Direct Lending:
The Determinants, Characteristics and Performance of Direct Loans*

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ABSTRACT

I explore the determinants, characteristics and performance of direct corporate loans, that is, loans originated by nonbank institutional investors without banks' intermediation. In the aftermath of the financial crisis, direct lending has been the most rapidly growing credit market segment. I document that direct lending activity increases when commercial banks face greater regulatory pressure and during periods of weak bank loan and securitized debt issuance. Direct lenders are particularly active in geographic regions that experience more bank mergers and primarily focus on informationally opaque borrowers with limited credit history and few financing alternatives. Moreover, direct loans have higher interest rate, more flexible covenant structures and are more likely to be secured by borrower's capital stock compared to institutional loans issued by banks. I further show that direct loans experience similar or somewhat better post-issuance performance compared to bank-originated institutional loans. Overall, I provide evidence consistent with the view that direct lending expanded the credit space without giving rise to adverse selection costs.

Keywords: Direct lending, nonbank institutional investors, banks, institutional loans

JEL classification: G21, G23, G24

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1. Introduction

Historically, corporate loans were originated by banks. Over the past twenty years, while the arrangers of corporate loans were typically banks, credit expansion was almost exclusively fueled by the inflow of nonbank institutional investors in the private debt market (e.g., finance companies, private equity firms, hedge funds and other investment managers). These lenders largely invested as syndicate participants in the leveraged segment of the market (i.e., in loans to non-investment grade or highly leveraged firms) to search for yield and to obtain private information about the borrowers (e.g., Bushman et al., 2010; Massoud et al., 2011; Ivashina and Sun, 2011a; Lim et al., 2014). However, a new, important private lending practice is now rapidly expanding and gaining popularity: direct lending. Direct lending refers to loans issued by nonbank institutional lenders without banks' intermediation (direct loans, hereafter). The compound annual growth rate of the direct loan market has been about 20% since 2009, reaching a total size of $600 billion in 2017 (Alternative Credit Council [ACC], 2017).[1]

In this paper, I investigate the determinants, characteristics and quality of direct loans. My study is organized across two research questions. First, did direct lending expand the credit space? One possibility is that through their prior lending experience with borrowers in the syndicated debt market, direct lenders aim to attract companies that usually received bank debt, potentially offering them better credit terms or greater contractual flexibility. Alternatively, direct lenders may expand the credit space by financing new borrowers or accessing companies that banks were not traditionally interested in or can no longer serve. Specifically, the rapid consolidation in the

[1] Direct credit market size is largely disputed: while total capital raised solely by direct lending funds in 2007-2017 is reported at about $200 billion (Preqin, 2018), other studies that examine the total direct lending activity estimate its size at about $900 billion (Ares Market Insights, 2018). These discrepancies can be explained by the different definitions of direct lending that these studies propose and the different segments of the direct lending market that they examine (e.g., syndicated versus middle-market direct loans; direct loans in closed-end funds versus loans held by the originating lender; including versus excluding direct loans to distressed companies). In this paper, I consider as direct loan any loan arranged by a nonbank institutional investor.

banking sector and the greater regulatory burdens on commercial banks likely created a pool of underserved borrowers that nonbank institutional lenders attracted.

Second, are direct loans of worse or better quality than institutional corporate loans originated by banks? On the one hand, unlike banks that face strict capital requirements and regulatory oversight, direct lending is largely unregulated, providing greater opportunities in the levels of credit risk that lenders can undertake.[2] Also, the direct lending landscape remains highly competitive, which can adversely impact credit standards.[3] Thus, direct loans are likely of worse quality compared to institutional loans issued by banks. On the other hand, direct loans are typically sole-lender or not largely syndicated. Direct lenders tend to hold the loans long term since the secondary direct loan market is relatively illiquid, as well as they may pull these loans in closed-end funds that attract long-term investors such as pension funds (ACC Research, 2017; Preqin, 2017). "Skin in the game" and long-term investment horizons may thus alleviate concerns about adverse selection in direct lending.

To test my research questions, I employ a sample of 756 direct loans issued by 89 nonbank institutional lenders in 2003-2016 (finance companies, private equity firms, investment management firms, hedge funds and insurance firms). I identify direct loans with complete information on their contract terms using data in Preqin, a new database on direct lending activity, Capital IQ and DealScan. I compare direct loans' determinants, terms and performance to those of institutional loans originated by banks and obtained from DealScan. To alleviate the concern that the results are driven by my control sample choices, I use three groups of institutional loans

[2] Although institutional investors that participate in bank-originated corporate loans are also unregulated, lead banks typically retain about 10%-15% of the loan size as an incentive to effectively screen and monitor credit risk (S&P Leveraged Loan Market, 2015).

[3] There are more than 200 U.S. direct lenders (Ares Market Insights, 2018). As direct lenders have been increasing the size of their transactions, they also compete for deals with investment banks (Preqin, 2017).

examined by prior studies (e.g., Fang et al., 2013; Bozanic et al., 2018): (1) loans issued by bank's investment- or private equity-arm (1,065 loans), (2) loans largely sold to institutional investors (976 loans), and (3) loans where direct lenders participate in the initial syndicate (1,318 loans).

Although finance companies and insurance firms have traditionally originated corporate loans, I show that over the past ten years, institutional investors such as private equity and investment management firms have aggressively entered the market, currently accounting for about 80% of the direct loan volume. Ares Management, Monroe, Maranon and Golub Capital are among the institutional lenders mostly active in direct lending. The flow of institutional money seems to gradually shift from the bank-based corporate loan market towards direct lending: not only is direct loan volume as a percentage of institutional loan issuance rapidly growing, but transaction size is also increasing over time. Direct lenders thus reach out to borrowers in both the middle- and large syndicated-loan market.[4] In terms of geographic coverage, most deals take place in the U.S.

In the first set of analyses, I show that direct lending activity is positively associated with regulatory pressure on banks. To exemplify, direct lending activity increases by about 22% when the banks that a firm has recently borrowed from face tighter capital constraints (i.e., report a greater non-performing loan volume). Also, an increase in banks' litigation risk by one standard deviation increases direct lending activity by about 8%. This evidence suggests that direct lenders are more active when banks potentially face greater regulatory constraints. In addition, I find that direct lending activity is positively related to banks' M&A activity in a borrower's state, consistent with the argument that the consolidation in the banking industry often creates an underserved pool of borrowers (e.g., Berger et al., 1999; DeYoung et al., 2009; Amore et al., 2013). Specifically, an increase in banks' local M&A activity by one standard deviation increases direct lending by about

[4] Based on Thomson Reuters LPC (Standard and Poor's Capital IQ LCD), middle-market loans are defined as loans to companies with revenues (earnings) less than $500 million ($100 million), or loans of the same size.

2.2%. Relatedly, I document that direct lending is more prevalent in periods of bank credit contraction (i.e., in quarters when banks reduce new loan issuance), as well as during periods of low CLO issuance.[5] An increase in bank loan issuance and CLO debt issuance by one standard deviation decreases direct lending by about 2% and 3%, respectively. Examining direct loan borrower characteristics, I show that direct lending is more common among smaller, less profitable and less reputable borrowers (i.e., borrowers with limited credit history). Overall, the results support the argument that direct lending expands the credit space to companies with fewer external financing options and fills the void in periods of credit contraction and greater regulatory scrutiny.

Second, examining the contractual terms of direct loans, I document that these loans have a higher spread by up to 140 basis points relative to institutional loans issued by banks, controlling for loan and borrower characteristics. The probability of a covenant-lite direct loan (i.e., a loan without financial covenants) is up to 14% higher compared to bank-originated institutional loans. I also find that the probability of direct loan borrowers pledging equity as collateral is by 5% higher than other institutional loans. These findings are mostly robust to restricting the sample to U.S. or publicly listed borrowers and to using a propensity score matching methodology, where I match direct loans to institutional loans based on size, maturity, collateralization and borrower type. In addition, I show that these results are primarily attributed to direct loans issued by private equity and investment management firms. Overall, my findings suggest that non-bank institutional direct lenders enter the credit market in search of higher yields and likely trade off covenant contractual

[5] CLOs (i.e., Collateralized Loan Obligations) are bankruptcy-remote special-purpose vehicles set up by a bank and an asset management firm to facilitate the securitization of corporate loans. CLOs are the largest institutional investor type in the leveraged loan market, holding about 70% of the leveraged loans outstanding and with annual securitized debt issuance of about $100 billion (Standard and Poor's, 2015).

flexibility with equity collateral pledges that can allow them to exercise greater control upon a borrower's default on its debt.[6]

Third, I investigate the quality of direct loans, measured by borrowers' post-issuance credit performance. Using three measures of credit quality—whether a borrower filed for bankruptcy (*Bankruptcy*), whether a borrower's credit rating is downgraded by a rating agency (*Borrower credit rating downgrade*), and the average quarterly returns of a borrower's loans (*Loan returns*)—I show that direct loan borrowers have slightly higher credit performance than those of bank-originated institutional loans in five out of fifteen specifications. These results are sensitive to the choice of the control loan group employed in the analyses: in the remaining specifications, I find that direct loans are of similar quality to bank-originated loans. In addition, direct loans issued by private equity or investment management firms exhibit significantly better performance than other institutional loans. Although I document a weak association between direct lending and post-issuance performance, there is an important positive implication: I find no evidence of direct lending giving rise to higher adverse selection costs. Indeed, despite the fact that direct lenders are not as sophisticated as banks in corporate loan underwriting and are not subject to strict regulatory oversight, they seem to be effective in screening borrowers by issuing loans of the same or somewhat better quality than banks do.

In supplemental analyses, I examine direct lenders' characteristics that are associated with loan issuance and quality. Direct lenders—such as investment management firms, hedge funds and private equity firms—have been traditionally active in investing in companies' equity. I investigate whether institutional investors leverage this expertise when expanding their business towards direct lending. I find that direct lending volume is positively associated with direct lenders'

[6] The findings of these multivariate tests further confirm anecdotal and survey evidence on direct loan terms and covenant contractual flexibility (Nesbitt et al., 2019).

industry expertise, thus, institutional investors are more likely to lend to borrowers in industries that they typically specialize. Lending to borrowers in high-expertise industries is related to better ex-post credit performance, suggesting that direct lenders are successful in identifying high-quality borrowers when they focus on industries they are more familiar with. In addition, an advantage of institutional investors expanding to direct lending is accessing private information about borrowers (e.g., Bushman et al., 2010; Massoud et al., 2011; Ivashina and Sun, 2011a). I find that direct lending volume is related to a subsequent increase in institutional investors' equity portfolio allocation in direct loan borrowers' industries, suggesting that direct lenders likely use their private information advantage in their portfolio allocation decisions. Moreover, using fund investor data in Preqin, I find that loans in direct lending funds backed by pension or (sovereign or private) wealth funds—that are typically long-term oriented—have slightly better performance than other institutional loans. This evidence is consistent with prior studies that document the higher asset performance of firms with a long-term investor base (Brochet et al, 2015).

A few caveats are in order. First, as the inflow of institutional money into the direct lending market grows, the availability of credit opportunities is likely to erode, potentially leading to direct lenders lowering their credit standards. Thus, I caution against a normative interpretation of my results, as this shift towards direct lending may entail significant credit risks unexplored in this study. Second, data limitations restrict me from establishing a causal link between direct lending and credit terms and quality, since I cannot observe direct lenders' due diligence efforts and loan underwriting negotiations. Third, explaining borrowers' capital structure choices or how direct lenders source their loan deals is beyond the scope of this study. Instead, I am simply interested in describing a novel lending practice in the private debt market.

The paper makes several contributions to the literature. First, prior literature on shadow banking has largely focused on the securitization-based credit intermediation process where commercial banks continue to play an active role, examining its effect on credit availability and risk (e.g., Gorton and Metrick, 2010; Stein, 2010; Acharya et al., 2010; Adrian and Ashcraft, 2012). Recent studies also explore online fintech lending, investigating the credit risk profile of borrowers that fintech lenders attract (e.g., Duarte et al., 2012; Wei and Lin, 2017; Di Maggio and Yao, 2018). For instance, Buchak et al. (2018) show that online fintech mortgage lenders serve more creditworthy borrowers, employ a different information set and charge higher interest rates compared to other shadow banks. I complement these studies by examining a different segment of shadow banking and documenting that the de-banking of the lending process likely expands the credit space without leading to higher adverse selection costs. Few studies have evaluated the contractual terms of loans issued by insurance firms (e.g., El-Gazzar and Pastena, 1990) and the determinants of private debt holdings by large insurers (Pottier, 2007). Also, Carey et al. (1998) and Denis and Mihov (2003) explore the characteristics of borrowers that take on loans from finance firms compared to those that raise bank debt. I extend these studies by providing a broader scope of the direct lending activity, documenting the rise of private equity and investment management firms as alternative lenders following the financial crisis. I thus complement prior research showing how changes in banks' lending activities can give rise to new financial intermediaries (e.g., Leland and Pyle, 1977; Diamond, 1984; Petersen and Rajan, 1995; Strahan and Weston, 1998; Sutherland, 2018).

Second, I contribute to the growing literature on borrower information verification by alternative lenders. Although online fintech lenders typically employed borrowers' unverifiable soft information in their credit decisions (Michels, 2012), they recently reduced sharply the extent

of soft information available in their lending platforms (Ryan and Zhu, 2018). Relatedly, Lin et al. (2013) show that online borrowers' friendships increase credit availability and reduce borrowing costs, suggesting that informal networks serve as informational cues of online borrowers' credit quality. I complement these studies by showing that nonbank institutional lenders leverage their industry expertise acquired by prior equity investments to expand towards direct lending and source high-quality loan deals. Thus, I further add to recent studies on the role of lenders' industry expertise and information processing in the credit intermediation process (e.g., Bushman, 2014; Berger et al., 2016; Lisowsky et al., 2017; Minnis and Sutherland, 2017; Bushman et al., 2017).

Last, my study is relevant to the research on the credit terms of institutional corporate loans. Prior studies largely associate the inflow of institutional money in the debt market with lower interest rates and less restrictive covenants (Ivashina and Sun, 2011b; Nadauld and Weisbach, 2011; Shivdasani and Wang, 2011; Becker and Ivashina, 2015). I find that direct corporate loans have on average higher spreads, consistent with financial disintermediation leading to higher borrowing costs (Ivashina and Kovner, 2011). I further show that direct lending is related to greater covenant contractual flexibility but more equity collateral pledges, suggesting that direct lenders likely monitor loans through tighter collateral rather than covenants (Rajan and Winton, 1995).

2. Data sources and sample construction

2.1. Sample of direct loans

I obtain my sample of direct loans from Preqin, a new database on direct loan fund structure and performance. While Preqin maintains a comprehensive database of private equity and hedge fund activity used by many prior studies (e.g., Lerner et al., 2007; Harris et al., 2014; Fang et al., 2015), it further retrieves information on private debt funds starting from 2014 (that is, funds labeled as direct lending, distressed debt, venture debt, mezzanine debt, special situations,

secondaries and fund of funds). In this study, I focus on direct lending funds. Preqin reports loan-level information, including: (1) unique asset (loan) and debt provider (lender) identifiers, (2) lender, fund and borrower names, (3) borrower country and industry, and (4) loan date, type (e.g., unitranche, senior, subordinated) and purpose (e.g., growth, LBO, merger, recapitalization, distressed). The database covers 2,887 unique loans (3,195 loan tranches) of 2,662 borrowers originated by 230 direct lenders and pulled in 540 direct loan funds over the period 2003-2016. Preqin thus offers a rich cross-sectional coverage of direct lending funds; however, the data is available only in a snapshot, and time-series information is not provided. Another limitation of the database is that it does not report loan contract details such as loan interest rate or covenants.

Many direct lending fund portfolio loans are related to buyouts or public-to-private deals, where nonbank institutional investors acquire the borrowing firm. I eliminate these loans from my sample by identifying for each loan in Preqin its transaction details in Capital IQ's "Transactions, Private placements" and "Key developments, Debt-related financing" descriptions using the deal date, borrower name and lender name. Similarly, using corporate ownership data in Capital IQ, I further eliminate direct loans whose lenders are listed as borrowers' current or prior investors. Moreover, I exclude loans for which a bank is reported as a co-arranger (i.e., loans that were jointly arranged by a direct lender and a bank).

