

Monitoring with Small Stakes *

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Abstract

This paper addresses the “monitoring with small stakes” phenomenon in leveraged lending. We theoretically identify two primary sources of creditor monitoring incentives: skin in the game and rent extraction through renegotiation. Rent extraction via renegotiation acts as a substitute for banks’ loan stakes. To empirically validate this mechanism, we leverage the passage of a tax policy that exogenously reduced renegotiation costs. Our findings suggest that a less frictional renegotiation environment fosters more diligent monitoring, particularly in loans with concentrated control rights. This enhanced monitoring improves borrower performance, especially in deals with concentrated control rights and lower bank shares.

Keywords: contract theory, renegotiation, control rights, monitoring, rent extraction, institutional lenders, cov-lite, covenants, fiscal policy, leveraged loans

JEL codes: G21, G23, G30

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1. Introduction

This paper addresses a puzzle in the financial contracting literature: how do banks maintain their monitoring incentives when they have low loan retention? Canonical contract theory models propose that moral hazard and adverse selection issues are mitigated when creditors retain a sufficiently large stake in their originations.¹ This “skin in the game” incentivizes banks to rigorously monitor borrowers, reducing default risk and increasing debt capacity.²

Over the past decade, institutional investors have increasingly participated in syndicated lending, challenging the traditional loan retention mechanism. This trend is particularly notable in the leveraged loan market, where borrowers often have greater agency problems and require effective creditor monitoring. However, this market is characterized by high syndicate participation from institutional investors who often lack adequate monitoring capabilities, resulting in lower banks’ stake in originated loans.³ Since 2010, there has been a secular decline in both the aggregate share owned by bank lenders and the dollar amount contributed by bank lenders in the leveraged loan market, as illustrated in Figure 3.⁴ These findings present a puzzle: how do banks maintain monitoring incentives with low ownership stakes and multiple creditor classes of equal priority? More broadly, are banks special in their capacity to serve as credible monitors, or are they simply arms-length lenders?

We propose a novel mechanism to explain the *monitoring with small stakes* puzzle by conceptualizing two sources of incentive provision for costly creditor monitoring. The first source is the traditional skin in the game channel, wherein creditors engage in monitoring to safeguard the salvage value of their claims and collateral (e.g., [Holmstrom and Tirole \(1997\)](#); [Gorton and Pennacchi \(1995\)](#)). The second source is the ability of creditors to extract rents from borrowers during renegotiation, which enhances monitoring incentives. This is because creditors’ incentives to monitor borrowers increase when they anticipate a higher payoff from rent extraction during renegotiation, often triggered by their monitoring activities. While the former source is well-established in the literature, our analysis focuses on the latter source as a novel explanation for the puzzle.

When the monitoring creditors (e.g., banks) hold a small stake, their incentives to monitor borrowers are ambiguous as the payoff from protecting the salvage value is limited. To credibly signal low borrower default risk to the non-monitoring creditors (e.g., institutional investors), the monitoring creditor must be able to generate a sufficiently high payoff from the rent extrac-

¹See, e.g., [Gorton and Pennacchi \(1995\)](#), [Holmstrom and Tirole \(1997\)](#), [Parlour and Plantin \(2008\)](#).

²The financial contracting literature shows that creditors’ incentives in conducting costly monitoring impacts borrowers’ debt capacity, see e.g., [Diamond \(1984\)](#), [Diamond \(1991\)](#), [Rajan and Winton \(1995\)](#), [Park \(2000\)](#).

³Loan contracts have evolved into split control deals which pair covenant-lite term loans, primarily held by institutional investors, with covenant-laden revolving credit, primarily held by banks ([Berlin et al. \(2020\)](#)). In practice, split control agreements delegate the exclusive right to monitor and renegotiate financial covenants to banks. And these concentrated control right deals are specifically featured with low banks’ skin in the game.

⁴The dollar amount is calculated by multiplying the dollar tranche amount with the percentage share contributed by bank lenders for each tranche and aggregating it at the annual level. To address potential data coverage issues, we provide evidence in Panel A of Appendix Figure A.1, demonstrating that the proportion of deals with non-missing lenders’ shares (and lenders’ amount contributed) has remained relatively stable since 2010. Furthermore, in Panel B of Appendix Figure A.1, we demonstrate that this trend is consistent at the deal level.

tion process during renegotiation. We demonstrate that banks' monitoring efforts are sensitive to the degree of their control right and costliness of the renegotiation process, with this sensitivity increasing as their control right of the loan increases and their own stake in the loan decreases. Therefore, reducing renegotiation frictions or enhancing creditors' control right can facilitate the ex-ante underwriting of credit contracts with small bank stakes, particularly for borrowers with severe agency conflicts—a key conjecture we empirically test.

Formally, we develop a framework under which the renegotiation-based mechanism serves as an alternative source and potential substitute for the stake-based mechanism in providing monitoring incentives and facilitating the participation of non-monitoring creditors in leveraged lending. This framework helps explain how monitoring creditors can credibly commit to monitoring borrowers despite holding a minority share of the origination, which in turn, encourages non-monitoring creditors to participate and assume a significant share of the origination.⁵

Specifically, in the model, a sequential game plays out between the monitoring creditor and the entrepreneur. The monitoring creditor conducts costly monitoring to prevent the entrepreneur from diverting the project. The monitoring creditor's incentives to monitor come from either the ability to liquidate the project, or extract rents during renegotiation with the entrepreneur. Consequently, the optimal loan contract design involves two key decisions: (1) determining the monitoring creditor's loan share, balancing funding costs against monitoring incentives, and (2) choosing between split control and non-split control arrangements, which impact the ease of renegotiation and the efficacy of rent-extraction as a monitoring mechanism.

We empirically test this renegotiation-based mechanism of monitoring incentive provision in the context of the leveraged loan market. Our analysis aims to identify whether an increased expected payoff from ex-post rent extraction in renegotiation better incentivizes bank lenders to engage in monitoring activities, thereby enabling them to retain a smaller stake ex-ante. Empirically identifying this mechanism is challenging, as it involves constructing shifters that affect creditors' ability to renegotiate or other factors determining their net payoff from renegotiation. However, such shifters are likely endogenous and could be correlated with other confounding factors that also affect the contractual and performance outcomes of underwritten loans, making it difficult to identify the channel in a clean manner.

We utilize the activation of TD9599 tax credit as a natural experiment that effectively lowered (increased) creditors' net cost (expected payoff) in renegotiation with their borrowers.⁶ This tax policy redesignated syndicated loans as publicly traded debt in late 2012, lowering the tax burden for creditors for out-of-court renegotiation. For the sake of simplicity, we refer to the decrease (increase) in net cost (expected payoff) for creditors resulting from the policy as a "reduction in ex-

⁵This "monitoring the monitor" problem is made clear in [Diamond \(1984\)](#) which highlights the incentive problem of a bank that behaves as a delegated monitor and demonstrates how debt contracts can mitigate such incentive issues. This incentive problem is later examined in other contexts and with other types of solutions (e.g., [Rajan and Winton \(1995\)](#), [Park \(2000\)](#), [Dang et al. \(2017\)](#)).

⁶The impact of this tax policy on the renegotiation of corporate loans has been examined in other papers including [Campello et al. \(2018\)](#) and [Ferracuti and Morris \(2017\)](#).

post renegotiation friction” for the remainder of this paper.⁷ We combine this policy change with the variation in control rights, using the split control status of loan deals, per [Berlin et al. \(2020\)](#), as a proxy for banks’ ability to facilitate renegotiation. Mapping to our model, this proxy measures the extent to which a credit arrangement relies on renegotiation to incentivize monitoring. Using a difference-in-differences (DiD) design, we identify the impact of this policy-induced reduction in renegotiation frictions on both the ex-ante contractual design of newly issued loans and the ex-post performance of pre-existing loans.

A key empirical prediction of our analysis is that banks’ incentives to monitor borrowers is sensitive to frictions in the renegotiation environment, particularly in loans with smaller bank shares and concentrated control rights. To test this, we examine how the tax policy affects renegotiation outcomes for split and non-split control deals. We provide direct evidence of rent extraction through renegotiation fees by comparing loan renegotiation outcomes and creditor actions around the tax policy. We find that, after the tax policy, lenders of split control deals are more likely to renegotiate and charge higher amendment fees compared to those in non-split control deals. Overall, our findings indicate that the tax policy strengthens lenders’ bargaining positions and increases their payoffs in renegotiation, especially for split control deals where banks have concentrated control rights and smaller loan shares.

To directly investigate the policy’s impact on banks’ monitoring incentives, we construct empirical measures of monitoring intensity, following [Gustafson et al. \(2021\)](#). We find that, after the tax policy, newly issued split control deals are more likely to require the delivery of timely financial statements and agent bank field examinations compared to non-split control deals. This evidence supports our mechanism: banks increase their monitoring intensity when expecting higher renegotiation payoffs triggered by their monitoring activities. The greater response to the policy-induced reduction in renegotiation frictions in split control deals indicates a greater reliance on the renegotiation-based mechanism for monitoring incentives in these deals, where banks have concentrated control rights and smaller stakes.

We next investigate how reduced ex-post renegotiation frictions influence the ex-ante design of other contractual characteristics in the leveraged loan market. As covenants trigger monitoring-induced renegotiation ([Rajan and Winton \(1995\)](#)), we examine their significance in the context of reduced renegotiation costs. Our findings show that covenants gain importance, particularly in split control deals, following the tax policy. Specifically, the incidence and tightness of covenants increase in split control deals compared to non-split control deals. These effects are more pronounced for profitability related covenants (e.g., debt-to-ebitda ratio, interest rate coverage ratio) than capital structure related covenants (e.g., debt issuance), suggesting enhanced monitoring commitment by bank lenders in split control deals ([Christensen and Nikolaev \(2012\)](#)).

We further investigate the impact of the tax policy on other contractual aspects of newly issued loan deals. We hypothesize that reduced renegotiation frictions enable banks to extract greater payoffs through renegotiation, leading them to rely more on ex-post compensation rather than

⁷The detailed description and discussion of this policy are provided in Section 5.1.

ex-ante compensation after the tax policy. Consistent with this hypothesis, we find that the tax policy reduces upfront fees more significantly for split control deals than non-split control deals, indicating a shift away from stake-based incentive provision mechanisms. Moreover, we find that banks' increased incentives to monitor borrowers after the tax policy lead them to contract with marginal borrowers with severe agency problems. Specifically, we observe that split control deals are less reliant on external monitoring sources (e.g., private equity) and are more likely to feature speculative borrowers with low credit ratings, after the tax policy. These findings suggest that the tax policy expands the boundaries of the leveraged loan market by enabling banks to monitor and lend to riskier borrowers.

To supplement our analysis of the policy impact on the underwriting of newly issued loan deals, we also examine how the loan outcome and performance of borrowers vary around the policy event for existing loan deals. We find that firms with split control deals on their balance sheet at the time of TD9599, referred to as "split control firms," exhibit a more pronounced decline in the probability of default within 1-year and 3-year time windows, compared with firms with non-split control deals on their balance sheet. These findings support our theoretical prediction that reduced renegotiation frictions lead to improved borrower outcomes, especially in loans with concentrated control rights and lower bank ownership.

