by firm, and t-statistics are reported in parentheses. \*\*\*, \*\*, and \* denote two-tailed significance at the 1%, 5%, and 10% levels, respectively. Main effects for *TopNLead* are not included as they are absorbed by facility fixed effects.

Panel A: Summary statistics for measures of lead arranger reputation

	N	Mean	Std	P25	Median	P75
<i>Top3Lead<sub>f</sub></i>	3,243	0.565	0.496	0.000	1.000	1.000
<i>Top5Lead<sub>f</sub></i>	3,243	0.636	0.481	0.000	1.000	1.000
<i>Top10Lead<sub>f</sub></i>	3,243	0.732	0.443	0.000	1.000	1.000

Panel B: Participant EDGAR search volume and participant share

	(1) <i>PartShare<sub>p,f</sub></i>	(2) <i>PartShare<sub>p,f</sub></i>	(3) <i>PartShare<sub>p,f</sub></i>
<i>ESV_S<sub>p,f</sub></i>	0.596*** (4.12)	0.574*** (3.63)	0.670*** (2.98)
<i>ESV_S<sub>p,f</sub> * Top3Lead<sub>f</sub></i>	-0.528*** (-3.14)		
<i>ESV_S<sub>p,f</sub> * Top5Lead<sub>f</sub></i>		-0.478*** (-2.67)	
<i>ESV_S<sub>p,f</sub> * Top10Lead<sub>f</sub></i>			-0.540** (-2.24)
Industry FE	NO	NO	NO
Facility FE	YES	YES	YES
Participant FE	YES	YES	YES
Year FE	YES	YES	YES
# of Obs.	18,796	18,796	18,796
Adj. R2	0.73	0.73	0.73

**Table 6****Participant Search-Share Relation: Previous Participant Bank Relationship**

Panel A of Table 6 reports summary statistics for measures of previous banking relationships. Panel B of Table 6 reports coefficient estimates from the OLS regressions of participant EDGAR search volume on participant share interacted with previous banking relationships (i.e., Eq. 2). All variables are defined in Appendix A. Standard errors are clustered by firm, and t-statistics are reported in parentheses. \*\*\*, \*\*, and \* denote two-tailed significance at the 1%, 5%, and 10% levels, respectively. # denotes one-tailed significance at the 10% level.

Panel A: Summary statistics for measures of previous participant bank relationship

	N	Mean	Std	P25	Median	P75
<i>PreFac<sub>p,f</sub></i>	18,796	0.824	0.828	0.000	0.693	1.386
<i>PreFacLead<sub>p,f</sub></i>	18,796	0.099	0.337	0.000	0.000	0.000
<i>PreFacPart<sub>p,f</sub></i>	18,796	0.767	0.803	0.000	0.693	1.386

Panel B: Participant EDGAR search volume and participant share

	(1)	(2)	(3)	(4)
	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>
<i>ESV_S<sub>p,f</sub></i>	0.382*** (2.95)	0.224*** (2.62)	0.373*** (3.04)	0.377*** (2.98)
<i>PreFac<sub>p,f</sub></i>	0.463*** (12.63)			
<i>ESV_S<sub>p,f</sub>*PreFac<sub>p,f</sub></i>	-0.192** (-2.34)			
<i>PreFacLead<sub>p,f</sub></i>		0.768*** (10.67)		0.732*** (10.10)
<i>ESV_S<sub>p,f</sub>*PreFacLead<sub>p,f</sub></i>		-0.279* (-1.66)		-0.228# (-1.36)
<i>PreFacPart<sub>p,f</sub></i>			0.395*** (10.43)	0.378*** (10.00)
<i>ESV_S<sub>p,f</sub>*PreFacPart<sub>p,f</sub></i>			-0.195** (-2.38)	-0.178** (-2.22)
Industry FE	NO	NO	NO	NO
Facility FE	YES	YES	YES	YES
Participant FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
# of Obs.	18,796	18,796	18,796	18,796
Adj. R2	0.74	0.73	0.73	0.74

**Table 7****Participant Search-Share Relation: Borrower Information Environment**

Panel A of Table 7 reports summary statistics for measures of borrower information environment. Panel B of Table 7 reports coefficient estimates from the OLS regressions of participant EDGAR search volume on participant share interacted with borrower information environment (i.e., Eq. 2). All variables are defined in Appendix A. Standard errors are clustered by firm, and t-statistics are reported in parentheses. \*\*\*, \*\*, and \* denote two-tailed significance at the 1%, 5%, and 10% levels, respectively. # denotes one-tailed significance at the 10% level. Main effects for *NAnalyst*, *NNews* and *CRDummy* are not included as they are absorbed by facility fixed effects.