Next, I obtain direct loan pricing and non-pricing terms by matching loans in direct lending funds with those in DealScan using the borrower name, arranger name and loan date. Although DealScan mainly reports data on syndicated loans (and several direct loans are syndicated), the database further includes some coverage of middle-market deals. Similarly, I eliminate loans for which DealScan reports a bank as a co-arranger or loans related to lender's acquisition of the

borrower (using the same identification process described above). This process yields a sample of 396 direct loans with complete credit term data originated over the 2003-2016 period.[7]

I augment this sample of direct loans with loans in DealScan that are originated by nonbank institutional investors and are not covered in Preqin, presumably because these loans are not pulled in direct lending funds. I identify whether a loan arranger is classified as nonbank institutional investor using DealScan data on lender type. I eliminate loans originated by banks' subsidiaries (e.g., Fortress Financial, subsidiary of Wells Fargo) as well as loans bundled with lenders' acquisitions of borrowers. I thus obtain an additional sample of 360 direct loans.[8] The final direct loan sample includes 756 loans of 639 unique borrowers with complete contract term data issued by 89 direct lenders over the 2003-2016 period.[9]

Several caveats are in order. First, similar to most fund data, direct loan data in Preqin is self-reported by the debt providers and thus subject to selection bias. To alleviate this constraint, I focus on the subsample of the 360 direct loans identified in DealScan where loan coverage is not affected by self-reporting bias (Carey et al., 1998; Ivashina, 2009). Second, DealScan may underreport information on loan arrangers, leading to a misclassification of bank loans as direct loans. Although I check the detailed transaction descriptions provided in Capital IQ to minimize this error, I also restrict the sample to the 396 loans identified in Preqin. These loans are less likely to have a bank arranger since they were originated by direct lenders to be pulled in their funds. Thus, while I could retrieve direct loans by solely using information in DealScan, Preqin data allows me

[7] I further manually checked the press releases and/or SEC filings of 83 loan agreements to confirm that the matching between DealScan and Preqin and the name of the direct lender are correct.

[8] In untabulated univariate tests, I examine whether the contract terms and borrower characteristics of direct loans in Preqin are significantly different to those identified in DealScan. I find that the direct loans across both subsamples have similar pricing and size, and their borrowers share similar financial performance. However, direct loans in Preqin are less (more) likely to be syndicated or secured (covenant-lite, i.e. having no financial covenant) and usually have longer maturity. I control for these loan terms in my multivariate analyses.

[9] Prior studies on corporate loan securitizations use samples of similar size (Shivdasani and Wang, 2011; Nadauld and Weisbach, 2011; Benmelech et al., 2012; Bozanic et al., 2018).

to better identify direct lending activity. In both untabulated robustness checks, my findings remain mostly unchanged. Finally, retrieving contractual terms from DealScan likely restricts the sample to larger direct loans, thus eliminating smaller and less economically significant deals.

2.2. Control groups of institutional loans

To assess direct loans' determinants, characteristics and quality, I compare them to institutional loans that are originated by banks and covered in DealScan. I focus on institutional loans to eliminate the effect of potential borrower and contractual differences between investment-grade and high-yield loans. Following Ivashina and Sun (2011b), I classify a loan as institutional if it includes at least one term loan tranche B-H.[10]

I employ three control groups of institutional loans that have also been examined in prior research. My first control sample includes institutional loans for which the arranger is a bank's private equity- or investment-arm (e.g., Fang et al., 2013). Using these control sample selection criteria, I identify 1,065 institutional loans originated by 16 banks to 775 borrowers over the 2003-2016 period. Second, to avoid pooling in my sample institutional loans that are sold mainly to banks but have a small institutional tranche, I require that a loan's institutional tranche size ranks above the mean institutional ownership of loans with institutional tranches (Bozanic et al., 2018). Based on these filters, there are 976 highly institutional loans (i.e., loans largely sold to institutional investors) issued by 51 banks to 786 borrowers in the 2003-2016 period. Last, I identify a control group of 1,318 institutional loans originated by 52 banks to 1,045 borrowers over the same period, where the sample direct lenders participate in the initial syndicate. Note that these control loan groups are not mutually exclusive (for example, a loan may be highly institutional and originated

[10] I categorize term loans for which seniority is not identified in DealScan (i.e., the facility type is "term loan") as institutional if their LIBOR-spread is above 250 basis points or if they are sold in the institutional loan market. The "market segment" field for these loans in DealScan is classified as: "(highly) leveraged," "institutional," "LBO" or "non-investment grade."

by a bank's private equity-arm). While I use the three control loan groups interchangeably throughout my analyses, combining them as one large control group yields very similar results (untabulated robustness check).[11]

2.3. Overview of sample

Table 1 provides statistics of the distribution of direct and bank-originated institutional loans in my sample. This table highlights the increasing trend of direct lending activity in the corporate high-yield loan market, especially in the aftermath of the financial crisis. Not only is the average annual growth rate of the direct loan market about 14% over the 2003-2016 period, with direct lending expansion reaching 27% per year in 2010-2016, but also the number of direct lenders significantly increases over this period (Panel A of Table 1). Importantly, the average direct loan size increased from $64 million in 2009 to $170 million in 2016, with a total annual direct loan volume of about $17.5 billion (Figure 1), consistent with the argument that direct lenders expanded from the middle loan market into the larger credit segment and into larger facilities across the board (Munday et al., 2018).

Over the sample period, institutional money has been gradually shifting from the traditional bank-centric leveraged loan market towards direct lending (Panel A of Table 1). Indeed, while direct lending volume as a percentage of institutional loans issued by banks' private equity- or investment-arms accounted for about 5% in 2009, it rapidly grew to 17% by 2016 (Figure 2). The relative growth rate is substantially larger when I compare direct lending activity with the highly institutional loan volume or the issuance of institutional loans where direct lenders participate in the initial syndicate: in both cases, direct lending volume reached about 65% of the institutional

[11] To alleviate the concern that differences in the characteristics between the treatment and control groups of loans likely drive my results, in Table 6 I report robustness tests using a propensity score matching methodology where I match direct loans to institutional (control group) loans based on their size, maturity, whether they are collateralized and whether the borrower is a private firm.

loan issuance by 2016 (Figure 2). In terms of geographic coverage (Panel B of Table 1), most direct deals take place in the U.S., with some activity also being present in Canada and Europe.[12]

I further document that the direct loan market composition has significantly changed over the sample period. While finance and insurance firms have traditionally been active in this market segment, the growth of direct lending was almost exclusively fueled by the advent of nonbank institutional investors such as investment management firms, private equity firms and hedge funds. To exemplify, General Electric Capital, Madison Capital and NewStar Financial are among the most active finance firms in direct lending, and private equity and investment management firms such as Ares Management, Golub Capital, Monroe Capital and Maranon have issued a significant direct loan volume. Appendix A provides a list of the largest direct lenders in my sample. These new types of direct lenders have significantly increased their commitments, currently contributing to approximately 80% of direct loan issuance (Figure 3). My sample includes 369 direct loans issued by finance firms, 242 loans by private equity firms, 99 loans by investment management firms, 41 loans by hedge funds and 5 loans by insurance companies (Panel C of Table 1).[13]

3. The economics of direct lending

Based on the framework outlined above, my empirical analyses are organized across two research questions. First, does direct lending expand the credit space? Second, are direct loans of better or worse quality relative to institutional loans issued by banks?

On the one hand, direct lenders may leverage the private information and lending relations that they have acquired over time by participating in corporate loans. Indeed, previous studies have

[12] Although my direct loan sample mainly includes U.S.-originated loans due to the fact that DealScan's contract data coverage is more complete for U.S. borrowers, these statistics are consistent with industry commentators' estimates that the European direct lending activity is about 13% of the U.S. market size (Ares Market Insights, 2018).
[13] The classification of direct lender type is based on the companies' description notes on Capital IQ (when this information is missing, direct lender type is retrieved from Bloomberg).

shown that institutional lenders take advantage of private information collected through their syndicate participation to profit from purchasing or selling borrowers' stocks (e.g., Bushman et al., 2010; Massoud et al., 2009; Ivashina and Sun, 2011a). Similarly, nonbank institutional investors can use this information advantage in the private debt setting by reaching out to borrowers that traditionally take on bank debt, potentially offering better credit terms or greater contractual flexibility. This argument is consistent with prior research documenting that the inflow of institutional lenders decreased loan yields compared to those that banks typically charge for lending to similar borrowers (e.g., Ivashina and Sun, 2011b; Nadauld and Weisbach, 2011). Moreover, syndicate participants—not only lead arrangers—tend to develop strong lending relationships with their borrowers (e.g., Sufi, 2007; Champagne and Kryzanowski, 2007; Li, 2018). I thus predict that direct lenders likely pursue borrowers that typically rely on bank debt offering better or more flexible credit terms. [14]

On the other hand, direct lenders may expand the lending space by reaching out to borrowers that banks did not traditionally or can no longer serve. Over the past twenty years, the significant consolidation in the banking industry has decreased the number of U.S. banks by about 46% (FDIC, 2018). Moreover, in the aftermath of the financial crisis, new regulations (e.g., Dodd-Frank, Basel 2) further increased banks' capital standards, forcing them to drastically reduce the percentage of leveraged loans on their balance sheets and shift to larger, investment-grade borrowers (e.g., Ares Market Insights, 2018). Banks have primarily focused on refinancing or amending existing leveraged loans (LSTA, 2017). At the same time, recent regulations imposed greater control on banks' securitization activities, which were the primary means of banks' selling

[14] Consistent with this prediction, based on my interviews with the debt analysts at Preqin, direct lenders likely try to offer more borrower-friendly loan terms to attract borrowers since they do not have a long reputation in private debt.

off risky loans. These developments likely created a pool of underserved borrowers that direct lenders reached out to.[15] Thus, I predict that direct lenders will expand the credit space.

Lastly, exploring the quality of direct loans, since direct lending is unregulated, lenders can take on greater credit risks compared to those that banks can. Moreover, the direct lending landscape remains highly competitive, which may urge lenders to lower credit standards. For instance, there are about 230 U.S. direct lenders, while, in comparison, 150 CLO managers are active in the U.S. securitized loan market (Ares Market Insights, 2018; Creditflux, 2018). Thus, direct loans may be of lower quality than institutional loans originated by banks. However, "skin in the game" and long-term investment horizons likely alleviate adverse selection costs in direct lending. Specifically, direct loans are typically sole-lender or not largely syndicated. Since direct loans are relatively illiquid, their lenders usually hold them long term on their balance sheets or pull them in closed-end funds (the average loan holding period is about two to six years) (ACC, 2017; Preqin, 2017; Ares Market Insights, 2018). In comparison, bank-originated institutional loans are largely syndicated and frequently traded in the secondary loan market.[16] Moreover, direct lending funds receive significant investments from pension and wealth funds that are typically long-term oriented, allowing direct lenders to focus on long-term performance and thus to potentially achieve greater return on assets (Brochet et al., 2015).[17] Therefore, direct lending may be related to better loan quality.

4. Variable definition and summary statistics

[15] The development of an underserved pool of borrowers has also been documented in prior studies examining personal loans through peer-to-peer lending platforms (e.g., Duarte et al., 2012; Lin et al., 2013).
[16] To exemplify, based on the 2014 LSTA Trade Data Study, bank-originated institutional loans were traded in the secondary market about 15 times per quarter in 2013, and securitized loans were traded on average 40 times per quarter in the same year (Bozanic et al., 2018). Banks typically retain about 10%-15% of an institutional loan's size with the remaining amount sold to non-bank institutional investors (Standard and Poor's, 2015).
[17] Bloomberg, "Public Pensions Gorge on Private Debt in Quest for Big Returns," June 1, 2018.

I divide the variables used in my empirical tests into measures of credit market and borrower characteristics, lending terms and loan quality. These variables are described below, and Appendix B includes their detailed definitions. In Panel A of Table 2, I present summary statistics for the variables, and univariate correlations are reported in Panel B of Table 2.[18]

4.1. Loan characteristics

I measure direct lending activity using three proxies. First, *Direct loan 1* is a binary variable that equals one if a loan is issued by a direct lender, and zero if a loan is arranged by a bank's investment- or private equity-arm. Second, *Direct loan 2* is a binary variable that equals one if a loan is issued by a direct lender, and zero if a loan is highly institutional and arranged by a bank (i.e., the size of its institutional tranches ranks above the mean institutional ownership of loans with institutional tranches). Third, *Direct loan 3* is a binary variable that equals one if a loan is issued by a direct lender, and zero if a loan is arranged by a bank and at least one direct lender participates in the initial syndicate. The mean *Direct loan 1* (*Direct loan 2* and *Direct loan 3*) is about 41.5% (43.6% and 36.5%).

In my multivariate tests, I use loan pricing and non-pricing terms obtained from DealScan, including the natural logarithm of a loan's LIBOR-spread (*LIBOR-spread*), an indicator variable of whether a loan includes no financial or net worth covenants (*Covenant-lite loan*), and an indicator variable equal to one if a loan is secured by a borrower's capital stock or equity warrants, and zero if a loan is secured by other collateral type (*Equity/warrant collateral*). I further control for the natural logarithm of loan size (*Loan amount*), the natural logarithm of loan maturity (*Loan maturity*), an indicator variable of whether a loan includes a revolving tranche (*Revolving tranche*),

[18] I exclude *Borrower credit rating downgrade*$_{y,y+2}$, *Loan returns*$_{q,\,q+1}$, *Equity/warrant collateral* and the measures of borrower financial performance from the correlation matrix to avoid a substantial sample drop. The reported correlations are similar to those for the restricted sample when I include these variables (untabulated).

an indicator variable of whether a loan is collateralized (*Secured loan*), and an indicator variable reflecting whether a loan is sole-lender (*Sole lender loan*).

The mean LIBOR-spread is 366 basis points (log-transformed values are shown), while 63.3% and 76.8% of the sample loans are covenant-lite and secured, respectively. These descriptive statistics are consistent with the high credit risk of institutional loans. About 13.0% of the secured sample loans are collateralized by borrower's equity. The mean loan amount is $450 million, and the average sample loan matures in five years (log-transformed values are tabulated). The probability of a sole-lender loan is 14.6%, and 71.4% of the loans include a revolving tranche.

4.2. Credit market and borrower characteristics

I employ several measures of credit market characteristics that are likely associated with direct lending activity. First, I use two proxies for regulatory pressure on banks. *Banks' litigation risk* is the natural logarithm of the number of lawsuits against banks in a borrower's country of incorporation over a quarter. Lawsuits potentially tighten banks' capital constraints and amplify their regulatory burden (e.g., Buchak et al., 2018). In addition, *Banks' NPL* is the mean non-performing loan volume (non-performing loans to total assets) of the lead arrangers a borrower has taken a loan from over the prior five years.[19] For borrowers with no prior lending transactions, variable values equal to the mean quarterly non-performing loan volume of the banks in Compustat. Weak bank balance sheets further lead to greater regulatory scrutiny. The mean annual number of lawsuits against banks is about 22 (with its logarithmic transformation equal to 2.8), and the mean *Banks' NPL* is 1.0%.

[19] Banks' financial data is obtained from Compustat. I match lead lender identifiers in DealScan with bank identifiers in Compustat using the link table in Schwert (2018).

Second, I measure local banking consolidation using the number of banks' mergers in a borrower's state of incorporation over a quarter (*Banks' M&A activity*). For international borrowers, variable values equal to the number of bank mergers in a borrower's country of incorporation over a quarter. Prior studies have shown that credit supply to risky, small and opaque firms significantly shrinks following banks' M&A activity, creating an underserved pool of borrowers (e.g., Berger et al., 1999; DeYoung et al., 2009; Amore et al., 2013). The mean quarterly number of banks' mergers in a borrower's state is about 1.3.

Third, I employ several variables related to banks' lending activities. *Bank loan issuance* is defined as the percentage change in bank loan issuance at the country-quarter level. Bank loans are term A and revolving loans (e.g., Ivashina and Sun, 2011b; Demiroglu and James, 2015).[20] Further, I measure borrowers' access to securitized debt using the percentage change in quarterly CLO issuance volume (*CLO issuance*).[21] Last, using OECD's macroeconomic data, I control for changes in a country's GDP growth rate over the prior four quarters (*GDP growth*). The mean quarterly increase in bank loan and CLO issuance is about 17.8% and 24.2%, which is primarily driven by the rapid expansion of the credit market before the financial crisis and its recovery after 2010. The average change in GDP quarterly growth rate in the sample countries is about 0.04%.

Finally, I use several measures of information asymmetry between borrowers and lenders. *Borrower reputation* is the natural logarithm of the number of years since a borrower first took on a loan.[22] *Borrower age* is a binary variable that equals one if a borrower's age (number of years

[20] If DealScan does not identify the term loan seniority, I consider a tranche as term loan A if its market segment is "middle market" or "investment grade," or, if market segment information is missing, its LIBOR spread is below 180 basis points. The results are robust to using quarterly changes in total loan volume (untabulated robustness tests).

[21] I use total CLO issuance rather than country-specific CLO issuance since CLOs pull loan portfolios related to both domestic and international borrowers.

