

CEO Initial Contract Horizon and the Design of Private Debt

Contracts

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Declaration of interest

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Abstract

Exploiting hand-collected CEO contract data from SEC filings (1994-2018), we find that newly appointed CEOs with longer initial contract periods are associated with significantly higher bank loan costs. We demonstrate this positive relationship is causal by utilizing a quasi-natural experiment that exogenously reduces CEO contract length. We further uncover that this correlation is more pronounced during economic downturns, within firms with less transparent information environments, or for younger CEOs. Our findings also indicate that CEOs with lengthier contract horizons are met with stricter nonprice loan terms. Additionally, we reveal that when CEOs have lengthier initial contract horizons, fewer lenders are willing to form the lending group in a loan facility, which supports the monitoring incentive for syndication. Finally, our study culminates with the observation that the firm's weakened debt repayment capacity and financial condition are the primary drivers behind the positive relation between a CEO's initial contract horizon and loan contracting. We conclude that bank lenders perceive heightened risks with CEOs serving longer initial contracts, which markedly amplifies a firm's earnings volatility.

JEL classification: G21; G32; J41; M55

Keywords: CEO initial employment contract; Contract horizon; Debt contracting

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1. Introduction

The employment relationship between a company and its CEO is intricate in nature. Thus, an explicit employment contract is required to improve the CEO's job security and reduce his/her career concerns by delineating the scope and reasons for termination of employment (Gillan et al., 2009). Although CEO employment contracts have been demonstrated to have significant impact on executive motivations (e.g., Graham et al., 2005), there is still scant evidence in the prior studies about how CEO employment contracts influence a firm's subsequent cost of borrowing. In this study, we explore the CEO contract horizon, a crucial aspect of executive employment agreement, by investigating its potential effect on the design of a loan contract, with a particular emphasis on the loan spreads.¹

We commence our analysis by focusing on a new CEO's initial contract. During a new CEO's initial employment period, there is a great deal of uncertainty over how well a CEO's talents and capabilities match the requirement of this work position (Cowen et al., 2016). Newly appointed CEOs are frequently hired from non-CEO roles outside the company or promoted within the same organization (Gibbons & Murphy, 1992). A diverse set of abilities and experiences are required for new CEOs due to their new fiduciary obligations (Hambrick & Fukutomi, 1991). Therefore, the boards must invest substantial time in learning about new CEOs' capabilities based on their realized performance to make renewal or dismissal

¹ CEO employment contract horizon is measured as the number of years remaining in an employment agreement (Cziraki & Groen-Xu, 2020).

determinations (e.g., Chevalier & Ellison, 1999; Hong et al., 2000). The renewal of the initial employment agreement for a new CEO is important, as the renewal decision could convey the positive signal to the labor market about this CEO's skill and competence (Brickley et al., 1999). Additionally, Gillan et al. (2009) suggest that if the initial contract is successfully renewed, the following employment agreements would be automatically renewed frequently.

We posit that shorter contract horizons fail to offer "tolerance for failure" (i.e., insurance or commitment against downside risk), as short-term underperformance may lead to the dismissal decision (Cziraki & Groen-Xu, 2020). Indeed, Cziraki and Groen-Xu (2020) find that shorter contract horizon increases CEO turnover-performance sensitivity. The payoffs of long-term investment cannot be materialized in the short run to enhance CEOs' visible performance. Due to possible short-term underperformance, positive NPV projects with long-term benefits could be perceived temporarily as a poor match between the new CEO and the firm. Groen-Xu (2013) suggests that a shorter contract horizon induces a manager's short-term and myopic behaviors that involves less risky orientation, such as lower R&D investment (Gonzalez-Uribe & Groen-Xu, 2017). Hence, career-concerned CEOs (i.e., CEOs with shorter contract duration in the initial employment periods) have the stronger motivation to take less risks in order to obtain the positive evaluation from the boards to increase the probability of renewing the employment agreements. These new CEOs may make decisions to prioritize their own job security over the interest of shareholders by implementing more cautious (or conservative) strategies (Cowen et al., 2016), that results in lower risks; hence, lower the loan spreads (Chen & Qiu, 2017). Therefore, we hypothesize that there is a positive relation between CEO initial contract horizon and bank loan costs.

We manually retrieve data on new CEO initial contract length from Form 8-K (the Material Definitive Agreement or Employment Agreement), Form 10-K or Form 10-Q (Filed under Exhibit 10, Material Contracts). Using a sample of 1,040 loan-year observations for 263 unique U.S. firms from 1994 to 2018, we present the evidence that new CEOs with longer contract horizons during their initial employment periods is associated with higher loan spreads. The result is economically significant, as a one-standard-deviation increase in a new CEO contract horizon leads to an elevation of bank loan costs by approximately 71.954 bps.

To establish the casual effect of CEO initial contract horizon on bank loan spreads, we exploit a quasi-natural experiment that affects U.S. firms that also cross-list in the U.K.: A U.K. corporate government regulatory reform that results in a reduction in the average length of a CEO employment contract. The results suggest that cross-listed firms, in comparison to those purely listed in the U.S., obtain loans with lower spreads, which is consistent with our expectation. To further address the omitted variable bias that could drive our main results, first, we employ Oster (2019)'s omitted variable bias approach. Second, we include several additional control variables that might potentially affect the variations in loan spreads. Third, we use additional fixed effect to account for time-invariant unobserved loan syndication attributes. Our results remain robust.

The divergence in the observed covariates between the treatment and control groups could also drive our results. To mitigate this potential issue, we utilize entropy balancing approach to balance the observed attributes between the treatment and control groups. Furthermore, to mitigate the potential measurement errors of our dependent variable (i.e., loan spreads) and the main variable of interest (i.e., CEO initial contract horizon), we utilize alternative

measures of loan spreads and CEO initial contract horizon. The results are still robust across multiple sensitivity tests. Although these identification strategies cannot eliminate all endogeneity concerns, they significantly enhance our confidence in the findings that CEOs serving longer contract horizons in the initial employment periods incur significantly higher cost of borrowing.

Next, we employ three cross-sectional tests to reinforce our key findings. First, Lin et al. (2020) argue that the crisis period could significantly increase firms' credit and liquidity risks, as firms may have less business in the near future. Second, related studies suggest that information asymmetry may significantly increase the cost of information and monitoring (Bharath et al., 2011; Ivashina, 2009). Hence, lenders may demand a higher loan spread to offset the risk of lending. Third, Serfling (2014) finds that CEO age is negatively associated with a firm's risk-taking activities. We predict and find a stronger positive association between CEO initial contract horizon and bank loan costs during economic downturns, within firms with less transparent information environment, and for younger CEOs.

Importantly, we also observe that private lenders tend to enforce collateral requirements and at least one covenant requirement on loans when a firm has a new CEO with a longer contract horizon during his/her initial employment period. Furthermore, bank lenders also increase the total number of covenant provisions utilized in a loan agreement and issues loans with shorter maturities. Additionally, Graham et al. (2008) argue that if a borrower has a higher risk, a more concentrated lending group is more likely to be formed, as it can enhance the power of collective monitoring, and increase the likelihood of effective loan restructuring if the failure to repay debt occurs. Our results support the above argument and find that there

is a negative relation between CEO initial contract horizon and number of lenders in a loan facility.

Finally, we explore the potential channels or mechanisms by which CEO initial contract horizon affects loan spreads. We use two accounting measures (i.e., interest coverage ratio and profit margin ratio) that are directly linked with a firm's debt repayment capability and one financial constraint measure (i.e., KZ index) to conduct our analyses. We find that CEOs with longer contract horizons are associated with weaker capability to repay debt and the increased likelihood of a firm's financial constraint. Taken together, the findings regarding loan contracting provide sufficient support to the contention that CEOs with longer contract horizons during their initial employment periods tend to engage in risky investment. These risky investments may cause short-term underperformance that significantly affects a firm's debt repayment capability and financial conditions. Therefore, bank lenders perceive CEOs with longer contract horizons as a perilous factor and impose higher loan costs and stricter loan terms.

This study contributes to the existing stream of literature on CEO employment contracts. Previous studies explore the factors influencing CEO employment agreements (e.g., Gillan et al., 2009) and the typical characteristics of CEO employment agreements (e.g., Hill et al., 2011). Recent studies examine the influence of CEO employment agreements on a firm's overall risk (Cziraki & Groen-Xu, 2020) and the effect of managerial opportunistic behaviors around employment agreement renewal year (Liu & Xuan, 2020). Our results highlight the real effect of a CEO contract horizon during his/her initial employment period on the design

of private debt contracts.² We also find that the positive association between CEO initial contract horizons and a firm's cost of borrowing is most likely to be driven by the deterioration of a firm's debt repayment ability and financial conditions.

We also add to the prior studies on the design of private debt contracts. Prior literature highlights the influence of social capital (Hasan et al., 2017), CEOs' risky hobbies (Ouyang et al., 2022), inside debt (Anantharaman et al., 2014), financial reporting quality (Graham et al., 2008), and lender trust (Hagendorff et al., 2023), among others, on bank loan costs. We suggest that private lenders impose higher loan spreads and more stringent loan terms for CEOs with longer contract horizons. Compared with other determinants of loan contracting suggested by prior literature, the coefficient of our main variable of interest (i.e., CEO initial contract horizon) are economically more significance.³

Finally, we add to the empirical studies on CEO time horizon and job security. Time horizon could significantly influence a CEO's job security and risk-taking behaviors. Previous studies have primarily centered on the retirement age of CEOs (i.e., the time horizons are determined by law and legal regulations) as a proxy to investigate the influence of CEO time horizon (e.g., Jenter and Lewellen, 2015). However, our study uses the CEO first employment contract (i.e., the time horizons are determined by the initial contract term) as a proxy to examine the influence of CEO time horizon. Moreover, Zhao (2013) highlights

² One limitation inherent in our paper is that our paper does not indicate the optimality of using explicit contracts, as it is outside the scope of our research. There is a potential cost-benefit tradeoff between the utilization of explicit contracts (with an unambiguous contract horizon) and implicit contracts. In reality, the use of explicit contracts for a firm could be costly due to their reliance on incomplete information, leading managers to potentially engage in opportunistic behaviors for their own gains (Prendergast, 1999). However, using explicit contracts could also be beneficial, as they are efficient to lower contracting costs (Chen et al., 2015).

³ For example, Hasan et al. (2017) indicate that a one-standard-deviation increase in the level of social capital results in a decrease of bank loan costs by approximately 4.33 bps, while our results suggest that a one-standard-deviation increase in a new CEO contract horizon leads to a rise of bank loan costs by approximately 71.954 bps. Similarly, Balachandran and Duong (2019) indicate that a one-standard-deviation increase in pension deficits only results in an increase of bank loan costs by approximately 7.68 bps.

that having the fixed-term contracts play a role of job security. Our study complements and extends that paper by suggesting that the design of the fixed-term contract (i.e., the initial contract horizon) is important, as it could also influence CEOs' job security concerns and consequently affect the characteristics of private debt contracting. Our findings could be useful to firms seeking for strategies to lower bank loan costs and/or loosen their nonprice loan agreements.

2. Literature Review and Hypothesis Development

According to option theory, shareholders and debtholders may have opposing interests regarding a firm's risk (Barnea et al., 1981). The role of debtholders is similar to that of a call option seller. Their payoff structure is asymmetric, as they only receive the fixed amount of payment but assuming significant downside risk if the debtor fails to commit a debt obligation (Anantharaman et al., 2014). Creditors are the most significant source for firms to access to capital funding support (Cheng et al., 2014). Banks are the key creditors, as their financial support constitute the major supply of capital for firms (Graham et al., 2008). Therefore, banks are very sensitive to the variation in a firm's risk. In this study, we examine whether banks perceive a CEO with initial longer contract horizon (i.e., the remaining years until expiration in the initial contract length) as a risky factor, and develop the hypothesis expounding the effect of CEOs' contract horizons in the initial contract length on bank loan spreads.

Previous literature finds that managers with short-termism may forgo costly but valuable long-term investment opportunities (e.g., Asker et al., 2011; Dechow & Sloan, 1991).

Contract horizon influences a CEO's investment decision. Typically, in a fixed-term employment agreement, the cost of termination decreases as the time remaining on the contract length decreases (Cziraki & Groen-Xu, 2020).⁴

Shorter contract horizons fail to offer insurance or commitment against downside risk, as short-term underperformance may lead to the dismissal decision (Cziraki & Groen-Xu, 2020). Indeed, Cziraki and Groen-Xu (2020) find that shorter contract horizon increases CEO turnover-performance sensitivity. The payoffs of long-term investment cannot be materialized in the short run to enhance CEOs' visible performance. Due to possible short-term underperformance, positive NPV projects with long-term benefits could be perceived temporarily as a poor match between the CEO and the firm. Groen-Xu (2013) suggests that a shorter contract horizon induces a manager's short-term and myopic behaviors that involves less risky orientation.

The above effect is more pronounced during a new CEO's initial employment period, as there is a great deal of uncertainty over how well a CEO's talents and abilities match the requirement of this job position (Cowen et al., 2016). The boards must invest substantial time in learnings about CEOs' capabilities based on their realized performance to make renewal or dismissal determinants (e.g., Chevalier & Ellison, 1999; Hong et al., 2000). The renewal of the initial employment agreement for a new CEO is important, as the renewal decision could convey the positive signal to the labor market about this CEO's competence (Brickley et al., 1999). Additionally, Gillan et al. (2009) suggest that if the initial contract is successfully

⁴ Consider the case of John Mack's who signed a five-year contract with Morgan Stanley as an example: If Morgan Stanley dismisses Mack in the early stage of the contract length, Mack would receive compensation that exceeds \$182 million. However, if Morgan Stanley dismisses Mack in the later stage of the contract length, Mack would only receive \$45 million (Morgan Stanley, Form 8K, filed September 22, 2005, Exhibit 10).

renewed, the following employment agreements would be automatically renewed frequently. Therefore, career-concerned CEOs (i.e., CEOs with shorter contract duration in the initial employment period) have the stronger motivation to take less risks. This means that these CEOs may make decisions to prioritize their own job security over the interest of shareholders by implementing more cautious (or conservative) strategies (Cowen et al., 2016).

In line with the above viewpoints, Gonzalez-Uribe and Groen-Xu (2017) suggest that a shorter contract horizon leads to less risky and exploratory innovation. Groen-Xu (2013) also finds that CEOs with shorter contract horizons invest less in capital expenditure as well as research and development. Indeed, compared with short-term investment, investing in capital expenditure and research and development (long-term investment) bears higher risk (Shao et al., 2013). Furthermore, Cziraki and Groen-Xu (2020) suggest that there is a positive association between contract horizon and stock return volatility. Overall, these findings highlight that CEOs with shorter contract horizons in the initial contract lengths may engage in less risky activities, which results in the transfer of wealth from shareholders to debtholders. According to Ouyang et al. (2022)'s interview, a top-level corporate loan officer from a leading local financial institution said:

“We will not offer favorable loan contract terms to those firm with more risk-taking or aggressive orientations. The ability to repay us in the future is what matters to us, not growth.”

Chen et al. (2022) suggest that due to the time pressure, CEOs with initial shorter contract lengths are more likely to engage in acquisition decisions that achieve quick outcomes and good ex-ante performance expectation. These acquisitions are also less risky in nature. In summary, we expect that banks perceive CEOs with initial longer contract horizons as a risky factor and demand higher loan spreads. Therefore, we hypothesize that

Hypothesis 1. CEO contract horizon in the initial contract length is positively associated with loan spreads when obtaining bank loans.

Strahan (1999) suggests that private lenders not only adjust loan spreads, but also use nonprice loan terms to alleviate the likelihood of a borrower being unable to fulfill their debt obligation. Compared to public bondholders, the renegotiation cost for bank lenders is lower, as banks possess superior information about borrowers and devote substantial effort in monitoring borrowers' behaviors. Thus, bank lenders have stronger motivations to use detailed and customized contracts. Indeed, Bharath et al. (2008)'s findings indicate that bank lenders employ both loan spreads and nonprice loan constraints to alleviate the borrowing risk, while public bondholders only use bond yield spread. Similarly, Graham et al. (2008) and Hasan et al. (2014) also indicate that if firms conduct more risky activities, bank lenders are more likely to impose more restrictive covenants. Accordingly, if banks perceive CEOs with longer contract horizon in the initial contract length as a risky factor, they will use more stringent nonprice loan terms, which results in the subsequent refutable hypothesis:

Hypothesis 2. CEO with a longer contract horizon in the initial contract length is associated with more stringent nonprice loan terms.

According to the loan syndicate literature, fewer lenders are willing to form a syndicated loan to lend to riskier firms or firms with a higher probability of financial distress (e.g., Bolton & Scharfstein, 1996; Lee & Mullineaux, 2004). The reason behind it is that it is easier for a loan with fewer lenders to make renegotiation or decision, which increases the probability of successful loan restructuring when facing financial distress. Accordingly, if banks perceive CEOs with longer contract horizons in the initial contract length as a risky factor, they will be

less likely to form a loan jointly with other banks, which results in the subsequent refutable hypothesis:

Hypothesis 3. CEO with a longer contract horizon in the initial contract length is associated with fewer lenders in a loan.

Diamond (1991) proposes a theory suggesting that the association between loan maturity and risk rating is nonmonotonic, as low- and high-volatility firms utilize short-term loan for different reasons (low-volatility firms can easily refinance their debt, while high-volatility firms may encounter challenges obtaining long-term debt due to their high likelihood of financial distress). The findings in Stohs and Mauer (1996) and Scherr and Hulburt (2001) provide additional evidence to support this notion. Cziraki and Groen-Xu (2020) argue that a CEO contract horizon is positively associated with a firm's overall risk. We expect that banks perceive CEOs with initial longer contract horizons as a risky factor. Thus, those firms are restricted mainly to borrow loan with shorter maturity, which results in the subsequent refutable hypothesis:

Hypothesis 4. CEO with a longer contract horizon in the initial contract length is associated with loans with shorter maturities.

3. Data and Sample Construct

3.1. Sample selection

According to SEC regulation S-K (item 402) rule, all CEO employment contracts information are now publicly available in 8-K, 10-K, or 10-Q filings. We manually retrieve data on new CEO initial employment contract length from Form 8-K (the Material Definitive Agreement

or Employment Agreement) and Form 10-K or 10-Q (Filed under Exhibit 10, Material Contracts). Specifically, we use the Execucomp database to collect information about CEO appointment dates and tenure, only focusing on firms that recruited new CEOs between 1994 to 2018. Then, based on each new CEO appointment information as well as some specific keywords such as “employment agreement”, “severance agreement” and “employment contract”, we use S&P Capital IQ company filing database to collect their initial employment contracts. To ensure the accuracy of these collected CEO initial contracts, we further use the CEO’s surname and other relevant terms such as “initial term”, “initial period”, “renewal”, “anniversary” and “employment period”. In some cases, some CEO initial employment contracts are included in yearly or quarterly reports as references. Then, we search for these reports to collect information about CEO initial employment contracts.

We obtain information about loan characteristics (e.g., loan spread, covenants, collateral requirement and loan maturity) of all U.S. public firms between 1994 to 2018 from the Loan Pricing Corporation’s DealScan database. Each loan facility is regarded as a separate observation, as different loan facilities may have different loan terms (Bizjak et al., 2019; Chen et al., 2016; Hasan et al., 2017). For any remaining variables, we obtain them from COMPUSTAT, ExecuComp and Thomson Reuters respectively. Following Bizjak et al. (2019), we exclude utility (SIC codes 4910-4940) and financial (SIC codes 6000-6999) firms, as their financial structure are not comparable. All continuous variables are winsorized at the 1% and 99% to remove the effect of outliers. After excluding all missing data, the final sample contains 1,040 loan-year observations for 263 unique U.S. firms in the period 1994-2018.

3.2. Dependent variable

Following Hasan et al. (2017), we define loan spread (*Spread*) as natural logarithm of all-in loan spread drawn for a given loan facility a firm acquires. Specifically, all-in loan spread drawn is measured as the amount the borrower pays in bps over LIBOR or LIBOR equivalent for each dollar drawn down.

3.3. Main variable of interest

We define a CEO initial contract horizon (*Contract Horizon*) as the number of years remaining on this CEO's contract length during his/her initial employment period. For example, if this CEO has an initial contract length of 2 years from 2000 to 2002, *Contract Horizon* equals two in 2000, one in 2001 and zero in 2002.

3.4. Empirical model

Following Hasan et al. (2017), we conduct our analysis for the baseline model based on ordinary least squares (OLS) method.

$$(1) \text{ Spread}_{i,t} = f(\text{Contract Horizon}_{t-1}, \text{CEO Related Characteristics}_{t-1}, \\ \text{Firm Characteristics}_{t-1}, \text{Loan Characteristics}_t, \\ \text{Firm Fixed Effect}, \text{Industry By Year Fixed Effect}, \\ \text{Loan Purpose Fixed Effect}, \text{Loan Type Fixed Effect}),$$

Following previous literature (e.g., Anantharaman et al., 2014; Bizjak et al., 2019; Hasan et al., 2017; Kim et al., 2011), we control for firm, CEO related and loan characteristics that could affect the pricing of private debt contracting: firm size (*Firm Size*), earnings loss (*Loss*), cash holding (*Cash*), leverage ratio (*Leverage*), dividend payout (*Dividend*), profitability

(*Profitability*), earnings volatility (*Earnings Vol*), tangibility (*Tangibility*), the research and development expense (*RD*), the market-to-book ratio (*MB*), Altman's Z-score (*Zscore*), CEO age (*CEO Age*), CEO salary (*CEO Salary*), CEO bonus (*CEO Bonus*), CEO tenure (*CEO Tenure*), loan maturity (*Loan Maturity*), performance pricing (*Performance Pricing*) and loan size (*Loan Size*). All independent variables (except for loan characteristics), including *Contract Horizon*, are measured in $t-1$. We include firm, industry (based on three-digit SIC codes) by year, loan purpose and loan type fixed effects to account for time-invariant unobserved factors. The standard error is clustered at the firm level, as a firm may acquire more than one loan facility in a given year t . The detailed definitions of these variables can be found in Appendix A.

4. The Relation between CEO Initial Contract Horizon and the Cost of Bank Loans

4.1. Descriptive statistics

Table 1 displays summary statistics for all variables used in this paper. The mean (median) value of *Spread* is 4.965 (5.091) with the standard deviation of 0.886, in line with Liu et al. (2023). The mean (median) value of *Contract Horizon* is 1.530 (1.000) with the standard deviation of 1.304. On average, our sample observations consist of high-growth firms with the mean value of *MB* equals to 3.115. At least 40% of loan facilities contain performance pricing provision. Overall, our descriptive statistics are comparable to those documented by Anantharaman et al., 2014, Bizjak et al., 2019, Hasan et al., 2017, Liu et al. (2023) and Kim et al., 2011.

[Insert Table 1 here]

4.2. Baseline regression results

Table 2 presents the estimated regression results that examine the impact of CEO initial contract horizon on loan spreads. Across all columns, the dependent variable is natural logarithm of loan spreads and the main variable of interest is the CEO initial contract horizon. Column (1) contains firm-level characteristics. Column (2) incorporates both firm-level and CEO-level attributes. Column (3) includes firm-level, CEO-level and loan-level characteristics. Column (4) is our main model that includes firm-level, CEO-level and loan-level characteristics, along with dummies to account for firm, industry by year, loan type and loan purpose fixed effects. In all columns, the estimated coefficients on *Contract Horizon* are significantly positive. The coefficients for Column (1), (2), (3), and (4) are 0.193, 0.201, 0.248 and 0.235, respectively. These findings indicate that CEOs with longer initial contract horizons incur significantly higher private debt costs after controlling for firm, CEO and loan attributes. The results are consistent with our Hypothesis 1, implying that banks perceive CEOs with longer initial contract horizons as a risky factor and demand higher loan spreads. The result is also economically significant, as a one-standard-deviation increase in *Contract Horizon* leads to an increase of bank loan costs by approximately 71.954 bps.⁵

Additionally, our estimated results for control variables are also comparable to those reported by previous literature. Specifically, our results indicate that loan size is negatively related to loan spread (coefficient = -0.071; *p-value* < 0.05), which is consistent with the

⁵ A one-standard-deviation increase in *Contract Horizon* (i.e., 1.304 in Table 1) results in an increase in bank loan cost (*Spread*) of roughly 0.306 ($0.306 = 0.235\% * 1.304$). Accordingly, it indicates an increase of 71.954 bps based on the average bank loan cost of 201 bps observed in our study ($71.954 = 201 * \exp(0.306) - 201$).

results in Hasan et al. (2017). We also find that performance pricing is negatively affect loan spread (coefficient = -0.242; p -value < 0.05), which is similar to the empirical findings presented in Ouyang et al. (2022). Overall, these findings demonstrate the significance of a longer CEO initial contract horizon in increasing a firm's future borrowing cost.

[Insert Table 2 here]

5. Identification Strategies

We present in our baseline regression analysis that CEOs initial contract horizon has a significant and positive relation with bank loan costs after accounting for firm-level, CEO-level and loan-level attributes. One could argue that such significant and positive relation may suffer from endogeneity issues due to omitted variables, measurement error or reverse causality. Therefore, we employ the following strategies to mitigate the potential endogeneity concerns.

5.1. Quasi-natural experiment

In this subsection, we exploit a quasi-natural experiment that affects U.S. firms that also cross-list in the U.K.: A U.K. corporate government regulatory reform that results in a reduction in the average length of CEO employment contract (Chen et al., 2022; Gonzalez-Uribe & Groen-Xu, 2017). This regulatory reform came into effect in 2003. The main purpose of this U.K. corporate government regulatory reform is twofold: firstly, to limit the extent of “reward for failure” in executive compensation structure, and secondly, to improve parity between white- and blue- employees' employment terms. In order to these goals, this

regulatory reform suggests reducing the length of CEO employment contracts and specifically proposes one-year employment agreement as the optimal practice. Although this reform is not legally binding, firms are requested to either comply with this reform or provide a detailed explanation for non-compliance. Based on Thornton's (2005) survey, there is a significant increase in compliance rate among FTSE100 firms, soaring from 22% before 2003 to 97% after the effective year of this reform. This evidence suggests that this regulation reform has an instantaneous influence on CEO employment agreement lengths.

Our treatment group consist of those U.S. firms that also cross-list in the U.K. Our control group consist of those solely U.S.-listed firms or U.S. firms that cross-list in other regions. The identification assumption is that after the implementation of this U.S. regulatory reform, those U.S. firms that cross-list in the U.K. could borrow loans with lower loan spreads, as CEOs who work in these dual-listed firms tend to adopt less risky investment strategies due to their reduced contract length and "rewards for failure".⁶ Their overall firms' risk could reduce (Cziraki & Groen-Xu, 2020). We only include firms that have new CEO initial contracts before and after this regulatory reform, which can ensure that our result is not skewed by new companies that appear only after this event or by companies that delist prior to this event. For this shock, *Post* is a dummy variable that equals one if the new CEO is appointed after 2003, and zero otherwise. *Cross* is a dummy variable that equals one if a U.S. firm is also listed in the U.K., and zero otherwise. *Post * Cross* is our variable of interest.

Table 3 reports the results.⁷ Column (1) of Table 3 is based on the whole sample periods

⁶ Gonzalez-Uribe and Groen-Xu (2017) find that after the 2003 U.K. corporate governance regulation reform, the length of contracts offered by cross-listed firms indeed shortens.

⁷ We do not add firm and year fixed effects in these three models. *Post* measures time and *Cross* measures individual firms. Therefore, firm and year fixed effects are subsumed by these two measures.

from 1994 to 2018. To examine the exogenous shock's impact more accurately, we choose a 9-year timeframe, spanning from 1999 to 2007 (four years before and after the event, See Column (2)). Column (3) of Table 3 is based on a 7-year window from 2000 to 2006 (i.e., three years before and after the shock). The results in all columns are consistent with our assumption, indicating that cross-listed firms, in comparison to those purely listed in the U.S., receive lower loan spreads. Overall, our hypothesis still holds.

[Insert Table 3 here]

5.2. Robustness tests

5.2.1. Omitted variable bias approach following Oster (2019)

One of the endogeneity concerns for our baseline model is that some important variables have been omitted. The most straightforward way to solve this issue is to add additional observed controls. However, it is possible that these observed controls are incomplete proxies and may not fully capture the omitted variables. Therefore, Oster (2019) suggests a formal methodology to address such bias. Oster (2019) indicates that an identified set can be established using the stability of coefficients along with the R-squares obtained from the baseline model based on whether controls are added or omitted. If the identified set does not contain zero, this means that we reject the null hypothesis that our results are driven by the potential omitted variable bias. Results reported in Table OA.1 suggest that zero is not included in either of the identified sets. Therefore, it is plausible to conclude that the inferences drawn from our baseline model in Table 2 are highly improbable to be influenced by the potential omitted variable bias issue.

5.2.2. Entropy balancing approach

To further alleviate the endogeneity concern, we adopt a relatively new approach known as “entropy balancing” to effectively reduce divergences in observable attributes between the treatment and control groups. It has been extensively employed in the area of social science as a solution to address the issue of discarding observations associated with conventional propensity score matching (PSM) approach (McMullin & Schonberger, 2020). Entropy balancing approach utilizes a maximum-entropy reweighting scheme to balance the observed characteristics between the treatment and control groups after matching. It could also improve the power of the testing, as this approach does not remove any observations and randomly match the sample (Gaver & Utke, 2019). Based on the yearly mean value of CEO initial contract horizon, we divide the sample into two subsamples. Firms above the yearly mean value of CEO contract horizon are used as the treatment group, while firms below the yearly mean value of CEO contract horizon are used as the control group.

Panel A of Table OA.2 suggests that after matching, the mean, variance, and skewness of the post-weighting covariates are same. Panel B of Table OA.2 presents the regression results based on post-weighting sample. The results in all columns suggest that the positive association between CEO initial contract horizon and loan spreads still holds.

5.2.3. Additional controls

Robin et al. (2017) suggest that auditor quality is negatively associated with loan spreads, implying that high-quality auditor plays a crucial role in alleviating a firm’s cost of borrowing. Chen et al. (2016) find that bank loan cost is positively related to whether or not this loan

facility is backed by collateral. Goss and Roberts (2011) find that firms with stronger external corporate governance mechanism tend to obtain loans with lower spreads due to the monitoring role of external governance mechanism. Chu et al. (2020) suggest that CEO equity compensation leads to heightened managerial risk-taking, which potentially increases the cost of private debt.

We add these four additional controls to ensure the reliability of our baseline results. *Auditor* is a dummy variable that equals one if a firm is audited by Big Four in year $t-1$ and zero otherwise. *Collateral* is an indicator variable that equals one if a loan facility is backed by collateral and zero otherwise. *Institutional Ownership* is measured as the percentage of institutional ownership in year $t-1$. *CEO Equity Compensation* is measured as the option grants and restricted stock as a percentage of CEO total compensation in year $t-1$. Table OA.3 reports the results. The coefficients on *Contract Horizon* are still significantly positive, and their magnitude are similar to the values presented in Table 2.

5.2.4. Alternative measures of loan spread and CEO initial contract horizon

We also examine whether our baseline results are robust to alternative measures of loan spread and CEO initial contract horizon. For loan spread, we employ the following three measures. *Spread Raw* is measured as the amount the borrower pays in bps over LIBOR or LIBOR equivalent for each dollar drawn down (Hagendorff et al., 2023). *Spread_100* is measured as all-in loan spread drawn, expressed in basis point divided by 100 (Anantharaman et al., 2014). *Spread Undrawn* is measured as natural logarithm of all-in loan spread undrawn (Berg et al., 2016). Firms that belong to different sectors and stages of life cycle may have

different interpretations about the unit of one year (Cziraki & Groen-Xu, 2020). Therefore, for CEO initial contract horizon, we employ the following measure. *Contract Horizon Time* is measured as the percentage of years remaining in the initial contract length. For example, if there are two years remaining in a 4-year initial contract length, then *Contract Horizon Time* equals to 0.5 or 50% (i.e., $0.5 = 2/4$). Table OA.4 reports the results. The results in all columns remain positive and significant, indicating that our results are robust to alternative measures of loan spread and CEO initial contract horizon.⁸

6. Cross Sectional Analyses

6.1. Macroeconomic conditions

Now, we investigate how macro-level economy affects the effect of CEO initial contract horizon on loan spreads. The crisis period may result in a decrease in funding supply in the capital market and lead to an increase in market spread. It may be difficult for firms to access to the capital market and obtain sufficient funding, implying that the bargaining power of firms may be reduced. The lending banks may charge a higher loan spread. Moreover, the crisis period could also significantly increase a firm's credit and liquidity risks, as firms may have less business in the near future (Lin et al., 2020). Therefore, we expect that the positive association between CEO initial contract horizon and loan spreads is more pronounced when the economy is in a downturn.

⁸ We also conduct other robustness checks. First, we further add an additional fixed effect (i.e., *Syndication*) to control for time-invariant unobserved heterogeneity. *Syndication* is a dummy variable that equals one if the loan facility obtained by a firm in year t is syndicated and zero otherwise. The result in Column (1) of Table OA.5 indicates robustness. Second, we cluster the standard error at industry by year level, loan purpose level and loan type level separately. The results are presented in Columns (2) – (4) of Table OA.5. Third, we add a lagged dependent variable (*Spread*) in the model. The result is reported in Column (5) of Table OA.5. Overall, all results are consistent with our Hypothesis 1.

The crisis periods are identified as 1998, 2000-2002, and 2008-2009 (Campello & Graham, 2013; Fahlenbrach et al., 2012; Ho et al., 2016). D_Crisis is measured as a dummy variable for the crisis periods. $Contract\ Horizon * D_Crisis$ is our main variable of interest. The results are displayed in Column (1) of Table 4. The coefficients for $Contract\ Horizon * D_Crisis$ are significantly positive. This coefficient suggests that the increasing effect of CEO initial contract horizon on the bank loan costs becomes stronger during the crisis periods, which is consistent with our expectation. We also define D_Crisis_{2008} as a dummy variable for 2008-09 financial crisis periods. $Contract\ Horizon * D_Crisis_{2008}$ is our main variable of interest. The results in Column (2) of Table 4 also indicate a similar conclusion that the positive relation between CEO initial contract horizon and loan spreads is more pronounced when the economy is in a downturn.⁹

[Insert Table 4 here]

6.2. Information transparency

In this subsection, we explore how a firm's information environment impact our results. Related studies suggest that information asymmetry could lead to the issues of adverse selection and moral hazard. It could also significantly increase the cost of information and monitoring. Thus, lenders may demand a higher loan spread to offset the risk of lending. We expect that the positive relation between CEO initial contract horizon and a firm's cost of borrowing is more pronounced if a firm has less transparent information environment.

Following Bharath et al. (2008) and Ertugrul et al. (2017), we use the following two

⁹ We did not include D_Crisis or D_Crisis_{2008} in the model, as these two variables measure time, which are subsumed by year fixed effect.

measures to capture a firm's information environment. Bharath et al. (2018) suggest that firms with poorer financial reporting quality receive higher loan costs. *Earnings Quality* is measured as the absolute value of discretionary accruals calculated employing an updated version of the Jones (1991)'s model (Garel et al., 2021). *Earnings Quality (Dummy)* is measured as a dummy variable that equals one if a firm's earnings quality is above the yearly mean value (i.e., poorer financial reporting quality) and zero otherwise. *Contract Horizon * Earnings Quality (Dummy)* is our main variable of interest. Column (3) of Table 4 reports the results. The findings suggest that the positive relation between CEO initial contract horizon and loan spread is stronger if a firm tends to use earnings management (i.e., worse information environment).

Ertugrul et al. (2017) argue that using uncertain and weak tones in the 10-K report increases the information risk and, therefore, borrowing cost. *Uncertain Weak Tone* is measured as the percentage of uncertain and weak modal words (Ertugrul et al., 2017). *Uncertain Weak Tone (Dummy)* is defined as a dummy variable that equals one if the percentage of a firm's uncertain and weak modal words in its 10-K is above the yearly mean value (i.e., weaker information transparency) and zero otherwise. *Contract Horizon * Uncertain Weak Tone (Dummy)* is our main variable of interest. Column (4) of Table 4 reports the results. Although the result is insignificant, the coefficient of *Contract Horizon * Uncertain Weak Tone (Dummy)* still shows a comparable trend.¹⁰ Taken together, our findings highlight that lenders demand an increased loan spread to compensate for the risk of lending caused by the information asymmetry between borrowers and lenders.

¹⁰ We thank Ertugrul et al. (2017) for generously sharing their data.

6.3. CEOs' propensity for risk-taking

In this subsection, we explore how younger CEOs impact our results. Serfling (2014) finds that CEO age is negatively associated with a firm's risk-taking activities, which supports the signaling explanation. Therefore, we expect that the positive relation between CEO initial contract horizon and a firm's cost of borrowing is more pronounced if this newly appointed CEO also has a younger age.

Following Chen et al. (2016) and Francis et al. (2008), we define *CEO Age (Dummy)* as a dummy variable that equals one if a CEO is younger than 63 and zero otherwise. *Contract Horizon * CEO Age (Dummy)* is our main variable of interest. Column (5) of Table 4 reports the results. *Contract Horizon * CEO Age (Dummy)* is positive and significant, which is consistent with our expectation.

7. Evidence from Nonprice Loan Terms, Number of Lenders, and Loan Maturity

7.1. Effects of CEO initial contract horizon on loan collateral and covenant requirements

Hypothesis 2 predicts that CEO with a longer contract horizon in the initial contract length is associated with more stringent nonprice loan terms. Now we test this prediction by exploring how CEO initial contract horizon influences the utilization of the collateral requirement and the inclusion of at least one covenant provision.

We use an indicator variable, *Collateral*, as a proxy for the utilization of the collateral requirement. *Collateral* equals one if a loan facility has a collateral requirement and zero

otherwise. We construct a dummy variable, *Covenant (Dummy)*, as a proxy to determine whether a loan facility has at least one covenant provision or not. *Covenant (Dummy)* equals one if a loan facility has at least one covenant and zero otherwise. We also construct another dummy variable, *Both Protection*, as a proxy to determine whether a loan facility is simultaneously secured and has at least one covenant. We use the same control variables from the baseline model while substituting the dependent variable (*Spread*) with *Collateral*, *Covenant (Dummy)* or *Both Protection*.¹¹ Columns (1)-(3) of Table 5 report the results. In all columns, the estimated coefficients on *Contract Horizon* are significantly positive. These findings highlight that CEOs with longer contract horizons during their initial employment periods are associated with stricter nonprice loan terms.

[Insert Table 5 here]

Next, we also explore how CEO initial contract horizon affects the intensity of covenant provisions in a loan facility. Due to the right-skewed distribution of covenant intensity, we follow Chy and Kyung (2023) to measure *Total Covenant* as natural logarithm of one plus total number of covenants (i.e., financial and general covenants). We use the same control variables from the baseline model while substituting the dependent variable (*Spread*) with *Total Covenant*. Column (4) of Table 5 reports the results. The results indicate that there is a positive relation between CEO initial contract horizon and covenants intensity, which offers further evidence to support our Hypothesis 2.^{12,13} Additionally, we also separately investigate

¹¹ Following Fotak et al. (2023), we use a linear probability model in the analyses.

¹² Drucker and Puri (2009) find that there is a miscoding issue in the DealScan database. A loan facility without any covenant shown in the DealScan database may actually has at least one covenant. Therefore, we limit our sample to ensure that each loan facility has at least one covenant, and then conduct the analysis. In the unreported analysis, our results are qualitatively similar if we impose this sample selection criteria.

¹³ We use OLS model to conduct the analysis. Our results are qualitatively similar if we conduct the analysis based on Poisson regression.

financial and general covenants. *Financial covenant* is measured as natural logarithm of one plus total number of financial covenants. *General covenant* is measured as natural logarithm of one plus total number of general covenants. Columns (5) and (6) report the results. We reveal that the coefficient on *Contract Horizon* remains significantly positive. Overall, all results support our predictions.

7.2. Effects of CEO initial contract horizon on number of lenders in a loan facility and loan maturity

Hypothesis 3 predicts that CEO with a longer contract horizon in the initial contract length is associated with fewer lenders in a loan facility. Now we test this hypothesis by exploring how CEO initial contract horizon influences the number of lenders. *Num of Lenders* is measured as natural logarithm of number of lenders in a loan facility. Column (1) of Table 6 reports the results. The coefficient on *Contract Horizon* remains significantly negative, suggesting that when CEOs serve longer initial contract horizons (i.e., riskier), a more concentrated lending composition is formed to enhance the power of collective monitoring and to increase the likelihood of effective loan reorganization, which is in line with the monitoring incentives for loan syndication.¹⁴

[Insert Table 6 here]

Hypothesis 4 predicts that CEO with a longer contract horizon in the initial contract length is associated with loans with shorter maturities. Now we test this hypothesis by exploring how CEO initial contract horizon influences loan maturity. *Loan Maturity* is measured as natural

¹⁴ We use OLS model to conduct the analysis. Our results are qualitatively similar if we conduct the analysis based on Poisson regression.

logarithm of number of months until a loan facility that a firm acquired matures. Column (2) of Table 6 reports the results, indicating that there is a negative relation between CEO initial contract horizon and loan maturity, which supports our Hypothesis 4.

8. How do CEO Initial Contract Horizon Increases Bank Loan Cost

In this section, we explore the potential channels or mechanisms by which CEO initial contract horizon affects bank loan cost. Previous literature suggests that CEOs with longer contract horizons tend to invest in risky projects that potentially rises a firm's earnings volatility and overall risk (Cziraki & Groen-Xu, 2020). The payoffs of long-term investment cannot be materialized in the short run. It is possible that these risky investments may cause short-term underperformance that significantly affects a firm's debt repayment capability, which increases bank loan costs eventually. We employ two accounting measures to capture a firm's debt repayment capability: *Interest Coverage Ratio* and *Profit Margin Ratio*. *Interest Coverage Ratio* is measured as EBIT scaled by interest expenses. Due to the considerable variability and nonlinearity exhibited by the interest coverage ratio, following Li et al. (2020), we utilize its yearly quartile rank, rather than its absolute value, for the purpose of analysis. *Profit Margin Ratio* is measured as EBIT scaled by sales.

Table 7 reports the results. The results in Column (1) are based on yearly quartile rank of *Interest Coverage Ratio*. The coefficient on *Contract Horizon* is significantly negative, suggesting that CEOs with longer initial contract horizons weaken a firm's debt repayment ability, which is consistent with our arguments. The results in Column (2) are based on *Profit Margin Ratio*. Although the coefficient on *Contract Horizon* is insignificant, the result

continues to show a comparable trend.

Furthermore, as a firm's debt repayment ability is also closely linked to the likelihood of a firm's financial constraint, we employ *KZ index* as a measure to capture a firm's financial conditions. We expect a positive association between CEO initial contract horizon and *KZ Index*, suggesting that CEOs with longer initial contract horizons increase the likelihood of a firm's financial constraint. The results in Column (3) suggest our arguments. Overall, our findings provide the sufficient evidence that the reduction in a firm's debt repayment ability and the increased likelihood of a firm's financial constraint are two specific channels or mechanisms by which CEO initial contract horizon influence bank loan costs.¹⁵

[Insert Table 7 here]

9. Conclusion

This paper adds the CEO initial contract horizon concept to the literature on loan contracting by investigating its impact on a firm's cost of borrowing. We find that private lenders charge higher loan spreads when a firm's new CEO has a longer contract horizon during his/her initial employment period. We establish the casual effect of CEO initial contract horizon on loan spreads through a quasi-natural experiment that focuses on the U.K. corporate governance regulatory reform. Through conducting several sensitivity tests, we demonstrate the robustness of the influence of CEO initial contract horizon on a firm's cost of borrowing.

In addition, we find that the positive association between CEO initial contract horizon and bank loan cost is more pronounced during economic downturns, within firms with less

¹⁵ Following Li et al. (2020), we only use industry (based on three-digit SIC codes) and year fixed effects in these models.

transparent environment, or for younger CEOs. Furthermore, our results suggest that when a firm's new CEO has a longer contract horizon during his/her initial employment period, private lenders tighten lending provisions by demanding more stringent nonprice loan terms and shortening loan maturity. Further analysis also shows that when a borrower has higher risk, a more concentrated lending structure or syndicated group in a loan facility is more likely to be formed to improve the power of collective monitoring and increase the likelihood of successful loan reorganization in the case of financial distress. Finally, we find that the positive association between CEO initial contract horizon and loan contracting is most likely to be driven by the deterioration of a firm's debt repayment ability and financial conditions. Banks are the key creditors, as their financial support constitute the major supply of capital for firms (Graham et al., 2008). Taken together, these findings offer direct evidence that private lenders (i.e., banks) perceive CEOs with longer contract horizons as a risky factor and demand higher loan spreads and more stringent nonprice loan terms.

More generally, our findings add to a growing stream of literature that explores CEO contract horizon on corporate policies and activities. These studies (e.g., Chen et al., 2022; Cziraki & Groen-Xu, M., 2020). provide compelling evidence that CEO contract horizon significantly affects a firm's risk-taking behaviors. We go beyond these studies by focusing on how a new CEO contract horizon affects the perception of private lenders, which, in turn, influences the design of loan contracting. A promising area of future research is to examine the effects of CEO initial contract horizon on the perception of other stakeholders, such as auditors.

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Table 1 Descriptive statistics

This table reports the descriptive statistics for all variables used in this paper. The final sample includes 1,040 loan-year observations for 263 unique U.S. firms in the period 1994-2018. All continuous variables are winsorized at 1% and 99 %. We exclude utilities (SIC codes 4910 – 4940) and financial (SIC codes 6000 – 6999) firms as well as all missing observations. See Appendix A for detailed variable definitions.

Variables used in the baseline model	N	Mean	S.D.	p10	p25	p50	p75	p90
Spread	1040	4.965	0.886	3.555	4.472	5.091	5.617	5.991
Contract Horizon	1040	1.530	1.304	0.000	0.000	1.000	2.000	3.000
Cash	1040	0.095	0.100	0.008	0.021	0.052	0.138	0.243
CEO age	1040	4.011	0.116	3.850	3.932	4.025	4.094	4.159
CEO bonus	1040	3.351	3.325	0.000	0.000	4.615	6.569	7.401
CEO salary	1040	6.592	0.454	6.080	6.382	6.621	6.909	7.132
CEO tenure	1040	1.959	0.569	1.099	1.609	1.946	2.303	2.639
Dividend	1040	0.016	0.024	0.000	0.000	0.005	0.025	0.042
Earnings Vol	1040	0.045	0.068	0.005	0.011	0.021	0.046	0.117
Firm Size	1040	7.900	1.405	6.148	6.837	7.852	8.930	9.938
Leverage	1040	0.245	0.198	0.006	0.104	0.212	0.345	0.498
Loan Maturity	1040	3.757	0.629	2.485	3.584	4.094	4.094	4.277
Loan Size	1040	5.604	1.311	3.912	4.868	5.704	6.477	7.255
Loss	1040	0.238	0.426	0.000	0.000	0.000	0.000	1.000
MB	1040	3.115	3.859	0.695	1.329	2.230	3.783	6.306
Performance Pricing	1040	0.407	0.491	0.000	0.000	0.000	1.000	1.000
Profitability	1040	0.143	0.078	0.062	0.094	0.128	0.180	0.238
RD	1040	0.019	0.032	0.000	0.000	0.000	0.027	0.054
Tangibility	1040	0.273	0.193	0.059	0.120	0.226	0.391	0.552
Zscore	1040	1.954	1.266	0.507	1.184	1.950	2.705	3.496
Variables used in all other analysis								
Auditor	1040	0.907	0.291	1.000	1.000	1.000	1.000	1.000
Both Protection	1040	0.288	0.453	0.000	0.000	0.000	1.000	1.000
CEO Equity Compensation	1037	0.207	0.290	0.000	0.000	0.000	0.437	0.686
Collateral	1040	0.444	0.497	0.000	0.000	0.000	1.000	1.000
Contract Horizon Time	1040	0.507	0.390	0.000	0.000	0.500	1.000	1.000
Covenant (Dummy)	1040	0.584	0.493	0.000	0.000	1.000	1.000	1.000
Earnings Quality	642	0.104	0.102	0.010	0.028	0.079	0.139	0.218
Financial Covenant	1040	0.569	0.555	0.000	0.000	0.693	1.099	1.099
General Covenant	1040	0.456	0.646	0.000	0.000	0.000	0.693	1.609

KZ Index	592	-3.610	8.765	-10.570	-4.456	-1.378	0.642	2.204
Num of Lenders	1040	1.906	0.862	0.693	1.386	2.079	2.485	2.996
Interest Coverage Ratio	593	16.072	35.456	0.651	2.764	6.463	13.897	31.364
Institutional Ownership	1040	0.848	0.160	0.608	0.745	0.892	1.000	1.000
Profit Margin Ratio	615	0.100	0.086	0.015	0.043	0.093	0.140	0.204
Spread_100	1040	1.993	1.563	0.350	0.875	1.625	2.750	4.000
Spread Raw	1040	199.292	156.270	35.000	87.500	162.500	275.000	400.000
Spread Undrawn	636	2.899	0.807	1.792	2.303	2.996	3.618	3.912
Total Covenant	1040	0.823	0.779	0.000	0.000	0.693	1.386	1.946
Uncertain Weak Tone	970	0.015	0.004	0.010	0.012	0.015	0.018	0.021

Table 2 Impact of CEO initial contract horizon on loan spread

This table presents the regression results for our baseline model. Column (1) includes firm-level characteristics. Column (2) further contains CEO-level attributes. Column (3) further includes loan-level characteristics. Column (4) includes firm-level, CEO-level and loan-level attributes, along with dummies to account for firm, industry by year, loan type and loan purpose fixed effects. The dependent variable is natural logarithm of loan spread (*Spread*). *Contract Horizon* is measured as the number of years remaining in a new CEO contract length during his/her initial employment period. All independent variables (except for loan characteristics) are measured in $t-1$. The standard error is clustered at the firm level. See Appendix A for detailed variable definitions. t -statistics are reported in parentheses. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
	Spread	Spread	Spread	Spread
Contract Horizon	0.193*** (2.67)	0.201** (2.15)	0.248*** (2.82)	0.235*** (3.03)
Firm Size	0.821 (1.31)	1.461 (1.46)	1.258 (1.43)	0.326 (0.26)
MB	0.200 (0.82)	0.126 (0.55)	0.051 (0.26)	-0.178 (-0.69)
Leverage	1.342 (0.94)	-0.206 (-0.14)	-0.228 (-0.19)	-1.315 (-1.15)
Loss	0.535 (1.27)	0.817 (0.95)	0.513 (0.69)	0.640 (0.78)
Cash	-0.152 (-0.09)	0.765 (0.27)	0.604 (0.24)	-2.791 (-0.80)
Dividend	20.088* (1.74)	11.946 (0.59)	7.247 (0.35)	34.510 (1.12)
Profitability	-2.857 (-0.68)	-0.807 (-0.20)	-1.606 (-0.46)	2.333 (0.54)
Earnings Vol	0.318 (0.21)	-0.773 (-0.28)	-0.409 (-0.16)	2.795 (0.70)
Tangibility	5.190 (0.72)	1.606 (0.20)	1.102 (0.16)	-3.271 (-0.36)
RD	1.302 (0.07)	12.859 (0.52)	11.642 (0.56)	4.830 (0.22)
Zscore	0.433** (2.09)	0.195 (0.59)	0.216 (0.77)	0.323 (0.92)
CEO Age		-1.391 (-0.86)	-0.642 (-0.45)	-0.607 (-0.45)
CEO Tenure		-0.370 (-1.58)	-0.393* (-1.89)	-0.290 (-1.05)
CEO Salary		0.712 (0.97)	0.908 (1.20)	-0.508 (-0.41)
CEO Bonus		0.024 (0.23)	0.015 (0.18)	-0.039 (-0.34)
Loan Maturity			0.047 (0.75)	0.084 (0.84)
Loan Size			-0.057 (-1.64)	-0.071** (-2.04)
Performance Pricing			-0.294*** (-2.67)	-0.242** (-2.24)
Constant	-1.145 (-0.26)	-2.761 (-0.29)	-5.505 (-0.56)	8.782 (0.67)
Firm Fixed Effect	Yes	Yes	Yes	Yes
Industry by Year Fixed Effect	Yes	Yes	Yes	Yes
Loan Purpose Fixed Effect	Yes	Yes	Yes	Yes

Loan Type Fixed Effect	No	No	No	Yes
Observations	1040	1040	1040	1040
Adjusted R^2	0.879	0.879	0.893	0.908

Table 3 The exogenous shock of a U.K. corporate governance regulatory reform

This table shows the results based on the exogenous shock. Column (1) is based on the whole sample periods from 1994 to 2018. Column (2) is based on the subsample periods from 1999 to 2007. Column (3) is based on a 7-year window from 2000 to 2006. *Post* is a dummy variable that equals one if the new CEO is appointed after 2003, and zero otherwise. *Cross* is a dummy variable that equals one if a U.S. firm is also listed in the U.K., and zero otherwise. *Post * Cross* is our main variable of interest. All control variables (except for loan characteristics) are measured in $t-1$. The standard error is clustered at the firm level. See Appendix A for detailed variable definitions. t -statistics are reported in parentheses. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
	Spread	Spread	Spread
Post	-0.213 (-1.65)	-0.269 (-1.44)	-0.386 (-1.59)
Cross	0.658*** (3.88)	0.815 (1.10)	0.767 (1.26)
Post * Cross	-0.553** (-2.45)	-1.329** (-2.22)	-1.436** (-2.19)
Firm-level Characteristics	Yes	Yes	Yes
CEO-level Characteristics	Yes	Yes	Yes
Loan-level Characteristics	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes
Loan Purpose Fixed Effect	Yes	Yes	Yes
Loan Type Fixed Effect	Yes	Yes	Yes
Observations	253	146	131
Adjusted R^2	0.824	0.882	0.883

Table 4 Macroeconomic conditions, information environment and CEOs' appetite for risk-taking

This table presents the results based on macroeconomic conditions, information environment and CEO's appetite for risk-taking. *D_Crisis* is measured as a dummy variable for the crisis period. *D_Crisis_2008* is measured as a dummy variable for the 2008-09 financial crisis period. *Earnings Quality (Dummy)* is measured as a dummy variable that equals one if a firm's earnings quality is above the yearly mean value (i.e., poorer financial reporting quality) and zero otherwise. *Uncertain Weak Tone (Dummy)* is defined as a dummy variable that equals one if the percentage of a firm's uncertain and weak modal words in its 10-K is above the yearly mean value (i.e., weaker information transparency) and zero otherwise. *CEO Age (Dummy)* is measured as a dummy variable that equals one if a newly appointed CEO is younger than 63 and zero otherwise. All control variables (except for loan characteristics), including our main variable of interest, are measured in *t*-1. See Appendix A for detailed variable definitions. *t*-statistics are reported in parentheses. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
	Spread	Spread	Spread	Spread	Spread
Contract Horizon	0.228*** (3.09)	0.166* (1.87)	1.959*** (4.95)	0.460 (1.48)	-0.105 (-0.55)
Contract Horizon * D_Crisis	0.374** (2.14)				
Contract Horizon * D_Crisis_2008		0.286** (2.07)			
Earnings Quality (Dummy)			1.839* (1.87)		
Contract Horizon * Earnings Quality (Dummy)			2.577*** (5.48)		
Uncertain Weak Tone (Dummy)				-1.373 (-1.54)	
Contract Horizon * Uncertain Weak Tone (Dummy)				0.350 (1.42)	
CEO Age (Dummy)					-0.062 (-0.15)
Contract Horizon * CEO Age (Dummy)					0.293* (1.78)
Firm-level Characteristics	Yes	Yes	Yes	Yes	Yes
CEO-level Characteristics	Yes	Yes	Yes	Yes	Yes
Loan-level Characteristics	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes	Yes
Industry by Year Fixed Effect	Yes	Yes	Yes	Yes	Yes

Loan Purpose Fixed Effect	Yes	Yes	Yes	Yes	Yes
Loan Type Fixed Effect	Yes	Yes	Yes	Yes	Yes
Observations	1040	1040	642	970	1040
Adjusted R^2	0.909	0.909	0.928	0.908	0.908

Table 5 The effect of CEO initial contract horizon on nonprice loan terms

This table presents the results by exploring the effect of CEO initial contract horizon on nonprice loan terms. *Collateral* is a dummy variable that equals one if a loan facility is backed by collateral. *Covenant (Dummy)* is a dummy variable that equals one if a loan facility has at least one covenant and zero otherwise. *Both Protection* is a dummy variable that equals one if a loan facility is simultaneously secured and has at least one covenant provision. *Total Covenant* is measured as natural logarithm of one plus total number of covenants. *Financial Covenant* is measured as natural logarithm of one plus total number of financial covenants. *General covenant* is measured as natural logarithm of one plus total number of general covenants. All control variables (except for loan characteristics), including our main variable of interest, are measured in *t*-1. See Appendix A for detailed variable definitions. *t*-statistics are reported in parentheses. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) Collateral	(2) Covenant (Dummy)	(3) Both Protection	(4) Total Covenant	(5) Financial Covenant	(6) General Covenant
Contract Horizon	0.264*** (6.57)	0.291*** (4.12)	0.151*** (4.14)	0.446*** (5.60)	0.178** (2.20)	0.358*** (2.87)
Firm-level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
CEO-level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Loan-level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry by Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Loan Purpose Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Loan Type Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1040	1040	1040	1040	1040	1040
Adjusted R^2	0.819	0.814	0.816	0.798	0.854	0.739

Table 6 The effect of CEO initial contract horizon on number of lenders and loan maturity
This table reports the results. *Num of Lenders* is measured as natural logarithm of number of lenders in a loan facility. *Loan Maturity* is measured as natural logarithm of number of months to maturity of a loan facility. All control variables (except for loan characteristics), including our main variable of interest, are measured in $t-1$. See Appendix A for detailed variable definitions. t -statistics are reported in parentheses. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) Num of Lenders	(2) Loan Maturity
Contract Horizon	-0.254** (-2.53)	-0.111** (-2.24)
Firm-level Characteristics	Yes	Yes
CEO-level Characteristics	Yes	Yes
Loan-level Characteristics	Yes	Yes
Firm Fixed Effect	Yes	Yes
Industry by Year Fixed Effect	Yes	Yes
Loan Purpose Fixed Effect	Yes	Yes
Loan Type Fixed Effect	Yes	Yes
Observations	1040	1040
Adjusted R^2	0.708	0.835

Table 7 Loan spread and CEO initial contract horizon: Mechanisms

This table presents the results based on *Interest Coverage Ratio*, *Profit Margin Ratio* and *KZ Index*. The results in Column (1) are based on the yearly quartile rank of *Interest Coverage Ratio*. All control variables, including our main variable of interest, are measured in $t-1$. See Appendix A for detailed variable definitions. t -statistics are reported in parentheses. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) Interest Coverage Ratio (yearly quartile rank)	(2) Profit Margin Ratio	(3) KZ Index
Contract Horizon	-0.056** (-2.12)	-0.001 (-0.31)	0.446** (2.00)
Firm-level Characteristics	Yes	Yes	Yes
CEO-level Characteristics	Yes	Yes	Yes
Loan-level Characteristics	No	No	No
Industry Fixed Effect	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes
Observations	591	614	592
Adjusted R^2	0.590	0.626	0.470

Appendix A Variable Definitions

Variable Name	Definition
<i>Spread</i>	Natural logarithm of all-in loan spread drawn for a given loan facility a firm acquires in year t . All-in loan spread drawn is measured as the amount the borrower pays in bps over LIBOR or LIBOR equivalent for each dollar drawn down.
<i>Spread_100</i>	It is measured as all-in loan spread drawn, expressed in basis point divided by 100.
<i>Spread Raw</i>	It is measured as the amount the borrower pays in bps over LIBOR or LIBOR equivalent for each dollar drawn down.
<i>Spread Undrawn</i>	It is measured as natural logarithm of all-in loan spread undrawn.
Main independent variable	
<i>Contract Horizon</i>	Number of years remaining in a new CEO contract length during his/her initial employment period in year $t-1$.
Alternate proxies for CEO initial contract horizon	
<i>Contract Horizon Time</i>	It is measured as the percentage of years remaining in the CEO initial contract length in year $t-1$.
Controls used in baseline model	
<i>Cash</i>	Cash and marketable securities scaled by total assets in year $t-1$.
<i>CEO Age</i>	Natural logarithm of one plus the CEO's current age in year $t-1$.
<i>CEO Bonus</i>	Natural logarithm of one plus the CEO's bonus in year $t-1$.
<i>CEO Salary</i>	Natural logarithm of one plus the CEO's salary in year $t-1$.
<i>CEO Tenure</i>	Natural logarithm of one plus the CEO's tenure at a firm in year $t-1$.
<i>Dividend</i>	Ratio of cash dividend scaled by sales in year $t-1$.
<i>Earnings Vol</i>	The standard deviation of earnings scaled by total assets over the past three years.
<i>Firm Size</i>	Natural logarithm of a firm's total asset in year $t-1$.
<i>Leverage</i>	Long-term debt scaled by total assets in year $t-1$.
<i>Loan Maturity</i>	Natural logarithm of number of months until the loan facility that a firm acquired mature in year t .
<i>Loan Size</i>	Natural logarithm of a loan amount (in \$millions) acquired by a firm in year t .
<i>Loss</i>	It equals one if a firm has negative earnings in year t and zero otherwise.
<i>MB</i>	It is measured as market value of equity scaled by book value of equity.
<i>Performance Pricing</i>	A dummy variable that equals one if the loan facility incorporates performance pricing provision and zero otherwise.
<i>Profitability</i>	EBITDA scaled by total assets in year $t-1$.
<i>RD</i>	Research and development expenses scaled by average total assets in year $t-1$.
<i>Tangibility</i>	Net property, plant, and equipment scaled by total assets in year $t-1$.

<i>Zscore</i>	It is based on modified Altman's Z-score and is measured in year $t-1$. Specifically, Z-score is defined as $(1.2 \text{ working capital} + 1.4 \text{ retained earnings} + 3.3 \text{ EBIT} + 0.999 \text{ sales})$ divided by total assets. We use modified Altman's Z-score rather than original Altman's Z-score in our regression analysis, as we have added a similar variable (i.e., MB) in our model.
Variables used in other tests	
<i>Auditor</i>	A dummy variable that equals one if a firm is audited by Big Four in year $t-1$ and zero otherwise.
<i>Both Protection</i>	A dummy variable that equals one if a loan facility is simultaneously secured and has at least one covenant, and zero otherwise.
<i>CEO Equity Compensation</i>	It is measured as the option grants and restricted stock as the percentage of CEO total compensation in year $t-1$.
<i>Collateral</i>	A dummy variable that equals one if a loan facility is backed by collateral and zero otherwise.
<i>Covenant (Dummy)</i>	An indicator variable that equals one if a loan facility has at least one covenant and zero otherwise.
<i>Earnings Quality</i>	It is measured as the absolute value of discretionary accruals in year $t-1$ calculated employing an updated version of the Jones (1991)'s model.
<i>Financial Covenant</i>	Natural logarithm of one plus total number of financial covenants.
<i>General Covenant</i>	Natural logarithm of one plus total number of general covenants.
<i>KZ Index</i>	It is measured following Lamont et al. (2001) as $-1.001909 [(ib+dp)/lagged ppent] + 0.2826389 [(at+prcc_f^*csho-ceq-txdb/at) + 3.139193 [(dltt+dle)/(dltt+dle+seq)] - 39.3678 [(dvc+dvp)/lagged ppent] - 1.314759 [che/lagged ppent]$.
<i>Num of Lenders</i>	Natural logarithm of number of lending banks in a loan facility.
<i>Interest Coverage Ratio</i>	It is measured as EBIT scaled by interest expenses.
<i>Institutional Ownership</i>	It is measured as the percentage of institutional ownership in year $t-1$.
<i>Profit Margin Ratio</i>	It is measured as EBIT scaled by sales.
<i>Total Covenant</i>	Natural logarithm of one plus total number of covenants (i.e., financial and general covenants).
<i>Uncertain Weak Tone</i>	It is measured as the percentage of uncertain and weak modal words in a firm's 10-K report in year $t-1$.

CEO Initial Contract Horizon and the Design of Private Debt

Contracts

Online Appendix

The following table gives a quick summary of what each of the subsequent tables contains and where it is mentioned in the main body of the paper.

Table Number	Table topic	In-text reference
Table OA.1	Omitted variable bias approach following Oster (2019)	Section 5.2.1
Table OA.2	The reweighting and regression analyses based on entropy balancing approach	Section 5.2.2
Table OA.3	The inclusion of additional control variables	Section 5.2.3
Table OA.4	Alternative measures of loan spread and CEO initial contract horizon	Section 5.2.4
Table OA.5	Other model specifications	Section 5.2.4

Table OA.1 Omitted variable bias approach following Oster (2019)

This table displays the regression results based on the Oster (2019) test. Following Mian and Sufi (2014) and Oster (2019), we set $R_{MAX} = \min(2.2\tilde{R}, 1)$ and $R_{MAX} = 1$ separately. Our dependent variable is *Spread*, and the main variable of interest is *Contract Horizon*. All control variables from the baseline model are included.

Assume $\delta = 1$ and $R_{MAX} = \min(2.2\tilde{R}, 1)$						
Variable of Interest	Controlled		Uncontrolled		Identified set	Includes Zero?
	β	R^2	β	R^2		
Contract Horizon	0.235	0.908	0.022	0.000	(0.235,0.257)	No
Assume $\delta = 1$ and $R_{MAX} = 1$						
Variable of Interest	Controlled		Uncontrolled		Identified set	Includes Zero?
	β	R^2	β	R^2		
Contract Horizon	0.235	0.908	0.022	0.000	(0.235,0.257)	No

Table OA.2 The reweighting and regression results based on entropy balancing approach
Panel A of this table presents the mean, variance and skewness based on reweighting sample. Based on the yearly mean value of CEO initial contract horizon, we divide the sample into two subsamples. Firms above the yearly mean value of CEO contract horizon are used as treatment group. Firms below the yearly mean value of CEO contract horizon are used as control group. All control variables from the baseline model are included. Panel B of this table presents the regression results based on entropy balancing approach. Column (1) only control for firm-level characteristics. Column (2) further add CEO-level attributes. Column (3) include firm-level, CEO-level and loan-level characteristics. All control variables (except for loan characteristics), including our main variable of interest, are measured in $t-1$. The standard error is clustered at the firm level. See Appendix A for detailed variable definitions. t -statistics are reported in parentheses. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Reweighting results

Variable	Before weighting					
	Treatment			Control		
	Mean	Variance	Skewness	Mean	Variance	Skewness
Firm Size	7.962	1.948	0.104	7.845	1.995	0.180
MB	2.942	11.310	2.963	3.268	18.030	3.328
Leverage	0.239	0.036	0.845	0.250	0.042	1.373
Loss	0.260	0.193	1.093	0.219	0.172	1.357
Cash	0.092	0.009	1.381	0.098	0.011	1.485
Dividend	0.014	0.000	2.790	0.018	0.001	2.592
Profitability	0.135	0.006	0.883	0.150	0.006	0.901
Earnings Vol	0.045	0.004	3.347	0.046	0.005	3.023
Tangibility	0.268	0.036	0.715	0.277	0.038	0.812
RD	0.018	0.001	2.472	0.019	0.001	2.425
Zscore	1.918	1.623	0.024	1.986	1.587	-0.579
CEO Age	4.012	0.014	-0.116	4.01	0.013	-0.065
CEO Tenure	1.972	0.327	-0.698	1.947	0.322	-0.930
CEO Salary	6.577	0.193	-1.027	6.606	0.217	-1.542
CEO bonus	3.691	11.140	-0.106	3.050	10.810	0.216
Loan Maturity	3.764	0.395	-1.385	3.750	0.397	-1.345
Loan Size	5.628	1.639	-0.399	5.583	1.792	-0.368
Performance Pricing	0.426	0.245	0.298	0.390	0.238	0.453

Variable	After weighting					
	Treatment			Control		
	Mean	Variance	Skewness	Mean	Variance	Skewness
Firm Size	7.962	1.948	0.104	7.962	1.948	0.104
MB	2.942	11.31	2.963	2.942	11.31	2.963
Leverage	0.239	0.036	0.845	0.239	0.036	0.845
Loss	0.260	0.193	1.093	0.260	0.193	1.092
Cash	0.092	0.009	1.381	0.092	0.009	1.381
Dividend	0.014	0.000	2.790	0.014	0.000	2.790
Profitability	0.135	0.006	0.883	0.135	0.006	0.883
Earnings Vol	0.045	0.004	3.347	0.045	0.004	3.347
Tangibility	0.268	0.036	0.715	0.268	0.036	0.715

RD	0.018	0.001	2.472	0.018	0.001	2.472
Zscore	1.918	1.623	0.024	1.918	1.623	0.024
CEO Age	4.012	0.014	-0.116	4.012	0.014	-0.116
CEO Tenure	1.972	0.327	-0.698	1.972	0.327	-0.698
CEO Salary	6.577	0.193	-1.027	6.577	0.193	-1.027
CEO bonus	3.691	11.140	-0.106	3.691	11.140	-0.106
Loan Maturity	3.764	0.395	-1.385	3.764	0.395	-1.385
Loan Size	5.628	1.639	-0.399	5.628	1.639	-0.399
Performance Pricing	0.426	0.245	0.298	0.426	0.245	0.298

Panel B: Regression analysis

	(1)	(2)	(3)
	Spread	Spread	Spread
Contract Horizon	0.213*** (3.45)	0.180** (2.00)	0.225*** (2.65)
Firm-level Characteristics	Yes	Yes	Yes
CEO-level Characteristics	No	Yes	Yes
Loan-level Characteristics	No	No	Yes
Firm Fixed Effect	Yes	Yes	Yes
Industry by Year Fixed Effect	Yes	Yes	Yes
Loan Purpose Fixed Effect	Yes	Yes	Yes
Loan Type Fixed Effect	Yes	Yes	Yes
Observations	1040	1040	1040
Adjusted R^2	0.910	0.910	0.922

Table OA.3 Adding additional controls

This table presents the results by adding additional four control variables. *Institutional Ownership* is measured as the percentage of institutional ownership in year $t-1$. *Collateral* is an indicator variable that equals one if a loan facility is backed by collateral. *CEO Equity Compensation* is measured as the option grants and restricted stock as a percentage of CEO total compensation in year $t-1$. *Auditor* is a dummy variable that equals one if a firm is audited by Big Four in year $t-1$ and zero otherwise. All control variables (except for loan characteristics), including our main variable of interest, are measured in $t-1$. The standard error is clustered at the firm level. See Appendix A for detailed variable definitions. t -statistics are reported in parentheses. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
	Spread	Spread	Spread	Spread	Spread
Contract Horizon	0.310*** (3.16)	0.250*** (2.81)	0.195* (1.77)	0.235*** (3.03)	0.277*** (2.46)
Institutional Ownership	-3.394 (-1.36)				-5.598** (-1.98)
Collateral		-0.0577 (-0.38)			-0.057 (-0.38)
CEO Equity Compensation			-0.304 (-0.64)		-0.752 (-1.32)
Auditor				-5.001 (-0.72)	6.222 (0.55)
Firm-level Characteristics	Yes	Yes	Yes	Yes	Yes
CEO-level Characteristics	Yes	Yes	Yes	Yes	Yes
Loan-level Characteristics	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes	Yes
Industry by Year Fixed Effect	Yes	Yes	Yes	Yes	Yes
Loan Purpose Fixed Effect	Yes	Yes	Yes	Yes	Yes
Loan Type Fixed Effect	Yes	Yes	Yes	Yes	Yes
Observations	1040	1040	1037	1040	1037
Adjusted R^2	0.908	0.908	0.908	0.908	0.909

Table OA.4 Alternative measures of loan spread and CEO initial contract horizon

This table presents the results based on alternative measures of loan spread and CEO initial contract horizon. *Spread Raw* is measured as the amount the borrower pays in bps over LIBOR or LIBOR equivalent for each dollar drawn down. *Spread_100* is measured as all-in loan spread drawn, expressed in basis point divided by 100. *Spread Undrawn* is measured as natural logarithm of all-in loan spread undrawn. *Contract Horizon Time* is measured as the percentage of years remaining in the CEO initial contract length. All control variables (except for loan characteristics), including our main variable of interest, are measured in $t-1$. The standard error is clustered at the firm level. See Appendix A for detailed variable definitions. t -statistics are reported in parentheses. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
	Spread Raw	Spread_100	Spread Undrawn	Spread
Contract Horizon	31.39*	0.314*	12.645***	
	(1.94)	(1.94)	(3.69)	
Contract Horizon Time				0.813*** (4.13)
Firm-level Characteristics	Yes	Yes	Yes	Yes
CEO-level Characteristics	Yes	Yes	Yes	Yes
Loan-level Characteristics	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes
Industry by Year Fixed Effect	Yes	Yes	Yes	Yes
Loan Purpose Fixed Effect	Yes	Yes	Yes	Yes
Loan Type Fixed Effect	Yes	Yes	Yes	Yes
Observations	1040	1040	636	1040
Adjusted R^2	0.713	0.713	0.940	0.909

Table OA.5 Other model specifications

This table presents the results based on different model specifications. Column (1) includes additional fixed effect. The standard error in Column (2) is clustered at industry by year level. The standard error in Column (3) is clustered at loan purpose level. The standard error in Column (4) is clustered at loan type level. We include the lagged dependent variable (*Spread*) in Column (5). All control variables (except for loan characteristics), including our main variable of interest, are measured in $t-1$. See Appendix A for detailed variable definitions. t -statistics are reported in parentheses. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) Spread Syndication fixed effect	(2) Spread Cluster at industry by year level	(3) Spread Cluster at loan purpose level	(4) Spread Cluster at loan type level	(5) Spread Lagged dependent variable
Contract Horizon	0.229*** (2.95)	0.235*** (2.80)	0.235*** (5.41)	0.235** (2.64)	0.236*** (3.03)
Lagged Contract Horizon					0.017 (0.30)
Firm-level Characteristics	Yes	Yes	Yes	Yes	Yes
CEO-level Characteristics	Yes	Yes	Yes	Yes	Yes
Loan-level Characteristics	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes	Yes
Industry by Year Fixed Effect	Yes	Yes	Yes	Yes	Yes
Loan Purpose Fixed Effect	Yes	Yes	Yes	Yes	Yes
Loan Type Fixed Effect	Yes	Yes	Yes	Yes	Yes
Syndication Fixed Effect	Yes	No	No	No	No
Observations	1040	1040	1040	1040	1030
Adjusted R^2	0.908	0.908	0.908	0.908	0.907