Panel A: Summary statistics for measures of borrower information environment

	N	Mean	Std	P25	Median	P75
<i>NAnalyst<sub>f</sub></i>	3,243	2.216	0.891	1.792	2.398	2.833
<i>NNews<sub>f</sub></i>	3,218	1.571	1.781	0.000	1.099	2.996
<i>CRDummy<sub>f</sub></i>	3,243	0.695	0.461	0.000	1.000	1.000

Panel B: Participant EDGAR search volume and participant share

	(1)	(2)	(3)	(4)
	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>
<i>ESV_S<sub>p,f</sub></i>	0.638** (2.27)	0.424*** (3.73)	0.772*** (3.12)	1.256*** (3.53)
<i>ESV_S<sub>p,f</sub>*NAnalyst<sub>f</sub></i>	-0.167* (-1.69)			-0.129# (-1.42)
<i>ESV_S<sub>p,f</sub>*NNews<sub>f</sub></i>		-0.103*** (-2.88)		-0.087*** (-2.69)
<i>ESV_S<sub>p,f</sub>*CRDummy<sub>f</sub></i>			-0.681*** (-2.66)	-0.622** (-2.42)
Industry FE	NO	NO	NO	NO
Facility FE	YES	YES	YES	YES
Participant FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
# of Obs.	18,796	18,679	18,796	18,679
Adj. R2	0.73	0.73	0.73	0.73

**Table 8****Aggregate Participant EDGAR Search Volume and Loan Outcomes**

This table reports coefficient estimates from the OLS regressions of aggregate participant EDGAR search volume on loan outcomes at the facility level. Panel A and Panel B use lead arranger share and spread as dependent variables (i.e., Eq. 3 and 4), respectively. All variables are defined in Appendix A. Standard errors are clustered by firm, and t-statistics are reported in parentheses. \*\*\*, \*\*, and \* denote two-tailed significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Aggregate participant EDGAR search volume and lead arranger share

	(1) <i>LeadShare<sub>f</sub></i>	(2) <i>LeadShare<sub>f</sub></i>
<i>ESVA_S<sub>f</sub></i>	-0.565* (-1.79)	-0.648** (-2.10)
<i>Size<sub>f</sub></i>	-0.903*** (-3.51)	-0.964*** (-3.82)
<i>ROA<sub>f</sub></i>	-7.194* (-1.93)	-8.275** (-2.24)
<i>Leverage<sub>f</sub></i>	-2.522 (-1.44)	-2.358 (-1.36)
<i>BtM<sub>f</sub></i>	-0.854 (-1.08)	-0.392 (-0.51)
<i>Tangibility<sub>f</sub></i>	-3.285** (-2.42)	-2.892** (-2.15)
<i>FacilityAmt<sub>f</sub></i>	0.886*** (2.74)	0.415 (1.31)
<i>Maturity<sub>f</sub></i>	-1.389*** (-2.75)	1.312 (1.48)
<i>NLeadArrangers<sub>f</sub></i>	4.657*** (28.18)	4.743*** (28.88)
<i>NParticipants<sub>f</sub></i>	-1.276*** (-27.09)	-1.264*** (-26.53)
<i>Secured<sub>f</sub></i>	0.850 (1.60)	0.575 (1.09)
<i>Spread<sub>f</sub></i>	0.004 (0.79)	-0.002 (-0.35)
<i>NCovenants<sub>f</sub></i>	-0.370 (-1.33)	-0.449 (-1.62)
Industry FE	YES	YES
Loan type FE	NO	YES
Loan purpose FE	NO	YES
Year FE	YES	YES
# of Obs.	3,243	3,243
Adj. R2	0.69	0.70

**Table 8, cont'd.**

Panel B: Aggregate participant EDGAR search volume and loan spread

	(1)	(2)
	<i>Spread<sub>f</sub></i>	<i>Spread<sub>f</sub></i>
<i>ESVA_S<sub>f</sub></i>	0.733 (0.44)	-0.132 (-0.08)
<i>Size<sub>f</sub></i>	-13.279*** (-8.14)	-12.542*** (-8.14)
<i>BtM<sub>f</sub></i>	4.560 (0.87)	10.222** (2.05)
<i>ROA<sub>f</sub></i>	-110.684*** (-4.63)	-98.340*** (-4.24)
<i>Leverage<sub>f</sub></i>	67.520*** (6.46)	73.439*** (7.62)
<i>Tangibility<sub>f</sub></i>	-5.288 (-0.60)	-8.874 (-1.16)
<i>FacilityAmt<sub>f</sub></i>	-4.876*** (-2.77)	-5.206*** (-3.05)
<i>Maturity<sub>f</sub></i>	-5.510** (-2.04)	-17.571*** (-3.52)
<i>Secured<sub>f</sub></i>	44.073*** (12.91)	39.246*** (12.64)
<i>NCovenants<sub>f</sub></i>	3.010* (1.94)	3.313** (2.29)
<i>LeadShare<sub>f</sub></i>	0.034 (0.40)	-0.020 (-0.25)
Industry FE	YES	YES
Loan type FE	NO	YES
Loan purpose FE	NO	YES
Year FE	YES	YES
# of Obs.	3,243	3,243
Adj. R2	0.64	0.67

**Table 9****Falsification Test: Participant EDGAR Search During the Documentation Period**

Table 9 reports coefficient estimates from the OLS regressions of participant EDGAR search volume from 30 days before loan inception to 1 day before loan inception on participant share (i.e., a variant of Eq. 1). All variables are defined in Appendix A. Standard errors are clustered by firm, and t-statistics are reported in parentheses. \*\*\*, \*\*, and \* denote two-tailed significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>
<i>ESV_D<sub>p,f</sub></i>	-0.031 (-0.34)	-0.005 (-0.07)	-0.014 (-0.20)	-0.038 (-0.58)
<i>Size<sub>f</sub></i>	-1.223*** (-21.73)	-0.224*** (-3.98)		
<i>ROA<sub>f</sub></i>	3.137*** (2.75)	0.271 (0.38)		
<i>Leverage<sub>f</sub></i>	-3.768*** (-7.13)	-1.353*** (-3.73)		
<i>BtM<sub>f</sub></i>	-0.945*** (-4.05)	-0.081 (-0.50)		
<i>Tangibility<sub>f</sub></i>	1.039** (2.14)	0.577* (1.88)		
<i>FacilityAmt<sub>f</sub></i>		-0.539*** (-8.47)		
<i>Maturity<sub>f</sub></i>		-0.131 (-1.59)		
<i>NLeadArrangers<sub>f</sub></i>		-0.393*** (-9.34)		
<i>NParticipants<sub>f</sub></i>		-0.209*** (-17.22)		
<i>Secured<sub>f</sub></i>		-0.031 (-0.26)		
<i>Spread<sub>f</sub></i>		-0.001 (-0.60)		
<i>NCovenants<sub>f</sub></i>		-0.094* (-1.87)		
<i>LeadShare<sub>f</sub></i>		-0.002 (-0.40)		
Industry FE	YES	YES	NO	NO
Facility FE	NO	NO	YES	YES
Participant FE	NO	NO	NO	YES
Year FE	YES	YES	YES	YES
# of Obs.	18,796	18,796	18,796	18,796
Adj. R2	0.22	0.47	0.67	0.73

**Table 10**  
**Robustness Tests**

Table 10 reports coefficient estimates from the OLS regressions of participant EDGAR search volume on participant syndicate share with samples altered to address several concerns. Panel A excludes loan facilities initiated during the financial crisis period (2008:Q3 – 2010:Q1). Panel B excludes loan facilities that are amendments. Panel C excludes overlapping loans. All variables are defined in Appendix A. Standard errors are clustered by firm, and t-statistics are reported in parentheses. \*\*\*, \*\*, and \* denote two-tailed significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Exclude facilities initiated during the financial crisis

	(1)	(2)	(3)	(4)
	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>
<i>ESV_S<sub>p,f</sub></i>	0.274** (2.41)	0.281*** (2.92)	0.305*** (3.67)	0.191** (2.36)
Borrower Controls	YES	YES	NO	NO
Loan Controls	NO	YES	NO	NO
Industry FE	YES	YES	NO	NO
Facility FE	NO	NO	YES	YES
Participant FE	NO	NO	NO	YES
Year FE	YES	YES	YES	YES
# of Obs.	17,676	17,676	17,676	17,676
Adj. R2	0.22	0.47	0.67	0.72

Panel B: Exclude facilities that are amendments

	(1)	(2)	(3)	(4)
	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>
<i>ESV_S<sub>p,f</sub></i>	0.299*** (2.63)	0.302*** (3.17)	0.298*** (3.62)	0.193** (2.39)
Borrower Controls	YES	YES	NO	NO
Loan Controls	NO	YES	NO	NO
Industry FE	YES	YES	NO	NO
Facility FE	NO	NO	YES	YES
Participant FE	NO	NO	NO	YES
Year FE	YES	YES	YES	YES
# of Obs.	18,674	18,674	18,674	18,674
Adj. R2	0.23	0.47	0.67	0.73

**Table 10, cont'd.**

Panel C: Exclude overlapping loans

	(1)	(2)	(3)	(4)
	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>	<i>PartShare<sub>p,f</sub></i>
<i>ESV_S<sub>p,f</sub></i>	0.268** (2.32)	0.289*** (2.98)	0.285*** (3.41)	0.177** (2.16)
Borrower Controls	YES	YES	NO	NO
Loan Controls	NO	YES	NO	NO
Industry FE	YES	YES	NO	NO
Facility FE	NO	NO	YES	YES
Participant FE	NO	NO	NO	YES
Year FE	YES	YES	YES	YES
# of Obs.	18,289	18,289	18,289	18,289
Adj. R2	0.23	0.47	0.67	0.73