[22] A borrower might take on a small-size loan not reported in DealScan, since DealScan mainly covers large deals. Despite this reporting bias, I consider that my measure continues to capture information asymmetry between a borrower and its lenders, since larger loans significantly lower information opacity. To alleviate the concern that my

since its incorporation) ranks in the upper quintile of the distribution of this variable, and zero otherwise. The results remain unchanged when I use the natural logarithm of a borrower's age (untabulated). I also include an indicator variable of whether the borrower is a private company (*Private company*). In addition, I measure a borrower's financing alternatives using the number of unique lead arrangers a borrower has taken a loan from over the past five years (*Number of prior lenders*), and an indicator variable reflecting whether a borrower has received funding from a private equity firm over the past five years, zero otherwise (*PE-backed)*. I identify private equity transactions using the "Transactions, Private placements" data in Capital IQ.[23] I also control for whether a borrower is incorporated in the U.S. (*U.S. borrower*).

About 57.1% of the sample borrowers are private companies, and their mean tenure in the credit market is about five years (log-transformed values are shown). These statistics suggest that the sample borrowers are on average informationally opaque and less reputable firms. Moreover, borrowers have interacted with about two unique lead arrangers over the prior five years, and only 2.5% of them have been a private equity investment target over the same period.[24]

4.3. Loan quality measures

Consistent with prior studies (e.g., Benmelech et al., 2012; Campbell et al., 2018), I focus on borrowers' post-issuance credit performance (controlling for loan and borrower characteristics at origination), since adverse selection can be only observable ex-post. I employ three proxies for borrowers' credit performance: (1) an indicator variable reflecting whether a borrower filed for

results are affected by this bias, I restrict my sample to loans with above-median size, and the results continue to hold (untabulated robustness checks).

[23] The variable definition is consistent with prior studies documenting an average of about four years of private equity investment holding horizon (Strömberg, 2008). Similar data on private equity investments have been used in prior studies (e.g., Fang et al., 2013).

[24] I further use several proxies for borrower's financial performance: total liabilities to total assets (*Leverage*), operating income to total assets (*ROA*), and the natural logarithm of total assets (*Total assets*). The mean *Leverage* and *ROA* is 45.3% and 6.4% respectively, and the mean borrower size is about $1.5 billion (log-transformed values are shown).

bankruptcy over the two-year period following a loan's origination ($Bankruptcy_{y, y+2}$), (2) a binary variable that equals one if a borrower's credit rating was downgraded by at least one notch over the two-year period following a loan's origination, and zero otherwise (*Borrower credit rating* $downgrade_{y, y+2}$), and (3) the average quarterly returns of borrowers' loans outstanding following a loan's origination ($Loan\ returns_{q, q+1}$). The results hold when I measure ex-post credit performance using a one- or three-year horizon (untabulated). I identify borrowers' bankruptcy filings in Capital IQ, borrowers' credit rating downgrades in Capital IQ and Compustat, and I measure quarterly loan returns using loan transaction data in Creditflux.[25]

The mean probability of a borrower's filing for bankruptcy or experiencing a credit rating downgrade is 6.0% and 21.9%, respectively. These statistics are comparable to those reported in prior studies on leveraged borrowers (e.g., Benmelech et al., 2012; Standard and Poor's, 2017). The mean quarterly loan returns are about 1.1%.

5. Research design and empirical results

5.1. The determinants of direct lending

To examine the determinants of direct lending, I employ an ordinary least squares (OLS) model where the dependent variable is *Direct loan 1*, *Direct loan 2* and *Direct loan 3*.

$$\begin{aligned} Direct\ lending = \ & \alpha + \beta_1 Banks'\ NPL + \beta_2 Banks'\ litigation\ risk + \beta_3 Banks'\ M\&A\ activity \\ & + \beta_4 Bank\ loan\ issuance + \beta_5 CLO\ issuance + \beta_6 GDP\ growth \\ & + \beta_7 Borrower\ reputation + \beta_8 Number\ of\ prior\ lenders + \beta_9 Borrower\ age \\ & + \beta_{10} PE\text{-}backed + \beta_{11} Private\ company + \beta_{12} U.S.\ borrower + \beta_{13} Total\ assets \\ & + \beta_{14} Leverage + \beta_{15} ROA + Year\ of\ loan\ origination\ FE \\ & + Borrower\ industry\ FE. \end{aligned} \quad \text{(Model 1)}$$

[25] I measure loan returns over the quarter rather than the two-year period following a loan's origination since I cannot observe loan returns over longer periods.

I control for borrower characteristics and credit market conditions that may affect direct lending as well as for loan origination year and borrower industry (Fama-French 12 industry-classification) fixed effects to capture differences in direct lending over time and across industries.[26]

I report the results of this test in Table 3. Across most specifications, I find that direct lending is positively associated with regulatory constraints on banks. To exemplify, using *Direct loan 1* (*Direct loan 2* and *Direct loan 3*) as the dependent variable (specifications I, IV and VII, respectively), a one standard deviation increase in *Banks' NPL* increases direct lending by about 28.6% (22.1% and 22.8%, respectively).[27] Using *Direct loan 1* (*Direct loan 2* and *Direct loan 3*) as the dependent variable (specifications I, IV and VII, respectively), a one standard deviation increase in *Banks' litigation risk* increases direct lending by about 5.5% (8.8% and 8.3%, respectively). The mean *Direct loan 1* (*Direct loan 2* and *Direct loan 3*) is 41.5% (43.6% and 36.5%). Moreover, I document a positive association between direct lending and regional banking industry consolidation. For example, using *Direct loan 1* (*Direct loan 2*) as the dependent variable (specifications I and IV, respectively), a one standard deviation increase in *Banks' M&A activity* increases direct lending by about 2.7% (1.8%). Thus, direct lenders seem to be more active in borrowers' states that potentially experience tight local bank credit supply following M&A activity. Consistent this view, I show that direct lending is inversely related to banks' loan issuance and securitization volume. To exemplify, using *Direct loan 1* (*Direct loan 2)* as the dependent variable (specifications II and V), a one standard deviation increase in *Bank loan issuance* and *CLO issuance* decreases direct lending by about 2.2% (2.2%) and 2.4% (3%), respectively. I also

[26] Across all specifications where the dependent variable is an indicator, I use an OLS model because coefficient estimates from probabilistic models are biased if a model includes a large number of indicator variables to estimate fixed effects (Maddala 1987; Greene 2004). However, using a logit model yields very similar results (untabulated).
[27] These results are robust when I exclude from the sample loans to borrowers with no prior credit relations (i.e., loans for which *Banks' NPL* variable values equal to the mean quarterly non-performing loan volume of the banks in Compustat) (untabulated robustness test).

find some evidence of an inverse relation between GDP growth and direct lending. Collectively, these findings suggest that direct lenders likely fill the void for the low bank credit availability.

Consistent with this interpretation, I document that direct lending is more prevalent among less reputable and more informationally opaque borrowers. For example, using *Direct loan 1* as the dependent variable (specifications II), a one standard deviation increase in *Borrower reputation* and *Number of direct lenders* decreases direct lending by 2.8% and 6.65% respectively, which represent about 6.7% and 15.6% of the mean value of the dependent variable.[28] In addition, I show that direct lending is more common among smaller, less profitable companies (specifications III, VI and IX). For instance, using *Direct loan 1* as the dependent variable (specification III), a one standard deviation increase in *Total assets* and *ROA* decreases direct lending by 16.2% and 4.6%, respectively.[29] The results are similar when using *Direct loan 2* (specifications IV-VI) and *Direct loan 3* (specifications VII-IX) as the dependent variable. Lastly, I find weak association between direct lending and a borrower's age, private-equity funding, leverage and private ownership.

Overall, my findings lend support to the argument that direct lending likely expands the credit space to a pool of borrowers that are not typically financed through traditional capital channels. Direct lenders target informationally opaque, less reputable and less profitable borrowers that may not be attractive to banks. Also, direct lenders seem to be more active in regions that experience greater banking consolidation and when banks are under greater financial and regulatory constraints. Thus, my findings suggest that direct lending was not developed as a substitute to bank-originated institutional lending but likely filled the void in the private debt market.

5.2. The contract terms of direct loans

[28] I further use an indicator variable reflecting whether the company took on a loan for the first time, and zero otherwise. I find that first-time borrowers are more likely to take on direct loans (untabulated robustness checks).
[29] When I control for borrower financial characteristics, sample size decreases because most private borrowers do not report accounting information.

I next investigate the pricing of direct loans. To do so, I employ an ordinary least squares (OLS) model where the dependent variable is the natural logarithm of a loan's LIBOR-spread (*LIBOR-spread*). Similar to prior studies (e.g., Ivashina, 2009), I consider the non-pricing loan terms to be simultaneously set before the loan pricing decision, which explains their use as control variables. Importantly, this analysis aims to examine the association between direct lending and loan terms rather than to make a causal interpretation.

$$\begin{aligned} \textit{LIBOR-spread} = {} & \alpha + \beta_1 \textit{Direct lending} + \beta_2 \textit{Loan amount} + \beta_3 \textit{Loan maturity} + \beta_4 \textit{Covenant-lite loan} \\ & + \beta_5 \textit{Secured loan} + \beta_6 \textit{Revolving tranche} + \beta_7 \textit{Sole lender loan} \\ & + \beta_8 \textit{Borrower reputation} + \beta_9 \textit{Number of prior lenders} + \beta_{10} \textit{Borrower age} \\ & + \beta_{11} \textit{PE-backed} + \beta_{12} \textit{Private company} + \beta_{13} \textit{U.S. borrower} + \beta_{14} \textit{Total assets} \\ & + \beta_{15} \textit{Leverage} + \beta_{16} \textit{ROA} + \textit{Year of loan origination FE} + \textit{Loan purpose FE} \\ & + \textit{Borrower industry FE}. \end{aligned} \quad \text{(Model 2)}$$

The independent variable of interest is the proxy for direct lending (*Direct loan 1*, *Direct loan 2* and *Direct loan 3*). I control for non-pricing loan terms as well as for measures of borrower characteristics and financial performance that affect loan pricing. I further control for year of loan origination, loan purpose (operating, investing, financing, other) and borrower industry (Fama-French 12 industry-classification) fixed effects to capture differences in loan pricing over time and across industries.

I report the results of this test in Panel A of Table 4. Across all specifications, I find that direct loans have a higher LIBOR-spread compared to bank-originated institutional loans. To exemplify, direct loans have a higher LIBOR-spread by about 140 basis points compared to institutional loans originated by a bank's private equity- or investment-arm (specification I), by 61 basis points compared to bank-originated highly institutional loans (specification III), and by about 61 basis points compared to bank-originated institutional loans in which direct lenders participate (specification V). These effects represent about 38.3%, 16.6% and 16.6% of the mean value of the

dependent variable, respectively. The results are very similar when I control for borrower financial performance (specifications II, IV and VI).

I further examine the association between direct lending and covenant structure. I use Model 2, where the dependent variable is the probability of a loan having no financial or net worth covenants (*Covenant-lite loan*). All control variables (*Covenant-lite loan* is excluded) and model specifications are the same as in Model 2. I report the results of the test in Panel B of Table 4. I find that direct loans are more likely to be covenant-lite by about 14.1% compared to institutional loans originated by a bank's private equity- or investment-arm (specification I), by 4.1% compared to bank-originated highly institutional loans (specification III), and by about 4.9% compared to bank-originated institutional loans in which direct lenders participate (specification V). These effects represent about 22.3%, 6.5% and 7.7% of the mean value of the dependent variable, respectively. These results do not hold when controlling for borrowers' financial performance due to the decrease in sample size (specifications II, IV and VI).

Last, I examine the collateral features of direct loans. Many direct lenders (e.g., private equity and investment management firms) traditionally invested in the equity side of the companies, having recently expanded to private debt. Thus, direct lending may be associated with more equity collateral pledges, which can allow direct lenders to gain equity ownership and control upon a borrower's default on its debt. To investigate the collateral type of direct loans, I use an indicator variable of whether a loan is collateralized by borrower's capital stock or warrants, and zero if a loan is secured by other collateral type (*Equity/warrant collateral*). I use Model 2, where the dependent variable is *Equity/warrant collateral*. I restrict the sample to secured loans, and control variables (*Covenant-lite loan* and *Secured* are excluded) and model specifications are the same as in Model 2. The results of the test are reported in Panel C of Table 4. I document that direct loans

are more likely to be secured by borrower's capital stock or warrants by 5.2% compared to institutional loans originated by a bank's private equity- or investment-arm (specification I) and by 4.0% compared to bank-originated institutional loans in which direct lenders participate (specification V). These effects represent about 41.2% and 31.7% of the mean value of the dependent variable, respectively. I find no statistically significant association between direct lending and equity collateral pledges when I use highly institutional loans as the control loan group (specification III), and the findings do not hold when controlling for borrowers' financial performance due to the very small sample size (specifications II, IV and VI).

Overall, I show that direct borrowing costs are significantly higher compared to those of bank-originated institutional loans, consistent with prior studies documenting a higher cost of borrowing arising from financial disintermediation (Ivashina and Kovner, 2011). This evidence can be driven by direct lenders expanding the credit space to new, informationally opaque borrowers, or can be attributed to direct loans' lower ex-post performance; I examine direct loan borrowers' post-issuance performance in section 5.3. Further, my findings suggest that direct lenders likely trade off greater cash flow rights and —to some extent— equity-based collateral pledges with more flexible covenant structures (e.g., Armstrong et al., 2010). Last, I note that the objective of these analyses is not to establish a causal link between direct lending terms, but simply describe certain important contractual features of these loans.

5.3. Direct loan quality

To test the relation between direct lending and a borrower's post-issuance credit performance, I employ an ordinary least squares (OLS) model where the dependent variables are the following measures of adverse ex-post credit performance: $Bankruptcy_{y,y+2}$, *Borrower credit rating* $downgrade_{y,y+2}$, and $Loan\ returns_{q,q+1}$.

$$\textit{Credit quality} = \alpha + \beta_1 \textit{Direct lending} + \beta_2 \textit{LIBOR-spread} + \beta_3 \textit{Loan amount} + \beta_4 \textit{Loan maturity} + \beta_5 \textit{Covenant-lite loan} + \beta_6 \textit{Secured loan} + \beta_7 \textit{Revolving tranche} + \beta_8 \textit{Sole lender loan} + \beta_9 \textit{Borrower reputation} + \beta_{10} \textit{Number of prior lenders} + \beta_{11} \textit{Borrower age} + \beta_{12} \textit{PE-backed} + \beta_{13} \textit{Private company} + \beta_{14} \textit{U.S. borrower} + \beta_{15} \textit{Total assets} + \beta_{16} \textit{Leverage} + \beta_{17} \textit{ROA} + \textit{Year of loan origination FE} + \textit{Loan purpose FE} + \textit{Borrower industry FE}. \quad \text{(Model 3)}$$

The independent variable of interest is the proxy for direct lending (*Direct loan 1*, *Direct loan 2* and *Direct loan 3*). I control for pricing and non-pricing loan terms as well as for borrower characteristics and financial performance that are likely related to ex-post credit performance. I further control for year of loan origination, loan purpose (operating, investing, financing, other) and borrower industry (Fama-French 12 industry-classification) fixed effects to capture differences in credit performance over time and across industries.

I report the results of these tests in Table 5. I find some evidence that direct loan borrowers are less likely to file for bankruptcy over the two-year period following a loan's origination compared to bank-originated institutional loan borrowers (Panel A). Economically, direct loan borrowers have a lower probability of filing for bankruptcy by about 4.7% relative to highly institutional loan borrowers (specification III) and by about 5.6% relative to borrowers of institutional loans in which direct lenders participate (specification V). However, these findings do not hold when I control for borrower financial performance (specifications II, IV and VI) or when I use institutional loans issued by a bank's private equity- or investment-arm as the control loan group (specification I): direct loan borrowers have similar bankruptcy probability to other institutional loan borrowers.

I document very similar results when I examine the probability of a borrower's credit rating downgrade (Panel B). More specifically, in specifications (III) and (V) of Panel B, I show that direct loan borrowers are less likely to experience a credit rating downgrade by about 16.8% relative to highly institutional loan borrowers and by about 15.0% compared to borrowers of

institutional loans in which direct lenders participate. These results do not hold after controlling for borrower financial performance. Finally, I find weak evidence that direct loan borrowers experience higher quarterly loan returns following a loan's origination compared to bank-originated institutional loan borrowers (Panel C). In these analyses, I do not control for borrower financial performance due to the very small sample size. Economically, direct loan borrowers have about 0.7% higher loan returns than other institutional loan borrowers (specification I).