Our findings have significant policy implications. The asymmetric impact of the tax policy, with borrowers in split control deals experiencing substantial performance improvements compared to those in non-split control deals, indicates that monitoring levels in loans with substantial non-bank lender stakes were likely inadequate prior to the policy change. This highlights the need to address monitoring challenges associated with increased institutional investor participation. Furthermore, our results indicate that fiscal policies reducing renegotiation frictions can facilitate institutional investor participation in the leveraged loan market and broaden access to credit markets. These insights can inform policymakers in developing measures to enhance monitoring practices and foster a stable and efficient credit environment.

Related Literature. Our analysis in this paper, addressing the "monitoring with small stakes" puzzle in the context of the leveraged loan market, contributes to several strands of literature.

Financial intermediaries play a critical role in reducing agency frictions and facilitating the flow of credit by actively monitoring borrowers. However, the incentive issue in conducting monitoring, known as the "monitoring the monitor" problem (Diamond (1984)), naturally arises when monitoring activities are not easily verifiable. Diamond (1984) shows that diversification with debt contracts can optimally alleviate the incentive problem, by making the delegated monitor's payoff most sensitive to her monitoring action.⁸ Later analyses (e.g., Gorton and Pennacchi (1995), Holmstrom and Tirole (1997), and Gryglewicz et al. (2021)) propose that lenders retain a sufficient share of loan originations (skin in the game) to align incentives between investors and lenders and increase borrowers' debt capacity. Complementing this theoretical literature, recent empirical

⁸In essence, our analysis reveals a similar key insight: a delegated monitor's payoff sensitivity to their monitoring actions requires either a sufficiently large stake or the ability to extract rents from monitoring-triggered renegotiations.

studies (e.g., [Sufi \(2007\)](#), [Ivashina \(2009\)](#), [Gustafson et al. \(2021\)](#)) document that (lead) banks often retain a significant share of loans requiring effective monitoring to credibly commit to monitoring. However, the rise of institutional investors' participation raises concerns that banks may have insufficient skin in the game to maintain monitoring incentives (e.g., [Drucker and Puri \(2009\)](#), [Bord and Santos \(2012\)](#), [Wang and Xia \(2014\)](#), [Billett et al. \(2016\)](#)). Our paper contributes this literature by proposing a novel channel that explains how monitoring incentives are preserved when banks retain small stakes in originated loans—in the absence of reputation-based incentive scheme (e.g., [Malenko and Malenko \(2015\)](#)). We highlight that renegotiation-based rent extraction can serve as a substitute for the traditional skin in the game channel.

The impact of ex-post renegotiation on ex-ante contractual structure has been recognized and explored by a large theoretical literature (e.g., [Hart and Moore \(1988\)](#), [Bolton and Scharfstein \(1996\)](#), [Hart and Moore \(1998\)](#), [Garleanu and Zwiebel \(2009\)](#).) However, empirical research on this important issue in financial contracting has been limited.⁹ One of the primary challenges faced by empirical studies is the difficulty in identifying exogenous sources of variation that can precisely test the predictions generated by the theoretical literature, as renegotiation outcomes are rarely exogenous. Our analysis in this paper overcomes this obstacle by leveraging the passage of TD9599 as an experimental setting, providing direct evidence that a policy-driven reduction in renegotiation costs increases monitoring activities by bank lenders. This, in turn, affects the contractual structure of new credit agreements and the performance of existing loan deals. Notably, to this end, we develop concrete measures of rent extraction and lenders' monitoring intensity, using natural language processing techniques applied to credit agreements and amendment filings on SEC. This novel dataset on features of renegotiation and credit agreements enables us to establish critical empirical linkages, bridging the gap between ex-post renegotiation and ex-ante contract design in the empirical literature of financial contracting.

Our analysis also contributes to the growing literature on covenant-lite loans and split control arrangements in the leveraged loan market (e.g., [Becker and Ivashina \(2016\)](#), [Billett et al. \(2016\)](#), [Berlin et al. \(2020\)](#)). [Becker and Ivashina \(2016\)](#) attribute the rapid expansion in cov-lite loans to the increased participation of non-bank investors in loan syndicates, which introduces creditor coordination frictions that cov-lite loans help alleviate. [Berlin et al. \(2020\)](#) further document that cov-lite loans are typically paired with bank-held revolving lines of credit that preserve traditional financial covenants.¹⁰ Our findings complement their analysis by highlighting the specific role of the renegotiation-based mechanism in the provision of monitoring incentives, particularly in split control deals where banks retain control over the renegotiation process.

⁹Among these studies, [Roberts and Sufi \(2009\)](#) find that over 90% of long-term loan contracts are renegotiated before maturity and that ex-ante contractual contingencies can affect the bargaining power of the contracting parties in renegotiation. [Benmelech and Bergman \(2008\)](#) focus on renegotiation under financial distress and show that the liquidation value of collateral affects renegotiation under incomplete financial contracts.

¹⁰See [Berlin et al. \(2020\)](#) and [Becker and Ivashina \(2016\)](#) for the increasing application of split control arrangement and cov-lite credit agreements in leveraged loan market. It is argued this particular contractual feature is designed to alleviate coordination problems with institutional investors. The blue line in Figure 3 shows that the dollar proportion of leveraged loans has been rising and reached about 50% of the total volume of split control deals.

The rest of the paper is organized as follows. Section 2 presents our model that highlights the role of the renegotiation-based mechanism when the stake-based mechanism is limited in providing monitoring incentives. We then bring the theory to the empirics. Section 3 describes the data and sample construction. Section 4 conducts a preliminary examination of the leveraged loan market, by comparing loan deals with concentrated control rights (split control deals) to those with diffuse control rights (non-split control deals). In Section 5, we empirically identify the renegotiation-based mechanism in the provision of monitoring incentives, by conducting an event-based analysis that exploits an exogenous policy-induced reduction in renegotiation frictions. Section 6 concludes the paper.

2. The Model

This section develops a model of debt financing in which borrowers are subject to agency problems. Monitoring creditors, who may only hold partial ownership of loans, interact with borrowers by incurring costly monitoring to alleviate such agency problems.

2.1. Model Setup

Players, technology and timing. Consider a setting where an entrepreneur has a project that needs to be financed externally. There are two potential sources of financing: creditor B who can monitor (e.g., banks) and the other creditor I who lacks monitoring capabilities (e.g., institutional investors).

The project can be jointly financed by the two creditors such that the bank lender contributes a fraction f of the initial funding while the institutional investor contributes the remaining $1 - f$ share. After the project pays off, both creditors then receive payments corresponding to their respective shares.¹¹ Throughout our analysis, we maintain the assumption that institutional investors have a lower cost of capital than bank lenders, motivated by the observation that bank lenders are often subject to tighter capital regulations in practice (Buchak et al. (2018), Irani et al. (2020a), Gebauer and Mazelis (2023)). Specifically, the institutional investors have a cost of capital normalized to unity while the bank lenders have a higher cost of capital, $R > 1$. This difference in the capital cost immediately implies a gain from facilitating the participation of institutional investors in financing the entrepreneur.

There are three relevant dates:

1. On date 0, the entrepreneur needs to raise a unit of funding to initiate the project. After obtaining funding, the entrepreneur decides whether to divert the project's course;
2. On date $\frac{1}{2}$, the bank lender can monitor to detect the status of project and have access to a liquidation technology that allows the creditor to terminate the project immediately to

¹¹Effectively, our analysis is focused on pari-passu type of debt contracts in which monitoring creditors and other participating lenders enjoy the same seniority in their claims.

recover some liquidation value (to be specified shortly). The entrepreneur may engage in certain “asset diverting” behavior;

3. On date 1, the project pays off, unless it is liquidated on date $\frac{1}{2}$.

Agency problem and creditor monitoring. The main agency problem in the model is captured by the entrepreneur’s option to divert the project on date 0. Specifically, we assume that the project, if not diverted, will remain in the good (G) state with certainty, generating a cash flow $X > 1$ that is fully pledgeable to creditors with no private benefit to the entrepreneur. However, if the entrepreneur incurs a cost, $c_E(\theta)$ to divert the project, she can introduce a probability $\theta > 0$ that the project will enter the bad (B) state while remaining in the G state only with probability $1 - \theta$. When project is in the B state, the cash flow pledgeable to the creditor is zero, while the entrepreneur receives a positive private benefit $b \in (0, X)$. We assume that the diversion cost $c_E(\theta)$ is increasing and convex in θ , i.e., $c'_E(\theta) > 0$ and $c''_E(\theta) > 0$.

On date $\frac{1}{2}$, the bank lender can conduct costly monitoring to detect the status of the project. Specifically, we assume that by incurring an effort $c_B(q)$, the bank lender can successfully detect the project being in the B state with probability q . Conceptually, this can be thought of as the creditor discovering the entrepreneur’s violation of covenants through diligent monitoring. In such cases, the bank creditor can terminate the project and recover a liquidation value, L from the project. Monitoring at date $\frac{1}{2}$ allows the creditor to protect himself from the project being in the B state, in which case the payment received would be zero if the project continues to date 1 (assuming that the liquidation option only exists on date $\frac{1}{2}$, not date 1). Similarly, we assume that the monitoring cost $c_B(q)$ is increasing and convex in q , i.e., $c'_B(q) > 0$ and $c''_B(q) > 0$.

In our subsequent analysis, we consider quadratic effort costs for both the bank lender and the entrepreneur, i.e., $c_E(\theta) = \frac{c_E}{2}\theta^2$ and $c_B(q) = \frac{c_B}{2}q^2$ for algebraic tractability.

Renegotiation. Alternatively, instead of immediately exercising the liquidation option when detecting the project’s entry into the B state, the bank lender may choose to renegotiate with the entrepreneur, allowing the project to continue until time 1. Throughout our analysis, we assume that $b > L$ to ensure room for renegotiation. Depending on the loan contract’s control rights structure (split control or non-split control), we assume that renegotiation occurs with an exogenous probability $p \in \{p_S, p_{NS}\}$ between the bank lender and the entrepreneur after a B status of the project is detected.

In practice, significant coordination and communication frictions among creditors, such as in non-split control credit contracts involving multiple bank lenders and institutional investors, make renegotiations challenging. The lack of consensus among creditors ex-ante further complicates the renegotiation process. In contrast, when control rights are concentrated among a small group of bank lenders (e.g., in split control credit deals), these frictions are less likely to occur, making renegotiations feasible whenever potential gains exist.

Under this specification, when the bank lender detects the project in the B state, renegotiation between the bank lender and the entrepreneur occurs with probability p . The bank lender's reservation value is $f \cdot L$ which is the value obtained by liquidating the project, whereas the entrepreneur's reservation value is 0 since liquidation does not generate any private benefits for the entrepreneur. The surplus gain from this renegotiation amounts to $b - fL$, which is shared exclusively between the bank lender and the entrepreneur. Consequently, the payoff from renegotiation to the bank lender, denoted as v_B , and to the entrepreneur, denoted as v_E , is as follows:

$$v_B = fL + \beta(b - fL); \quad v_E = (1 - \beta)(b - fL), \quad (1)$$

where β represents the bargaining power of the bank lender in the renegotiation process. When renegotiation does not occur, with probability $1 - p$, the bank lender receives their portion of the liquidation value, $f \cdot L$, while the entrepreneur obtains a reservation value of 0.

2.2. Agent Optimization and equilibrium

We are now ready to characterize the decision making by agents in this model. In this section, we fix the contract design features (e.g., the share f contributed by the bank lender, the face value payment D , renegotiation probability p , etc.) and study the resulting equilibrium behavior of agents, given the design of contracts. In the next section, we study the optimal design of contracts based on the equilibrium outcome derived in this section.

In the model, the entrepreneur and the bank lender play a sequential game in which:

1. on date 0, the entrepreneur chooses their diverting effort θ with the expectation that the bank lender will incur monitoring effort q on date $\frac{1}{2}$;
2. on date $\frac{1}{2}$, the bank lender chooses their monitoring effort q , given that the entrepreneur has incurred effort θ to divert the project on date 0.

Let us start with the entrepreneur's problem. With the face value of debt payment set at $D \in [0, X]$ and the bank lender contributing f share of the loan, the entrepreneur solves the following optimization problem:

$$\max_{\theta} (1 - \theta)(X - D) + \theta \left(\underbrace{q \cdot [p \cdot v_E + (1 - p) \cdot 0]}_{\text{detected by monitoring creditor}} + \underbrace{(1 - q) \cdot b}_{\text{not detected}} \right) - c_E(\theta). \quad (2)$$

In this optimization, the entrepreneur determines her diverting effort θ , taking into account the bank lender's equilibrium choice of monitoring effort q and the credit contract parameters (D, f, p) as given. With probability $1 - \theta$, the project remains in the G state, yielding the residual cash flow of $X - D$. Conversely, with probability θ , the project transitions to the B state. In this scenario, the entrepreneur either receives the full private benefit b if the diversion remains undetected (which

occurs with probability $1 - q$), or the expected payoff from potential renegotiation with the monitoring creditor if the diversion is detected (which occurs with probability q). In the latter case, the expected payoff to the entrepreneur is $p \cdot v_E + (1 - p) \cdot 0$, where v_E is as defined in Eq. (1).

As such, the optimal effort, θ , chosen by the entrepreneur is determined as the optimal solution to Eq. (2):

$$qp v_E + (1 - q)b - (X - D) = c'_E(\theta) \quad (3)$$

Next, we turn to the bank lender. On date $\frac{1}{2}$, the bank lender chooses their monitoring effort $q \in [0, 1]$ by solving the following problem:

$$\max_q (1 - \theta)fD + \theta \left(\underbrace{q \cdot [p \cdot v_B + (1 - p) \cdot fL]}_{\text{detection succeeds}} + \underbrace{(1 - q) \cdot 0}_{\text{detection fails}} \right) - c_B(q), \quad (4)$$

in which the bank lender takes as given the entrepreneur's choice of diverting effort, θ , made at time 0, along with the credit contract terms and conditions (D, f, p) . By incurring monitoring effort q , the bank lender can detect the project in the B state with probability q , allowing him to derive positive value either by liquidating the project or extracting rents from the entrepreneur through renegotiation, instead of receiving zero payoff at time 1 if detection fails. In the former scenario, the positive payoff to the bank lender from successful detection is $p v_B + (1 - p)L$, where v_B is defined in Eq. (1).

Given the entrepreneur's choice of θ on date 0, the bank lender's optimal response regarding their monitoring effort q is therefore determined as

$$\theta [p \cdot v_B + (1 - p) \cdot fL] = c'_B(q) \quad (5)$$

Combining Eq. (3) and (5), we have the following proposition stating the existence and uniqueness of the subgame perfect equilibrium.

Lemma 1. *For any credit contract (D, f_B, p) , there exists a unique subgame perfect equilibrium. In the equilibrium, the entrepreneur chooses diverting effort θ on date 0 and the bank lender chooses monitoring effort q on date $\frac{1}{2}$, where (θ, q) is determined by Eq. (3) and (5).*

The optimal response by the entrepreneur implies a negative relation between θ and q (since $v_E < b$) from Eq. (3). Intuitively, the entrepreneur's incentive to divert the project is lower when she anticipates that the bank lender will monitor more intensively. Conversely, the bank lender's optimal response yields a positive relation between θ and q from Eq. (5). This is because the value of monitoring increases when the entrepreneur is more inclined to divert the project. Consequently, these opposing relationships between the optimal effort choices of the agents ensure the existence of a unique equilibrium.

For our subsequent analysis of the optimal contract design, it is useful to establish the following corollary, which characterizes the equilibrium efforts of economic players in this economy for two specific values of renegotiation probability, i.e., when the loan is structured with a non-split control structure (i.e., $p = 0$) and with a split control structure (i.e., $p = 1$), and the face value payment is maximized (i.e., $D = X$).

Corollary 1. *Equilibrium effort with split/non-split control*

Consider loan contracts with maximized face value payment, i.e., $D = X$.

(i) When the loan is arranged with non-split control ($p = 0$), the equilibrium efforts of the bank lender and entrepreneur are given by

$$q_{NS} = \frac{fLb}{fLb + \tau_E \tau_B}, \theta_{NS} = \frac{\tau_B b}{fLb + \tau_E \tau_B}.$$

(ii) When the loan is arranged with split control ($p = 1$), the equilibrium efforts of the bank lender and entrepreneur are given by

$$q_S = \frac{bv_B}{v_B^2 + \tau_E \tau_B}, \theta_S = \frac{\tau_B b}{v_B^2 + \tau_E \tau_B},$$

where v_B is as given by Eq.(1).

2.3. Optimal Contract Design

This section characterizes the optimal design of credit contracts that maximizes the total net payoff in this economy. As discussed earlier, our analysis focuses on pari-passu type debt contracts where three dimensions determine the design: the share $f \in [0, 1]$ (and $1 - f$) contributed by the bank lender (and the institutional investor), the face value payment $D \in [0, X]$, and the probability of renegotiation $p \in \{p_S, p_{NS}\}$ contingent on whether the loan is structured as a split control deal or a non-split control deal.

Given that the main objective of our study is to examine the growing participation of institutional investors and the emergence of split control arrangements in corporate lending, we simplify our analysis of the optimal contract design by focusing on the optimization over f and p . Specifically, we simplify the analysis by setting the face value payment of debt at $D = X$. That is, our analysis of the contract design is restricted to the subspace of contracts where all pledgeable cash flows are paid to creditors in a pro-rata manner.¹²

To further reduce algebraic complexity, we specify that without loss of generality, the exogenous probability of renegotiation under split control and non-split control arrangements are

¹²In fact, it can be shown that maximizing the face value payment increases the entrepreneur's incentive to divert the project to the greatest extent. This allows us to investigate contract design concerning monitoring creditor's shareholding and control right structure in an environment where the agency problem is particularly acute.

$p_S = 1$ and $p_{NS} = 0$, respectively. That is, under split control arrangements, creditors can always initiate renegotiation with the borrower whenever they perceive an opportunity for surplus gain, whereas renegotiation is precluded under non-split control deals even when it could benefit both parties. As explained earlier, this emphasis on extreme scenarios also allows us to distinctly separate the two channels of incentive provision for creditor monitoring.

Given the credit contract (f, p) specified on date 0, the sequential game between the entrepreneur and the bank lender then unfolds as described in Section 2.2. With the equilibrium efforts $\{q, \theta\}$ chosen by economic players, the total expected net payoff attained in this economy is

$$\begin{aligned}
 V(f, p) = & \underbrace{(1 - \theta)X}_{\text{project payoff in G state}} + \underbrace{\theta [pb + (1 - p)L]}_{\text{project payoff in B state}} \\
 & - \underbrace{[fR + (1 - f)]}_{\text{funding cost}} - \underbrace{c_E(\theta)}_{\text{entrepreneur's diverting cost}} - \underbrace{c_B(q)}_{\text{bank's monitoring cost}} \quad (6)
 \end{aligned}$$

First-best benchmark and economic efficiency. It is helpful to start the analysis by characterizing the first-best outcome in this economy before discussing the contractual design solutions. In the first-best solution, as determined by a social planner who has authority over the actions of both the bank lender and the entrepreneur, it is evident that neither player should exert any effort in diverting or monitoring (i.e., $\theta = 0$ and $q = 0$). Moreover, considering the funding cost advantage of the institutional investor, the social planner should minimize the contribution by the bank lender and set $f = 0$.

It's worth noting that in the first-best solution, the project is ensured to remain in the G state with certainty, making it incentive-compatible for the bank lender to choose a monitoring effort of $q = 0$. However, in equilibrium, the entrepreneur's incentive to divert the project is high when the bank lender has a low incentive to monitor, which in turn necessitates the bank lender to increase their monitoring effort. This leads to a socially inefficient "ratchet effect," where the bank lender overmonitors to compensate for the entrepreneur's high diversion incentive. Importantly, for economic efficiency, it is critical whether the bank lender would respond adequately to the entrepreneur's diversion efforts, as this determines the effectiveness of deterring the entrepreneur's incentive to divert the project.

In this context, having the bank lender hold a smaller share of the originated loans results in a welfare loss due to weakened discipline. With a smaller stake, the bank lender is less inclined to monitor diligently, even when they anticipate a higher likelihood of the entrepreneur diverting the project. This implies an important trade-off between the optimal share held by the monitoring creditor and the lower cost of capital, which we will explore next.

Optimal share f^* by the monitoring creditor. As discussed earlier, the loan share held by the monitoring creditor f is determined by finding the solution that optimally balances its impact on funding costs against its effect on equilibrium efforts. A higher non-bank lender share (i.e., lower

f) capitalizes on the lower funding cost of institutional investors but weakens the disciplining mechanism of the credit contract.

In general, when the monitoring creditor holds an increased share of the loan, their payoff from detecting the project in the B state increases. This implies a direct effect that heightens the bank lender's monitoring incentive, subsequently reducing the entrepreneur's incentive to divert the project. Consequently, with either split control ($p = 1$) or non-split control loans ($p = 0$), the entrepreneur's equilibrium choice of θ decreases as the bank lender's share increases. However, a decreased θ also triggers an indirect effect, lowering the bank lender's monitoring effort q , as it becomes less necessary to monitor when the borrower is less likely to divert.

From Corollary 1, the direct effect always dominates the indirect effect if the loan is arranged as a non-split control deal. Conversely, the indirect effect could dominate the direct effect for split control loans. This difference highlights the differential levels of reliance on the bank lender's loan share in incentivizing monitoring between split control and non-split control loan arrangements. Specifically, in non-split control loans, the bank lender's monitoring incentive relies exclusively on their stake in sharing the liquidation value L , making it sensitive to their loan share. In contrast, in split control deals, the bank lender shares the entrepreneur's private benefit b through bargaining, irrespective of their own loan shares. As a result, the positive direct effect of loan share on the bank lender's incentive to monitor is likely to be limited in split control loans.

In either split control or non-split control loan deals, the optimal bank lender share f^* is determined as the f that maximizes $V(f, p)$ as given by Eq. (6), with the renegotiation probability p evaluated at either $p_{NS} = 0$ or $p_S = 1$. Accordingly, we denote the optimal bank lender share in either case as f_{NS}^* or f_S^* , respectively. We have the following proposition summarizing key properties of optimal bank lender shares f_{NS}^* and f_S^* .

Proposition 1. Properties of optimal bank lender share

The optimal bank lender shares $\{f_{NS}^*, f_S^*\}$ satisfy:

- (i) For either $f^* \in \{f_{NS}^*, f_S^*\}$, $\frac{\partial f^*}{\partial \tau_E} < 0$;
- (ii) when β is sufficiently high, $f_S^* < f_{NS}^*$;
- (iii) An increase in b always raises f_{NS}^* , i.e., $\frac{\partial f_{NS}^*}{\partial b} > 0$, while the effect on f_S^* is ambiguous.

Item (i) of the above proposition is intuitive. When dealing with borrowers facing more severe agency problems (i.e., those with lower diverting cost τ_E), ensuring effective disciplining becomes increasingly important relative to saving on funding costs in maximizing the objective specified in Eq. (6). In such scenarios, the optimal design of the loan contract should therefore necessitate the bank lender to hold a relatively larger share to ensure effective disciplining (recall that by Corollary 1, the borrower's incentive to divert always decreases with the bank lender's share f).

As stated in item (ii) of Proposition 1, loans arranged with split control feature a lower optimal bank lender share than those arranged with non-split control, provided there is sufficient lender bargaining power in renegotiation. Economically, this is because, with non-trivial bargaining power, the bank lender shares the borrower's private benefit regardless of their own loan share

in split control deals. Therefore, the bank lender's share plays a less critical role in providing monitoring incentives (and hence disciplining of borrowers) compared to non-split control loans. In other words, it is less costly – in terms of weakening disciplining – to lower the bank lender's share when loans are arranged as split control. Therefore, it is optimal to encourage greater participation of non-bank institutional lenders in split control loans to capitalize on their funding cost advantage.

The entrepreneur's private benefit b from diverting the project, which also captures her valuation of continuing the project at date $\frac{1}{2}$, has a more subtle effect on equilibrium incentives and hence the optimal contract design. In non-split control loans, an increase in b directly raises the entrepreneur's incentive to divert, necessitating a larger share to be held by the bank lender. However, in split control loans, an increase in b has an additional effect—it allows the bank lender to extract more rents from renegotiation with the entrepreneur. This additional effect provides an alternative source incentivizing the bank lender's monitoring, in turn, allowing for a smaller bank lender share in the optimal contract. For instance, in the extreme case where the bank lender has all the bargaining power in renegotiation (i.e., $\beta = 1$), the bank lender's payoff from renegotiation is always b , regardless of their loan share. In such a scenario, an increase in the entrepreneur's private benefit only increases the bank lender's incentive to monitor (so as to collect the increased rent from bargaining) while leaving the diverting incentive of the entrepreneur unaffected.

Choice between split control versus non-split control. Our model also addresses another important aspect of contract design: the endogenous choice between split control and non-split control arrangements of the loan contract. Specifically, it is optimal to structure the loan contract with a split control structure if and only if

$$V(f_S^*, p_S) \geq V(f_{NS}^*, p_{NS}), \quad (7)$$

where the total net payoff function $V(f, p)$ is assessed at the respective optimal choice of bank lender share f^* for either control right arrangement. While analytical proof is challenging due to algebraic complexity, we numerically verify that this optimal choice between split and non-split control arrangements exhibits the following properties, as outlined in the proposition below.

Proposition 2. Optimal arrangement of control right

- (i) For fixed β and b , there exists a cutoff level $\hat{L}$ such that it is optimal to arrange the loan with a non-split control structure (i.e., $p = 0$) if and only if the liquidation value $L > \hat{L}$;
- (ii) For fixed L and b , there exists a cutoff level $\hat{\beta}$ such that it is optimal to arrange the loan with a split control structure (i.e., $p = 1$) if and only if lender's bargaining power $\beta > \hat{\beta}$.

The findings above, regarding the optimal choice of control right structure can be intuitively understood within our conceptual framework, which highlights the sources of the bank lender's

monitoring incentive. As discussed earlier, by successfully detecting the project being in the B status, the bank lender can either protect their liquidation value, or extract rents from the borrower if renegotiation can be arranged. When the project has limited liquidation value (i.e., L being relatively low) or if creditor can enjoy sufficient bargaining power in renegotiation (i.e., β being relatively high), renegotiation-based rent extraction becomes more effective in providing monitoring incentives. As a result, it is superior to facilitate the occurrence of renegotiation (e.g., by arranging split control rights so that $p = 1$) in such cases.

2.4. Numerical Solution and Model Predictions for Empirical Tests

In this section, we provide numerical illustrations of the model's predictions regarding how various factors affect the optimal contract design, from which we generate hypotheses for our empirical analysis.

2.4.1. Numerical Illustration of Optimal Contract Design

To highlight the important features of optimal contract design derived from our framework, we perform a series of comparative statics analyses numerically. These analyses explore how the optimal choice of contract design (f, p) is influenced by various economic factors.

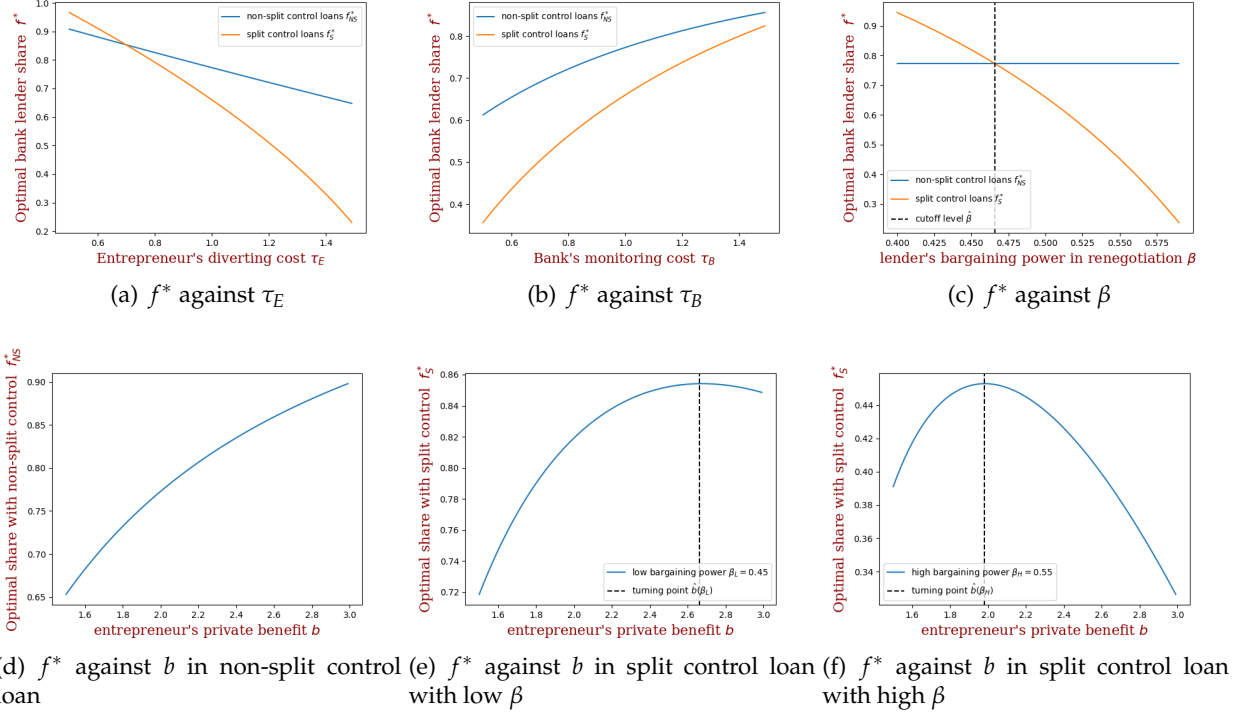
Figure 1 displays various comparative statics analyses regarding the optimal bank lender share f^* . First, for both non-split control and split control loans, the optimal contracts require the bank lender to hold increased share f^* when τ_E is lowered (panel a) or τ_B is higher (panel b). Intuitively, when the agency problem is more severe, either due to less costly diversion (i.e., lower τ_E) or more costly monitoring (i.e., higher τ_B), ensuring the disciplinary efficacy of the loan contract becomes more important than minimizing funding costs. In such cases, the contract design prioritizes discipline over cost savings to mitigate the agency problem's adverse effects.

Panel (c) displays how lender's bargaining power β in renegotiation affects the optimal design of contracts. Under our corner case specification with $p = 0$, the bargaining power parameter does not influence the contract design for non-split control loans, as expected. However, for split control loans with $p = 1$, the lender's bargaining power plays a significant role in two ways. First, we observe that higher lender bargaining power leads to a lower optimal bank lender share in the contract. Second, we observe that with sufficiently high lender bargaining (i.e., $\beta > \hat{\beta}$), split control loans have a lower optimal bank lender share compared to non-split control loans.

Panel (d)-(f) explore the impact of private benefit b on optimal bank lender share f^* . As described in Proposition 1, an increase in entrepreneur's private benefit always implies a higher bank lender share in the optimal design of non-split control loans (as shown in panel d). The relationship between the optimal bank lender share (f^*) and the loan size (b) in split control loans exhibits a non-monotonic, hump-shaped pattern. Specifically, as b increases, f^* initially rises but then declines after b surpasses a critical threshold $\tilde{b}(\beta)$

Fig. 1. Properties of optimal bank lender share f^*

This figure plots the comparative statics of the optimal bank lender shares regarding various model parameters. Parameterizations: $X = 4$, $L = 1.5$, $R = 2.5$, $b = 2$, $\tau_E = \tau_B = 1$, and $\beta = 0.5$.



In Figure 2, we numerically illustrate how the optimal choice between split control versus non-split control is affected by relevant economic factors. Panel (a) plots the optimized total net payoff with split control (i.e., $V(f_S^*, p_S)$) and non-split control (i.e., $V(f_{NS}^*, p_{NS})$) against the project liquidation value L . A single crossing pattern is observed. Specifically, the value function under a non-split control arrangement exhibits a higher sensitivity to fluctuations in the liquidation value (L) compared to that under split control. Consequently, for sufficiently high values of L , the optimized total net payoff is maximized when the loan is structured as non-split control. Similarly, as shown in panel (b), the value function under split control displays a higher sensitivity to variations in the lender's bargaining power (β) relative to that under non-split control. Accordingly, for sufficiently high values of β , the optimized total net payoff is maximized when the loan is structured with split control.

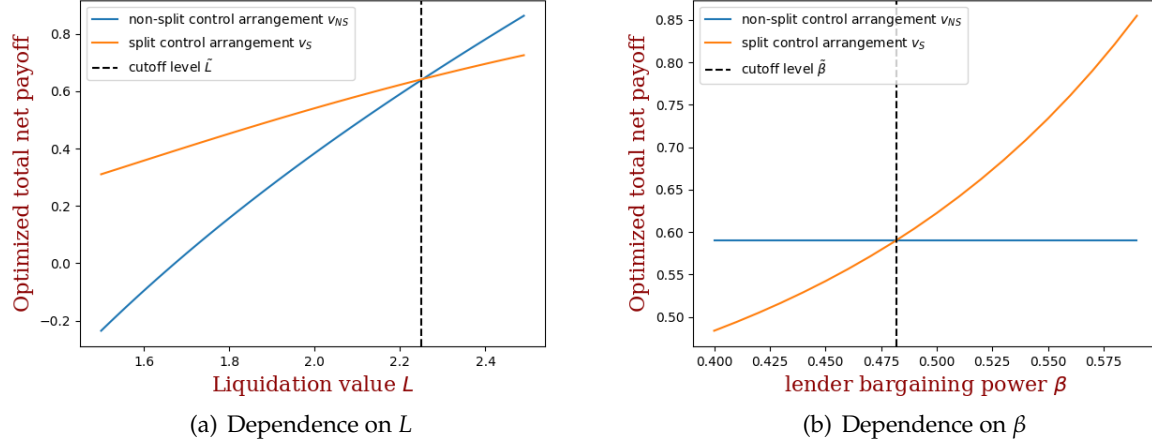
2.4.2. Hypotheses for Empirical Tests

This section develops hypotheses for our later empirical tests. In particular, our model delivers testable predictions in two important aspects: 1) how loans arranged with split control differ with those arranged with non-split control, and 2) how shocks to renegotiation environment affect loan contracting.

Fig. 2. Choice between split control versus non-split control

This figure plots the optimized total net payoff as functions of project liquidation value L (panel a) and creditor bargaining power β (panel b).

Parameterization: $X = 4$, $b = 2.5$, $\tau_E = 1$, $\tau_B = 1$, $R = 2.5$. In panel (a), $\beta = 0.5$; in panel (b), $L = 2.2$.



Differences between split control and non-split control loans. Our theoretical framework yields several testable hypotheses regarding the differences between split control and non-split control loans. First, we predict that split control loans will exhibit lower bank lender shares due to their reduced reliance on the loan stake-based channel for incentive provision. Additionally, since the liquidation value of assets (L) plays a more significant role in non-split control loans (as per Proposition 2, item *i*), we expect borrowers in non-split control loans to possess more tangible assets compared to those in split control loans. Moreover, according to Proposition 2, item *ii*, split control arrangements are likely to be superior when creditors have more favorable bargaining positions in renegotiations with borrowers. Therefore, we hypothesize that lenders in split control loans have relatively stronger bargaining positions (which occurs, for instance, when they have longer relationships with borrowers), compared with lenders in non-split control loans.

Formally, we propose the following hypothesis, which summarizes the predicted differences in loan characteristics between split control and non-split control loans. We empirically test this hypothesis later.

Hypothesis 1. *Loan characteristics differences*

Compared with non-split control loans, split control loans exhibit differences in the following aspects:

- i) split control loans have a smaller bank lender share;*
- ii) borrowers in split control loans have lower asset tangibility, and their loans are less likely to be secured;*
- iii) lenders in split control loans have a longer relationship with borrowers.*

Impact of shocks to renegotiation environment. The renegotiation environment plays a critical role in shaping the effectiveness of incentive provision through the rent extraction channel.

Later, in our analysis, we will exploit a policy shock that enhances creditors' bargaining power in renegotiation to empirically test the incentive provision mechanisms outlined in our theoretical framework.

Following this policy shock, which facilitates lenders' rent extraction in renegotiation with borrowers, we expect an increase in renegotiation occurrences as lenders are more incentivized to monitor and trigger renegotiation. Consequently, borrowers' incentives to divert the project are diminished, leading to improved loan performance.

The shock to the renegotiation environment is also likely to influence the contractual design of newly issued loans. Specifically, with strengthened incentive provision through ex-post rent extraction, the reliance on ex-ante compensation, such as upfront and annual fee payments, is expected to decrease. Moreover, because more effective incentive provision through the rent extraction channel can substitute for that from the loan stake-based channel, we predict lower bank lender shares in newly issued loans after the policy shock. These contractual changes are expected to be more pronounced among split control loans, where renegotiation frictions are relatively smaller. Finally, we expect an expansion of the boundary of split control loans, enabling marginal borrowers to access credit through split control loans.

We summarize our predictions on the expected changes in loan renegotiation and performance outcomes, as well as the impact on loan contracting following shocks to the renegotiation environment, as follows:

Hypothesis 2. *Impact of shocks to renegotiation environment*

Following a shock that positively affects lenders' bargaining position in renegotiation:

- i) for existing loans, renegotiation occurrence and rent extraction (e.g., amendment fees) increase, leading to improved loan performance, especially for split control loan;*
- ii) for the contractual design of newly issued loans, bank lenders' loan share decreases, and the inclusion of upfront and annual fees decreases, especially for split control loans;*
- iii) the boundary of borrowers receiving split control loans expands, enabling marginal borrowers to access credit through split control loans.*

3. Data and Sample Construction

3.1. Deal and Firm Information

This paper employs several datasets, detailed in this section. Our empirical analysis is restricted between 2005 and 2018.

Loan Contracts. We collect data on loan contracts from Loan Pricing Corporation (LPC) DealScan. The DealScan database has extensive and reliable information on loan pricing, contractual terms,

and conditions. DealScan provides deal and tranche level information, lender composition, and borrower information. We use this dataset to identify split control deals as leveraged loan deals consisting of cov-lite term loan tranches and a non-cov-lite revolving credit tranche.

Covenants. We collect data on loan covenants from Thomson Reuters SDC Platinum. SDC provides information on new issues, M&A, syndicated loans, private equity, project finance, and poison pills, among other financial transactions. We focus on data on syndicated loans and examine covenant features for the deals in our sample. The data is reported at annual frequency for new deals. Variables of interest include: whether the deal has a covenant, whether the deal was renegotiated, the rounds of renegotiation, whether the deal was amended, the details of covenants. For the details of covenants, we extract the text of financial covenants and categorize them into *Debt-to-Ebitda*, *Interest-coverage ratio*, *Fixed-charge coverage*, *Debt-Issuance* (including debt-to-equity ratio, debt issuance, and net debt issuance), and *Other*. We record the value of the financial covenants if it is also reported in the SDC database.¹³ We merge this data with our deal-level data to compare covenant features in split control and non-split control deals, before and after the tax policy.

Firm outcomes. We track firm outcomes using Compustat data provided through S&P Global Market Intelligence. Compustat provides standardized financial statement and market data for publicly traded companies. This includes data on firm fundamentals from balance sheets, statements of cash flows, income statements, and supplemental data outcomes. We use the Compustat at annual frequency, the variables of interests include size, age, profitability, sales, net debt issuance, R&D expenditures, capital expenditures, etc. We merge this data with our deal-level data to compare characteristics of split control borrowers to non-split control borrowers. Summary statistics of split control borrowers and non-split control borrower are reported in Appendix Table B.2.

3.2. Data Collection on Loan Renegotiation and Monitoring

In this section, we explain in detail how we collect information and construct variables related to loan renegotiation terms and lenders' monitoring commitments from SEC filings. We conduct keyword searches using the SEC API.¹⁴ To maximize matches, we restrict our search on the SEC API to firms with a Ticker symbol, which results in a total of 4,228 companies. We collected the data and augment all the negotiation outcomes at annual frequency.

Construction of loan renegotiation information. We obtain information on loan renegotiation outcomes from the renegotiation files supplementing the 10-Q and 10-K filings. In 10-K filings,

¹³SDC provides the details of financial covenant category incorporated, the value of each financial covenant, and whether a given financial covenant changed within the duration of the loan deal. Covenants that appear multiple times in the dataset with different thresholds associated with them suggest that the deal underwent renegotiation or amendment. We construct the rounds of renegotiation of a financial contract by counting the maximum number of times any financial covenant shows up with different thresholds in SDC.

¹⁴The SEC API provides platform to search and extract information of all the filings by publicly listed companies.

“Item 15: Exhibits, Financial Statement Schedules” display all the related files about the companies’ financial statements and changes to the companies’ agreements including credit agreements.¹⁵ We restrict our attention to changes in *credit agreements* between a company and its bank lenders. This is done by confining the search of documents to exhibits with titles of format “XX-th Amended and Restated Credit Agreement.”¹⁶ We collect all the credit amendment files shown as exhibits in 10-K and 10-Q filings during 2005 and 2018 for companies in our data set and conduct the relevant text searches.

Each amendment document outlines the involved parties, credit agreement details (including start date and amendment round), and associated lenders. The main body specifies modifications and adjustments to the credit agreement. The document concludes with a “Condition of Effectiveness” section, where lenders stipulate conditions for the amendment to take effect, including the borrower’s payment of an amendment fee (also referred to as “extension fees,” “monitoring fees,” or “renegotiation fees”). These fees, typically out-of-pocket expenses, represent a renegotiation outcome reflecting the extra charge lenders impose on borrowers. We extract the occurrence and magnitude of amendment fees as a direct measure of rent extraction. Additionally, we collect the ticker of the filing company, the credit agreement initiation date, and the agent bank of the credit agreement to match with our sample of deals.

To detect the initiation of amendment fees, we look for the occurrence of keywords such as “amendment fee,” “extension fee,” and “monitoring fee,” etc. We also require that the keywords for fees appear together with “administrative agents” and “agent banks” in the same paragraph to confirm that the fees are paid only towards agent lenders. In our sample, conditional on a loan being renegotiated and amended, the likelihood of fee charging is significantly higher for split control deals (42.76%) compared to non-split control deals (12.20%). This suggests that lenders in split control deals, with more concentrated control rights, are more likely to extract rents from borrowers during renegotiation.

Additionally, we extract information of the contents of renegotiation. Specifically, to identify accelerated repayments, we search for indicators such as “accelerated maturity,” “accelerated repayment,” and the co-occurrence of “acceleration” or “accelerated” with “repayment” or “maturity” in the text. For the inclusion of extra covenants, we search for phrases like “inserting in Section XXX” and “XXX is modified by adding the following paragraph” and require that the added paragraph contains specific financial covenants. For reductions in the borrowing amount, we search for the co-occurrence of “revolver amount” or “revolver credit line amount” and “decreased.” We locate 770 credit renegotiation and amendment documents filed as exhibits in 10-Q and 1,853 files in 10-K for companies with tickers in our sample. These amount to 1,732 unique credit amendments. 640 of the 1,732 amendments occurred before the enactment of TD9599 –

¹⁵For 10-Q filings, “Item 6: Exhibits” demonstrate the corresponding financial statements and changes in all kinds of agreements.

¹⁶For instance, Urban Outfitters incorporated its sixth amended and restated credit agreements in its 10-Q report in July of 2012, and in “Item 6 Exhibits” of that 10-Q filing, the firm demonstrated the “Sixth Amended and Restated Credit Agreement” for its loan contract with a group of syndicated lenders with Wachovia Bank as the administrative agents.

while 1,092 amendments occurred subsequent to TD9599.

Construction of monitoring commitment in loan contracts. Next, we complement loan renegotiation measures with lenders’ monitoring intensity and monitoring commitment measures. We extract these measures by conducting keyword searches in the original credit agreements.

When a company enters into a new credit agreement or renews an existing credit agreement, they are required to file for “Item 1.01: Entry into a Material Definitive Agreement” in their 8-K filings.¹⁷¹⁸ The original credit agreement is often appended to the 8-K filing as an exhibit, providing detailed information on the agreement’s terms. We retrieve all 8-K filings with “Item 1.01” entries for companies with active tickers in our sample, spanning the period from 2005 to 2018. From these filings, we extract the original credit agreements, as well as the signing dates and lead banks associated with each agreement. This information enables us to match the data with our existing deal dataset, providing a comprehensive view of the credit agreements.

To measure lenders’ monitoring intensity and monitoring commitment at loan origination, we extract information and construct three variables from the credit agreement files following [Gustafson et al. \(2021\)](#). First, we record the occurrence of a financial statement reporting requirement in the credit agreement by searching keywords such as “financial statement,” “income statement,” “delivery,” “submission.” Second, we record whether there are field examinations, inspections and appraisals of collateral by searching keywords such as “field exam,” “inspections,” “asset appraisal,” and “collateral appraisal.” We locate a total of 1,156 unique credit agreement files.

Summary statistics of key variables of our regression analysis are provided in Table 1. Table B.1 provides the definition of all the variables.

4. Corporate Lending with Non-Monitoring Creditors

This section traces the developments in corporate lending as institutional investors increasingly participate in the market. Our discussion begins with an overview of the leveraged loan market, where we explore the relationship between the growing presence of non-bank lenders and the emergence of cov-lite loans and split control deals. We then compare split and non-split control deals, and relate these patterns to our conceptual framework.

¹⁷For instance, in the 8-K form filed by CME Group Inc in January of 2011, “Item 1.01 Entry into a Material Definitive Agreement” documented the initiation of a \$1 billion multi-currency revolving senior credit facility credit agreement between the company and a syndicate of lenders, with Bank of America as the agent bank.

¹⁸These material definitive agreements could be credit agreements or other types of agreements such as employment agreements. For the purpose of our study, we focus on credit agreements.

4.1. Institutional Investors in the Leveraged Loan Market

The literature on banking and contract theory has long recognized the importance of lenders' incentives in conducting costly monitoring during credit contracting. Effective bank monitoring is crucial and provides social benefits, especially when borrowers face significant agency problems. However, the monitoring incentives of banks are ambiguous when banks hold relatively small stakes in the loans they originate together with other lenders.¹⁹

Unlike traditional bank lenders who are perceived as able to intensively screen and monitor borrowers, non-bank institutional investors are often seen as passive lenders with limited screening and monitoring capabilities (see e.g., [Becker and Ivashina \(2016\)](#), [Berlin et al. \(2020\)](#), [Gustafson et al. \(2021\)](#), [Chernenko et al. \(2022\)](#)).²⁰ Over the past two decades, however, the leveraged loan market has experienced a dramatic increase in the participation of these non-monitoring lenders. These participants include finance companies, insurance companies, hedge funds, distressed debt funds, loan mutual funds, and collateralized loan obligations (CLOs).²¹ We thus focus on the leveraged segment of the syndicated loan market, where the need for effective creditor monitoring is particularly acute, yet the presence of non-monitoring creditors is growing.²²

Several recent studies have identified various factors contributing to the increased participation of non-bank institutional investors in the leveraged loan market. These factors include the search for yield behavior in a low-interest-rate environment (e.g., [Becker and Ivashina \(2016\)](#), [Goel \(2018\)](#)), heightened regulatory requirements (e.g., [Loumioti \(2019\)](#), [Chernenko et al. \(2022\)](#)), and stricter securitization standards faced by banks following the financial crisis (e.g., [Irani et al. \(2020b\)](#), [Kundu \(2022\)](#)). Figure 3 illustrates the aggregate trends of institutional lenders' participation and the time series of split control deals (explained in the next section) in the leveraged loan market. Indeed, we observe a notable increase in institutional lenders' participation in the post-crisis period, characterized by a low-interest-rate environment and stricter banking regulations.

4.2. Split Control Deals in the Leveraged Loan Market

The increasing participation of institutional investors in the leveraged loan market has led to significant structural changes in loan contract design. In response to the entry of institutional investors, a distinct form of contractual arrangement known as *split control* has emerged to adapt

¹⁹The challenge of incentivizing lenders to conduct valuable yet costly monitoring bears resemblance to the long-standing concerns surrounding loan originators' motivation to thoroughly screen borrowers when they subsequently sell off the originated loans through securitization (e.g., [Keys et al. \(2010\)](#), [Drucker and Puri \(2009\)](#); [Blickle et al. \(2020\)](#)).

²⁰Relatedly, [Beyhaghi et al. \(2019\)](#) document that compared to bank lenders, non-bank investors are more likely to exit the syndicate rather than stay engaged in the lengthy and costly process of loan renegotiations, which are crucial for ensuring favorable loan and firm performance.

²¹According to the IMF, the proportion of leveraged loans held by non-bank institutional investors surged from approximately 30% in 2001 to over 80% in 2018. Concurrently, the percentage of loans held by banks declined from around 50% in 2001 to below 10% in 2018. The data is available at the 2019 [Global Financial Stability Report](#).

²²The leveraged loan market refers to a specific syndicated loan segment where loans are primarily made to relatively risky borrowers. Loan Pricing Corporation (LPC) defines a leveraged loan as a syndicated loan that is rated BB+ or lower or an unrated loan with an interest rate spread larger than 150 basis points. We follow the definition given by LPC. We refer readers to [Kundu \(2022\)](#) for more details on the classification of leveraged loans.

to the evolving dynamics of the leveraged loan market (see, e.g., [Becker and Ivashina \(2016\)](#) and [Berlin et al. \(2020\)](#)).²³ Split control deals are those in which institutional cov-lite loans are paired with revolving lines of credit, which are retained by banks and feature traditional financial covenants.²⁴ This split structure gives bank lenders the exclusive right and ability to monitor and renegotiate financial covenants. We follow [Berlin et al. \(2020\)](#) in our designation of split control deals. Specifically, we define a deal package in the leveraged loan market as a split control deal when it has cov-lite term loan tranches alongside a non-cov-lite revolving credit tranche. In other words, we refer to deals as split control deals if the financial covenants only apply to a subset of tranches and can be waived or modified only by a subset of lenders.

Differences between split and non-split control deals. As a starting point of our empirical analysis, we conduct a detailed examination of the differences between split control and non-split control deals based on their contractual structure, borrower characteristics, industry distribution, secured status, loan purpose, private equity sponsorship, and lender characteristics.

In terms of contractual structure, the first row of Table 2 shows the comparison of banks' share of the loan in split control deals and non-split control deals. The average bank commitment share in the split control deals is 22%, whereas for non-split control deals, the average bank commitment is 71%. This aligns with our hypothesis (Hypothesis 1) that in deals where control rights are concentrated among a smaller group of monitoring lenders, the equilibrium share of loans held by these lenders is smaller compared to deals without concentrated control rights. Figure 3 (first sub-figure) reveals a steady decline in banks' commitment share over time, accompanied by a corresponding increase in the share of non-bank lenders. This shift is accompanied by an increase in split control deals, which typically have lower bank shares, as illustrated in Figure 3 (fourth sub-figure).

Banks' commitment to leveraged loans has not only declined as a share of the market, but also in absolute dollar terms. This is evident in the top-right panel of Figure 3. The average amount committed by banks as lead arrangers in split control deals is significantly lower at \$20.03 million (median of \$11.25 million) compared to non-split control deals at \$27.84 million (median of \$19.98 million). This trend is further supported by firm-level data in Appendix Figure A.2, which shows a long-term decline in banks' share of total corporate debt.²⁵

Our analysis reveals distinct characteristics among borrowers involved in split control deals compared to those in non-split control deals, as shown in Panel A of Table B.2. split control borrowers tend to be smaller in asset size and have higher market-to-book ratios. Moreover, they ex-

²³Several recent studies have analyzed the transformation of loan contracts within the leveraged loan market. [Becker and Ivashina \(2016\)](#) demonstrate a clear correlation between the surge of cov-lite deals with the inflow of non-bank institutional investors in the leveraged loan market. [Berlin et al. \(2020\)](#) examine the expansion of cov-lite loans and highlight their consistent pairing with revolving lines of credit, which are retained by banks and feature traditional financial covenants.

²⁴Banks typically retain the revolving lines of credit, while the cov-lite term loans are typically held by non-bank institutional investors.

²⁵Our analysis accounts for potential changes in capital structure composition, ensuring that the observed decline in banks' share of debt is not merely an artifact of a shift towards term loans or other debt instruments.

hibit lower retained earnings, indicating a greater reliance on external financing, and fewer tangible assets, reflected in lower capital investment rates (Capex/assets) and tangibility (PPE/assets). Consistent with these traits, split control borrowers are more concentrated in intangible industries, such as Technology, Healthcare, and Business Services, as shown in Appendix Figure A.3.

These characteristics align with our model’s predictions, which suggest that the concentrated control rights in split control deals facilitate renegotiation-based rent extraction, rather than reliance on salvage value recovery. Our empirical evidence supports this theoretical prediction, showing that borrowers in intangible industries with limited fixed assets and lower tangible assets on their balance sheets are more likely to engage in split control deals. This highlights the significance of renegotiation-based rent extraction in split control deals, particularly in industries with limited tangible assets. Furthermore, split control deal borrowers exhibit a higher reliance on external financing, which, combined with their low tangibility, necessitates cash flow-based borrowing and enhances banks’ bargaining power in renegotiation. These findings support our theoretical model’s predictions, highlighting the significance of renegotiation-based rent extraction in split control deals.

Lender characteristics also play a crucial role in split control deals. Specifically, we find that well-capitalized and profitable banks with stronger lending relationships are more likely to participate in these deals, consistent with Hypothesis 1 of our model. These characteristics strengthen lenders’ bargaining position, enabling them to extract rents more effectively through renegotiation.²⁶ More details can be found in Appendix Table B.3.

5. Identifying the Renegotiation Channel: An Event-Based Analysis

Many theoretical studies in the incomplete contracting literature have recognized and analyzed the importance of ex-post renegotiation on the ex-ante design of contracts.²⁷ The primary goal of this paper is to empirically identify the renegotiation-based rent extraction mechanism. This mechanism, more likely to occur when control rights in a credit agreement are concentrated, serves as an alternative to skin in the game for providing monitoring incentives. It thereby facilitates the underwriting of credit agreements with concentrated control rights.

Empirical identification of this channel is challenging as it involves constructing exogenous shifters that exclusively impact lenders’ incentives to conduct monitoring through the renegotiation channel. Importantly, achieving a clean empirical identification requires shifters that do not influence the severity of the underlying agency problem. Otherwise, any observed effects on

²⁶Specifically more favorable bargaining position of relationship lender could be attributed to the information monopoly possessed by these lenders through information acquired during the lending process (e.g., [Rajan \(1992\)](#); [Schenone \(2010\)](#)).

²⁷The impact of ex-post renegotiation on ex-ante contract design has been acknowledged since the earliest seminal works on the allocation of control rights in credit contracts, including [Aghion and Bolton \(1992\)](#), [Dewatripont and Tirole \(1994\)](#), and [Berglöf and Von Thadden \(1994\)](#). Later, theoretical work such as [Bolton and Scharfstein \(1996\)](#), [Hart and Moore \(1998\)](#) and [Garleanu and Zwiebel \(2009\)](#) explicitly model the possibility of and friction in renegotiation between creditors and borrowers, and study their implications on the optimal design of credit contracts.

ex-ante contracting or ex-post loan outcomes cannot be attributed solely to changes in lenders' monitoring activities.

In this section, we conduct an event-based analysis to empirically identify the impact of a policy-induced change on both the ex-ante contracting features and the ex-post loan outcomes in the leveraged loan market. This empirical design exploits exogenous variation in lenders' net payoff from renegotiation to test the model predictions from our theoretical analysis in Section 2 and understand how banks' monitoring incentives as well as credit contracts in leveraged loan markets are causally affected by changes in renegotiation environments.

5.1. Background of TD9599 and Empirical Design

Our empirical analysis exploits the passage of TD9599 in 2012, a tax policy that altered the taxes owed on publicly traded debt. When debt is modified outside of bankruptcy proceedings (*out-of-court renegotiation*), the restructuring is treated as a taxable exchange.²⁸ The amount of taxes owed by the original lenders depends on the IRS' classification of the debt as *public* versus *private*. For privately traded debt, taxes are based on the difference between the *par value* of the newly-renegotiated debt contract and the original debt. Generally, the par value of out-of-court renegotiated debt is equivalent to the original par value. Thus, while debt holders may experience a capital loss from restructuring privately traded debt, they cannot claim tax credits (Asquith et al. (1994); Demiroglu and James (2015); Campello et al. (2018)). In contrast, for publicly traded debt, taxes are based on the difference between the *market value* of the newly-renegotiated debt contract and the debt's original par value. Debt holders can thus receive a tax credit from restructuring publicly traded debt as the market value is generally below the par value. Hence, the renegotiation payoff (costs) associated with publicly traded debt are generally higher (lower) for creditors than that associated with privately traded debt.²⁹

TD9599 changed the classification of privately and publicly traded debt on September 13, 2012, for out-of-court renegotiations. Prior to the passage of TD9599, debt was classified as publicly traded according to three conditions of a 1994 regulation: (i) the issue was exchange listed or market traded property; (ii) the issuance value appeared in a quotation medium; or (iii) the issuance value is quotable property in the 60-day period ending 30 days after the issue date of the debt instrument. TD9599 added a fourth condition that debt would be classified as public if a "soft quote" could be obtained from one broker, dealer, or pricing service — a condition satisfied by most syndicated loans (Campello et al. (2018)). In other words, the IRS revised TD9599 to include syndicated loans as publicly traded debt, by adding the fourth qualifying condition.³⁰

²⁸Such debt modifications may include changes in the issue's principal, maturity, timing of interest payments, yield, or recourse status (Campello et al. (2018)).

²⁹Consider a scenario where a bank provides a \$100 million revolver credit line to a borrower. Prior to TD9599, if the borrower's performance deteriorated and the market value of the loan was renegotiated to \$50 million, the lender would not have been entitled to any tax credit. However, with the implementation of TD9599, the lender is eligible to receive $\$0.35 \times (50 - 100) = \17.5 million in tax credit, assuming a tax rate of 35%. Thus, the tax credit is substantial.

³⁰See [this document](#) for explanation. Additionally, at the time, Cleary Gottlieb, a leading international law firm, stated: "The final regulations are likely to cause most syndicated loans to be treated as publicly traded, especially as a

One potential concern is that the passage of TD9599 might be endogenous to bank monitoring and its associated effects in the leveraged loan market. We argue that TD9599 was a plausibly exogenous event that occurred outside of the leveraged loan market. The announcement of TD9599 was unanticipated and the scope of the regulation was uncertain. The IRS drafted TD9599 in response to a request from the US Treasury to review the tax definition of public debt, which had remained unchanged since 1994. On January 6th, 2011, the IRS released an initial proposal for public comment. Notably, none of the comments cited renegotiation or enhancement of bank monitoring as a motive for the proposed change.³¹ In fact, the IRS did not specify which debt contracts would be subject to TD9599, nor did they provide a timeline for its adoption. Hence, the policy was unforeseen by market participants. Additionally, it is worth mentioning that IRS proposals often have a high discard rate of up to a third, and the IRS ranks as the second highest among U.S. administrative agencies for the length of time spent on drafting new documents (Yackee and Yackee (2016); Campello et al. (2018)). Given the uncertainty surrounding final approval and adoption, the passage of TD9599 presents a plausibly exogenous natural experiment to study how a reduction in lenders' renegotiation costs affects credit market outcomes. Furthermore, our analysis in Section 5.4 focuses on the outcomes of loan deals issued well before the tax policy was implemented. As such, the extent of selection bias in this analysis is limited.

This classification of syndicated loans as publicly traded debt substantially reduces the expected total costs associated with renegotiation. As a result, lenders of loan deals with concentrated control rights, which are easier to renegotiate, are more likely to benefit from lower renegotiation costs following the tax policy change. Indeed, we find evidence that agent banks involved in split control deals decrease their skin in the game, as proxied by the size of revolving credit facilities during renegotiation, more significantly after TD9599.

In the following sections, we explore the impact of this plausibly exogenous tax policy on loan renegotiation and the monitoring activities of creditors that trigger such renegotiation (Section 5.2). We then investigate the policy's impact on both the ex-ante design of credit contracts (Section 5.3) and the ex-post performance of outstanding loan deals (Section 5.4). Specifically, we investigate how the policy impact varies between loan deals with concentrated control rights (split control) and those with dispersed control rights (non-split control).

Our baseline regression specification is the following:

$$Y_{(i),d,s,t} = \alpha_i + \gamma_s + \mu_t + \beta \times \text{Split Control}_{d,t} \times \mathbb{1}[\text{Post}]_t + \beta_1 \times \text{Split Control}_{d,t} + \epsilon_{d,s,t}. \quad (8)$$

The left-hand side variables include the occurrence and frequency of renegotiation, the occurrence and size of amendment fee charges, and various contractual features. These variables are used to examine how split control and non-split control deal contracts change in specific features around the activation of TD9599. In the specification, i stands for the borrowing company, d stands for

result of the fact that indicative quotes — a term that is very broadly defined — may cause a loan to be publicly traded.”

³¹See IRS TD 9599.

the deal, s indicates the two-digit industry of the borrower that issued the deal, t represents the year during which the deal was originated. On the right-hand side, the coefficient of interest is the interaction term $\text{Split Control}_{d,t} \times \mathbb{1}[\text{Post}]_t$, where the dummy variable $\text{Split Control}_{d,t}$ takes a value of 1 if the deal d issued in year t is a split control deal and $\mathbb{1}[\text{Post}]_t$ is a dummy variable that equals 1 if year t is after the passage of TD9599 (we treat years 2013 and after as post-event years). We include year fixed effects, which absorb the dummy variable indicating post-TD9599. We also include industry fixed effects to account for industrial factors that could drive the contractual changes on the demand side. In all of our main regression tables, we progressively add deal-level control variables including the size of the deal (measured by the natural log of the deal amount), maturity, and deal spread. In our baseline analysis, we focus on publicly traded companies, as this enables us to maintain a consistent sample of comparable firms and incorporate firm fixed effects, thereby controlling for time-invariant firm-specific characteristics that may influence the outcomes. We control for the borrowing firm’s size, profitability, tangibility, retained earnings, and leverage ratio at the time of origination.

We conduct a series of robustness checks. First, we control for additional factors, such as deal and firm characteristics. Second, we present results that include deals from both publicly traded and privately held companies. Third, we additionally report regression results, focusing on deals originated between 2010 and 2016. Lastly, we include results from an entropy balancing regression that equates the distributions of firms’ tangibility, retained earnings, and leverage ratios between split control and non-split control borrowers, mitigating the influence of potential confounding factors (Hainmueller (2012)).

5.2. *Heterogeneous Impact on Renegotiation*

The goal of the paper is to empirically establish that concentrated control rights in loan contracts facilitate renegotiation-based monitoring, which functions as an alternative to the traditional stake-based channel in the provision of monitoring incentives. To achieve this goal, our empirical strategy tests whether split control deals and non-split control deals respond differently to a specific shock to the renegotiation environment – the passage of TD9599. This leads us to investigate the role of split control deals in renegotiation, which is the focus of the next section.

Renegotiation and control rights concentration. This section explores how split control deals facilitate renegotiation by concentrating control rights with lead banks. We show that the split control arrangement enables lead banks to extract rents through amendment fees during renegotiation, consistent with the rent-extraction channel proposed in Section 2.

Split control deals streamline the renegotiation process by concentrating control rights with lead banks. As demonstrated by Caskey et al. (2021) and Martin et al. (2023), the presence of multiple lenders in a syndicate can increase coordination costs among lenders, particularly in non-split control deals where control rights are equally allocated among all lenders. This is reflected in our sample, where split control deals undergo an average of 3.96 renegotiations compared to 2.43

for non-split control deals.³²

Figure 4 illustrates the distinct amendment fee structures for split and non-split control deals. Panel (a) showcases a split control deal between Toll Brothers Inc. and its lenders, where the administrative agent receives a fee of 0.15% of the revolving credit commitment. In contrast, Panel (b) highlights a non-split control deal amendment between Flowers Food Inc. and its lenders in a syndicated loan agreement, where fees are distributed proportionally to each lender's loan commitment. The validity of the amendment is contingent upon Flowers Food Inc. paying fees to each individual lender.

Notably our sample shows that when amendment fees are charged, split control deals have an average fee of 0.36 percentage points of total loan commitment size, significantly higher than the 0.08 percentage points average for non-split control deals. This difference in fee structure suggests that lenders in split control deals have greater discretion over renegotiation terms, potentially enabling them to extract rent through renegotiation.

These findings motivate our examination into how aspects of loan renegotiation change with the tax policy for split and non-split control deals in response to the passage of TD9599. We investigate this next.

Impact on loan renegotiation occurrence. We begin by directly examining changes in loan renegotiation around the tax policy for split and non-split control deals.

Our analysis of renegotiation encompasses several aspects, including the incidence and frequency of loan deal renegotiation (measured by the number of renegotiation rounds) and whether lead arrangers of split control deals are more likely to charge fees.³³

Our findings in Table 3 support (i) of Hypothesis 2. The table shows results from a regression analysis based on Equation (8). These results suggest that the tax policy change (TD9599) led to more creditor involvement for split control deals. Specifically, Column (2) indicates that after TD9599, split control deals are 5.52 percentage points more likely to experience at least one renegotiation or amendment compared to non-split control deals. Additionally, Column (7) shows that split control deals went through an average of 0.31 additional rounds of renegotiation following the policy change. We show that these findings are robust in other columns. Our findings align with our theoretical framework, showing that a reduction in renegotiation costs leads to a greater increase in renegotiations for split control deals compared to non-split control deals. This is because split control deals involve concentrated control rights and rely more heavily on renegotiation as a means of monitoring, making them more sensitive to changes in renegotiation costs.

³²In our model, we simplify the setup by assuming non-split control deals do not renegotiate, but the theoretical results hold without loss of generality.

³³As a graphical analysis, Figure A.4 illustrates the frequency of renegotiation in loan deals before and after the implementation of the tax policy. We observe that prior to policy, both split control and non-split control deals experienced an average of approximately 2.0 to 2.5 rounds of renegotiation. After the tax policy, split control deals experienced a substantial increase in the number of rounds of renegotiation, averaging around 3.5 rounds of renegotiation one year later. In contrast, the number of rounds of renegotiation for non-split control deals remained around 2.5.

Impact on loan renegotiation terms. We further examine the differential impact of the policy on the terms of renegotiation for split control and non-split control deals. Table 4 presents the results. Our findings provide evidence of the renegotiation-based rent extraction mechanism. Following the tax policy change, banks in split control deals exhibit a significantly higher likelihood of undertaking various actions in renegotiation compared to those in non-split control deals. Specifically, after the tax policy, banks in split control deals are 0.82 percentage points more likely to reduce the borrower’s credit limit in the revolving credit line tranche (Column (2)), are 2.29 percentage points more likely to extend the maturity of the deal (Column (5)), and 2.28 percentage points more likely to include new covenants after renegotiation (Column (8)).

Impact on loan renegotiation rent extraction. Amendment fees are another important aspect of renegotiation outcomes. To this end, we examine two aspects of amendment fees: (i) whether such fees were levied, and (ii) the corresponding fee amounts, giving us a direct measure of how much extra lenders were able to extract from borrowers during renegotiation.

Table 5 presents the regression results for the likelihood of fee charges, showing that, post TD9599, borrowers in split control deals are 3.82 percentage points (Column (4)) more likely to be charged amendment fees by their agent banks, compared to non-split control deals. Table 6 reports the regression results for the size of amendment fees, conditional on fees being charged. We find that agent banks in split control deals charge 9.57 basis points (Column (4)) higher amendment fees, on average, post TD9599. These findings support Hypothesis 2(i), indicating that the decreased costs associated with renegotiation lead to a greater extraction of rents by agent banks in split control deals. We show that these findings are robust in other columns.

5.3. *Impact on Loan Contracting*

Building on our analysis of renegotiation outcomes and creditor monitoring in Section 5.2, we now explore how these changes influence the ex-ante design of credit contracts in the leveraged loan market. Specifically, we compare the characteristics of loan deals issued before and after the tax policy.

5.3.1. *Impact on monitoring commitment in credit agreements.*

Thus far, we have provided suggestive evidence that creditors conduct more diligent renegotiation-based monitoring, indicated by the higher frequency of renegotiations, and increased ability to extract rents measured by the renegotiation fee (e.g., Rajan and Winton (1995), Park (2000)). This effect is particularly pronounced for split control deals, where the concentration of control rights at agent banks enables them to capitalize more effectively on the reduced costs associated with renegotiation.

This section strengthens this argument by providing direct evidence that banks increase their monitoring intensity and commitment in response to the tax policy. We further show that these

changes are larger for split control deals compared to non-split control deals.

To empirically gauge bank lenders' monitoring intensity and commitment, we extract information from the original credit agreements filed under the 8-K. Following [Gustafson et al. \(2021\)](#), we construct two measures of lenders' monitoring intensity. The first measure is a dummy variable indicating whether the credit agreement mandates firms to provide a financial statement. The second measure is a dummy variable indicating whether lenders conduct on-site field examinations of the borrowing firm.

Table 7 presents the results of our analysis, which reveal a significant increase in monitoring intensity for split control deals following the tax policy. Specifically, we find that the likelihood of requiring periodic financial statement deliveries increases by 1.57 percentage points (Column (1)) more for split control deals compared to non-split control deals after the tax policy. Additionally, the likelihood of conducting on-site field exam requests increases by 0.82 percentage points more for split control deals compared to non-split control deals after the tax policy.

These findings indicate that the sensitivity of monitoring incentives to changes in renegotiation environments differs between split control and non-split control deals. The greater sensitivity of split control deals to the tax policy reflects their higher dependence on renegotiation-based mechanisms for providing monitoring incentives, consistent with our theoretical model. These results align with our previous findings in Section 5.2, which showed an increase in renegotiation frequency and rent extraction through amendment fee charges.

5.3.2. *Impact on covenants and other contracting features.*

This section investigates the impact of the tax policy on the contractual features of loan deals issued to leveraged borrowers. Specifically, our analysis aims to understand how changes in banks' monitoring incentives, resulting from the reduction of renegotiation frictions, translate into various aspects of contractual outcomes in the leveraged loan market, with a focus on covenants – an important device for monitoring borrower behavior.

Covenant inclusion. We explore the impact of the tax policy on covenant-based monitoring in loan contracts, focusing on the inclusion and tightness of covenants. As covenants serve as contractual devices that enhance banks' incentives to monitor ([Rajan and Winton \(1995\)](#)), we investigate how the tax policy affects covenant-based monitoring in split and non-split control deals.

Table 8 shows the impact of the tax policy on the total number of financial covenants. The results in Column (1) indicate that, on average, split control deals have 1.85 more financial covenants than non-split control deals after the implementation of TD9599. We show that these findings are robust in other columns. Additionally, Appendix Figure A.5 illustrates the time-varying regression coefficients, which further confirm that the increase in covenant inclusion is significant for split control deals relative to non-split control deals following the tax policy.

In Table 9, we further examine how the inclusion of specific types of covenants are affected by TD9599 for split and non-split control deals. The outcome variables are indicators that re-

flect whether there are covenants that restrict a firm’s debt-to-ebitda, interest coverage, fixed charge coverage, debt issuance (including debt-to-equity ratio), or other measures, respectively. As shown in the table, after the tax policy, split control deals exhibit a higher likelihood of including covenants related to debt-to-ebitda (8.62 percentage points), fixed-charge coverage (3.24 percentage points), and interest coverage (3.38 percentage points), compared to non-split control deals. The results are robust to controlling for deal- and firm-level variables. Appendix Table B.4 provides the robustness check of Table 9 with different samples and with entropy balancing.

Our findings indicate that when renegotiation costs are lower, banks in split control deals benefit more. Split control structures concentrate control rights, allowing them to capitalize on the reduced costs of renegotiation. This incentivizes these banks to conduct more rigorous covenant-based monitoring compared to lenders in non-split control deals, where coordination challenges among lenders inflate costs.

Furthermore, by analyzing the coefficient magnitudes, we observe a distinct preference for covenants that assess cash flow’s ability to service debt, such as debt-to-EBITDA and interest coverage ratios. This is evident in the statistically significant difference between the coefficients of profitability and capital structure covenants (see row *p-value* of Table 9). The preference for profitability covenants indicates that lenders are more actively monitoring borrowers’ managerial actions. These covenants provide earlier warning signs of declining credit quality compared to capital structure covenants, which typically only become binding after significant losses occur (Christensen and Nikolaev (2012)).

Covenant tightness. Our results, thus far, indicate a more pronounced response in covenant inclusion among split control deals after the tax policy, suggesting a greater emphasis on covenant-based monitoring, particularly on the extensive margin. We now examine whether this is accompanied by changes in covenant tightness on the intensive margin. Tighter covenants could also reflect a greater propensity to monitor and renegotiate.

Tables 10 and 11 present the differences in covenant tightness between split and non-split control deals around the tax policy. Table 10 shows that lenders in split control deals impose tighter debt-to-ebitda, fixed charge, and interest coverage covenants. Table 11 constructs a measure of covenant tightness, following Murfin (2012) and finds that split control deals exhibit 0.35 percentage points higher covenant strictness compared to non-split control deals after the tax policy.³⁴ Our findings indicate that split control deals feature more stringent covenants and more frequent amendments and renegotiations compared to non-split control deals, consistent with Murfin (2012)’s observation that covenant stringency is positively correlated with post-covenant violation outcomes.

Collectively, these results indicate that split control deals feature a greater number of covenants and stricter terms compared to non-split control deals, following the tax policy. This builds on our

³⁴Following Murfin (2012), we estimate the covariance matrices of strictness measure using historical changes in the natural logarithm of ebitda-to-debt ratio, interest coverage ratio, fixed charge coverage ratio for each borrower-deal, as these three are the most commonly seen in the leveraged loan deals.

earlier findings in Section 5.2, which revealed a higher frequency of renegotiations in split control deals. The increased focus on covenants and stricter terms suggest that lenders, particularly in split control deals where lenders hold exclusive control rights, intensify their monitoring efforts through these mechanisms.

Other Contractual Features This section considers the differences of other contractual features between split and non-split control deals, and explores how these features change for split deals in the pre- and post-tax policy periods.

- **Fees:** Our model predicts that split control deals have lower upfront fees due to their increased reliance on renegotiation-based incentives, which diminish the need for ex-ante compensation, thereby reducing the upfront fee structure.³⁵ Consistent with this, we find that split control deals have lower upfront fees (19-36 bps lower) compared to non-split control deals. After the tax policy, which reduces renegotiation costs, upfront fees in split control deals decrease by almost half.³⁶
- **Loan Purpose and Deal Sponsorship:** Our model predicts that split control deals are more likely to involve private equity sponsorship and fund buyouts, as private equity sponsors can effectively substitute for the reduced monitoring intensity from banks in split control deals.³⁷ However, following the tax policy change, which reduces renegotiation frictions, banks have stronger incentives to actively monitor borrowers, making them more likely to engage in split control deals with firms that require closer monitoring. Our results support these hypotheses.
- **Boundary of the Leveraged Loan Market:** Relatedly, we find that split control deals are more likely to feature speculative borrowers (rating below B3), and that this likelihood increases after the tax policy, as banks become more willing to lend to marginal firms.
- **Secured Loans:** Our model predicts that borrowers with high external financing needs and low asset tangibility are more likely to opt for split control deals. Consistent with this prediction, our findings show that split control deals are more likely to be secured by collateral, but less likely to be asset-based, and are predominantly concentrated in industries with high intangible assets, such as technology, healthcare, and business services.

³⁵Fees are compensation for options embedded in credit contracts (Thakor et al. (1981); Berg et al. (2016)). As split control deals rely more on the renegotiation-based channel for incentive provision, they are predicted to be less-reliant on upfront fees.

³⁶When the renegotiation cost (payoff) is relatively low (high), banks demand lower ex-ante compensation in the form of fees. This hypothesis is in the spirit of Williamson (1983) who argues that advance payments are equivalent of posting a “hostage” or a credible commitment that prevents parties from opportunistically changing contract terms during renegotiation.

³⁷The existing literature suggests that buyouts and private equity sponsorship can reduce agency costs and increase firm value by improving corporate governance and fostering managerial discipline. See, e.g., Jensen and Meckling (1976); Jensen (1986); Lehn and Poulsen (1989); Kaplan (1989); Smith (1990); Innes (1990); Muscarella and Vetsuypens (1990); Cotter and Peck (2001); Badoer et al. (2021). Consequently, private equity can effectively serve as an external monitor and deals with private equity firms are considered less prone to agency problems.

See Appendix Tables B.5 and B.6 for a comprehensive summary of the differences between split and non-split control deals, as well as the changes in split control deals before and after the tax policy. Additional details on the loan purpose, industry composition, and geography of firms can be found in Appendix Tables B.7 and B.8, and Appendix Figures A.3, A.6, A.7, and A.8.

5.4. