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The fringe benefits of fringe benefits: When firms borrow from their retirement providers☆

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ABSTRACT

I test whether retirement plan providers extend preferential corporate loan terms to firms that have an overlapping retirement plan relationship. I find that loans from affiliated retirement plan providers (i.e., relationship loans) have lower spreads than non-relationship loans. Relationship loans are also larger and exhibit longer maturities. These terms benefit shareholders without sacrificing the quality of retirement plans available to employees. The favorable terms within this banking relationship are most likely explained by the ability of retirement plan relationships to alleviate information asymmetries in the corporate loan market rather than a quid pro quo arrangement.

1. Introduction

Retirement plans have long been a ubiquitous component of corporations' employee benefits packages, designed as a mechanism to attract and retain a talented workforce while providing financial security and support for employees during their post-employment years. Retirement plans often involve partnerships between firms and retirement providers who manage investment options and administrative services for the plan. These providers are represented by a variety of financial institutions, such as banks, insurers, and investment advisors, who often provide a range of services to firms beyond plan management. Consequently, other service areas may be impacted by the existence of retirement plan management services. One such area is the corporate loan market, as large banks often serve as plan providers on firm-level retirement plans. In this paper, I study whether firms that use their retirement plan providers as lenders receive preferential corporate loan terms compared to firms without such connections. In other words, I examine whether the existing relationship between the firm and retirement provider influences loan terms, potentially leading to more favorable conditions, such as lower interest rates, larger loans, and longer repayment periods.

Understanding the potential existence and implications of preferential loan terms is of paramount importance for two reasons. First, while the primary goal of retirement plans is to provide employees with future financial security, it sheds light on the complex

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dynamics between firms and their retirement plan providers, extending beyond the realm of retirement benefits. Second, it can have significant implications for corporate financing decisions, capital structure choices, and financial performance. If preferential loan terms do exist, firms with retirement plan providers as lenders may enjoy a competitive advantage in securing financing and optimizing their financial resources, a tangible benefit for shareholders.

To investigate whether firms that borrow from retirement plan providers receive preferential loan terms, I use retirement plan-level data from the Department of Labor (DOL) Form 5500, which is filed for any retirement plan with fiduciary obligations, and corporate loan data from DealScan. I find that firms that receive loans from lenders that simultaneously serve as their retirement providers (i.e., a lender-provider relationship) pay approximately 5.5% lower spreads than firms that receive loans from non-provider lenders. This result holds in regressions with firm fixed effects, suggesting that within the same borrowing firm, loans from a lender-provider relationship have lower spreads than loans from a non-lender-provider relationship. The results are also robust to controlling for prior lending relationships and lead arranger status. In addition, I also test whether non-price loan terms vary across provider and non-provider loans. I find that borrowers with a lender-provider relationship receive larger loans and loans with longer maturities.

A potential concern is that larger borrowers are more likely to have relationships with larger retirement providers that have more auxiliary business divisions such as lending. If these larger borrowers are more sophisticated and established, they may receive lower spreads irrespective of whether the loan is from a retirement provider. To help alleviate this concern, I match loans of firms with lender-provider relationships to loans of firms without lender-provider relationships using propensity score matching on loan and firm characteristics. I find that loans from lender-providers continue to have lower spreads, larger amounts, and longer maturities, suggesting that differences in the observed characteristics between borrowers and loans are not driving my results.

With firms receiving more preferential loan terms from lenders who simultaneously serve as their retirement providers, one must wonder if these terms represent a potential benefit to shareholders. It could be the case that the lower spreads are offset by the administrative costs paid by the firm for retirement services. Therefore, I compare the differences in total administrative costs between lender-provider and non-lender-provider plans with the median interest savings the firm enjoys from loans borrowed from retirement providers. I find that, on an aggregate basis, the additional total administrative costs of providing a retirement plan with a lender-provider is 35% of the median interest savings from relationship loans, suggesting that plan-level costs do not offset the benefits of lower spreads.

It could also be the case that the benefit of favorable loan terms comes at a cost of reduced plan quality. In this case, lenders extract value directly from employees by providing an inferior retirement plan with suboptimal investment options and higher costs. This situation presents a possible conflict of interest between management's commitment to their shareholders and their stakeholders, namely employees. If the lender-provider retirement plans produce suboptimal returns, firms may be accepting a worse performing plan in exchange for a reduced cost of debt, representing a wealth transfer from employees to shareholders. On the upside, if the lender-provider retirement plans outperform, then this would suggest that both employees and shareholders benefit from the relationship. Finally, if the lender-provider retirement plan performs equally, employees would be indifferent, and shareholders would benefit from lower costs of debt if borrowing from a provider. To analyze this, I calculate overall plan-level returns and compare the returns of plans with a lender-provider relationship against those without. I find that lender-provider plan returns are not significantly different from those without a lender-provider relationship, suggesting that there is not a wealth transfer from shareholders and employees. Instead, if a firm needs to take on debt, shareholders will experience some benefit if the loan is from their retirement provider, and it will not negatively impact the long-term financial well-being of employees.

Why might firms receive preferential loan terms from lenders who simultaneously serve as a provider on their retirement plan? One possible explanation is that there is a quid pro quo arrangement where the lender provides favorable terms in exchange for their retirement plan business. Several studies provide evidence of quid pro quo within retirement plan services and with cross-selling services more generally (Reuter, 2006; Cohen and Schmidt, 2009; Cvijanovic et al., 2016; Ferreira et al., 2018). Another potential channel is through a reduction in information asymmetry between the firm and the lender. Prior research finds that risks associated with adverse selection decrease when a lending bank has a strong past relationship with a borrower because access to prior information about the borrower reduces information asymmetry (e.g., Boot, 2000). Various studies have shown that relationship banking can reduce information asymmetry and improve loan terms (Sharpe, 1990; Rajan, 1992; Bharath et al., 2007; Bharath et al., 2011). In addition, external non-banking relationships can facilitate information production and improve loan terms (Ferreira and Matos, 2012; Huang et al., 2018).

To tease out which explanation drives my results, I begin by conducting two tests for the quid pro quo channel. First, I examine the amount of compensation paid by the firm for provider services. If a quid pro quo arrangement exists, then more valuable retirement plans should receive more preferential terms. I employ four measures of how valuable a plan is to a provider. Specifically, I use the total amount of compensation paid by the retirement plan following Cvijanovic et al. (2016), the total compensation scaled by the number of providers, the total amount of compensation scaled by the number of active participants in the plan, and the total amount of assets under management (AUM) within the plan. Overall, I find that loan spreads do not vary with the amount of compensation paid to providers, inconsistent with the quid pro quo explanation.

Second, I examine the riskiness of the loans using financial covenants. To retain their position as retirement provider, lenders may offer favorable terms to riskier firms that would otherwise not receive those terms. However, I find no difference in the likelihood of violating financial covenants between affiliated and unaffiliated loans, suggesting that the lender is not taking on additional risk when providing sponsor firms corporate loans.

Next, I conduct three tests for the information asymmetry channel. First, I examine how the effect of a lender-provider relationship varies with the opaqueness of a borrower's operations. Prior work finds that it is more difficult for market participants to value and assess the quality of intangible assets, leading to greater information asymmetry (Barth et al., 2001; Gu and Wang, 2005; Palmon and

Yezegel, 2012; Ghaly et al., 2017; Bongaerts et al., 2022). Therefore, a provider relationship should be more valuable to firms with more opaque operations. Consistent with an information asymmetry channel, I find that the effects of a lender-provider relationship on loan spreads is strongest for firms with higher levels of knowledge and organizational capital, as captured by capitalized research and development (R&D) and selling, general, and administrative (SG&A) expenses.

Second, I examine whether the proportion of the loan held by individual lenders within a syndicated loan varies with whether the lender is a retirement plan provider. Syndicated loans are issued by a group of lenders with one acting as the lead lender and the other lenders acting as members of the syndicate. Theory suggests that as asymmetric information increases between the lead arranger and the members of the syndicate, the participants in the loan will demand higher interest rates and hold less of the loan while demanding a larger loan ownership by the lead arranger to mitigate this effect. I find evidence that lenders that lend to borrowers with whom they have a retirement provider relationship tend to hold a larger percentage of the syndicated loan, consistent with lenders having more information about the borrower.

As a final test, I employ a pseudo difference-in-differences approach similar to the one used in Cohen and Schmidt (2009) that exploits the formation and termination of a retirement provider relationship. Consistent with both information asymmetry and quid pro quo, loan spreads should increase following the termination of a provider relationship and decrease following the establishment of a provider relationship. However, if loan spreads are unaffected after the termination of a provider relationship, the result would be most consistent with an information asymmetry mechanism as information from a prior relationship remains valuable and relevant even after the termination. I find that the termination of the retirement provider relationship has no effect on loan spreads but that the establishment of a retirement provider relationship leads to lower loan spreads. This result is most consistent with the information asymmetry hypothesis, as a prior retirement provider relationship gives the lender useful information about the borrowing firm that persists even after the relationship is terminated.

Taken together, my tests suggest that the favorable loan terms experienced by firms who borrow from their retirement providers are more consistent with a reduction in information asymmetry rather than a quid pro quo arrangement, underscoring a potential mechanism within the interplay among financial institutions, retirement plans, and corporate financing. Therefore, this study contributes to the growing literature on the spillover effects of retirement plan provider relationships. Prior work finds that having a retirement plan relationship affects other areas of business activity, such as mutual fund ownership and shareholder voting (Cohen and Schmidt, 2009; Cvijanovic et al., 2016). Some studies show questionable behavior when it comes to the management of retirement plans by providers (Pool et al., 2016; Badoer et al., 2020). However, my findings suggest that lender-provider relationships may be beneficial to firms by reducing information asymmetry in the corporate loan market. Ultimately, my results suggest that the benefits to firms from offering retirement plans extend beyond attracting and retaining employees.

In addition, this paper contributes to work on relationship lending and cross-selling. Prior work finds evidence consistent with both favorable treatment from a reduction in information asymmetry and from sweetheart deals or quid pro quos (Reuter, 2006; Bharath et al., 2007; Ferreira et al., 2018). My evidence is consistent with the provider relationship reducing information asymmetry, resulting in the lender giving more preferential terms to the borrower.

Finally, my study has implications for the debate between shareholders and stakeholders that has arisen in the last decade. My paper suggests that lenders cross-selling retirement plan services creates a possible conflict of interest between employee retirement wealth and shareholder wealth maximization. However, I find that employee wealth is not exploited in favor of preferential loan terms, mitigating concerns of a tradeoff between retirement plan performance and the cost of corporate debt.

This paper proceeds as follows. Section 2 discusses institutional background. Section 3 describes the data and methodology, and Section 4 reports the main empirical results. Section 5 and Section 6 respectively examine potential tradeoffs and mechanisms for favorable loan terms. Section 7 concludes.

2. Background

2.1. Retirement benefits and corporate outcomes

In March 2023, the median total compensation costs for private industry workers were $30.26 per hour, and around 30% of this compensation came in the form of fringe benefits (insurance, retirement, paid leave, etc.). Of that, the cost of retirement and savings plans represented approximately 8% of the total benefits package that employees receive.[1] Employers bear this cost for several reasons. According to the IRS, the main reasons for a firm to offer employees a retirement plan are the attraction and retention of quality workers and the tax-deductibility of employer contributions. In a 2022 survey, 52% of small business employers said that retirement plans helped attract more qualified employees.[2] In another study, over 80% of employees who belong to a retirement plan admitted that the benefit increased retention and company loyalty.[3] With turnover costing a company an average of 33% of an employee's base pay, higher retention undoubtedly improves the bottom line.[4] As such, employers provide these plans with the anticipation that they

[1] See the median private industry workers statistics from "Employer Costs for Employee Compensation Summary" – Bureau of Labor Statistics – June 16, 2023.