Collectively, I show that direct lending is related to better post-issuance credit performance in only five out of fifteen specifications, which can be considered as an overall negative finding. However, there is a significant positive implication: direct lending does not seem to exacerbate adverse selection costs in the private debt market. Despite that direct lenders are not as sophisticated as banks in underwriting corporate loans and are not regulated, they seem to be effective in screening borrowers. [30]

5.4. Robustness tests

I perform several robustness tests to provide additional credibility to my findings. First, my sample includes institutional loans of both publicly traded and private borrowers, for which I obtain contract term data from DealScan. While prior studies have used this database to evaluate the terms in the lending agreements of private borrowers (e.g., Saunders and Steffen, 2009), DealScan may have a better contract term coverage for loans of publicly traded borrowers. To alleviate the concern that this reporting bias affects my results, I restrict my sample to loans of publicly-traded firms and replicate the analyses tabulated in Tables 4-5 (i.e., the analyses where I employ loan pricing and non-pricing terms as the dependent or control variables). I report the

[30] In additional untabulated tests, I find that direct loan borrowers have a similar covenant violation likelihood compared to institutional loan borrowers (Roberts and Sufi, 2009).

results of these robustness tests in Table 6. I show that my findings on the higher direct loan LIBOR-spread, the use of equity-based collateral and the less covenanted direct loan agreements (Panel A of Table 6) as well as on the similar post-issuance performance of direct loan borrowers (Panel D of Table 6) continue to hold in these specifications. The analysis on the quarterly loan returns is omitted due to the very small sample size. The results are very similar when I further control for borrower financial information and are statistically and economically stronger when I restrict my sample to loans issued to private borrowers (untabulated robustness tests).

Second, similar to the reporting bias discussed above, DealScan may have a more complete coverage of the characteristics of loans by U.S. borrowers compared to those of foreign companies (e.g., Carey and Hrycray, 1999). While about 90% of my sample loans are issued to U.S. companies, and thus this reporting bias is unlikely to significantly affect my results, I restrict my sample to loans of U.S. borrowers and replicate the analyses tabulated in Tables 4-5. I report the results of these robustness tests in Panel B and Panel E of Table 6. The results remain unchanged to these specifications. The results hold when I also control for borrower financial information (untabulated robustness test).

Third, to alleviate the concern that differences in the deal size, terms and borrower characteristics between direct and institutional loans may affect my results, I use a propensity score matching methodology. Specifically, I identify a set of control bank-originated institutional loans by matching them with direct loans based on loan size, maturity, whether a loan is collateralized and whether a borrower is a private firm. The one-to-one matching of direct loans is done in random order and without replacement. Matched loans are within a distance ("caliper") of 0.01 of the propensity score of the loans in the treatment group. I find no significant differences in the weighted means of the matching variables between the control and treatment groups (untabulated).

I report the results of these robustness tests in Panel C and Panel F of Table 6. Despite the significant decrease in loan sample size, the findings reported in Tables 4-5 remain mostly robust to using the propensity score matched methodology.

Last, sample direct lenders include finance companies, private equity firms, insurance firms, hedge funds and investment management firms. I thus recognize the possibility that my results are driven by a certain direct lender type. For instance, prior studies have examined the characteristics of lending agreements by finance companies (Carey et al., 1998), and my findings can be potentially attributed to finance companies rather than to direct lenders in general. To alleviate this concern, I focus on the largest direct lender types—finance companies, private equity firms and investment management firms (Panel C of Table 1)—and replicate the analyses in Tables 4-5 using the following measures of direct lending activity: (1) a binary variable equal to one if a loan is issued by a finance company and zero otherwise (*Finance firm*), (2) a binary variable equal to one if a loan is issued by a private equity firm and zero otherwise (*Private equity firm*), and (3) a binary variable equal to one if a loan is issued by an investment management firm and zero otherwise (*IM firm*). All other control variables and model specifications are the same as the ones used in Tables 4-5. I measure the lending activity of the largest direct lenders rather than all direct lender types to avoid multicollinearity across my direct lending variables.

I report the results of these tests in Table 7. In Panel A, I show that the findings on the higher interest rate of direct loans are primarily driven by loans that private equity and investment management firms originate. Direct loans issued by finance companies have a higher LIBOR-spread only when compared to loans issued by a bank's private equity- or investment-arm (specification I). In Panel B, across all specifications, I document that direct loans originated by finance companies and private equity firms are more likely to be covenant-lite. I find similar results

for direct loans originated by investment management in two out of three specifications (specifications I and II). Moreover, in Panel C, I show that borrower's equity collateral pledges are generally more common for direct loans issued by private equity and investment management firms rather than for those issued by finance firms (specifications I and III), potentially because the former lenders were traditionally familiar to invest in the equity side of companies, thus, likely prefer to gain equity ownership upon a borrower's default on its debt.

Examining direct loan quality (Panel D), in most specifications, I find that borrowers of direct loans issued by private equity and investment management firms experience better post-issuance credit performance relative to other borrowers. These results are similar but statistically weaker for loans originated by finance firms (borrowers of direct loans issued by finance firms are shown to have greater post-issuance credit performance in only three out of 9 specifications). In untabulated robustness tests, my primary results continue to hold when I control for borrower financial performance or exclude from my sample loans issued by finance companies. The findings on the direct lending determinants (reported in Table 3) remain unchanged when I investigate direct lending activity by finance, private equity and investment management firms separately. I further control for the probability of a direct loan being issued by a hedge fund and find that these loans have higher spreads and similar performance compared to bank-originated institutional loans. Collectively, I show that my primary results cannot be solely attributed to a specific direct lender type (e.g., finance companies). While borrowers of direct loans issued by private equity and investment management firms have the strongest post-issuance credit performance, importantly, I find no evidence that certain direct lender types issue low-quality loans.

5.5. Supplemental analyses

5.5.1. Direct lender's expertise and direct lending activity

In supplemental analyses, I examine the association between direct lenders' industry expertise and lending issuance volume and quality. Specifically, direct lenders—such as investment management firms, hedge funds and private equity firms— traditionally invested in companies' equity. I investigate whether nonbank institutional lenders leverage this expertise when expanding their business towards direct lending. I measure direct lenders' expertise using an indicator variable of whether a direct lender's specialization in an industry (Fama-French 12 industry-classification) ranks in the upper quartile of a direct lender's annual industry specialization (*High industry expertise*). For private equity firms, hedge funds, investment management firms and insurance firms, a direct lender's industry specialization is measured using the average investment allocation (number of shares held) in an industry as a percentage of his investment portfolio size over the prior three years, based on institutional (13f) holdings data in Thomson Reuters. Since finance firms do not typically invest in companies' equity, industry specialization is estimated using the average lending activity (number of loans arranged) within an industry as a percentage of a finance firm's lending lending activity over the prior three years, based on corporate loan data in DealScan. My findings hold when finance firms are excluded from the sample (untabulated).

To investigate the association between direct lenders' industry expertise and loan issuance, I employ an ordinary least squares (OLS) model where the dependent variable is *Direct lending activity,* defined as the total number of loans a direct lender issues over a year within an industry (Fama-French 12 industry-classification). The independent variable of interest is *High industry expertise*. I further control for a direct lender's return on assets (operating income to total assets), leverage (total liabilities to total assets) and natural logarithm of total assets. Fixed effects for direct lender, industry and year are also included in the model. The analyses are at the direct lender–industry–year level. I report the results of these tests in specifications I and II of Table 8, Panel A.

Consistent with my expectations, I show that direct lenders are particularly active in high-expertise industries, i.e., industries that traditionally account for a significant portion of their equity portfolios. Specifically, a direct lender's high-industry expertise increases direct lending volume within an industry by about 9.5% of the mean value of the dependent variable.

I further explore whether direct lenders' industry expertise is instrumental to ex-post credit performance. I use my sample of direct loans and augment Model 3 with the variable *High industry expertise*. Sample size drops since I was able to identify data on industry expertise for 48 out of the 89 direct lenders in my sample. Given the small sample size, I measure direct loan quality using $Bankruptcy_{y,y+2}$ as the dependent variable. All other control variables and model specifications are the same as in Model 3. I report the results of this test in specifications III and IV of Table 8, Panel A. I document a positive association between direct loan quality and direct lenders' high-industry expertise. This evidence suggests that nonbank institutional investors are particularly successful in identifying high-quality loan deals when they focus on industries where they primarily allocate their equity investments.

Lastly, through their direct lending activity nonbank institutional investors can gain access to valuable proprietary information about a borrower's or an industry's future financial performance. This private information advantage may provide important feedback to the profitability of their equity investments, thus, potentially enhance the performance of their equity portfolio. Indeed, prior studies provide evidence of the participation of institutional lenders in the large syndicated loan market to obtain private information about the borrowers (e.g., Bushman et al., 2010; Massoud et al., 2011; Ivashina and Sun, 2011a; Lim et al., 2014). I explore the association between direct loan issuance and direct lenders' equity portfolio allocation within an industry over the following two quarters using an ordinary least squares (OLS) model, where the dependent variable

is the percentage difference in investment allocation within an industry (Fama-French 12 industry-classification) over the next two quarters (*Change in industry allocation*). The independent variable of interest is *Direct lending activity,* defined as the quarterly number of loans a direct lender issues within an industry (Fama-French 12 industry-classification). I further control for a direct lender's financials and fixed effects for direct lender, industry and year. The analyses are at the direct lender–industry–quarter level. I report the results of these tests in Panel B of Table 8. I find that a direct lender's loan issuance volume predicts a future increase in his equity investments within an industry. Specifically, a one standard deviation increase in *Direct lending activity* increases a direct lender's industry allocation over the following two quarters by about 13.0% of the mean value of the dependent variable. In sum, my findings suggest that nonbank institutional investors leverage their industry expertise to expand their direct lending business and identify high-quality loan deals. Direct lending further provides a significant private information advantage, which seems to influence direct lenders' future investment allocation across industries.

5.5.2. Direct lending, direct lenders' investor base and loan quality

In my primary tests, I find no evidence of direct lending exacerbating adverse selection costs. Next, I explore additional direct lending characteristics that likely explain credit quality by investigating the association between direct loan funds' investor base and credit performance. I expect that direct lenders' long-term investor base likely contributes to direct loan quality. Indeed, direct lenders usually hold the loans long term (about two to six years), or pull these loans in closed-end funds that they manage and for which they attract long-term investors such as pension and wealth funds (ACC, 2017; Preqin, 2017). I obtain data on the names and types of the major investors in direct lending funds from Preqin. Preqin reports about nine unique investors by direct lending fund. Pension funds are the most important direct lending fund investor type (pension

funds invest in 72% of the direct loan funds), followed by insurance firms (32%), (sovereign or private) wealth funds including endowments (30%), private equity (14%) and banks or asset managers (10%). Among these investors, pension and wealth funds have on average the longest investment horizons, while banks are usually more short-term oriented (Brochet et al., 2015).

In my tests, I focus on loans in direct lending funds with pension or wealth fund investors and those with bank investors.[31] *Direct loan_Pension/Wealth fund investor* is an indicator variable of whether a loan is in a direct lending fund with a pension or (sovereign or private) wealth fund investor (including endowments), and zero otherwise. *Direct loan_Bank investor* is an indicator variable of whether a loan is in a direct lending fund with a bank or asset manager investor, and zero otherwise. I augment Model 3 with the two measures of direct lending fund ownership. All other control variables and model specifications are the same as in Model 3. I report the results of this test in Table 9. I find that while loans in funds with bank investments largely exhibit similar post-issuance performance compared to other direct loans or bank-originated institutional loans, loans in direct lending funds backed by pension or wealth funds exhibit on average somewhat better performance. These results are consistent with prior studies showing that a long-term investor base is related to greater asset returns (Brochet et al., 2015). Note that I document a positive association, not a causal link, between direct loan fund investor base and loan quality since I cannot observe investor pressure on direct lenders to improve direct loan portfolio quality. Also, the results do not suggest that direct lending funds backed by pension funds outperform those backed by banks since I do not examine funds' internal rate of return over time. In untabulated

[31] Direct loans identified in DealScan and not covered in Preqin are excluded from the sample because I cannot obtain data on direct lenders' ownership structure at the time of loan issuance.

tests, I find that direct loans in funds backed by insurance firms —the second-largest direct lending fund investor type—have similar or slightly better quality relative to other institutional loans.

5.5.3. Direct lending activity and bank financing

Direct lending is described as the de-banking of the loan issuance process, where banks are not involved in the underwriting and funding of loan deals. However, based on my discussions with credit analysts in alternatives advisory firms, direct lenders are likely to raise funds from banks to finance their lending activity (see also the discussion in section 5.5.2. on direct loan funds' investor base). Though exploring how banks may indirectly participate in the direct lending market (e.g., by consulting direct lenders about sourcing loan deals) is beyond the scope of this paper, I provide some preliminary evidence by investigating whether banks increasingly finance direct lenders especially post-financial crisis when regulatory constraints drastically increased.

I use an ordinary least squares (OLS) model where the dependent variable is the total number of loans a direct lender issues over the following quarter (*Direct lending activity*). The independent variable of interest is the number of loans a direct lender takes on from a bank during a quarter (*Bank loans to direct lenders*). I retrieve data on direct lenders' debt financing from Capital IQ. Quarters when a direct lender does not raise debt but issues direct loans are also included in the sample. I augment the model with an indicator variable of whether a direct loan is issued post-2009 (*Post financial crisis*) and the interaction term *Bank loans to direct lenders* × *Post financial crisis*. I further control for a direct lender's financial performance, as well as fixed effects for direct lender, industry and year. The analyses are at the direct lender–quarter level. I report the results of these tests in Appendix C. Although I find a negative association between bank financing to institutional lenders and direct lending activity, I document that this relation sharply reverses post-financial crisis. This evidence suggests that while banks' direct financing to small, informationally

opaque borrowers has decreased after the financial crisis (e.g., Ares Market Insights, 2018), banks have increasingly extended debt to institutional lenders around quarters of high direct lending activity.

6. Conclusion

Direct lending (i.e., loans originated by nonbank institutional investors without banks' intermediation) is the most rapidly growing segment of the private debt market. Although insurance and finance firms have been traditionally active in this market, its recent expansion was almost exclusively fueled by institutional investors such as private equity firms, hedge funds and investment management firms. Indeed, over the past fifteen years, and especially after the financial crisis, the inflow of institutional money has gradually shifted from the bank-centric corporate loan market, where institutional lenders invested as loan participants, towards direct loan deals. Using a dataset of loans originated by nonbank institutional investors, I provide novel insights on the determinants, characteristics and quality of direct loans.

I find that direct lending activity is positively associated with regulatory constraints on banks, measured by the number of lawsuits filed against banks and the volume of non-performing loans on banks' balance sheets. Moreover, direct lenders seem to be more active in regions that experience greater banking consolidation, suggesting that direct lenders potentially substitute for the shrinkage in local bank credit supply. Consistent with this view, direct lending activity is stronger in periods of bank credit contraction and low CLO issuance. Examining direct loan borrower characteristics, I show that direct lending is particularly common among informationally opaque companies with few financing alternatives, that is, companies that are less reputable and did not transact with many different lenders. Relatedly, direct loan borrowers are smaller and less profitable firms on average. These findings suggest that direct lenders expanded the credit space

to companies that banks did not typically or can no longer serve. Examining direct lending terms, I show that direct loans are more likely to be covenant-lite with higher spreads and are collateralized by borrower's capital stock or warrants. In addition, direct loan borrowers have similar or—in some specifications—slightly better post-issuance credit performance compared to bank-originated institutional loan borrowers. Thus, the de-banking of the lending process does not seem to give rise to adverse selection problems. In supplemental tests, I find some evidence that direct lenders' industry expertise and long-term investor base further contribute to direct lending issuance and quality.

My study has certain limitations that offer opportunities for future research. First, direct lending is only a recent credit innovation, and thus, direct lenders likely successfully exploited lending opportunities, which may explain my findings on direct loans' quality. As the inflow of institutional money grows and the availability of credit opportunities erodes, direct lenders may lower their credit standards. Thus, consistent with studies documenting the underperformance of loans issued during the credit bubble (e.g., Benmelech et al., 2012), my findings on direct loans' post-issuance performance may not generalize to later periods. Second, data limitations restrict me from establishing a causal link between direct lending and credit terms and quality, since I cannot observe direct lenders' due diligence and negotiation efforts. Third, while I expect that borrowers might prefer this new lending practice to avoid equity dilution by institutional investors, explaining borrowers' capital structure choices is beyond the scope of my study. Finally, direct lenders likely use multiple channels to source profitable lending opportunities, which are not systematically explored in this study. I leave these questions for future research to explore.

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APPENDIX A

Examples of direct lenders and lenders in the control groups of loans

Direct lender	Direct lender type	Control groups	Lead arranger name
General Electric Capital	Finance firm	Loans issued by a bank's investment- or private equity-arm	Morgan Stanley Capital
Madison Capital Funding	Finance firm		Barclays Capital
NewStar Financial	Finance firm		Wachovia Partners
NXT Capital	Finance firm		Goldman Sachs Capital Partners
Cerberus Business Finance	Finance firm		Deutsche Bank Capital
NewStar Financial	Finance firm		Bank of America
Monroe Capital	Private equity firm		JP Morgan Capital
Golub Capital	Private equity firm		Merrill Lynch Capital Partners
Apollo Management	Private equity firm	Highly institutional loans	Bank of America
KKR & Co.	Private equity firm		JP Morgan Chase
Twin Brook Capital	Private equity firm		Credit Suisse
Monroe Capital	Private equity firm		Citicorp
Ares Management	Investment management firm		Deutsche Bank
Alcentra	Investment management firm		BNP Paribas
Guggenheim Investments	Investment management firm		Bank of Montreal
The Carlyle Group	Investment management firm		Bear Stearns
Maranon	Investment management firm	Institutional loans with direct lenders as syndicate participants	Bank of America
Cortland	Investment management firm		JP Morgan Chase
Oaktree Capital	Hedge fund		Citicorp
Silver Point Capital	Hedge fund		Credit Suisse
Deerfield Management	Hedge fund		Deutsche Bank
			Bank of Montreal
			Wachovia
			BNP Paribas

APPENDIX B

Variable definitions

Variable	Definition	Database
Direct lending		
Direct loan 1	Binary variable that equals one if a loan is issued by a direct lender, and zero if a loan is arranged by a bank's investment- or private equity-arm.	Capital IQ /DealScan/Preqin
Direct loan 2	Binary variable that equals one if a loan is issued by a direct lender, and zero if a loan is arranged by a bank and is highly institutional (i.e., the size of its institutional tranches ranks above the mean institutional ownership across loans with institutional tranches).	Capital IQ /DealScan/Preqin
Direct loan 3	Binary variable that equals one if a loan is issued by a direct lender, and zero if a loan is arranged by a bank and at least one direct lender participates in the initial syndicate.	Capital IQ /DealScan/Preqin
Credit market characteristics		
Banks' litigation risk	The natural logarithm of the number of lawsuits against banks in a borrower's country of incorporation over a quarter.	Capital IQ
Bank loan issuance	The ratio of the change in bank loan issuance volume (at the country-quarter level) over the previous quarter, deflated by total bank loan issuance volume in the prior quarter. Bank loans are Term A and revolving loans.	DealScan
Banks' M&A activity	The number of banks' mergers in a borrower's state of incorporation over a quarter. For international firms, the variable values are the number of banks' mergers in a borrower's country of incorporation over a quarter.	Capital IQ/ FRB Chicago
Banks' NPL	The mean non-performing loan volume (non-performing loans to total assets) in percentage points of the lead arrangers a borrower has taken a loan from over the prior five years. NPL is measured in the loan issuance year. For borrowers with no prior lending transactions, NPL is measured using the mean quarterly non-performing loan volume of banks in Compustat.	DealScan/Compustat
CLO issuance	The ratio of the change in total CLO issuance volume over the previous quarter, deflated by total CLO issuance volume in the previous quarter.	CLO-i, Creditflux
GDP growth	The change in a country's GDP growth rate over the prior four quarters.	OECD

APPENDIX B (Continued)

Borrower characteristics

Borrower age	Binary variable that equals one if a borrower's age (number of years since the year of incorporation) is in the upper quintile of the variable distribution, zero otherwise.	Capital IQ
Borrower reputation	The natural logarithm of the number of years since a borrower first took on a loan.	DealScan
Number of prior lenders	The number of lead arrangers a borrower has taken a loan from over the past five years.	DealScan
PE-backed	Binary variable equal to one if a borrower received funding from a private equity firm over the past five years, zero otherwise.	Capital IQ
Private company	Binary variable equal to one if a borrower is a private firm, zero otherwise.	Capital IQ
U.S. borrower	Binary variable equal to one if a borrower is a U.S. domiciled firm, zero otherwise.	Capital IQ /DealScan

Borrower financials

Leverage	Total liabilities to total assets.	Capital IQ/Compustat
ROA	Operating income to total assets.	Capital IQ/Compustat
Total assets	The natural logarithm of total assets (in $million).	Capital IQ/Compustat

Loan characteristics

Covenant-lite loan	Binary variable that equals one if a loan has no financial or net worth covenants, zero otherwise.	DealScan
Equity/warrant collateral	Binary variable that equals one if a loan is secured by borrower's capital stock or warrants, zero if a loan is secured by other collateral type.	DealScan
LIBOR-spread	The natural logarithm of a loan's all-in-drawn LIBOR-spread (averaged across loan tranches, excluding fees).	DealScan
Loan amount	The natural logarithm of loan amount (in $million).	DealScan
Loan maturity	The natural logarithm of loan maturity (in days).	DealScan
Revolving tranche	Binary variable that equals one if a loan includes a revolving tranche, zero otherwise.	DealScan
Secured loan	Binary variable that equals one if a loan is collateralized, zero otherwise.	DealScan
Sole lender loan	Binary variable equal to one if a loan's initial syndicate structure includes one lender, zero otherwise.	DealScan

APPENDIX B (Continued)

Loan quality		
Bankruptcy$_{y, y+2}$	Binary variable that equals one if a borrower filed for bankruptcy over the two-year period following a loan's origination, zero otherwise.	Capital IQ
Borrower credit rating downgrade$_{y, y+2}$	Binary variable that equals one if a borrower's credit rating was downgraded by at least one notch over the two-year period following a loan's origination, zero otherwise.	Capital IQ/Compustat
Loan returns$_{q, q+1}$	The average returns of a borrower's loans outstanding over the one-quarter period following a loan's origination.	CLO-i, Creditflux

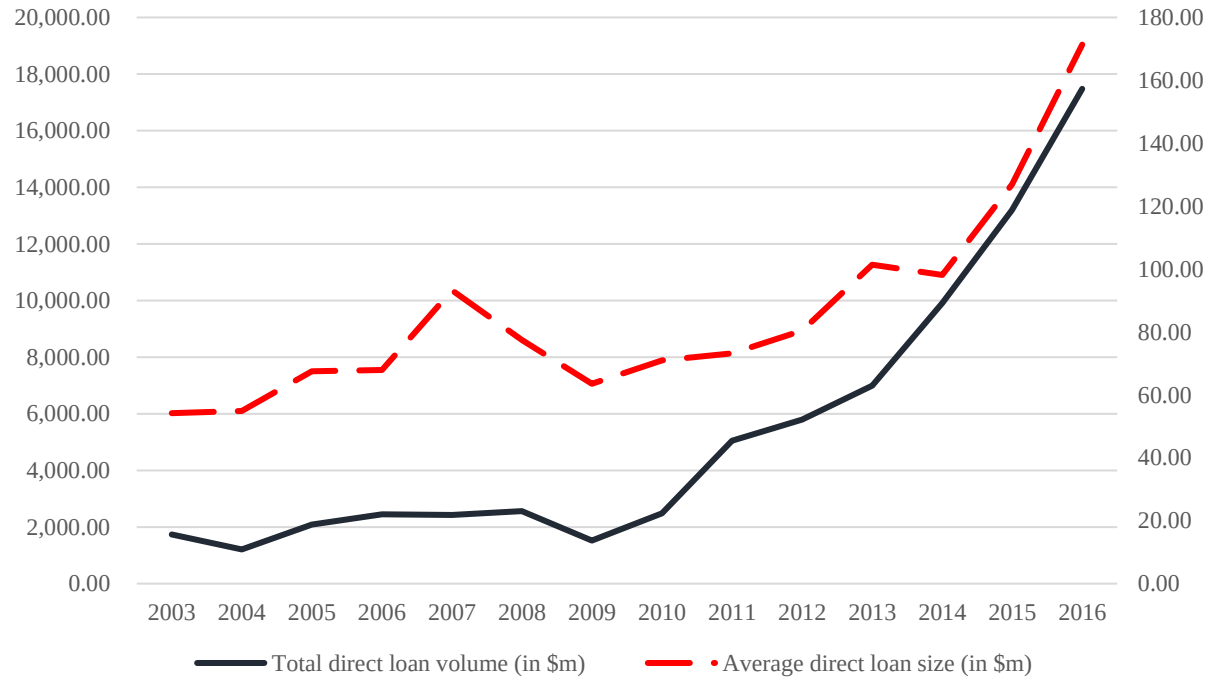
APPENDIX C

Direct lending activity and bank financing

	(I)	(II)
	At the direct lender -quarter level	
Variable	*Direct lending activity*$_{q,q+1}$	
Bank loans to direct lenders	-0.486***	-0.577***
	(-3.291)	(-4.968)
Post financial crisis	-0.294*	-0.403**
	(-1.894)	(-2.321)
Bank loans to direct lenders x *Post financial crisis*	**0.357*** **	**0.454*** **
	(2.797)	**(3.890)**
Direct lender financials	NO	YES
Lender and year fixed effects	YES	YES
Obs.	761	761
R^2	51.48%	51.68%

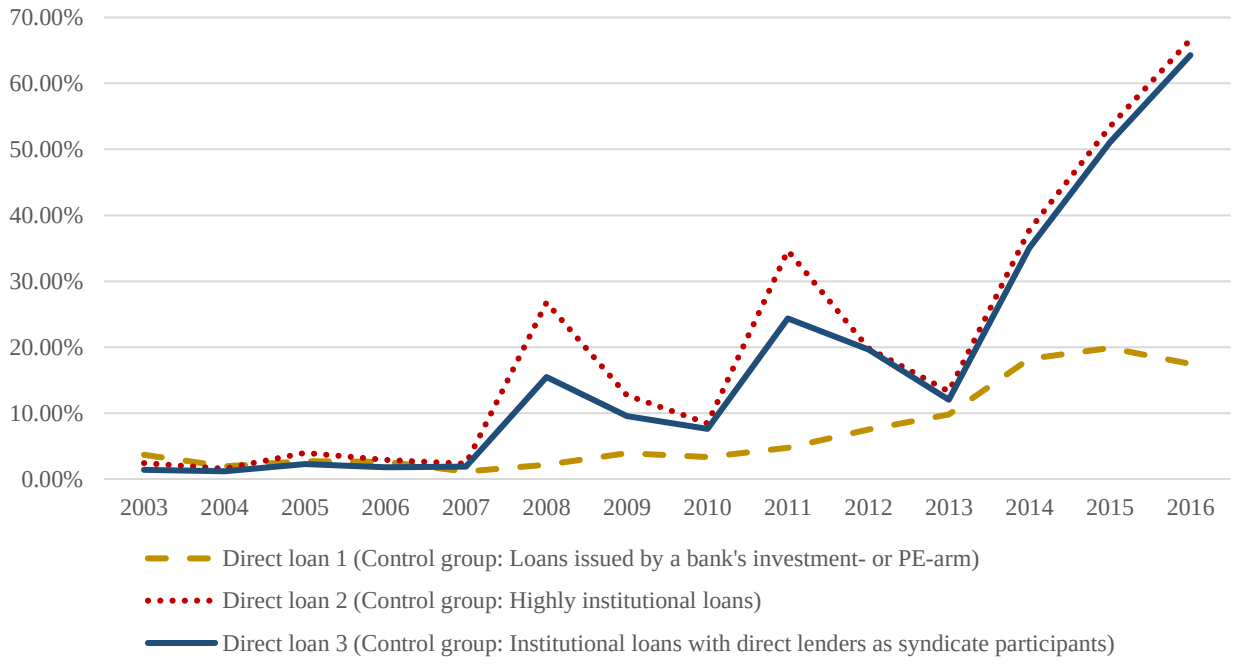
This table reports the analysis of the relation between direct lending activity and banks' financing to direct lenders. *Direct lending activity* is the total number of loans a direct lender issues over the next quarter. *Bank loans to direct lenders* is the number of loans that a direct lender takes on from a bank during a quarter. *Post financial crisis* is an indicator variable of whether a direct lender issues a loan or receives a bank loan post 2009. Controls of direct lender financials are included but not tabulated (a direct lender's return on assets (operating income to total assets), leverage (total liabilities to total assets), and natural logarithm of total assets). Direct lender and year fixed effects are included but not tabulated. Standard errors are corrected for heteroskedasticity and clustered at the lender level. OLS regressions are used to estimate the models, with T-statistics reported in parentheses. The values of the continuous variables are winsorized at 1% and 99%.***, ** and * denote significance at the 1%, 5% and 10% (two-sided) levels, respectively. Coefficients of interest are in boldface.

Figure 1. Direct lending over time



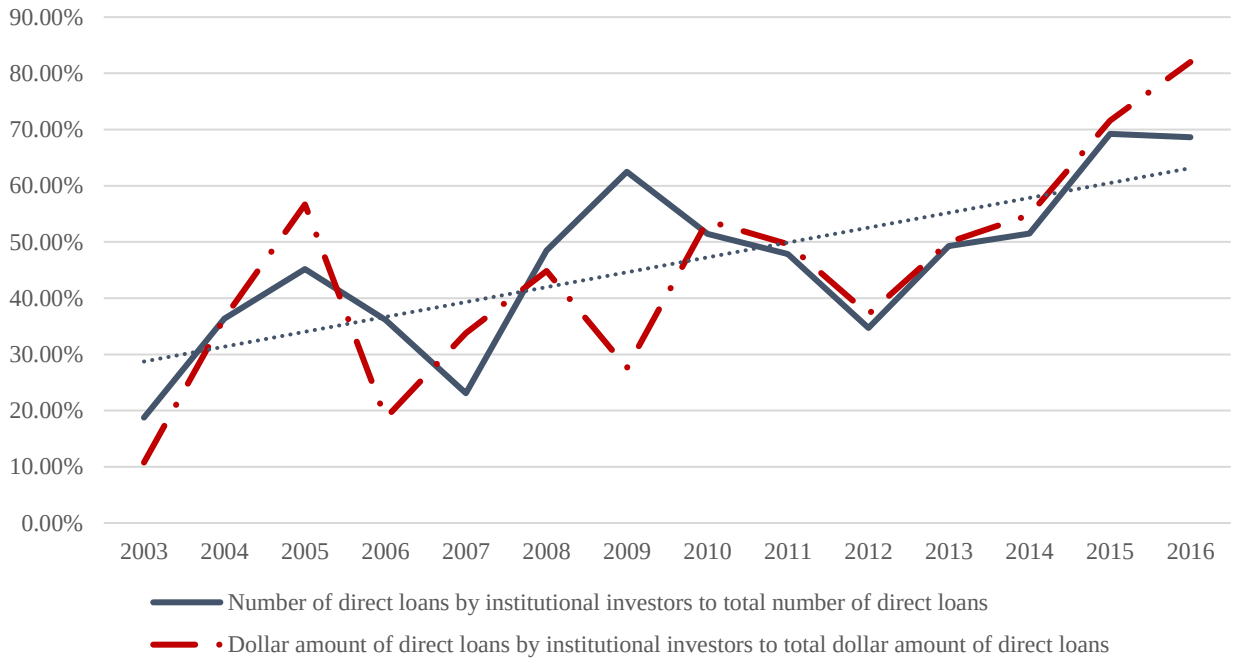
This figure plots the total annual direct loan issuance volume (in $million; primary axis, solid line) and the average size of direct loans (in $million; secondary axis, dotted line) in my sample over time.

Figure 2. Percentage of direct lending over time



This figure plots the total annual direct loan issuance volume ($million) as a percentage of the annual issuance volume of direct loans and: 1) loans issued by a bank's investment- or private equity-arm (*Direct loan 1*) (dotted, yellow line); 2) highly institutional loans (i.e., loans issued by banks and primarily sold to institutional investors) (*Direct loan 2*) (dotted, red line); and 3) loans issued by banks where direct lenders participate in the initial syndicate group (*Direct loan 3*) (solid line).

Figure 3. Direct lenders over time



This figure plots the percentage of the number (solid line) and issuance volume (dotted line) of direct loans originated by institutional investors (private equity firms, investment management firms, hedge funds and insurance firms) to total annual direct loan issuance.

TABLE 1

Sample composition by year, country and direct lender type

Panel A: Direct loans, direct lenders and loans in the control groups by year

Year	Number of direct loans	Number of direct lenders	Loans arranged by a bank's investment- or PE-arm	Highly institutional loans	Institutional loans with direct lenders as syndicate participants
2003	32	11	98	183	273
2004	22	10	132	184	244
2005	31	14	131	128	184
2006	36	14	103	119	173
2007	26	12	113	116	152
2008	33	14	55	14	22
2009	24	8	35	22	30
2010	35	15	68	40	47
2011	69	23	72	24	28
2012	72	25	47	30	32
2013	69	28	70	46	52
2014	101	28	46	20	24
2015	104	35	46	26	30
2016	102	27	49	24	27

Panel B: Direct loans, direct lenders and loans in the control group by borrower's country

Borrower's country	Number of direct loans	Number of direct lenders	Loans arranged by a bank's investment- or PE-arm	Highly institutional loans	Institutional loans with direct lenders as syndicate participants
Canada	4	3	14	29	42
France	6	5	10	11	28
Germany	3	3	10	11	18
Spain	2	2	4	4	5
United Kingdom	24	18	32	27	40
USA	715	78	962	874	1,153
Other	2	2	33	20	32

Panel C: Direct loans by direct lender type

Finance firms	369
Private equity firms	242
Investment management firms	99
Hedge funds	41
Insurance firms	5

TABLE 2

Descriptive statistics

Variable	Obs.	Mean	S.D.	Q1	Median	Q3
Direct lending						
Direct loan 1	1,821	0.415	0.490	0.000	0.000	1.000
Direct loan 2	1,732	0.436	0.500	0.000	0.000	1.000
Direct loan 3	2,074	0.365	0.480	0.000	0.000	1.000
Credit market characteristics						
Banks' litigation risk	3,073	2.835	0.999	2.303	3.045	3.638
Bank loan issuance	3,073	0.178	0.507	-0.181	0.044	0.456
Banks' M&A activity	3,073	1.329	1.823	0.000	1.000	2.000
Banks' NPL	3,073	0.934	0.736	0.444	0.604	1.091
CLO issuance	3,073	0.242	0.533	-0.129	0.201	0.532
GDP growth	3,073	0.041	0.721	-0.338	-0.124	0.472
Borrower characteristics						
Borrower age	3,073	0.200	0.400	0.000	0.000	0.000
Borrower reputation	3,073	1.308	1.092	0.000	1.386	2.303
Number of prior lenders	3,073	2.072	1.387	1.000	2.000	3.000
PE-backed	3,073	0.025	0.155	0.000	0.000	0.000
Private company	3,073	0.571	0.495	0.000	1.000	1.000
U.S. borrower	3,073	0.899	0.301	1.000	1.000	1.000
Borrower financials						
Leverage	1,612	0.453	0.271	0.270	0.426	0.600
ROA	1,612	0.064	0.058	0.027	0.062	0.097
Total assets	1,612	7.292	1.804	6.183	7.209	8.371
Loan characteristics						
Covenant-lite loan	3,073	0.633	0.482	0.000	1.000	1.000
Equity/warrant collateral	2,371	0.126	0.332	0.000	0.000	0.000
LIBOR-spread	3,073	5.801	0.568	5.416	5.858	6.215
Loan amount	3,073	5.366	1.274	4.382	5.323	6.341
Loan maturity	3,073	7.305	0.953	7.287	7.51	7.692
Revolving tranche	3,073	0.714	0.452	0.000	1.000	1.000
Secured loan	3,073	0.768	0.422	1.000	1.000	1.000
Sole lender loan	3,073	0.146	0.353	0.000	0.000	0.000
Loan quality						
Bankruptcy$_{y,y+2}$	3,073	0.060	0.232	0.000	0.000	0.000
Borrower credit rating downgrade$_{y,y+2}$	1,308	0.219	0.414	0.000	0.000	0.000
Loan returns$_{q,q+2}$	291	0.011	0.017	0.006	0.015	0.022

TABLE 2 (Continued)

Panel B: Correlations among the variables used in the primary analyses

Obs.= 3,073	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
(1) *Direct loan*	1.000																				
(2) *Banks' litigation risk*	0.022	1.000																			
(3) *Bank loan issuance*	-0.110	-0.047	1.000																		
(4) *Banks' M&A activity*	0.018	-0.065	-0.076	1.000																	
(5) *Banks' NPL*	0.409	0.127	0.028	0.085	1.000																
(6) *CLO issuance*	-0.073	-0.082	0.274	-0.059	0.050	1.000															
(7) *GDP growth*	-0.030	-0.010	0.097	-0.028	0.111	0.029	1.000														
(8) *Borrower age*	-0.116	0.015	0.012	0.027	-0.043	0.024	-0.009	1.000													
(9) *Borrower reputation*	-0.266	0.085	0.029	-0.022	-0.157	0.029	0.003	0.262	1.000												
(10) *Number of prior lenders*	-0.291	0.106	0.020	-0.015	-0.257	0.019	-0.031	0.184	0.543	1.000											
(11) *PE-backed*	-0.067	0.005	0.011	0.006	0.001	0.012	0.010	-0.038	-0.007	0.029	1.000										
(12) *Private company*	0.264	-0.067	-0.043	0.061	0.184	-0.068	-0.051	-0.093	-0.270	-0.258	-0.116	1.000									
(13) *U.S. borrower*	0.086	0.762	-0.074	-0.172	-0.063	0.022	0.003	-0.025	0.051	0.102	-0.003	-0.036	1.000								
(14) *Covenant-lite loan*	0.300	-0.146	-0.009	0.054	0.244	-0.047	-0.029	-0.080	-0.263	-0.264	-0.092	0.497	-0.149	1.000							
(15) *LIBOR-spread*	0.368	0.026	-0.064	0.012	0.271	-0.029	0.019	-0.165	-0.193	-0.176	-0.035	0.314	0.022	0.244	1.000						
(16) *Loan amount*	-0.516	-0.080	0.062	-0.025	-0.207	0.010	-0.015	0.193	0.362	0.382	0.061	-0.244	-0.146	-0.264	-0.349	1.000					
(17) *Loan maturity*	-0.172	-0.042	0.070	0.013	-0.159	0.037	-0.046	-0.005	0.111	0.149	-0.006	0.146	-0.049	-0.066	0.117	0.207	1.000				
(18) *Revolving tranche*	-0.002	0.034	0.034	0.027	0.005	0.020	-0.023	-0.005	-0.017	-0.151	-0.035	0.156	0.062	0.009	-0.024	0.033	0.228	1.000			
(19) *Secured loan*	-0.195	-0.021	0.015	-0.027	-0.189	0.010	-0.012	-0.049	0.077	0.059	-0.002	-0.131	-0.001	-0.211	0.117	0.120	0.114	-0.003	1.000		
(20) *Sole lender loan*	0.427	-0.018	-0.048	0.015	0.176	-0.055	0.027	-0.079	-0.106	-0.073	-0.008	0.066	-0.004	0.085	0.201	-0.331	-0.028	-0.110	-0.055	1.000	
(21) *Bankruptcy* $_{y,y+2}$	-0.025	0.058	-0.005	-0.023	-0.023	-0.014	-0.043	0.037	0.088	0.132	0.007	-0.085	0.029	-0.048	0.110	0.009	-0.077	-0.044	0.080	0.004	1.000

This table presents descriptive statistics for the variables used in my primary tests. Panel A presents summary statistics. Panel B presents correlations among these variables. *Direct loan* is one if the loan is issued by a direct lender, and zero for control-group loans. All variables are defined in Appendix B. Continuous variables are winsorized at the 1% and 99% levels.

TABLE 3

Determinants of direct lending

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
Variable	*Direct loan 1*			*Direct loan 2*			*Direct loan 3*		
Banks' NPL	0.388***	0.295***	0.204***	0.300***	0.258***	0.287***	0.310***	0.273***	0.289***
	(18.012)	(13.825)	(6.679)	(11.540)	(9.749)	(7.843)	(12.636)	(10.946)	(8.821)
Banks' litigation risk	0.056***	0.041	0.008	0.089***	0.040	0.029	0.084***	0.030*	0.043*
	(4.530)	(1.479)	(0.259)	(6.865)	(1.563)	(1.053)	(8.527)	(1.680)	(1.841)
Banks' M&A activity	0.015***	0.013**	0.012*	0.010*	0.011**	0.003	0.007	0.009*	0.004
	(2.684)	(2.414)	(1.798)	(1.718)	(1.991)	(0.373)	(1.481)	(1.876)	(0.647)
Bank loan issuance	-0.037	-0.042*	-0.013	-0.043*	-0.042*	-0.003	-0.033	-0.032	0.014
	(-1.577)	(-1.830)	(-0.498)	(-1.698)	(-1.719)	(-0.102)	(-1.575)	(-1.545)	(0.501)
CLO issuance	-0.059***	-0.045**	-0.055**	-0.051**	-0.056***	-0.089***	-0.035**	-0.043**	-0.067***
	(-2.856)	(-2.253)	(-2.398)	(-2.510)	(-2.745)	(-3.369)	(-2.054)	(-2.471)	(-3.231)
GDP growth	-0.034**	-0.037**	-0.027	-0.021	-0.019	-0.037	-0.016	-0.016	-0.026
	(-2.244)	(-2.528)	(-1.596)	(-1.284)	(-1.180)	(-1.575)	(-1.099)	(-1.114)	(-1.305)
Borrower reputation		-0.026**	-0.012		-0.036***	-0.014		-0.038***	-0.023*
		(-2.510)	(-0.972)		(-3.082)	(-0.976)		(-3.702)	(-1.739)
Number of prior lenders		-0.048***	0.009		-0.037***	0.008		-0.028***	0.010
		(-6.411)	(1.143)		(-4.204)	(0.890)		(-3.829)	(1.331)
Borrower age		-0.061**	0.008		0.019	0.058*		-0.003	0.022
		(-2.316)	(0.333)		(0.648)	(1.776)		(-0.145)	(0.852)
PE-backed		-0.158***	-0.108**		-0.092	-0.058		-0.062	-0.062
		(-2.908)	(-2.565)		(-1.437)	(-1.000)		(-1.104)	(-1.202)
Private company		0.162***	-0.012		-0.014	-0.061*		-0.011	-0.049
		(7.047)	(-0.397)		(-0.628)	(-1.737)		(-0.562)	(-1.567)
U.S. borrower		0.034	-0.031		0.174**	0.055		0.190***	0.029
		(0.392)	(-0.316)		(2.360)	(0.645)		(3.053)	(0.409)

TABLE 3 (Continued)

Total assets			-0.090***			-0.076***			-0.067***
			(-10.969)			(-6.812)			(-7.139)
Leverage			-0.016			-0.094*			-0.063
			(-0.352)			(-1.672)			(-1.314)
ROA			-0.789***			-1.173***			-1.076***
			(-3.712)			(-4.492)			(-4.935)
Fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Obs.	1,821	1,821	970	1,732	1,732	726	2,074	2,074	899
R^2	39.90%	46.67%	47.74%	44.18%	46.06%	57.53%	46.06%	47.79%	56.39%

This table reports the results of the tests that examine the determinants of direct lending. In columns I - III, the dependent variable equals one if a loan is issued by a direct lender, and zero if a loan is issued by a bank's investment- or private equity-arm (*Direct loan 1*). In columns IV-VI, the dependent variable equals one if a loan is issued by a direct lender, and zero if a loan is issued by a bank and is highly institutional (i.e., sold primarily to institutional investors) (*Direct loan 2*). In columns VII-IX, the dependent variable equals one if a loan is issued by a direct lender, and zero if a loan is issued by a bank and a sample direct lender participates in the initial syndicate group (*Direct loan 3*). All variables are defined in Appendix B. The values of the continuous variables are winsorized at 1% and 99%. Year of loan origination and borrower's industry (Fama-French 12 industry-classification) fixed effects are included but not tabulated. OLS regressions are used to estimate the models, with T-statistics reported in parentheses. Standard errors are corrected for heteroskedasticity and clustered at the borrower level. ***, ** and * denote significance at the 1%, 5% and 10% (two-sided) levels, respectively.

TABLE 4

Direct lending and credit terms

Panel A: Direct loans and LIBOR-spread

	(I)	(II)	(III)	(IV)	(V)	(VI)
Variable			*LIBOR-spread*			
Direct loan 1	**0.361*** (11.345)**	**0.421*** (8.201)**				
Direct loan 2			**0.131*** (5.579)**	**0.240*** (4.342)**		
Direct loan 3					**0.130*** (5.783)**	**0.229*** (4.232)**
Loan amount	-0.101*** (-9.258)	-0.052*** (-2.815)	-0.093*** (-9.609)	-0.083*** (-4.199)	-0.106*** (-12.165)	-0.103*** (-5.878)
Loan maturity	0.054*** (3.366)	0.028 (1.348)	0.003 (0.174)	-0.004 (-0.187)	-0.008 (-0.531)	-0.010 (-0.538)
Covenant-lite	0.071** (2.448)	0.065* (1.948)	0.039* (1.650)	0.018 (0.598)	0.046** (2.172)	0.015 (0.556)
Secured loan	0.253*** (10.545)	0.358*** (8.688)	0.094*** (4.336)	0.013 (0.212)	0.115*** (5.520)	0.017 (0.305)
Revolving tranche	-0.226*** (-8.907)	-0.292*** (-9.078)	-0.061*** (-2.909)	-0.094*** (-3.140)	-0.050** (-2.418)	-0.087*** (-3.118)
Sole lender loan	0.059** (2.191)	0.028 (0.580)	0.059** (2.241)	-0.087 (-1.521)	0.047* (1.783)	-0.108* (-1.861)
Borrower reputation	-0.029** (-2.468)	-0.006 (-0.363)	-0.010 (-1.063)	0.007 (0.459)	-0.007 (-0.824)	0.008 (0.612)
Number of prior lenders	0.018* (1.785)	0.012 (1.029)	-0.001 (-0.056)	-0.013 (-1.180)	0.004 (0.509)	-0.007 (-0.656)
Borrower age	-0.080*** (-2.819)	-0.037 (-1.075)	-0.049* (-1.951)	-0.027 (-0.724)	-0.053** (-2.310)	-0.020 (-0.609)
PE-backed	0.020 (0.282)	0.032 (0.465)	0.057 (0.831)	0.020 (0.272)	0.068 (1.098)	0.032 (0.434)
Private company	0.117*** (4.090)	0.102*** (2.782)	0.085*** (3.721)	0.039 (1.116)	0.092*** (4.459)	0.063* (1.902)
U.S. borrower	-0.019 (-0.435)	-0.109** (-2.166)	0.028 (0.890)	-0.025 (-0.523)	0.007 (0.266)	-0.063 (-1.419)
Total assets		-0.035*** (-2.599)		-0.021* (-1.644)		-0.016 (-1.457)
Leverage		0.232*** (4.072)		0.199*** (3.976)		0.219*** (4.947)
ROA		-1.140*** (-4.156)		-1.249*** (-4.686)		-1.263*** (-5.290)
Fixed effects	YES	YES	YES	YES	YES	YES
Obs.	1,821	970	1,732	726	2,074	899
R^2	56.54%	59.28%	53.69%	58.34%	54.13%	58.55%

TABLE 4 (Continued)

Panel B: Direct loans and financial covenants

	(I)	(II)	(III)	(IV)	(V)	(VI)
Variable			*Covenant-lite loan*			
Direct loan 1	**0.141*** (4.617)**	**0.019 (0.358)**				
Direct loan 2			**0.041* (1.788)**	**-0.004 (-0.053)**		
Direct loan 3					**0.049** (2.556)**	**-0.004 (-0.077)**
Loan amount	-0.033***	-0.012	-0.034***	-0.004	-0.004	-0.006
	(-3.016)	(-0.608)	(-2.893)	(-0.144)	(-1.106)	(-0.932)
Loan maturity	-0.012	-0.008	0.003	0.015	-0.027	0.000
	(-0.861)	(-0.416)	(0.219)	(0.787)	(-1.126)	(0.005)
Secured loan	-0.127***	-0.146***	-0.107***	-0.241***	-0.151***	-0.315***
	(-5.800)	(-3.297)	(-6.444)	(-4.256)	(-10.599)	(-7.753)
Revolving tranche	-0.048*	-0.120***	-0.020	-0.082**	-0.003	-0.066**
	(-1.910)	(-3.480)	(-0.839)	(-2.209)	(-0.168)	(-2.158)
Sole lender loan	-0.039	0.101**	-0.066***	-0.030	-0.033*	-0.009
	(-1.512)	(2.063)	(-2.850)	(-0.449)	(-1.772)	(-0.177)
Borrower reputation	-0.034***	-0.029	-0.001	-0.010	-0.015	-0.013
	(-2.784)	(-1.621)	(-0.137)	(-0.480)	(-1.612)	(-0.815)
Number of prior lenders	0.013	0.018	-0.032***	-0.020	-0.039***	-0.021
	(1.218)	(1.345)	(-2.607)	(-1.167)	(-3.972)	(-1.618)
Borrower age	0.025	0.046	-0.021	-0.031	-0.014	-0.023
	(0.836)	(1.099)	(-0.820)	(-0.674)	(-0.655)	(-0.660)
PE-backed	-0.087	-0.117*	-0.070	-0.089	-0.105*	-0.112
	(-1.334)	(-1.767)	(-0.896)	(-0.929)	(-1.851)	(-1.497)
Private company	0.320***	0.155***	0.380***	0.260***	0.373***	0.256***
	(10.822)	(3.303)	(13.326)	(4.963)	(15.600)	(6.222)
U.S. borrower	-0.176***	-0.217***	-0.139***	-0.169***	-0.138***	-0.245***
	(-4.269)	(-3.883)	(-3.746)	(-2.685)	(-6.571)	(-5.485)
Total assets		0.001		0.002		0.007
		(0.045)		(0.151)		(0.622)
Leverage		0.037		-0.088		-0.027
		(0.640)		(-1.369)		(-0.555)
ROA		-1.083***		-0.086		-0.407*
		(-4.010)		(-0.275)		(-1.879)
Fixed effects	YES	YES	YES	YES	YES	YES
Obs.	1,821	970	1,732	726	2,074	899
R^2	37.96%	29.80%	44.29%	35.12%	45.05%	35.63%

TABLE 4 (Continued)

Panel C: Direct loans and equity/warrants as loan collateral

	(I)	(II)	(III)	(IV)	(V)	(VI)
Variable	*Equity/warrant collateral*					
Direct loan 1	**0.052** **(2.024)**	**0.062*** **(1.629)**				
Direct loan 2			**0.027** **(1.177)**	**0.017** **(0.293)**		
Direct loan 3					**0.040*** **(1.832)**	**0.040** **(0.731)**
Loan amount	0.019* (1.806)	0.029 (1.622)	0.025** (2.532)	0.052*** (2.658)	0.033*** (3.730)	0.045*** (2.586)
Loan maturity	0.009 (0.386)	0.008 (0.238)	0.003 (0.125)	-0.006 (-0.176)	0.009 (0.478)	0.011 (0.390)
Covenant-lite	-0.148*** (-5.544)	-0.144*** (-4.165)	-0.177*** (-6.863)	-0.186*** (-5.711)	-0.168*** (-7.350)	-0.169*** (-5.858)
Revolving tranche	0.020 (0.867)	0.055* (1.751)	-0.008 (-0.378)	-0.017 (-0.564)	-0.010 (-0.541)	-0.006 (-0.210)
Sole lender loan	-0.022 (-0.958)	-0.013 (-0.350)	-0.018 (-0.675)	-0.018 (-0.306)	-0.013 (-0.497)	-0.023 (-0.394)
Borrower reputation	0.011 (1.020)	0.010 (0.627)	-0.010 (-0.943)	-0.032* (-1.902)	-0.015 (-1.573)	-0.035** (-2.243)
Number of prior lenders	0.013 (1.379)	0.012 (0.998)	0.011 (1.064)	0.018 (1.244)	0.015 (1.642)	0.020 (1.604)
Borrower age	-0.021 (-0.767)	-0.028 (-0.722)	-0.031 (-1.481)	-0.043 (-1.193)	-0.031* (-1.651)	-0.043 (-1.361)
PE-backed	-0.038 (-0.609)	-0.018 (-0.248)	-0.028 (-0.353)	-0.024 (-0.258)	-0.038 (-0.576)	-0.031 (-0.398)
Private company	-0.038 (-1.415)	-0.052 (-1.263)	-0.032 (-1.250)	-0.051 (-1.297)	-0.024 (-1.065)	-0.045 (-1.225)
U.S. borrower	0.049* (1.955)	0.048 (1.398)	0.066*** (2.846)	0.133*** (3.518)	0.075*** (3.976)	0.118*** (3.518)
Total assets		0.004 (0.349)		-0.013 (-1.023)		-0.000 (-0.020)
Leverage		0.057 (1.279)		-0.065 (-1.315)		-0.051 (-1.124)
ROA		-0.033 (-1.141)		0.031 (0.121)		0.071 (0.313)
Fixed effects	YES	YES	YES	YES	YES	YES
Obs.	1,235	724	1,352	683	1,662	845
R^2	13.01%	13.78%	14.43%	35.12%	13.74%	14.65%

This table reports the analyses of the relation between direct lending and credit terms. In Panel A, across all columns, the dependent variable is the natural logarithm of a loan's all-in-drawn LIBOR spread (average across loan tranches, excluding fees) (*LIBOR-spread*). In Panel B, across all columns, the dependent variable equals one if a loan has no financial or net worth covenants, and zero otherwise (*Covenant-lite loan*). In Panel C, across all columns, the dependent variable equals one if a loan is secured by a borrower's capital stock or warrants, and zero if a loan is secured by other collateral type (*Equity/warrant collateral*). The sample is restricted to secured loans. In all panels, *Direct loan 1* equals one if a loan is issued by a direct lender, and zero if a loan is issued by a bank's investment- or private equity-arm; *Direct loan 2* equals one if a loan is issued by a direct lender, and zero if a

loan is issued by a bank and is highly institutional (i.e., sold primarily to institutional investors); and *Direct loan 3* equals one if a loan is issued by a direct lender, and zero if a loan is issued by a bank and a sample direct lender participates in the initial syndicate group. All variables are defined in Appendix B. The values of the continuous variables are winsorized at 1% and 99%. Year of loan origination, loan purpose ("operating," "investing," "financing," "other") and borrower's industry (Fama-French 12 industry-classification) fixed effects are included but not tabulated. OLS regressions are used to estimate the models, with T-statistics reported in parentheses. Standard errors are corrected for heteroskedasticity and clustered at the borrower level. ∗∗∗, ∗∗ and ∗ denote significance at the 1%, 5% and 10% (two-sided) levels, respectively. Coefficients of interest are in boldface.

TABLE 5

Direct lending and loan quality

Panel A: Direct loans and the probability of borrower's bankruptcy

	(I)	(II)	(III)	(IV)	(V)	(VI)
Variable			*Bankruptcy*$_{y,y+2}$			
Direct loan 1	**-0.009**	**0.021**				
	(-0.435)	**(0.582)**				
Direct loan 2			**-0.047*** **	**0.019**		
			(-2.808)	**(0.386)**		
Direct loan 3					**-0.056*** **	**-0.024**
					(-3.206)	**(-0.490)**
LIBOR-spread	0.084***	0.067***	0.112***	0.062*	0.115***	0.065*
	(5.067)	(2.678)	(4.614)	(1.725)	(5.099)	(1.867)
Loan amount	0.000	-0.012	0.011*	0.011	0.008	0.007
	(0.060)	(-1.000)	(1.708)	(0.856)	(1.449)	(0.538)
Loan maturity	-0.075***	-0.065***	-0.083***	-0.053	-0.104***	-0.098***
	(-4.233)	(-2.955)	(-3.732)	(-1.497)	(-4.928)	(-2.952)
Covenant-lite loan	-0.021	-0.023	-0.003	0.019	0.005	0.021
	(-1.212)	(-1.082)	(-0.148)	(0.766)	(0.290)	(0.891)
Secured loan	0.028***	-0.003	0.011	0.005	0.017	0.012
	(2.589)	(-0.117)	(0.902)	(0.108)	(1.475)	(0.311)
Revolving tranche	0.018	0.036	-0.009	0.005	-0.007	0.007
	(1.080)	(1.402)	(-0.601)	(0.234)	(-0.485)	(0.361)
Sole lender loan	-0.013	-0.011	0.005	0.040	0.007	0.045
	(-0.888)	(-0.372)	(0.306)	(0.783)	(0.452)	(0.899)
Borrower reputation	0.003	-0.005	0.008	0.006	0.008	0.004
	(0.395)	(-0.512)	(1.152)	(0.619)	(1.230)	(0.395)
Number of prior lenders	0.015**	0.020**	0.021***	0.019**	0.025***	0.026***
	(2.397)	(2.295)	(2.738)	(2.139)	(3.557)	(3.185)
Borrower age	0.006	0.001	0.015	0.017	0.017	0.006
	(0.309)	(0.026)	(0.730)	(0.561)	(0.905)	(0.228)
PE-backed	0.015	0.016	-0.034	-0.058	-0.040	-0.061
	(0.397)	(0.362)	(-0.941)	(-1.180)	(-1.327)	(-1.543)
Private company	-0.067***	-0.054**	-0.010	-0.016	-0.019	-0.023
	(-3.965)	(-2.248)	(-0.484)	(-0.479)	(-0.977)	(-0.771)
U.S. borrower	-0.014	-0.033	0.018	0.018	0.019	0.036
	(-0.511)	(-0.782)	(0.959)	(0.639)	(1.263)	(1.475)
Total assets		0.007		-0.003		-0.004
		(0.764)		(-0.344)		(-0.419)
Leverage		0.108**		0.130***		0.091**
		(2.243)		(3.053)		(2.373)

TABLE 5 (Continued)

ROA		-0.496**		-0.568***		-0.520***
		(-2.415)		(-2.910)		(-2.888)
Fixed effects	YES	YES	YES	YES	YES	YES
Obs.	1,821	970	1,732	726	2,074	899
R^2	12.75%	15.68%	10.57%	12.54%	11.96%	13.88%

Panel B: Direct loans and the probability of borrower's credit rating downgrade

	(I)	(II)	(III)	(IV)	(V)	(VI)
Variable	*Borrower credit rating downgradey,y+2*					
Direct loan 1	**-0.088**	**-0.048**				
	(-1.558)	**(-0.652)**				
Direct loan 2			**-0.168***	**-0.098**		
			(-1.906)	**(-0.742)**		
Direct loan 3					**-0.150***	**-0.129**
					(-1.731)	**(-1.056)**
LIBOR-spread	0.056	0.073	-0.087*	0.027	-0.149***	-0.042
	(1.401)	(1.463)	(-1.948)	(0.326)	(-3.459)	(-0.674)
Loan amount	0.039***	0.006	-0.017	-0.015	-0.023	-0.017
	(2.697)	(0.301)	(-0.914)	(-0.453)	(-1.340)	(-0.576)
Loan maturity	-0.041	-0.022	-0.228***	-0.185**	-0.195***	-0.110*
	(-1.306)	(-0.603)	(-4.382)	(-2.500)	(-4.516)	(-1.920)
Covenant-lite loan	-0.046	-0.010	-0.022	-0.052	-0.033	-0.049
	(-1.396)	(-0.257)	(-0.570)	(-1.098)	(-0.913)	(-1.122)
Secured loan	0.009	0.019	-0.109*	0.056	-0.106*	-0.226**
	(0.218)	(0.376)	(-1.679)	(0.684)	(-1.813)	(-2.371)
Revolving tranche	0.010	0.031	0.026	0.043	0.017	0.031
	(0.295)	(0.779)	(0.653)	(0.817)	(0.477)	(0.700)
Sole lender loan	-0.030	-0.037	-0.064	-0.053	-0.124	-0.009
	(-0.574)	(-0.637)	(-0.766)	(-0.461)	(-1.497)	(-0.076)
Borrower reputation	0.021	0.020	-0.036*	-0.027	-0.026	-0.012
	(1.122)	(0.881)	(-1.670)	(-0.988)	(-1.262)	(-0.463)
Number of prior lenders	0.010	0.003	0.020	0.008	0.010	0.001
	(1.000)	(0.180)	(1.200)	(0.460)	(0.651)	(0.041)
Borrower age	0.015	0.025	0.053	0.078	0.068	0.083
	(0.382)	(0.560)	(1.052)	(1.240)	(1.433)	(1.445)
PE-backed	-0.053	-0.075	0.065	0.005	0.055	0.013
	(-0.637)	(-0.864)	(0.522)	(0.039)	(0.459)	(0.094)
Private company	-0.030	-0.019	-0.040	-0.041	-0.015	-0.020
	(-0.857)	(-0.484)	(-0.993)	(-0.865)	(-0.392)	(-0.465)
U.S. borrower	0.083	0.054	0.009	-0.011	-0.029	0.037
	(1.526)	(0.790)	(0.153)	(-0.132)	(-0.506)	(0.496)

TABLE 5 (Continued)

Total assets		0.047**		0.045*		0.035*
		(2.571)		(1.796)		(1.668)
Leverage		0.047		0.146		0.086
		(0.553)		(1.421)		(0.906)
ROA		-0.072		-0.371		-0.653
		(-0.191)		(-0.699)		(-1.361)
Fixed effects	YES	YES	YES	YES	YES	YES
Obs.	726	623	603	443	770	564
R^2	20.71%	17.42%	14.57%	21.96%	13.44%	11.29%

Panel C: Direct loans and borrower's loan returns

	(I)	(II)	(III)
Variable		*Loan returnsq,q+1*	
Direct loan 1	**0.007***		
	(1.762)		
Direct loan 2		**0.006**	
		(1.084)	
Direct loan 3			**0.009**
			(1.532)
LIBOR-spread	0.002	0.001	-0.002
	(0.617)	(0.123)	(-0.548)
Loan amount	0.001	0.001	-0.000
	(0.417)	(0.395)	(-0.106)
Loan maturity	0.001	0.001	0.001
	(1.033)	(0.772)	(1.329)
Covenant-lite loan	-0.001	-0.001	-0.000
	(-0.383)	(-0.187)	(-0.111)
Secured loan	0.000	-0.002	-0.000
	(0.106)	(-0.649)	(-0.080)
Revolving tranche	-0.001	0.004	0.003
	(-0.218)	(0.931)	(0.939)
Sole lender loan	0.000	0.004	0.002
	(0.022)	(0.700)	(0.341)
Borrower reputation	0.000	-0.000	0.000
	(0.053)	(-0.236)	(0.093)
Number of prior lenders	-0.001	0.001	0.001
	(-1.245)	(0.595)	(0.739)
Borrower age	-0.001	-0.006*	-0.006*
	(-0.218)	(-1.726)	(-1.725)
PE-backed	-0.002	-0.016	-0.018
	(-0.552)	(-1.301)	(-1.562)
Private company	-0.001	0.001	0.002
	(-0.534)	(0.342)	(0.494)
U.S. borrower	-0.001	0.002	-0.001
	(-0.202)	(0.241)	(-0.116)

TABLE 5 (Continued)

Fixed effects	YES	YES	YES
Obs.	192	136	149
R^2	47.37%	48.17%	50.75%

This table reports the analyses of the relation between direct lending and a borrower's post-issuance credit performance. In Panel A, across all columns, the dependent variable equals one if a borrower filed for bankruptcy over the two-year period following a loan's origination, and zero otherwise (*Bankruptcy*$_{y,y+2}$). In Panel B, across all columns, the dependent variable equals one if a borrower's credit rating was downgraded by at least one notch over the two-year period following a loan's origination, and zero otherwise (*Borrower credit rating downgrade*$_{y,y+2}$). I restrict the sample to loans of rated borrowers. In Panel C, across all columns, the dependent variable is the average returns of borrower's loans outstanding over the one-quarter period following a loan's origination (*Loan returns*$_{q,q+1}$). Analyses controlling for borrower financials are omitted due to the very small sample size. Across all panels, *Direct loan 1* equals one if a loan is issued by a direct lender, and zero if a loan is issued by a bank's investment- or private equity-arm; *Direct loan 2* equals one if a loan is issued by a direct lender, and zero if a loan is issued by a bank and is highly institutional (i.e., sold primarily to institutional investors); and *Direct loan 3* equals one if a loan is issued by a direct lender, and zero if a loan is issued by a bank and a sample direct lender participates in the initial syndicate group. All variables are defined in Appendix B. The values of the continuous variables are winsorized at 1% and 99%. Year of loan origination, loan purpose ("operating," "investing," "financing," "other") and borrower's industry (Fama-French 12 industry-classification) fixed effects are included but not tabulated. OLS regressions are used to estimate the models, with T-statistics reported in parentheses. Standard errors are corrected for heteroskedasticity and clustered at the borrower level. ∗∗∗, ∗∗ and ∗ denote significance at the 1%, 5% and 10% (two-sided) levels, respectively. Coefficients of interest are in boldface.

TABLE 6

Robustness analyses

Panel A: Direct loans and credit terms, public borrowers

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
Variable	*LIBOR-spread*			*Covenant-lite*			*Equity/warrant collateral*		
Direct loan 1	**0.466*** **			**-0.020**			**0.085***		
	(7.765)			**(-0.358)**			**(1.667)**		
Direct loan 2		**0.338*** **			**0.034**			**0.052**	
		(4.323)			**(0.442)**			**(0.707)**	
Direct loan 3			**0.323*** **			**0.118***			**0.077**
			(4.359)			**(1.772)**			**(1.556)**
Loan and Borrower controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Obs.	776	572	734	776	572	734	571	543	699
R^2	54.72%	53.37%	53.41%	28.07%	32.76%	37.91%	13.52%	15.37%	13.47%

Panel B: Direct loans and credit terms, U.S. borrowers

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
Variable	*LIBOR-spread*			*Covenant-lite*			*Equity/warrant collateral*		
Direct loan 1	**0.367*** **			**0.143*** **			**0.046***		
	(10.997)			**(4.402)**			**(1.713)**		
Direct loan 2		**0.126*** **			**0.042***			**0.015**	
		(5.220)	**0.122*** **		**(1.759)**			**(0.673)**	
Direct loan 3			**(5.265)**			**0.098*** **			**0.032**
						(3.996)			**(1.447)**
Loan and Borrower controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES

TABLE 6 (Continued)

Obs.	1,677	1,590	1,869	1,677	1,590	1,869	1,150	1,228	1,481
R^2	57.20%	53.98%	55.10%	38.92%	45.59%	46.05%	12.62%	14.45%	13.44%

Panel C: Direct loans and credit terms, matched loan sample

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
Variable	*LIBOR-spread*			*Covenant-lite*			*Equity/warrant collateral*		
Direct loan 1	**0.331*** **			**0.154*** **			**0.058***		
	(8.064)			**(4.004)**			**(1.662)**		
Direct loan 2		**0.158*** **			**0.037***			**0.016**	
		(5.551)			**(1.805)**			**(0.227)**	
Direct loan 3			**0.162*** **			**0.030**			**0.045***
			(5.894)			**(1.185)**			**(1.671)**
Loan and Borrower controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Obs.	644	694	826	644	694	826	459	283	607
R^2	45.19%	43.46%	41.56%	37.23%	45.59%	39.84%	13.97%	14.45%	15.15%

The first three panels report the analyses of whether the relation between direct lending and credit terms holds for the subsample of publicly traded borrowers (Panel A), U.S. borrowers (Panel B) and for a matched loan sample (Panel C). Direct loans are matched to bank-originated institutional loans using a propensity score matching methodology, where one-to-one matching is done without replacement and using a 0.01 caliper. I employ the same specifications as in Table 4, without controlling for measures of borrower financial performance. OLS regressions are used to estimate the models, with T-statistics reported in parentheses. Standard errors are corrected for heteroskedasticity and clustered at the borrower level. ***, ** and * denote significance at the 1%, 5% and 10% (two-sided) levels, respectively. Coefficients of interest are in boldface.

TABLE 6 (Continued)

Panel D: Direct loans and borrower's ex-post credit performance, public borrowers

	(I)	(II)	(III)	(IV)	(V)	(VI)
Variable	*Bankruptcyy,y+2*			*Borrower credit rating downgradey,y+2*		
Direct loan 1	**0.048**			**-0.042**		
	(1.065)			**(-0.525)**		
Direct loan 2		**0.005**			**0.018**	
		(0.075)			**(0.128)**	
Direct loan 3			**-0.025**			**0.086**
			(-0.427)			**(0.680)**
Loan and Borrower controls	YES	YES	YES	YES	YES	YES
Fixed effects	YES	YES	YES	YES	YES	YES
Obs.	776	572	734	540	387	506
R^2	15.82%	12.56%	14.74%	16.03%	12.67%	11.06%

Panel E: Direct loans and borrower's ex-post credit performance, U.S. borrowers

	(I)	(II)	(III)	(IV)	(V)	(VI)
Variable	*Bankruptcyy,y+2*			*Borrower credit rating downgradey,y+2*		
Direct loan 1	**-0.004**			**-0.018**		
	(-0.237)			**(-0.286)**		
Direct loan 2		**-0.046****			**-0.075**	
		(-2.328)			**(-0.806)**	
Direct loan 3			**-0.054*****			**-0.058**
			(-2.807)			**(-0.685)**
Loan and Borrower controls	YES	YES	YES	YES	YES	YES
Fixed effects	YES	YES	YES	YES	YES	YES
Obs.	1,677	1,590	1,869	661	516	641
R^2	13.03%	10.12%	11.76%	20.16%	16.14%	15.29%

Panel F: Direct loans and borrower's ex-post credit performance, matched loan sample

	(I)	(II)	(III)	(IV)	(V)	(VI)
Variable	*Bankruptcyy,y+2*			*Borrower credit rating downgradey,y+2*		
Direct loan 1	**0.010**			**0.020**		
	(0.350)			**(0.233)**		
Direct loan 2		**-0.035**			**0.092**	
		(-1.149)			**(0.833)**	
Direct loan 3			**-0.066****			**-0.012**
			(-2.006)			**(-0.096)**
Loan and Borrower controls	YES	YES	YES	YES	YES	YES
Fixed effects	YES	YES	YES	YES	YES	YES
Obs.	644	694	826	164	138	144
R^2	16.03%	17.62%	15.98%	51.31%	45.55%	43.09%

The last three panels report the analyses of whether the relation between direct lending and the borrower's post-issuance credit performance holds for the subsample of publicly traded borrowers (Panel D), U.S. borrowers (Panel E) and for a matched loan sample (Panel F). Direct loans are matched to bank-originated institutional loans using a propensity score matching methodology, where one-to-one matching is done without replacement and using a 0.01 caliper. I employ the same specifications as in Table 5, without controlling for measures of borrower financial performance. The analysis on borrower's loan returns is omitted due to the small sample size. OLS regressions are used to estimate the models, with T-statistics reported in parentheses. Standard errors are corrected for heteroskedasticity and clustered at the borrower level. ∗∗∗, ∗∗ and ∗ denote significance at the 1%, 5% and 10% (two-sided) levels, respectively. Coefficients of interest are in boldface.

TABLE 7

Direct lender type, credit terms and loan quality

Panel A: Direct loans, direct lender type and LIBOR-spread

	(I)	(II)	(III)
Control group	Loans arranged by a bank's investment- or PE-arm	Highly institutional loans	Institutional loans with direct lenders as syndicate participants
Variable		*LIBOR-spread*	
Finance firm	0.220***	0.002	0.007
	(6.709)	(0.090)	(0.297)
Private equity firm	0.344***	0.131***	0.140***
	(9.224)	(4.501)	(4.921)
IM firm	0.377***	0.194***	0.200***
	(8.925)	(5.513)	(5.707)
Loan and borrower controls	YES	YES	YES
Fixed effects	YES	YES	YES
Obs.	1,821	1,732	2,074
R^2	55.67%	54.20%	54.56%

Panel B: Direct loans, direct lender type and financial covenants

	(I)	(II)	(III)
Control group	Loans arranged by a bank's investment- or PE-arm	Highly institutional loans	Institutional loans with direct lenders as syndicate participants
Variable		*Covenant-lite loan*	
Finance firm	0.156***	0.099***	0.088***
	(5.263)	(4.266)	(3.935)
Private equity firm	0.105***	0.069**	0.053**
	(3.281)	(2.466)	(2.007)
IM firm	0.097**	0.069*	0.049
	(2.261)	(1.839)	(1.323)
Loan and borrower controls	YES	YES	YES
Fixed effects	YES	YES	YES
Obs.	1,821	1,732	2,074
R^2	38.02%	44.15%	44.89%

TABLE 7 (Continued)

Panel C: Direct loans, direct lender type and equity/warrants as loan collateral

	(I)	(II)	(III)
Control group	Loans arranged by a bank's investment- or PE-arm	Highly institutional loans	Institutional loans with direct lenders as syndicate participants
Variable		*Equity/warrant collateral*	
Finance firm	-0.009	-0.019	-0.006
	(-0.352)	(-0.917)	(-0.332)
Private equity firm	0.076**	0.046	0.057*
	(2.277)	(1.364)	(1.746)
IM firm	0.081**	0.045	0.059*
	(2.095)	(1.227)	(1.671)
Loan and borrower controls	YES	YES	YES
Fixed effects	YES	YES	YES
Obs.	1,235	1,352	1,662
R^2	13.38%	14.68%	13.91%

TABLE 7 (Continued)

Panel D: Direct loans, direct lender type and post-issuance credit performance

Variable	Control group	*Finance firm*	*Private equity firm*	*IM firm*	Loan and borrower controls	Obs.	R^2
Bankruptcy$_{y,y+2}$	Loans arranged by a bank's investment- or PE-arm	-0.029* (-1.758)	-0.044** (-2.330)	0.023 (0.703)	YES	1,821	13.18%
	Highly institutional loans	-0.042** (-2.576)	-0.065*** (-3.220)	0.005 (0.150)	YES	1,732	11.16%
	Institutional loans with direct lenders as syndicate participants	-0.050*** (-3.318)	-0.070*** (-3.687)	-0.001 (-0.027)	YES	2,074	12.43%
Borrower credit rating downgrade$_{y,y+2}$	Loans arranged by a bank's investment- or PE-arm	-0.011 (-0.162)	0.054 (0.976)	-0.129 (-1.465)	YES	726	20.90%
	Highly institutional loans	-0.107 (-1.284)	-0.170* (-1.851)	-0.202** (-2.409)	YES	603	16.97%
	Institutional loans with direct lenders as syndicate participants	-0.083 (-0.972)	-0.213** (-2.191)	-0.180** (-2.277)	YES	770	14.55%
Loan returns$_{q,q+1}$	Loans arranged by a bank's investment- or PE-arm	0.004 (0.791)	0.009* (2.445)	0.017*** (3.104)	YES	192	48.72%
	Highly institutional loans	0.003 (0.603)	0.005 (1.045)	0.019*** (3.508)	YES	136	49.80%
	Institutional loans with direct lenders as syndicate participants	0.003 (0.754)	0.006 (1.277)	0.020*** (3.517)	YES	149	52.19%

This table reports the analyses of the relation between direct lending and credit terms (Panel A, B and C) and a borrower's post-issuance credit performance (Panel D) by direct lender type. I focus on the three most active direct lender categories: finance firms, private equity firms and investment management firms. Across all panels, *Finance firm* is one if a direct loan is issued by a finance firm, and zero otherwise (i.e., if a loan is issued by a non-finance firm or a bank). *Private equity firm* is one if a direct loan is issued by a private equity firm, and zero otherwise (i.e., if a loan is issued by a non-private equity firm or a bank). *IM firm* is one if a direct loan is issued by an investment management firm, and zero otherwise (i.e., if a loan is issued by a non-investment management firm or a bank). All other variables are defined in Appendix B. In panels A-C (D), I employ the same specifications as in Table 4 (Table 5), without controlling for measures of borrower financial performance. OLS regressions are used to estimate the models, with T-statistics reported in parentheses. Standard errors are corrected for heteroskedasticity and clustered at the borrower level. The values of the continuous variables are winsorized at 1% and 99%. Year of loan origination, loan purpose ("operating," "investing," "financing," "other") and borrower's industry (Fama-French 12 industry-classification) fixed effects are included but not tabulated. ***, ** and * denote significance at the 1%, 5% and 10% (two-sided) levels, respectively.

TABLE 8

Direct lender's expertise and direct lending activity

Panel A: Direct lenders' expertise, lending activity and loan quality

	(I)	(II)		(III)	(IV)
	Analysis at the direct lender –industry- year level			Analysis at the direct loan level	
Variable	*Direct lending activity*		Variable	*Bankruptcy$_{y,y+2}$*	
High industry expertise	**0.097****	**0.100****	*High industry expertise*	**-0.036***	**-0.121***
	(2.297)	**(2.285)**		**(-1.798)**	**(-1.904)**
Direct lender financials	NO	YES	Loan and borrower characteristics	YES	YES
Lender, year and industry fixed effects	YES	YES	Borrower financials	NO	YES
			Loan purpose, year of loan origination and borrower industry fixed effects	YES	YES
Obs.	328	328	Obs.	493	154
R^2	17.74%	18.03%	R^2	26.03%	32.99%

Panel A reports the analyses of the relation between direct lenders' industry expertise, lending activity and loan quality. Across all specifications, *High industry expertise* is an indicator variable of whether a direct lender's specialization in an industry (Fama-French 12 industry-classification) ranks in the upper quartile of a lender's industry specialization during a year. For private equity firms, hedge funds, investment management firms and insurance firms, industry specialization is measured using a direct lender's average investment allocation (number of shares held) in an industry as a percentage of his total investment portfolio size over the prior three years, based on institutional (13f) holdings data in Thomson Reuters. For finance firms, industry specialization is estimated using the average lending activity (number of loans arranged) in an industry as a percentage of a finance firm's total lending lending activity over the prior three years, based on corporate loan data in DealScan. In specifications (I) and (II), the analysis is at the direct lender-industry-year level. *Direct lending activity* is the total number of loans a direct lender issues over a year within an industry. Controls of direct lender financials are included but not tabulated (a direct lender's return on assets (operating income to total assets), leverage (total liabilities to total assets), and natural logarithm of total assets). Direct lender, year and industry (Fama-French 12 industry-classification) fixed effects are included but not tabulated. Standard errors are corrected for heteroskedasticity and clustered at the lender level. In specifications (III) and (IV), the analysis is at the direct loan level. Control variables and model specifications are the same as those in Table 5, Panel A. Standard errors are corrected for heteroskedasticity and clustered at the borrower level. OLS regressions are used to estimate the models, with T-statistics reported in parentheses. The values of the continuous variables are winsorized at 1% and 99%.***, ** and * denote significance at the 1%, 5% and 10% (two-sided) levels, respectively. Coefficients of interest are in boldface.

TABLE 8 (Continued)

Panel B: Direct lending activity and change in direct lenders' investment holdings over the next two quarters

	(I)	(II)
	Analysis at the direct lender –industry –quarter level	
Variable	*Change in industry allocation* $_{q,q+2}$	
Direct lending activity	**0.094*** **	**0.093*** **
	(3.148)	**(3.212)**
Direct lender financials	NO	YES
Lender, year and industry fixed effects	YES	YES
Obs.	228	228
R^2	11.40%	11.47%

Panel B reports the analyses of the relation between direct lending activity and direct lender's equity investments in an industry. *Change in industry allocation* is the percentage difference in investment allocation (number of shares held) within an industry (Fama-French 12 industry-classification) over the following two quarters. *Direct lending activity* is the total number of loans a direct lender issues over a quarter within an industry. Controls of direct lender financials are included but not tabulated (a direct lender's return on assets (operating income to total assets), leverage (total liabilities to total assets), and natural logarithm of total assets). Direct lender, year and industry (Fama-French 12 industry-classification) fixed effects are included but not tabulated. Standard errors are corrected for heteroskedasticity and clustered at the lender level. OLS regressions are used to estimate the models, with T-statistics reported in parentheses. The values of the continuous variables are winsorized at 1% and 99%.∗∗∗, ∗∗ and ∗ denote significance at the 1%, 5% and 10% (two-sided) levels, respectively. Coefficients of interest are in boldface.

TABLE 9

Direct lending, direct lenders' investor base and loan quality

Variable	*Direct loan 1 _Pension/Wealth fund investor*	*Direct loan 1_ Bank investor*	*Direct loan 2 _Pension/Wealth fund investor*	*Direct loan 2_ Bank investor*	*Direct loan 3 _Pension/Wealth fund investor*	*Direct loan 3_ Bank investor*	Loan and borrower controls	Obs.	R^2
Bankruptcy$_{y,y+2}$	-0.038*	-0.014					YES	1,461	13.14%
	(-1.814)	(-0.694)							
			-0.045**	-0.014			YES	1,372	8.46%
			(-2.011)	(-0.650)					
					-0.040*	-0.026	YES	1,714	10.56%
					(-1.866)	(-1.240)			
Borrower credit rating downgrade$_{y,y+2}$	0.032	-0.078					YES	669	19.49%
	(0.489)	(-1.401)							
			0.143	-0.203			YES	490	16.88%
			(1.065)	(-1.521)					
					0.140	-0.204*	YES	629	15.14%
					(1.098)	(-1.777)			
Loan returns$_{q,q+1}$	0.012*	-0.001					YES	157	47.62%
	(1.960)	(-0.203)							
			0.006	0.004			YES	100	45.69%
			(0.885)	(0.603)					
					-0.000	0.011	YES	113	47.73%
					(-0.065)	(1.389)			

This table reports the analyses of the relation between direct lending, the borrower's post-issuance credit performance and the direct lender's investor base. *Direct loan _Pension/Wealth fund investor* equals one if a loan is in a direct lending fund portfolio funded by a pension or (sovereign or private) wealth fund (incl. endowments), and zero otherwise. *Direct loan_Bank investor* equals one if a loan is in a direct lending fund portfolio funded by a bank or an asset manager, and zero otherwise. These variables are estimated across the three proxies for direct lending activity (*Direct loan 1, Direct loan 2* and *Direct loan 3*). The treatment group of direct loans is restricted to loans obtained from Preqin. All other variables are defined in Appendix B. The coefficients on *Direct loan _Pension/Wealth fund investor* and *Direct loan _Bank investor* are reported, and T-statistics are in parentheses. All control variables (untabulated; the *Direct loan* variable is excluded) and model specifications are the same as in Table 5. The values of the continuous variables are winsorized at 1% and 99%. Year of loan origination, loan purpose ("operating," "investing," "financing," "other") and borrower's industry (Fama-French 12 industry-classification) fixed effects are included but not tabulated. OLS regressions are used to estimate the models. Standard errors are corrected for heteroskedasticity and clustered at the borrower level. ***, ** and * denote significance at the 1%, 5% and 10% (two-sided) levels, respectively.