[2] https://www.score.org/resource/infographic-small-business-retirement-investing-your-future.

[3] See "The Value of a Good Pension: The Business Case for Good Workplace Retirement Plans" by Healthcare of Ontario Pension Plan - https://hoopp.com/home/pension-advocacy/research/the-value-of-a-good-pension-the-business-case-for-good-workplace-retirement-plans.

[4] "2018 Retention Report: Truth & Trends in Turnover" – Work Institute

remain competitive in the labor force.

Prior literature has examined indirect effects of retirement plans on business outcomes. For example, a number of studies have examined the implications of pension underfunding risk and subsequent plan freezes. Almaghrabi (2023) finds a positive relation between pension underfunding risk and cash holdings, suggesting that firms mitigate their pension risk with more cash. Choy et al. (2014) find that firms who declare a hard freeze on their defined benefit plans experience an increase in total risk, equity risk, and credit risk. Consequently, if firms can transfer their pension assets and liabilities to third-party insurers, they tend to increase their aggregate corporate risk-taking (Silverstein, 2021). In addition, some studies have found more indirect effects arising from their retirement plans. Institutions that administer retirement plans tend to hold more of their client's stock and engage in more pro-management voting (Cohen and Schmidt, 2009; Cvijanovic et al., 2016). However, more research is needed to understand the relationship between the firm and those who manage their retirement plan as well as the direct and indirect effects on corporate outcomes.

2.2. Retirement plans and providers

Currently in the United States, there are two main types of retirement plans that are offered to employees: defined benefit plans and defined contribution plans. Defined benefit plans are traditional pension plans that pay an employee a fixed, pre-established benefit throughout their time in retirement. This amount is typically determined by the level of the employee's salary when working and the years of service in the company. Because of complications in defined benefit plans, defined contribution plans have become much more common in the private workplace. These plans are primarily funded by an employee with a pre-tax payroll deduction, and the company may match this contribution up to a certain limit.

The administration of such plans can be complicated, so firms will outsource much of the plan management. These entities that operate a firm's retirement plan are called plan providers. Providers serve in many different roles within a retirement plan. One provider may work with the management of the firm to select which funds to be included in the plan, one provider may work directly with plan participants to answer investment questions and provide educational services, and another provider may work directly with a firm's accounting department to ensure that the plan information is accurately reported to the DOL, SEC, and IRS. While there are different functions, almost all providers work closely with the firm to ensure they are acting in the best interests of the plan participants in obligation to their fiduciary responsibility as laid out in the Employee Retirement Income Security Act of 1974 (ERISA).

3. Research design and sample selection

3.1. Empirical methodology

To examine the relation between spreads and the presence of a plan provider relationship, I estimate the following pooled OLS fixed effects regression model:

$$Ln(AID\ Spread)_{i,k,t} = \beta_1 LP\ Relationship_{i,k,t} + \gamma X_{i,t} + \upsilon_i + \omega_t + \varepsilon_{i,k,t}, \quad (1)$$

where $Ln(AID\ Spread)_{i,k,t}$ is the natural logarithm of the all-in-drawn spread for firm i for loan k at time t. $LP\ Relationship_{i,k,t}$ is the independent variable of interest that represents whether firm i received loan k at time t from a lender who simultaneously was a plan provider for their retirement plan. I include a set of firm-level controls measured immediately before issue and loan-level controls measured at time t (X). Firm-level controls include: the market-to-book ratio, the natural logarithm of total assets, the natural logarithm of firm age, profitability, fixed assets, book leverage, and a dummy variable indicating whether the firm has a bond rating. Loan-level controls include the natural logarithm of the total facility amount, the natural logarithm of loan maturity, a covenant index following Bharath et al. (2011) and Bradley and Roberts (2015), and a dummy variable indicating whether the loan is a term loan. These controls are consistent with Campello and Gao (2017) who examine how customer concentration affects loan terms. I winsorize continuous firm-level controls and Facility Amount at the 1% and 99% level, and I also control for repeat borrowing from the same lead arranger within the prior five years following Bharath et al. (2011). Additionally, following Sufi (2007), I control for the lead arranger status on the loan.

The model includes firm fixed effects (υ_i) and year fixed effects (ω_t). The firm fixed effects control for any time-invariant firm characteristics that could be correlated with loan terms and the likelihood of having a lender-provider relationship. Including firm fixed effects also implies that any relation between loan spreads and a retirement plan provider relationship is driven by within-firm variation in spreads and the likelihood of a retirement provider relationship. Thus, the coefficient estimate on β_1 is interpreted as how much a firm is charged on a loan from a lender-provider compared to how much the same firm is charged on a loan from a non-lender-provider. The year fixed effects account for transitory macroeconomic-wide factors, such as regulations and economy-wide lending conditions, that could simultaneously affect loan spreads and the retirement plan provider relationship within a given year. Including year fixed effects also removes any time trends that could affect loan spreads. To correct for heteroskedasticity and correlation of standard errors within firms, I cluster standard errors at the firm level.

3.2. Sample selection

Consistent with prior work dealing with defined benefit and contribution plans, I begin by collecting information on retirement plans from the Department of Labor (DOL) Form 5500. The DOL Form 5500 is a required filing for any firm that administers a benefits

plan that is subject to ERISA.[5] ERISA requires firms and most providers that administer the plan to act as fiduciaries for those they represent – the plan participants, in this case. The Form 5500 offers an advantage over other legal forms filed for retirement plans such as the SEC Form 11-K in that it is filed by more firms. The 11-K is required to be filed only by firms that offer stock purchase plans or company stock within their employee savings plans. The advantage of using the Form 5500 is that it gives access to detailed information about the firm and plan such as the number of participants in the plan, the specific assets held within the plan, employer contribution amounts, the amount paid to plan providers, and other detailed plan provider information. Provider services on a defined contribution and defined benefit plan can range from recordkeeper and trustee to advisory services. However, most providers work closely with the firm to ensure they are acting in the best interest of the plan participants in obligation to their fiduciary responsibility.

I obtain the Form 5500 for public firms over the years 2009–2019.[6] This initially leaves 50,668 plans for 5190 unique firm identifiers.[7] Loan data including spreads, covenants, maturity, and lender information are from DealScan and linked to the form 5500 data using the gvkey-facility ID linking file provided by Chava and Roberts (2008) and Keil (2023).[8] I then fuzzy match lender names from DealScan to provider names on the form 5500 and verify by hand. The verification process ensures that bank subsidiary asset management divisions are properly linked. For example, a firm would be classified as having a relationship if they received a loan from Wells Fargo and received provider services from Wells Fargo Advisors, the bank's asset management division. This process is consistent with the idea from Ferreira et al. (2018) that asset management divisions of banks do support the lending operations of the bank. Using this linked data, I create a dummy variable for each firm that had a lender-provider relationship in the same year as their Form 5500 filing year, ensuring that the lender-provider relationship is current.

I collect accounting data from Compustat for firm-level controls and I obtain loan-level controls from DealScan. I adjust all dollar values for inflation using the 2019 Consumer Price Index. Keeping only those firms from the initial form 5500 dataset that received a corporate loan from 2009 to 2019 and removing those that were missing data as well as financial firms (SIC codes between 6000 and 6999), the final sample consists of 8538 different loans for 1547 unique firms. 2091 of these loans had a lender-provider relationship in the final sample.

Table 1, Panel A presents the summary statistics for all loans. Roughly 25% of the loans have a lender-provider relationship, and the total loan amount varies widely, as the 25th percentile of loans is $135 million and the 75th percentile is $800 million. Additionally, the maturity for most loans in the sample is 4–5 years.

Panel B compares the mean firm and loan characteristics between those that had a lender-provider relationship and those that did not have a lender-provider relationship. Overall, I find that loans from lender-providers have lower spreads and greater loan amounts. In addition, firms with lender-provider relationships tend to be older, larger, have lower market-to-book ratios, and a higher likelihood of having a bond rating. These differences between the lender-provider group and the non-lender-provider group further motivate me to control for these factors in my regressions. Additionally, I attempt to address these differences through a propensity score matching analysis in Section 4.3.

4. Results

4.1. Cost of debt analysis

Next, I empirically test whether loans with a lender-provider relationship have lower spreads. Table 2 presents both univariate and multivariate estimates of Eq. (1), in which the dependent variable is the natural logarithm of the all-in-drawn spread.

The results show that obtaining a loan from a lender-provider is associated with lower spreads. These results are statistically significant and robust to firm and year fixed effects. The univariate results in columns 1 and 2 show that firms with a lender-provider relationship tend to have significantly lower loan spreads. When extending the test to a multivariate framework, the negative relation remains statistically significant. In terms of economic significance, results are interpreted by taking the exponential function of the coefficient. For example, the coefficient estimates in column 4, which are from regressions that includes both firm and year fixed effects, imply that loan spreads from retirement providers are about 5.5% $(= e^{-.057} - 1)$ lower. With the average loan in my sample of approximately $690 million and the average all-in-drawn spread of 230 bps, a firm would pay approximately $15.87 million per year in interest over and above LIBOR. A 5.5% decrease in the spread would make the new all-in-drawn spread roughly 217 bps, reducing the yearly debt payment by approximately $897,000.

In columns 5 and 6, I control for whether the lender-provider relationship was the lead arranger on the loan. Most syndicated loans in the U.S. are under a best-efforts deal where the lead arranger makes their best efforts to fulfill the terms of the loan negotiated with the borrower. Based upon syndicate member demand, loan terms may have to adjust. Therefore, the role the lender-provider plays in the syndication process may affect spreads. I find that the presence of a lender-provider relationship on a loan remains statistically significant even when controlling for their lead arranger status.

[5] A full Form 5500 is filed for firms with over 100 participants. Firms with less than 100 employees can file a Form 5500-SF. Because the data is limited on the Form 5500-SF, my data is limited to those firms with more than 100 participants.

[6] The sample begins in 2009 because the Form 5500 structure and acknowledgement ID numbers were changed between 2008 and 2009. They have remained constant since then.

[7] This is a sample of plans and firms that I was able to accurately match to Compustat's gvkey firm identifier.

[8] Because these data end in 2018, I fill in later loans with last available gvkey identifier based on *borrowercompanyid* from DealScan.

Table 1
Summary Statistics.

Panel A: Summary Statistics of All Loans
Obs. = 8538

	Mean	Std. Dev.	P25	P50	P75
LP Relationship	0.245	0.430	0.000	0.000	0.000
AID Spread (BPS)	232.0	149.9	125.0	175.0	275.0
Ln (AID Spread)	5.280	0.580	4.828	5.165	5.617
Facility Amount ($M)	756.7	1061	152.4	379.9	891.0
Ln (Facility Amount)	19.77	1.352	18.84	19.76	20.61
Maturity (Months)	53.71	18.06	48.00	60.00	60.00
Ln (Maturity)	3.887	0.524	3.871	4.094	4.094
Total Assets ($B)	137.8	344.1	11.06	33.65	99.58
Ln (Total Assets)	8.174	1.647	7.009	8.121	9.206
Firm Age (Years)	31.48	19.14	16.00	25.00	48.00
Ln (Firm Age)	3.276	0.683	2.833	3.258	3.892
Market-to-Book	1.387	0.931	0.794	1.107	1.661
Profitability	0.129	0.074	0.086	0.121	0.163
Fixed Assets	0.294	0.245	0.097	0.204	0.444
Book Leverage	0.316	0.206	0.174	0.298	0.426
Total Covenants	1.215	1.460	0.000	1.000	2.000
Bond Rate Dummy	0.662	0.473	0.000	1.000	1.000
Loan Type Dummy	0.065	0.247	0.000	0.000	0.000

Panel B: Comparison of Mean Characteristics

	Mean of LP Loans Obs. = 2091	*Mean of Non-LP Loans Obs. =6447*	*Differences*
Ln (AID Spread)	5.129	5.328	−0.199***
Ln (Facility Amount)	20.05	19.55	0.503***
Ln (Maturity)	3.884	3.888	−0.004
Ln (Total Assets)	8.647	8.020	0.627***
Ln (Firm Age)	3.480	3.209	0.271***
Market-to-Book	1.302	1.414	−0.113**
Profitability	0.137	0.127	0.009***
Fixed Assets	0.327	0.283	0.044***
Book Leverage	0.329	0.312	0.017
Total Covenants	1.099	1.253	−0.154**
Bond Rate Dummy	0.766	0.628	0.137***
Loan Type Dummy	0.038	0.074	−0.036***

This table shows the summary statistics for my sample of firms in the Form 5500 that received loans from 2009 to 2019. Panel A shows the characteristics for all 8538 loans. Panel B, column 1 shows the variables that will be used in regressions for the 2091 loans where a lender-provider relationship was present. Panel B, column 2 shows the variables that will be used in regressions for the 6447 loans where a lender-provider relationship was not present. Panel B, column 3 shows the difference in means between columns 1 and 2. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

4.2. Loan size and maturity

While the focus of my analysis is on spreads, I also examine non-price loan terms such as loan size and maturity. Prior studies document a positive association between relationship length and the availability of credit to a borrower (Hoshi et al., 1990; Petersen and Rajan, 1994; Degryse and Van Cayseele, 2000). The size of a loan facility and maturity can be used as proxies for access to financing.

Table 3 presents both univariate and multivariate estimates of Eq. (1) using the natural logarithm of total loan facility amount as the dependent variable. The results show that obtaining a loan from a lender-provider is associated with larger loan facility amounts. As in Table 2, these results are statistically significant and robust to firm and year fixed effects. Focusing on column 6, firms that receive loans from their retirement providers are about 28% larger than loans that do not include their provider.

Table 4 presents both univariate and multivariate estimates for Eq. (1) using the natural logarithm of loan maturity as the dependent variable. Examining the estimates, the lender-provider relationship is associated with longer maturity. The results are statistically significant only when incorporating firm fixed effects, suggesting that the presence of a lender-provider relationship affects the within variation of maturity for firms but not when examining only within-year effects. In terms of economic magnitudes, the results in column 6 imply that having a lender-provider relationship leads to a 13% increase in loan maturity.

4.3. Robustness

One potential concern about the evidence presented is that there are significant differences between the firms that have a lender-provider relationship on their loans and those that do not. It could be the case that larger, more mature firms have access to larger providers that have multiple business segments. Conversely, it could be the case that smaller, less mature firms select a lender-provider due to simplicity and streamlining business segments.

Table 2
Lender-Provider Relationships and Loan Spreads.

	Dependent Variable = *Ln (AID Spread)*					
	(1)	(2)	(3)	(4)	(5)	(6)
LP Relationship	−0.202***	−0.103***	−0.083***	−0.057**	−0.097***	−0.045**
	(−7.79)	(−4.16)	(−4.10)	(−2.62)	(−4.24)	(−2.05)
LP Relationship Leader					0.039	−0.042
					(1.10)	(−0.92)
Prior Lender			−0.180***	−0.136***	−0.180***	−0.135***
			(−10.42)	(−7.60)	(−10.45)	(−7.60)
Ln (Facility Amount)			−0.077***	−0.063***	−0.077***	−0.063***
			(−5.74)	(−4.71)	(−5.70)	(−4.72)
Ln (Maturity)			0.144***	0.064***	0.144***	0.064***
			(6.94)	(3.42)	(6.95)	(3.42)
Market-to-Book			−0.090***	−0.052**	−0.089***	−0.052**
			(−4.60)	(−2.91)	(−4.59)	(−2.91)
Ln (Total Assets)			−0.069***	−0.098***	−0.069***	−0.098***
			(−6.79)	(−4.36)	(−6.79)	(−4.35)
Ln (Firm Age)			−0.105***	0.200**	−0.105***	0.198**
			(−6.73)	(2.77)	(−6.75)	(2.76)
Profitability			−0.698***	−0.553***	−0.704***	−0.553***
			(−4.42)	(−3.51)	(−4.47)	(−3.51)
Fixed Assets			−0.085**	0.180	−0.085**	0.180
			(−2.00)	(1.52)	(−1.99)	(1.52)
Book Leverage			0.625***	0.618***	0.626***	0.617***
			(11.14)	(8.94)	(11.18)	(8.94)
Total Covenants			0.008	−0.014**	0.008	−0.014**
			(1.44)	(−2.50)	(1.45)	(−2.51)
Loan Type Dummy			0.198***	0.180***	0.198***	0.181***
			(6.45)	(7.03)	(6.45)	(7.07)
Bond Rating Dummy			0.090**	−0.029	0.090**	−0.029
			(3.08)	(−0.79)	(3.07)	(−0.80)
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Firm FEs	No	Yes	No	Yes	No	Yes
Observations	8538	8289	8538	8289	8538	8289
Adjusted R^2	0.111	0.610	0.378	0.653	0.378	0.653

This table shows results from OLS regressions of the natural logarithm of loan spreads on the presence of a lender-provider relationship for the Compustat/Dealscan merged form 5500 sample firms from 2009 to 2019. *LP Relationship* is a binary variable that represents whether a firm received a loan from a lender who simultaneously was a plan provider for their retirement plan. LP *Relationship Leader* is a dummy variable that denotes whether the lender-provider was also the lead arranger on the loan that the borrowing firm received. *Prior Lender* is a dummy variable that denotes whether the lender was a lead arranger on the borrowing firm's loans within the last 5 years. The appendix provides definitions of control variables. *t*-statistics in parentheses are calculated from heteroskedasticity-robust standard errors clustered by firm. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

The results in Table 1, Panel B suggest that some of the key firm characteristics that influence loan terms are systematically different across the relationship and non-relationship groups. To test whether these differences are driving the results presented earlier, I employ propensity score matching with replacement to match a firm with a lender-provider relationship to a similar firm without a lender-provider relationship. This technique has been commonly employed to estimate the predicted probability of group membership based on some observed characteristics (Heckman et al., 1997, 1998; Drucker and Puri, 2005; Bharath et al., 2011). The controls used in previous tests are the observed characteristics used to match loans with a lender-provider relationship to those that do not have a lender-provider relationship. More specifically, using a probit model to estimate the probability of being in the treatment group verses control group, for every lender-provider loan, I match up to two non-lender-provider loans as controls with a propensity score within ±1% of the lender-provider loan propensity score and within the same year and industry.

Using the matched sample, I again evaluate the differences in the mean between the lender-provider and the non-lender-provider groups. Table 5 shows the results of this test and suggests that the propensity score matching technique has eliminated the significant differences between the two groups. I then re-estimate my main regressions from Table 2 to see the impact that having a lender-provider relationship has on loan spreads using the matched sample and present the results in Panel A of Table 6. The results are consistent with those in Table 2 in that loan spreads are lower for lender-provider loans. I repeat this analysis for both loan size and

Table 3
Lender-Provider Relationships and Loan Facility Amount.

	Dependent Variable = *Ln (Facility Amount)*					
	(1)	(2)	(3)	(4)	(5)	(6)
LP Relationship	0.508***	0.328***	0.128***	0.208**	0.187***	0.244***
	(8.59)	(4.47)	(3.35)	(3.11)	(4.00)	(3.88)
LP Relationship Leader					−0.151**	−0.122
					(−2.29)	(−1.23)
Prior Lender			0.137***	0.067**	0.139***	0.070**
			(3.99)	(2.01)	(4.05)	(2.07)
Ln (AID Spread)			−0.362***	−0.404***	−0.360***	−0.405***
			(−5.88)	(−5.55)	(−5.86)	(−5.57)
Ln (Maturity)			0.194***	0.169***	0.193***	0.168***
			(3.66)	(3.89)	(3.67)	(3.86)
Market-to-Book			0.048	0.082**	0.046	0.082**
			(1.44)	(2.84)	(1.42)	(2.88)
Ln (Total Assets)			0.463***	0.392***	0.462***	0.394***
			(16.75)	(7.93)	(16.72)	(7.95)
Ln (Firm Age)			−0.109***	0.215	−0.108***	0.208
			(−3.65)	(1.26)	(−3.64)	(1.22)
Profitability			1.058***	0.827**	1.079***	0.828**
			(3.65)	(2.95)	(3.72)	(2.95)
Fixed Assets			−0.109	−0.160	−0.111	−0.159
			(−1.00)	(−0.56)	(−1.03)	(−0.56)
Book Leverage			0.046	0.026	0.041	0.027
			(0.33)	(0.19)	(0.30)	(0.20)
Total Covenants			0.079***	0.068***	0.078***	0.067***
			(6.89)	(4.94)	(6.87)	(4.94)
Loan Type Dummy			−0.387***	−0.281***	−0.385***	−0.278***
			(−7.78)	(−5.44)	(−7.75)	(−5.39)
Bond Rating Dummy			0.194**	−0.016	0.195**	−0.017
			(3.15)	(−0.23)	(3.17)	(−0.24)
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Firm FEs	No	Yes	No	Yes	No	Yes
Observations	8538	8289	8538	8289	8538	8289
Adjusted R^2	0.094	0.552	0.471	0.585	0.472	0.586

This table shows univariate and multivariate regressions of the natural logarithm of loan facility amount on the presence of a lender-provider relationship. *LP Relationship* is a binary variable that represents whether a firm received a loan from a lender who simultaneously was a plan provider for their retirement plan. *LP Relationship Leader* is a dummy variable that denotes whether the lender-provider was also the lead arranger on the loan that the borrowing firm received. *Prior Lender* is a dummy variable that denotes whether the lender was a lead arranger on the borrowing firm's loans within the last 5 years. The appendix provides definitions of control variables. *t*-statistics in parentheses are calculated from heteroskedasticity-robust standard errors clustered by firm. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

maturity and present them in Panel B and Panel C, respectively. Like the results for loan spreads, the results for both loan size and maturity are robust to matching and are statistically similar to the results presented in Section 4.2. This indicates that the results of my main tests are robust and not driven by significant differences between lender-provider loans and non-lender-provider loans.[9]

Another potential concern to my analysis is the presence of selection bias as those lenders with a provider relationship could be more sophisticated than the lenders who lend without a provider relationship, contributing to lower spreads. To mitigate this concern, I restrict my sample only to loans extended from lenders who serve as providers on retirement plans. I find 50 unique lenders who serve as retirement plan providers, and I only keep those loans in my sample that include those 50 lenders. My sample size decreases from 8538 loans to 8276 loans, suggesting that most loans in my original sample included lenders that offered provider services and extended loans to both firms with whom they do and do not have a provider relationship. I estimate the prior analyses using the restricted sample and find the results to be robust. I present these results in the Internet Appendix.

[9] Observation sizes of the three matched samples vary due to slight differences in sample when propensity scores were generated. For example, for the loan spread sample, two of the variables to be matched on included maturity and size. Conversely, for the maturity sample, spread and size were included in the matching procedure. For full regressions of the matched sample analyses, please see the Tables IA1, IA2, and IA3 in the Internet Appendix.

Table 4
Lender-Provider Relationships and Loan Maturity.

	Dependent Variable = *Ln (Maturity)*					
	(1)	(2)	(3)	(4)	(5)	(6)
LP Relationship	−0.009	0.126***	0.026	0.113***	0.034*	0.119***
	(−0.50)	(4.94)	(1.50)	(4.61)	(1.67)	(4.44)
LP Relationship Leader					−0.020	−0.020
					(−0.77)	(−0.49)
Prior Lender			0.076***	0.077***	0.076***	0.077***
			(4.09)	(3.72)	(4.11)	(3.74)
Ln (AID Spreads)			0.168***	0.114***	0.168***	0.114***
			(8.09)	(3.89)	(8.10)	(3.88)
Ln (Facility Amount)			0.049***	0.047***	0.048***	0.047***
			(4.08)	(4.20)	(4.08)	(4.17)
Market-to-Book			−0.028**	−0.038**	−0.028**	−0.038**
			(−2.56)	(−2.10)	(−2.57)	(−2.09)
Ln (Total Assets)			−0.058***	0.015	−0.058***	0.016
			(−5.34)	(0.66)	(−5.36)	(0.67)
Ln (Firm Age)			−0.018	−0.129	−0.018	−0.130
			(−1.38)	(−1.52)	(−1.38)	(−1.54)
Profitability			0.493***	0.674***	0.496***	0.674***
			(3.61)	(3.81)	(3.64)	(3.82)
Fixed Assets			−0.063*	−0.351**	−0.063*	−0.351**
			(−1.68)	(−2.41)	(−1.69)	(−2.41)
Book Leverage			−0.035	−0.194**	−0.036	−0.194**
			(−0.71)	(−2.33)	(−0.72)	(−2.33)
Total Covenants			0.002	−0.005	0.002	−0.005
			(0.31)	(−0.87)	(0.31)	(−0.88)
Loan Type Dummy			−0.049	−0.038	−0.049	−0.037
			(−1.39)	(−1.05)	(−1.39)	(−1.05)
Bond Rating Dummy			0.014	−0.057	0.014	−0.057
			(0.64)	(−1.58)	(0.65)	(−1.58)
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Firm FEs	No	Yes	No	Yes	No	Yes
Observations	8538	8289	8538	8289	8538	8289
Adjusted R^2	0.047	0.222	0.107	0.238	0.107	0.238

This table shows univariate and multivariate regressions of the natural logarithm of maturity on the presence of a lender-provider relationship. This table shows univariate and multivariate regressions of the natural logarithm of loan facility amount on the presence of a lender-provider relationship. *LP Relationship* a binary variable that represents whether a firm received a loan from a lender who simultaneously was a plan provider for their retirement plan. *LP Relationship Leader* is a dummy variable that denotes whether the lender-provider was also the lead arranger on the loan that the borrowing firm received. *Prior Lender* is a dummy variable that denotes whether the lender was a lead arranger on the borrowing firm's loans within the last 5 years. The appendix provides definitions of control variables. *t*-statistics in parentheses are calculated from heteroskedasticity-robust standard errors clustered by firm. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 5
t-test of means of matched sample.

	Mean of LP Loans (Obs. = 1165)	*Mean of Non-LP Loans (Obs. = 1847)*	*Differences*
Ln (Facility Amount)	19.95	19.90	0.054
Ln (Maturity)	3.906	3.895	0.011
Ln (Total Assets)	8.572	8.584	−0.012
Ln (Firm Age)	3.453	3.462	−0.009
Market-to-Book	1.292	1.306	−0.014
Profitability	0.130	0.130	0.000
Fixed Assets	0.319	0.328	−0.009
Book Leverage	0.336	0.329	0.007
Total Covenants	1.183	1.075	0.108
Loan Type Dummy	0.042	0.045	−0.003
Bond Rating Dummy	0.750	0.764	−0.014

This table reports univariate results comparing difference between the mean values of variables within the lender-provider relationship group and the non-relationship group after the propensity score matching procedure. Standard errors are clustered by firm. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 6
Matched Sample Analysis.

Panel A:	Dependent Variable = *Ln (AID Spread)*					
	(1)	(2)	(3)	(4)	(5)	(6)
LP Relationship	−0.067**	−0.083**	−0.074**	−0.083**	−0.087**	−0.086**
	(−2.01)	(−2.21)	(−2.98)	(−2.47)	(−3.14)	(−2.70)
LP Relationship Leader					0.036	0.011
					(0.97)	(0.20)
Prior Lender			−0.183***	−0.122***	−0.184***	−0.123***
			(−5.56)	(−3.49)	(−5.58)	(−3.47)
Observations	3012	2746	3012	2746	3012	2746
Adjusted R^2	0.108	0.712	0.396	0.735	0.396	0.735
Panel B:	Dependent Variable = *Ln (Facility Amount)*					
LP Relationship	0.192**	0.411**	0.171**	0.367**	0.200**	0.334**
	(2.17)	(2.73)	(2.80)	(2.65)	(2.78)	(2.71)
LP Relationship Leader					−0.078	0.134
					(−0.91)	(0.84)
Prior Lender			0.040	0.072	0.044	0.065
			(0.48)	(0.78)	(0.53)	(0.69)
Observations	2939	2717	2939	2717	2939	2717
Adjusted R^2	0.058	0.602	0.383	0.612	0.383	0.612
Panel C:	Dependent Variable = *Ln (Maturity)*					
LP Relationship	0.030	0.158***	0.035	0.156***	0.038	0.142**
	(1.12)	(3.92)	(1.32)	(3.77)	(1.27)	(3.26)
LP Relationship Leader					−0.008	0.053
					(−0.24)	(0.79)
Prior Lender			0.118**	0.154**	0.119**	0.152**
			(3.03)	(2.84)	(3.02)	(2.80)
Observations	2945	2689	2945	2689	2945	2689
Adjusted R^2	0.025	0.281	0.082	0.292	0.082	0.292
Controls	No	No	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Firm FEs	No	Yes	No	Yes	No	Yes

This table shows results from OLS regressions of the natural logarithm of loan spreads, facility amount, and maturity on the presence of a lender-provider relationship for the propensity score matched samples. *LP Relationship* is a binary variable that represents whether a firm received a loan from a lender who simultaneously was a plan provider for their retirement plan. *LP Relationship Leader* is a dummy variable that denotes whether the lender-provider was also the lead arranger on the loan that the borrowing firm received. *Prior Lender* is a dummy variable that denotes whether the lender was a lead arranger on the borrowing firm's loans within the last 5 years. The appendix provides definitions of control variables. *t*-statistics in parentheses are calculated from heteroskedasticity-robust standard errors clustered by firm. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively. For the full regressions with control estimates, please see the Internet Appendix.

5. The cost of cheaper debt

5.1. Plan performance and debt cost

Cheaper debt is undoubtedly a benefit for the firm and its shareholders. However, is there a tradeoff between lower spreads and other aspects of retirement plan services? One potential tradeoff is plan performance, which reflects the underlying costs and management of the investments in the plan menu available to employees. This reflects a possible conflict of interest between shareholders and stakeholders, namely employees. If the lender-provider retirement plans underperform non-lender-provider plans, firms may be accepting a worse performing plan in exchange for a reduced cost of debt, representing a wealth transfer from employees to shareholders. On the upside, if the lender-provider retirement plans outperform, then this would suggest that both employees and shareholders benefit from the relationship. Finally, if the lender-provider retirement plan does not underperform or outperform, employees would be indifferent from the relationship and shareholders would likely enjoy lower costs of debt if the firm borrowed from a provider.

I calculate an estimate for plan-level returns using Schedule H of the Form 5500. This schedule includes both the balance sheet and income statement of the retirement plan, reporting beginning and ending balances on accounts as well as any gains or losses in investment vehicle types. I present the summary statistics for the retirement plans in my sample in Table 7. The average plan in my

Table 7
Plan Statistics.

Number of Unique Plan-Years = 4667

	Mean	Std. Dev.	P25	P50	P75
Plan Assets ($M)	681.5	1514	53.99	162.5	543.7
Employee Cont. ($M)	17.73	42.14	0.934	3.756	13.68
Employer Cont. ($M)	22.66	48.46	1.387	6.573	20.48
Admin Cost ($M)	1.323	3.642	0.036	0.149	0.703
Cash Ratio	0.015	0.034	0.000	0.000	0.010
MF Ratio	0.543	0.340	0.215	0.651	0.843
CCT Ratio	0.160	0.219	0.000	0.076	0.222
Sep. Acct. Ratio	0.039	0.153	0.000	0.000	0.000
Master Trust Ratio	0.096	0.281	0.000	0.000	0.000
103–12 Ratio	0.002	0.017	0.000	0.000	0.000
Return	0.067	0.094	−0.015	0.078	0.139
Active Participants	7523	15,144	903.0	2410	7123

This table shows the summary statistics for the retirement plans of my sample of firms in the Form 5500 that received loans from 2009 to 2019. All variables are winsorized at the 1% and 99% level and missing variables are dropped. Variable definitions are presented in the Appendix.

sample has a little over $681 M in total assets. Plans with a lender-provider relationship tend to be, on average, larger ($1.11B vs. $525 M) and have more employees actively participating in the plan (10,141 vs. 6573).[10] I first take the average of the beginning and ending balances of common collective trusts, pooled separate accounts, master trusts, 103–12 investment vehicles, and registered investment companies (mutual funds), the main asset classes reported on the Form 5500.[11] Unsurprisingly, mutual funds and common collective trusts are the most popular investment vehicles in my sample, commanding an average of 54% and 16% of total assets respectively. Next, I add up the net gain (loss) on all respective vehicles. Finally, I divide the net dollar return of all vehicles by the average yearly balance in the plan to get the return of the plan.[12]

To examine the relation between plan performance and the presence of a plan provider relationship, I estimate the following model:

$$Return_{i,t} = \beta_1 LP\ Relationship_{i,t} + \gamma X_{i,t} + \omega_t + \varepsilon_{i,k,t}, \tag{2}$$

where X is a vector of controls that includes the natural log of plan assets, natural log of employer and employee contributions, and natural log of plan cash balances. The model also includes year fixed effects (ω_t).

Table 8 presents the results. I find that lender-provider plans neither underperform nor outperform non-lender-provider plans. Specifically, plans with lender-providers underperform by 0.005%. With controls, these plans underperform by 0.184% per year. However, these are both not statistically different from zero. This suggests that conditional upon accessing corporate debt, firms and shareholders reap the benefits of lower spreads without accepting a 401(k) plan that harms employees' long-term financial health.

5.2. Plan costs and debt cost

With firms receiving more preferential loan terms from lenders who simultaneously serve as their retirement providers, one must wonder if these terms represent a potential benefit to shareholders. One could also argue that the reduction in loan spreads received is directly related to the amount paid by the firm for retirement services, thus offsetting any cost of debt benefit. Specifically, the lender-provider is compensated for the reduction in loan spreads through the compensation received from plan provider services.

To test whether the loan benefits are offset by plan costs, I compare the median total administrative cost differences paid by plans with a lender-provider relationship and the median dollar interest savings per year.[13] I compute the median administrative cost differences by subtracting the plan administrative cost per participant for firms without a lender-provider relationship from those with a relationship.[14] To compute the median dollar interest savings per year, I multiply the median interest rate for lender-provider and non-lender-provider loans with the median lender-provider loan amount. This compares the actual loan interest cost for lender-provider loans with the interest cost the loan would have had if it received the rate that non-lender-provider loans had. This value is then scaled by the median number of plan participants in relationship plans. Fig. 1 shows the results. In every year, the median cost of lender-provider plans is greater than the cost of plans without a lender-provider relationship. However, this difference is a fraction of

[10] Averages are skewed high due to a small number of very large plans. The largest plan in my sample has over $11B in assets under management. The median total assets for relationship plans and non-relationship plans is $313 M and $130 M, respectively. This motivates me to use medians in my analysis in Section 5.2.

[11] The most held asset class is mutual funds and common collective trusts.

[12] This is a rough way to compute plan-level returns. Without a specific breakdown of the plan's schedule of assets and their respective cost basis, this is the most straightforward way of computing returns. The schedule of assets is included in the Form 5500's audit reports but are not easily accessed and scraped. My method of computing returns does not consider participant directed investment decisions that could impact aggregate plan performance.

[13] Schedule H, line 2(i) of the Form 5500 reports the total administrative costs from the firm.

[14] I use the total number of active participants from the Form 5500.

Table 8
Plan-Level Returns.

	Dependent Variable = *Return (%)*	
	(1)	(2)
LP Relationship	−0.036	−0.211
	(−0.08)	(−1.14)
Ln (Plan Assets)		0.245*
		(2.14)
Ln (Employer Cont.)		−0.013
		(−1.01)
Ln (Employee Cont.)		−0.001
		(−0.01)
Ln (Plan Cash)		−0.056**
		(−2.86)
Year FEs	Yes	Yes
Observations	4667	4667
Adjusted R^2	0.828	0.831

This table shows univariate and multivariate regressions of the plan-level return differences for retirement plans with lender-provider relationships. *Return* calculated using the income statement and balance sheets in the Form 5500 and is presented in percentage terms. *LP Relationship* a binary variable that represents whether a firm received a loan from a lender who simultaneously was a plan provider for their retirement plan. *Plan Assets* is the total assets of the retirement plan. *Employer Cont.* and *Employee Cont.* are employer and employee plan contribution amounts, respectively. *Plan Cash* is the amount of cash held in the retirement plan account. Year fixed effects are included in all specifications. *t*-statistics in parentheses are calculated from heteroskedasticity-robust standard errors clustered by year. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

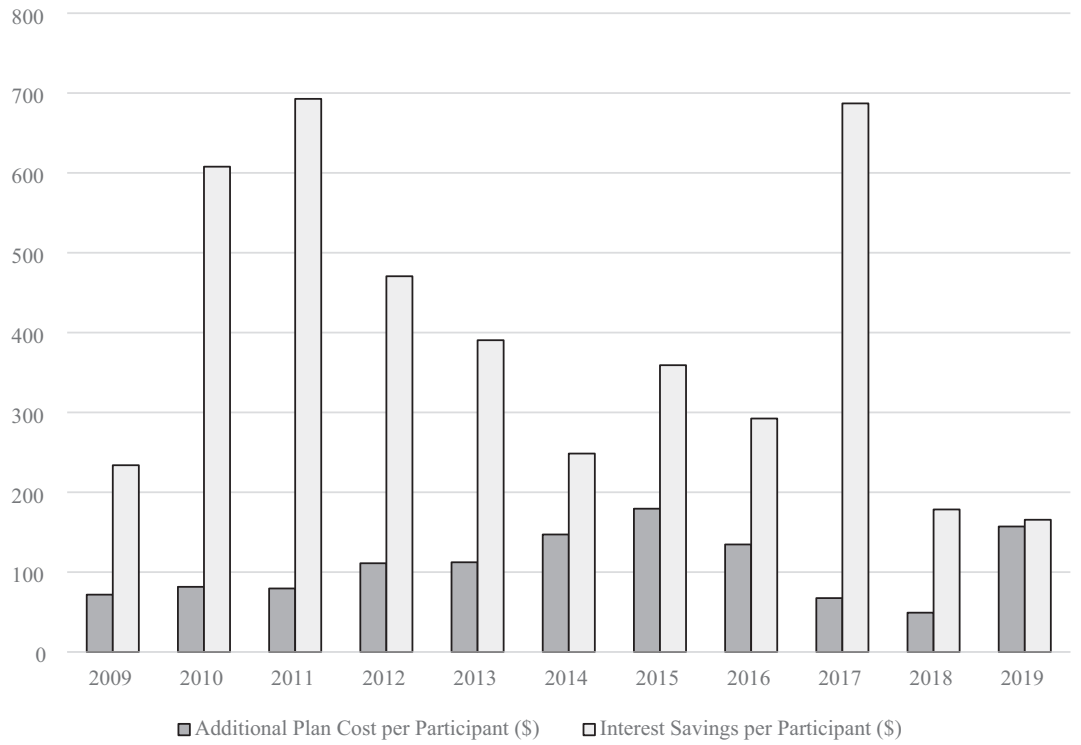

Fig. 1. Plan Cost Differences and Interest Savings.
This figure compares the difference in total plan administration costs and loan interest savings between firms and loans with lender-provider relationships and those without. Total plan administration cost are from the Form 5500 Schedule H, and the differences are between firms with a lender-provider relationship in a given year and those without. Loan interest savings are the difference between lender-provider loan interest rates and non-lender-provider interest rates multiplied by the average loan amount for lender-provider loans. Both differences are scaled by the number of participants in the retirement plan to help control for differences in cost due to plan size.

the difference in interest savings that these firms enjoy from the lender-provider loans.

While the per year administrative cost is higher per participant, it is an average of 36% of the total interest savings that firms receive when borrowing from an affiliated lender. Overall, these results suggest that shareholders may reap a net benefit in the form of cheaper debt, and the extra amount they pay for retirement services do not offset their interest savings.

6. Why preferential terms?

Akerlof (1970) first presented the theoretical concept of adverse selection between agents, and under adverse selection theory, the quality of goods traded in markets can degrade in the presence of information asymmetry. Information asymmetry holds true in the market for corporate loans because information asymmetry between lenders and borrowers drives financial intermediation. If borrowing firms cannot accurately reveal their financial health or future prospects, then the lender must invest in costly research and due diligence to determine whether to issue a loan to the borrower and at what cost. Further, the lender must expend resources to monitor the borrower, decreasing the favorability of loan terms for borrowers. Ivashina (2009) finds that the information asymmetry effect on loan spreads is economically significant and accounts for approximately 4% of the total cost of credit.

However, a high level of research and monitoring may not be as necessary if the amount of information asymmetry is mitigated. As information asymmetries decrease, the cost to monitor and provide loans also decreases. Thus, if a firm engages with a lender with whom they already have other business relationships, this asymmetry should be lower because the lender already has some level of information about the borrowing firm. Theoretically, Boot and Thakor (2000) show that rates charged for loans decrease as a borrowing firm and a lender's relationship matures. Research also finds that the risks of adverse selection decrease if the lending bank has had a strong relationship with the borrower in the past (Boot, 2000). This suggests that the lender has access to prior information or has some knowledge about the borrower, reducing information asymmetry.

Furthermore, borrowers may be more apt to go to a lender with whom they have had a relationship in the past because of the information they have already shared with the lender (Sharpe, 1990; Rajan, 1992). Bharath et al. (2007) find that a relationship lender's informational advantage over non-relationship lenders generates a higher probability of cross-selling information-sensitive products to its borrower and that there is a greater likelihood that the relationship lender will provide a future loan. Additionally, these mitigated risks of adverse selection in the form of reduced information asymmetry have a tangible benefit in the form of reduced spreads to firms that borrow from a lender that they borrowed from in the past (Bharath et al., 2011).

Spreads are not the only term impacted by risk. Strahan (1999) shows that riskier firms obtain smaller loans and have relatively shorter maturity. Prior studies document a positive association between relationship length and the availability of credit to a borrower (Hoshi et al., 1990; Petersen and Rajan, 1994; Degryse and Van Cayseele, 2000). The size of a loan facility is used as a proxy for access to financing. If risk is mitigated through some sharing of information, lenders will give borrowers larger loans. In addition, in the model described by Flannery (1986), a relationship with a lender would lower information asymmetry and as quality signaling through debt maturity decreases through better information sharing between the lender and the firm, debt maturities should increase.

Because retirement providers work closely with the management and employees of a firm, they may gain access to information that they would not have otherwise, and this information could indicate the health of the firm. For example, a provider can observe the number of participants added to and leaving a plan. Turnover is traditionally seen as a negative signal, which may convey information about the firm that non-providers would not directly observe. Additionally, a provider can observe the amount of liability that a firm would have to pay out in the form of benefits within pension plans or contributions within defined contribution plans such as 401(k)'s. This information, along with close relationships with firm management and employees, could spill over into other business relationships between the firm and the provider, which could reduce information acquisition costs. All of this would be material information that a lender could take into consideration when determining the cost of the loan. Regardless, through a reduction in information asymmetry, a lender would be more able to assess the risks associated with lending to the firm, which could be represented in lower loan spreads and other preferential loan terms.

Information asymmetry is not the only explanation for preferential loan terms from relationship lenders. Prior research also finds evidence of quid pro quo arrangements in the banking and asset management industries. Ferreira et al. (2018) study the performance of equity mutual funds that are run by the asset management division of commercial banks. They find that these mutual funds underperform, but the underperformance is more pronounced in the funds that overweight the stock of the bank's lending clients and that most of the underperformance is explained by the size of the lending business. This suggests that the asset management division of the bank directly supports the lending division. Furthermore, there is evidence of quid pro quo arrangements by investment banks in initial public offerings (IPO). Prior work finds that high-revenue investors receive higher allocation rates during IPO's and that commissions paid by mutual funds to an underwriter are correlated with their holdings of that recently listed stock in their portfolios (Reuter, 2006; Jenkinson et al., 2018). There has also been evidence of questionable behavior within the retirement plan provider framework. Prior literature finds that pro-management voting is tied to plan provider compensation and that mutual fund plan providers overweight their client firm's stock in their portfolios and subsequently reduce that weighting when the plan provider relationship ends (Cohen and Schmidt, 2009; Cvijanovic et al., 2016). Therefore, lenders that simultaneously serve as a plan provider for a firm could provide more preferential loan terms to that firm through some kind of quid pro quo arrangement.

Overall, the loan terms enjoyed by sponsor firms are consistent with either a reduction in information asymmetry or a quid pro quo arrangement between the sponsor firm and lender-provider. Therefore, in this section, I seek to distinguish which mechanism most likely drives the preferential terms.

6.1. Compensation and assets under management

One could argue that the loan spreads received are indirectly related to the amount paid by the firm for retirement services. If a quid pro quo relationship exists, loan spreads would decrease as the total amount of compensation paid to the provider increases because the provider relationship would be more valuable to the lender.[15] The Form 5500 reports the amount of money that is paid by firms to their retirement providers for their services. Direct compensation is compensation paid to the provider out of the plan or plan account. For example, a fee per participant would fall under this type of compensation. Indirect compensation is compensation that is paid out of the plan or plan assets for services rendered and would not have been paid had the service not taken place. This can include brokerage commissions, asset management fees, and reporting fees, among others. Eligible indirect compensation is a type of indirect compensation that is reflected in the value of the investments and not paid directly by the plan or plan sponsor. Eligible indirect compensation would include soft dollar arrangements paid by participants through the underlying fees in their respective investments.

For this test, I focus on the subsample of loans in which the firm has a lender-provider relationship. Following Cvijanovic et al. (2016), I construct a total compensation measure of payment to retirement providers that takes the natural log of the summation of direct compensation, indirect compensation, and 50 basis points of the total assets under management (a proxy for eligible indirect compensation). I also use an adjusted total compensation measure by scaling the eligible indirect compensation component by the total number of providers on the plan. Finally, I use the natural log of total compensation scaled by the number of active participants in the plan and the natural log of total assets under management. Larger assets under management and more compensation may incentivize lenders to give more preferential spreads because their retirement relationship is more valuable than those plans with a smaller asset base and paying less for retirement services.

Conditional on loans having a lender-provider relationship, the results in Table 9 show mostly no significant effects of retirement plan value on the loan spreads. The size of the retirement plan has weak significance with low magnitudes in column 7. However, this result becomes insignificant when controlling for within-firm effects. One may argue that a quid pro quo arrangement would be more sensitive to dollar amounts rather than spreads. In untabulated results, I use the natural log of interest received from the loan as my independent variable and find that the results remain qualitatively and quantitatively similar. Overall, these results call into question the existence of quid pro quo arrangements related to retirement plan value.

6.2. Loan risk

One possible concern is that the firms who receive loans from their retirement providers are riskier and therefore, are using their relationships to secure loans that have preferential terms than they would otherwise receive. To explore this channel, I examine the number of covenants included on loan packages with and without a lender-provider relationship. For lenders, covenants are used to help align incentives with borrowers and mitigate the risk of default. Accordingly, loans to riskier firms tend to have more covenants (Bradley and Roberts, 2015). Following Graham et al. (2008), I compute covenant intensity by calculating the total number of general and financial covenants on a loan package. Because covenants are at the package level, I assign *Package Relationship* a value of one if at least one of the facilities in the package had a lender-provider relationship and zero if there was no relationship. Furthermore, I take the natural logarithm of the total package deal size and the average spread across facilities in the package.

Table 10, columns 1 and 2 show the covenant intensity results. Within a given year, packages with a lender-provider relationship tend to have fewer covenants. However, after controlling for firm and loan characteristics, this effect becomes insignificantly different from zero.[16] Insofar as the number of covenants proxies for the riskiness of the loans, the finding suggests that firms with lender-provider relationships are no riskier than the firms without lender-provider relationships.

Next, I examine the performance of the loan, and although I cannot observe whether the firm defaulted on a loan, I use covenant violations to proxy for the riskiness of the loan (Chava and Roberts, 2008; Griffin et al., 2021). If firms with a lender-provider relationship receive lower spreads and are also more likely to violate their covenants, then quid pro quo would be a likely explanation.

I identify those loans with "Min. Current Ratio", "Net Worth", and "Tangible Net Worth" covenants in their packages. I focus on these covenants because the accounting measures used to calculate them are standardized and unambiguous across firms (Chava and Roberts, 2008). I assign a value of one if the loan package has at least one of these covenants and zero otherwise. I find that 301 of the 5895 packages received one of these financial covenants. I compare Compustat quarterly fundamentals with the terms of the financial covenant. If the firm's financial ratios fall below the threshold set by the covenant at any point during the life of the loan, I designate that as a violation. I also include the tightness of the covenant defined as the absolute value of the distance between the firm's financial ratio before loan issuance and the covenant threshold at the time of issuance (Chava and Roberts, 2008; Demiroglu and James, 2010).

Table 10, columns 3 and 4 show the results.[17] Although statistically insignificant, conditional on having financial covenants, loans that have a lender-provider relationship are less likely to violate a covenant. Unsurprisingly, those loans with a larger distance between

[15] This arrangement is similar to the one Cornaggia et al. (2023) finds where municipal bond rating agencies give higher ratings to those issuers that pay more for ratings. Banks may give preferential terms to those firms that pay the most for other services.

[16] Following Graham et al. (2008), I separately test the number of general covenants and number of financial covenants. The results remain statistically insignificant within the multivariate framework.

[17] In Table 10, I only include year fixed effects because I am more interested in the cross-sectional probability of covenant presence and violation. Furthermore, firm fixed effects eliminate about one-third of the sample in Panel B, creating issues of inference with an even smaller sample than one that is already small.

Table 9
Effect of Compensation and Assets Under Management.

	Dependent Variable = *Ln (AID Spreads)*							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln (Total Compensation)	−0.011	−0.018						
	(−1.27)	(−0.98)						
Ln (Adj. Total Compensation)			−0.018	−0.017				
			(−1.44)	(−1.07)				
Ln (Total Comp./Participants)					−0.011	−0.008		
					(−1.00)	(−0.67)		
Ln (AUM)							−0.013*	−0.021
							(−1.72)	(−1.55)
LP Relationship Leader	0.041	−0.031	0.039	−0.035	0.039	−0.032	0.042	−0.030
	(1.27)	(−0.51)	(1.19)	(−0.57)	(1.19)	(−0.52)	(1.28)	(−0.49)
Prior Lender	−0.104**	−0.106**	−0.104**	−0.105**	−0.104**	−0.105**	−0.105**	−0.107**
	(−2.70)	(−2.81)	(−2.70)	(−2.80)	(−2.69)	(−2.80)	(−2.73)	(−2.83)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FEs	No	Yes	No	Yes	No	Yes	No	Yes
Observations	2091	1972	2091	1972	2091	1972	2091	1972
Adjusted R^2	0.414	0.670	0.415	0.670	0.414	0.670	0.415	0.671

This table shows the multivariate regressions of the natural logarithm of loan spreads on the amount of compensation paid by the plan to the retirement provider. The sample includes only those firms that had lender-provider relationships. Columns 1 and 2 show results for the Cvijanovic et al. (2016) total compensation measure. Columns 3 and 4 show the results for the Total Compensation measure where the eligible indirect compensation is scaled by the number of providers in the plan. Columns 5 and 6 show the results for total compensation scaled by the number of active participants in the retirement plan. Columns 7 and 8 show the results of the total assets under management. *LP Relationship Leader* is a binary variable that denotes whether the lender-provider was also the lead arranger on the loan that the borrowing firm received. *Prior Lender* is a binary variable that denotes whether the lender was a lead arranger on the borrowing firm's loans within the last 5 years. Control variables include *Ln(Facility Amount), Ln (Maturity), Market-to-Book, Ln(Total Assets), Ln(Firm Age), Profitability, Fixed Assets, Book Leverage, Total Covenants,* and *Loan Type*. The appendix provides definitions of these variables. Year fixed effects are included in all specifications. *t*-statistics in parentheses are calculated from heteroskedasticity-robust standard errors clustered by firm. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

firm ratios and covenant threshold are less likely to default.

Overall, these results suggest that lender-provider loans are not significantly more or less risky than loans that do not have such a relationship. While my earlier results suggest some preferential loan terms, it does not seem that lenders are taking undue risk in lending to firms in which they have a lender-provider relationship. The results suggest that the lender-provider relationship provides some informational or relational advantages rather than a quid pro quo arrangement.

6.3. *Effect of intangible assets*

If the negative relation between spreads and lender-provider relationships is driven by these relationships reducing information asymmetry, lender-provider loans to firms where asymmetric information is most severe should benefit the most. One such asset class, intangibles, has traditionally been hard to value and has often led to accounting mismeasurement (Srivastava, 2014; Lev and Gu, 2016). As such, firms with high levels of intangible assets have been associated with greater levels of information asymmetries and more uncertainty in projected future cash flows (Barth et al., 2001; Gu and Wang, 2005; Palmon and Yezegel, 2012; Ghaly et al., 2017; Bongaerts et al., 2022).

To examine the effects of a lender-provider relationship on loan spreads for high intangible firms, I use the Peters and Taylor (2017) measures of organizational and knowledge capital normalized by the firm's total assets. Organizational capital represents accumulated investments in human capital, brands, customer relationships, and distribution systems, and I proxy for the value of it with capitalized SG&A expenses. I proxy for accumulated knowledge capital with capitalized R&D, which includes any expense relating to the development of products, processes, and services. For both proxies, I rank each variable into terciles each year and interact the tercile dummy variables with the existence of a lender-provider relationship.

Table 11 presents the results. Columns 1 and 2 show that the negative relation between spreads and lender-provider relationships is more pronounced in firms with high knowledge capital. Similarly, columns 3 and 4 show that firms with the higher levels of organization capital receive loans with significantly lower spreads from their retirement providers. In most specifications, the magnitude and significance of a retirement provider relationship monotonically increases as firms have more intangible assets. Overall, the results suggest that a lender-provider relationship is more valuable for firms with higher levels of intangible assets, suggesting that information asymmetries may be reduced through the retirement provider relationship.

6.4. *Percent of syndicated loan held*

Leland and Pyle (1977) suggest that an increase in an informed party's share of ownership would signal a higher quality of the

Table 10
Lender-Provider Relationships and Loan Covenants.

Dependent Variable =	*Total Covenant Intensity*		*Financial Covenant Violation*	
	(1)	(2)	(3)	(4)
Package Relationship	−0.349**	−0.088	−0.028	−0.039
	(−3.06)	(−0.81)	(−0.30)	(−0.49)
Default Distance				−0.001**
				(−3.07)
Ln (Avg. Spread)		0.134		−0.074
		(1.45)		(−0.98)
Ln (Deal Size)		0.420***		0.084*
		(8.09)		(1.89)
Market-to-Book		−0.159**		−0.065
		(−2.38)		(−1.43)
Ln (Total Assets)		−0.617***		−0.045
		(−11.97)		(−1.00)
Ln (Firm Age)		−0.157*		−0.060
		(−1.77)		(−1.40)
Profitability		0.096		−0.590**
		(0.12)		(−2.16)
Fixed Assets		−0.220		0.542***
		(−1.00)		(4.02)
Book Leverage		0.474		0.148
		(1.37)		(0.62)
Bond Rating Dummy		0.080		0.242**
		(0.53)		(2.20)
Loan Type Dummy		0.085		0.184
		(0.43)		(0.89)
Year FEs	Yes	Yes	Yes	Yes
Observations	5895	5895	301	301
Adjusted R^2	0.041	0.111	0.043	0.429

This table shows multivariate linear probability models of the existence of covenants and subsequent covenant violations. Columns 1 and 2 show the total number of covenants included in the loan package. Conditional on the inclusion of financial covenants, Columns 3 and 4 shows the probability of violating those covenants. Financial covenants are based upon current ratios, total net worth, or tangible net worth, and violation is defined as in Chava and Roberts (2008). All analyses are at the package level and not facility level. *Package Relationship* is a binary variable that denotes whether a facility inside the package had a lender-provider relationship. *Ln (Avg. Spread)* is the natural logarithm of the average spread across facilities within a package. *Ln (Deal Size)* is the natural logarithm of the total package deal size. *Default Distance* is the absolute value of the difference between the firm's current ratio or net worth and their respective covenant threshold. In cases where the firm has both covenants, the minimum distance is taken. The appendix provides definitions of the control variables. *t*-statistics in parentheses are calculated from heteroskedasticity-robust standard errors clustered by firm. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

underlying project, thereby reducing the cost of asymmetric information. In the case of syndicated loans, the lead bank possesses some level of information that loan participants do not possess. This asymmetric information can be mitigated by the lead bank holding more of the loan. In fact, Ivashina (2009) finds that asymmetric information accounts for about 4% of the total cost of debt in syndicated loans. In the case of my framework, a lender-provider has some information about the borrowing firm that arises from their relationship. Theory suggests that as asymmetric information increases between the lead arranger and the members of the syndicate, the participants on the loan will demand higher interest rates and hold less of the loan while demanding a larger loan ownership by the lead arranger to mitigate this effect. However, if information asymmetry is mitigated through the retirement plan relationship, the lender-provider would then hold more of the loan, which could support lower spreads. I hypothesize that lenders that lend to a firm with whom they have a provider relationship will hold a higher percentage of the loan as compared to those loans that do not have a relationship because they may deem the loan less risky. Lender-providers may be confident in the borrowing firm's ability to pay as they would have additional information about the firm and a relationship with management.

I test the effect of the lender-provider relationship on the amount of the loan held by lenders. This estimation requires the data to be adjusted to the lender level. Each loan in my sample has multiple observations, each representing a different lender in the syndicate. Table 12 presents the results of from the following equation:

$$PercentAllocation_{i,k,t} = \beta_1 LP\ Relationship_{i,k,t} + \gamma X_{i,t} + \upsilon_i + \omega_t + \varepsilon_{i,k,t}, \quad (3)$$

where $PercentAllocation_{i,k,t}$ is the percentage of the syndicated loan held by a lender. All other variables are the same as in Eq. (1).

The results in Table 12 show that the lender-provider relationship dummy is positive across all specifications, suggesting that those lenders who have a relationship with the borrower hold more of the loan. More specifically, in column 4, lenders tend to hold 0.94 percentage points more if they have a provider relationship with the borrower, representing a 13% increase relative to the mean holding percentage of 7.4%.

As argued by Holmstrom and Tirole (1997) and Sufi (2007), there exists a moral hazard between lenders of a syndicated loan in

Table 11
Lender-Provider Relationships and Intangible Capital.

	Dependent Variable = *Ln (AID Spread)*			
	Knowledge Capital	*Organizational Capital*		
	(1)	(2)	(3)	(4)
LP Relationship	−0.070**	−0.001	−0.026	0.018
	(−2.34)	(−0.04)	(−0.76)	(0.54)
LP Relationship x Mid	−0.021	−0.039	−0.104*	−0.084*
	(−0.32)	(−0.71)	(−1.84)	(−1.67)
LP Relationship x High	−0.099*	−0.114**	−0.159**	−0.131**
	(−1.90)	(−2.38)	(−2.60)	(−2.37)
Mid	−0.023	−0.036	0.097***	0.035
	(−0.18)	(−0.37)	(3.31)	(1.19)
High	0.004	−0.026	0.141***	0.059
	(0.03)	(−0.25)	(3.35)	(1.32)
LP Relationship Leader		−0.045		−0.037
		(−0.97)		(−0.82)
Prior Lender		−0.135***		−0.133***
		(−7.63)		(−7.54)
Controls	No	Yes	No	Yes
Year FEs	Yes	Yes	Yes	Yes
Firm FEs	Yes	Yes	Yes	Yes
Observations	8289	8289	8289	8289
Adjusted R^2	0.610	0.653	0.611	0.654

This table shows results from cross-sectional regressions of the natural logarithm of loan spreads on the interaction of intangible capital measures from Peters and Taylor (2017) and the presence of a lender-provider relationship. *LP Relationship* is a binary variable that represents whether a firm received a loan from a lender who simultaneously was a plan provider for their retirement plan. Columns 1 and 2 interacts the *LP Relationship* dummy with the yearly tercile rankings of capitalized R&D scaled by total assets (*Knowledge Capital)*. Columns 3 and 4 interacts the *LP Relationship* dummy with the yearly tercile rankings of capitalized SG&A scaled by total assets (*Organizational Capital)*. *LP Relationship Leader* is a dummy variable that denotes whether the lender-provider was also the lead arranger on the loan that the borrowing firm received. *Prior Lender* is a dummy variable that denotes whether the lender was a lead arranger on the borrowing firm's loans within the last 5 years. Control variables include *Ln(Facility Amount), Ln (Maturity), Market-to-Book, Ln(Total Assets), Ln(Firm Age), Profitability, Fixed Assets, Book Leverage, Total Covenants,* and *Loan Type*. The appendix provides definitions of control variables. *t*-statistics in parentheses are calculated from heteroskedasticity-robust standard errors clustered by firm. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

which the lead lender may not monitor the borrower as well because there is shared exposure with the other loan syndicate members. Because of this, the lead arranger tends to hold more of the loan and those participants in the syndicate that have a lender-provider relationship will hold more because the amount of information asymmetry is less. Interestingly, in column 5, the interaction term between the lead arranger and lender-provider dummy is negative, indicating that although lead arrangers tend to hold more of the loan, being a lead arranger and having a provider relationship lowers the percentage of the loan that they hold. This may seem surprising, but a leader with a provider relationship with the borrowing firm could signal to the other syndicate members a commitment to monitor the borrower because the leader has multiple business relationships with them, leading syndicate members to hold more of the loan and the lender-provider leader to hold less through a reduction in moral hazard. Overall, this result is consistent with my previous findings and supports the information asymmetry argument as it is unclear how a quid pro quo arrangement would encourage a lender to hold a greater percentage of the syndicated loan.

6.5. *Lender-provider relationship switchers*

To further distinguish the channel, I focus on firms that received multiple loans from the same lender over time, but that lender was at one point a provider on their retirement plan and at another point, they were not a provider. To illustrate this strategy, assume that a firm received four loans, one in 2009, 2012, 2014, and 2017; and Wells Fargo was a lender for every one of these loans. Additionally, Wells Fargo was not provider on the firm's 401(k) plan during the years 2009–2012 when the firm received the first two loans. Later, in 2013, Wells Fargo became a provider on the firm's 401(k) plan, and the firm took out two additional loans from them in 2014 and 2017. I seek to examine the within-firm variation in these loans from Wells Fargo before and after they became a provider. Using retirement provider changes is not an uncommon technique. Cohen and Schmidt (2009) use changes in a mutual fund's trustee relationship on a sponsor firm's 401(k) to examine how the trustee relationship affects the weighting of the firm's stock in their funds.

The establishment of a plan provider relationship should lower spreads, consistent with both a reduction in information asymmetry and quid pro quo. However, the termination of a plan provider relationship has two predictions. First, loan spreads could significantly increase after the termination of a plan provider relationship, consistent with either a quid pro quo arrangement or an increase in information asymmetry. Second, if the loan spreads do not significantly change after the termination of the plan provider relationship, the lower spreads would be more supported by the reduced information asymmetry argument as information from a prior relationship remains valuable and relevant even after the termination.

Table 12
Lender-Provider Relationships and Percentage of Loan Held by Lenders.

	Dependent Variable = *PercentageAllocation*					
	(1)	(2)	(3)	(4)	(5)	(6)
LP Relationship	2.322***	1.771***	1.625***	0.936**	1.905***	1.164***
	(4.26)	(5.79)	(3.58)	(3.27)	(5.91)	(4.71)
Leader					19.966***	12.303***
					(10.38)	(12.34)
LP Relationship × Leader					−3.927**	−2.795**
					(−2.73)	(−3.05)
Prior Lender			9.014***	7.642***	−9.925***	−4.172***
			(18.57)	(19.17)	(−5.11)	(−3.86)
Ln (AID Spreads)			−0.777*	−0.850	−0.985**	−0.851
			(−1.77)	(−0.99)	(−2.37)	(−1.05)
Ln (Facility Amount)			−1.923***	−0.857***	−1.604***	−0.768***
			(−8.27)	(−5.71)	(−8.00)	(−5.37)
Ln (Maturity)			−2.067***	−1.890***	−1.765***	−1.694***
			(−5.33)	(−4.18)	(−5.21)	(−4.14)
Market-to-Book			0.162	−0.338	−0.031	−0.169
			(0.63)	(−0.73)	(−0.14)	(−0.42)
Ln (Total Assets)			−1.423***	−1.411**	−1.397***	−1.116**
			(−6.82)	(−2.46)	(−7.43)	(−2.09)
Ln (Firm Age)			0.176	−2.276	0.182	−2.140
			(0.61)	(−1.06)	(0.68)	(−1.11)
Profitability			−8.216**	−0.890	−6.657**	−0.683
			(−2.64)	(−0.30)	(−2.47)	(−0.25)
Fixed Assets			0.780	6.268*	0.459	5.232
			(0.92)	(1.73)	(0.62)	(1.49)
Book Leverage			−0.699	4.247**	−0.418	4.339**
			(−0.68)	(2.01)	(−0.45)	(2.20)
Total Covenants			−0.441***	−0.143	−0.343**	−0.087
			(−3.51)	(−1.20)	(−2.91)	(−0.73)
Loan Type Dummy			2.306**	2.132**	1.179*	1.782**
			(2.87)	(3.22)	(1.67)	(2.93)
Bond Rating Dummy			−0.996*	0.350	−1.061**	0.230
			(−1.70)	(0.58)	(−2.02)	(0.39)
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Firm FEs	No	Yes	No	Yes	No	Yes
Observations	23,923	23,893	23,923	23,893	23,923	23,893
Adjusted R^2	0.017	0.485	0.260	0.543	0.364	0.579

This table shows univariate and multivariate regressions of the percentage of loan held by each syndicate member on the presence of a lender-provider relationship (*PercentageAllocation*). *LP Relationship* a binary variable that represents whether a lender was simultaneously a plan provider for the borrowing firm's retirement plan. *Leader* is a binary variable that denotes which lender is the lead arranger on the loan. *LP Relationship x Leader* is a binary variable that denotes whether the lender-provider was also the lead arranger on the loan that the borrowing firm received. *Prior Lender* denotes lead arranger on the borrowing firm's loans within the last 5 years. The appendix provides definitions of the control variables. *t*-statistics in parentheses are calculated from heteroskedasticity-robust standard errors clustered by firm. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

I restrict the lender-provider relationship loans to only those loans with a single lender-provider relationship. I break up my sample into three groups: firms that received multiple loans from the same lender and never had a lender-provider relationship (*Never)*, firms that received multiple loans and always had a lender-provider relationship with the same lender (*Always*), and firms that I call *Switchers*. *Switchers* are firms that fall into the situation explained in the above paragraph. They are firms that received multiple corporate loans from the same lender that at one point held a provider relationship and at another point, did not hold a provider relationship. I further categorize the *Switchers* group into those that had a lender-provider relationship earlier in the sample and then did not and those that did not have a lender-provider relationship earlier in the sample but later established one.

I run two separate tests. The first test combines the *Always* group with the *Switchers* that had a lender-provider relationship earlier but then did not have a lender-provider relationship later. Fig. 2, Panel A depicts this test. Conceptually, the goal of this test is to compare two firms that both received loans from the same lender. For example, say that Firm A is in the *Always* group. This means that Firm A received multiple loans from Wells Fargo and Wells Fargo was always a provider on their retirement plan. Firm B also received multiple loans from Wells Fargo, but Wells Fargo was only a provider on its retirement plan when the first few loans were issued, but they were not a provider during the last few loans. This test tries to capture the effect that going from having a relationship to not having a relationship has on loan spreads.

Table 13, Panel A tests the termination of a provider relationship with the restricted sample that includes *Always* and *Switchers*. The results are insignificant, suggesting that the provider relationship that was on the earlier loans may have an information spillover effect to the later loans when that lender was not a provider. This finding is consistent with the information asymmetry story, as a lender that

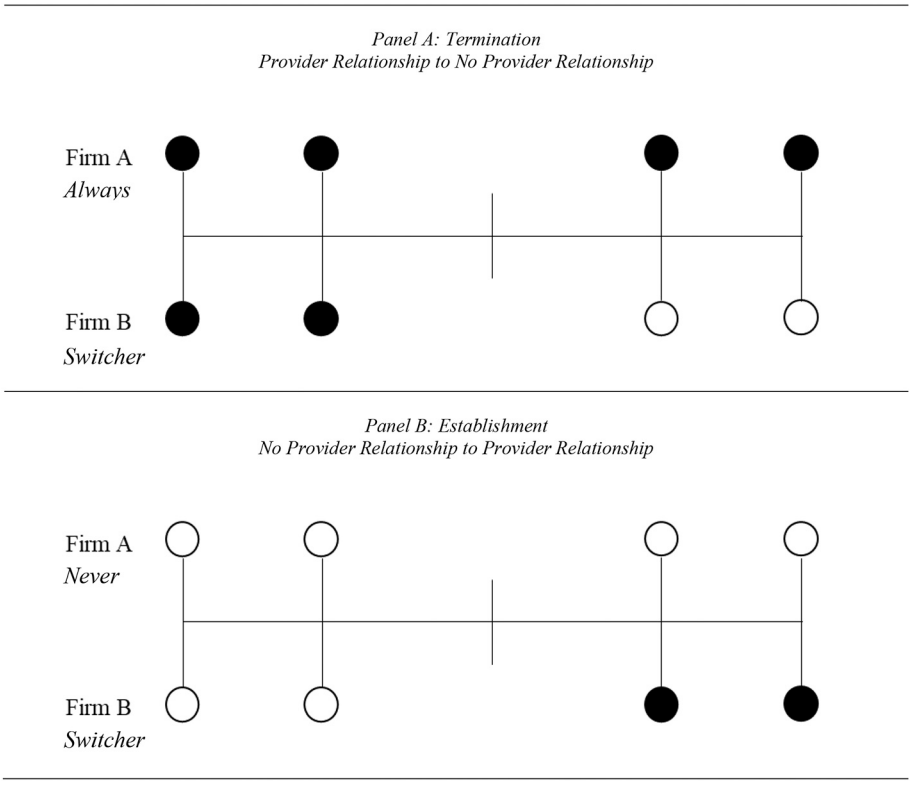

Fig. 2. Lender-Provider Relationship Switchers.
This figure shows the two switcher tests that are used for identification. In each case, a circle reflects a loan that was received by a firm. A solid circle represents a loan received from a lender with whom they have a retirement provider relationship. A hollow circle represents a loan received from the same lender without a retirement provider relationship. Panel A depicts the termination of a retirement provider relationship. Firm A is the *Always* control group that received multiple loans from the same lender and that lender was always a provider for their retirement plan. Firm B is in the *Switcher* treatment group that received multiple loans from the same lender, but that lender was a provider on their retirement plan only during the earlier loans and not the later loans. Panel B depicts the establishment of a retirement provider relationship. Firm A is the *Never* control group that received multiple loans from the same lender and that lender was never a provider on their retirement plan. Firm B is in the *Switcher* treatment group that received multiple loans from the same lender, but that lender was only a provider on their retirement plan during the later loans. Treatment occurs when the relationship is terminated or established.

had a previously established relationship has information on the borrowing firm even though the lender is no longer a provider on its retirement plan. While it could be the case that lenders keep their loan spreads low to entice the firm to reestablish their retirement plan relationship, it seems unlikely to be the case as I presented earlier that total revenue from retirement plans is often a fraction of the interest savings.

The second test combines the *Never* group and the *Switchers* that did not have a lender-provider relationship earlier in the sample but later established a lender-provider relationship. Depicted in Fig. 2, Panel B, I keep only those in the *Never* group that received loans from the same subset of lenders that the *Switchers* did. Staying consistent with my earlier example, say that Firm A is in the *Never* group. Firm A received multiple loans from Wells Fargo, but Wells Fargo was never a provider on their retirement plan. Conversely, Firm B also received multiple loans from Wells Fargo, but Wells Fargo was only a provider later in the sample. This test tries to capture the effect that going from no relationship to having a relationship has on loan spreads. Table 13, Panel B shows the results for this test. When controlling for lead arranger status, the results show that spreads are lower for loans with a lender-provider relationship.

Taking the two tests together, the establishment of a lender-provider relationship lowers loan spreads, but the termination of a lender-provider relationship does not seem to have a significant effect, most likely because the lender has information about the lender from when they were a provider earlier in the sample. These results also suggest that the underlying mechanism driving the lower spreads is a reduction in information asymmetry. If, for example, the results in Panel A were significantly positive, then it could be argued that some quid pro quo arrangement could be driving the results. However, since the results in Panel A are insignificant, it can be argued that the information that lenders received while they were providers remained persistent even after their termination as retirement plan providers. Additionally, by controlling for prior lending, the results are interpreted as the additional value that information from a retirement plan provider relationship has on loan spreads, not just a prior lender effect.

Table 13
Loan Spreads and Retirement Provider Changers.

	Dependent Variable = *Ln (AID Spread)*			
	Panel A: Provider to No Provider		*Panel B: No Provider to Provider*	
	(1)	(2)	(3)	(4)
LP Relationship	0.037	0.030	−0.018	−0.099**
	(0.98)	(0.78)	(−0.45)	(−2.13)
LP Relationship Leader		−0.053		0.237*
		(−0.94)		(1.67)
Prior Lender		−0.095**		−0.075**
		(−2.20)		(−3.13)
Controls	No	Yes	No	Yes
Year FEs	Yes	Yes	Yes	Yes
Firm FEs	Yes	Yes	Yes	Yes
Observations	978	978	3671	3671
Adjusted R^2	0.694	0.724	0.681	0.707

This table shows univariate and multivariate regressions of the natural logarithm of loan spreads on the presence of a lender-provider relationship when examining switcher firms. Panel A includes the control group of firms that received multiple loans from the same lender and always had a lender-provider relationship with that lender, and it includes the treatment group of firms that received multiple loans from the same lender, but that lender was a provider on the earlier loans but not a provider on the later loans. Panel B includes the control group of firms that received multiple loans from the same lender and never had a lender-provider relationship with that lender, and it includes the treatment group of firms that received multiple loans from the same lender, but that lender was not a provider on the earlier loans but was a provider on the later loans. *LP Relationship Leader* is a binary variable that denotes whether the lender-provider was also the lead arranger on the loan that the borrowing firm received. *Prior Lender* is a binary variable that denotes whether the lender was a lead arranger on the borrowing firm's loans within the last 5 years. Control variables include *Ln (Facility Amount), Ln(Maturity), Market-to-Book, Ln(Total Assets), Ln(Firm Age), Profitability, Fixed Assets, Book Leverage, Total Covenants,* and *Loan Type*. The appendix provides definitions of these variables. Year fixed effects are included in all specifications. *t*-statistics in parentheses are calculated from heteroskedasticity-robust standard errors clustered by firm. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

7. Conclusion

In this paper, I empirically test whether firms that borrow from lenders who are also providers on their retirement plans receive preferential loan terms. I find that firms with lender-provider relationships receive loans that have about 5.5% lower spreads than firms that borrow from non-provider lenders. I also find that lender-provider loans tend to be larger, have longer maturities, and have similar levels of risk as non-lender-provider loans.

Additionally, I test whether these preferential terms are paid for by the firm or its employees. Specifically, I test whether the savings in interest are directly offset by plan administrative costs or indirectly offset by lower plan quality, proxied by plan-level returns. I find that interest savings are much larger than typical plan costs and plan-level returns do not underperform other plans without lender-provider relations. These results suggest that shareholders reap benefits in the form of cheaper debt financing when borrowing from their retirement provider, and this benefit is not at the expense of employee long-term wealth.

Finally, using several tests, I seek to determine whether lower spreads are driven by a reduction in information asymmetry or a quid pro quo arrangement. While inconclusive on their own, taken together, the results suggest that relationship banking through the cross-selling of retirement provider services by lenders can lead to some preferential loan terms due to a reduction in information asymmetry rather than some quid pro quo arrangement.

CRediT authorship contribution statement

Connor L. Kasten: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

Declaration of competing interest

None

Data availability

Data will be made available on request.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jcorpfin.2024.102595.

Appendix A. Variable Definitions

103–12 Ratio	The average of beginning and ending 103–12 investment balances relative to Plan Assets.
Active Participants	The total number of participants actively participating in the plan. An active participant is any individual who is currently in employment covered by the plan and who is earning or retaining credited service under the plan.
Admin Cost	The total cost paid by the plan for retirement provider administrative services.
AID Spread	All-in-drawn loan spread over LIBOR
Bond Rating Dummy	A dummy variable that equals one if the firm has a bond rating, zero otherwise.
Book Leverage	Total debt (long-term debt (dltt) + current debt (dlc))/total assets (at)
Cash Ratio	The amount of Plan Cash in the retirement plan relative to the Plan Assets.
CCT Ratio	The average of beginning and ending common collective trust balances relative to Plan Assets.
Employee Cont.	The amount of employee contributions to the retirement plan.
Employer Cont.	The amount of employer contributions to the retirement plan.
Facility Amount	Size of the facility loan in 2019 dollars
Firm Age	Years after a firm's first appearance in CRSP database
Fixed Assets	Net property, plant, and equipment (ppent)/total assets (at)
Loan Type Dummy	A dummy variable that equals one if the loan is a term loan, zero otherwise.
LP Relationship	A dummy that equals one if a firm is borrowing at the facility level from a lender that is also a plan provider on their retirement plan, zero otherwise.
Market-to-Book	Following Lemmon et al. (2008): (market equity + total debt + preferred stock liquidating value (pstlk) – deferred taxes and investment tax credits (txditc))/total assets (at)
Master Trust Ratio	The average of beginning and ending master trust balances relative to Plan Assets.
Maturity	Loan maturity in months
MF Ratio	The average of beginning and ending mutual fund balances relative to Plan Assets.
Plan Assets	The total amount of assets in the retirement plan. This is the average of beginning and ending asset balances for the plan year.
Plan Cash	The amount invested in cash inside total retirement plan assets. This is the average of beginning and ending cash balances for the year
Prior Lender	A dummy variable that equals one if the firm had the same lead arranger on another loan within the last 5 years.
Profitability	Operating income before depreciation (oibdp)/total assets (at)
Return	Plan return is calculated by dividing the sum of gains/losses for common collective trusts, pooled separate accounts, master trusts, 103–12 investment vehicles, and registered investment companies (mutual funds) by the average of the beginning and ending sum of these asset class balances.
Sep. Acct. Ratio	The average of beginning and ending pooled separate account balances relative to Plan Assets.
Total Assets	Total book assets (at) in 2019 dollars
Total Covenants	Total number of restrictive covenants on the loan package. Following Bharath et al. (2011).

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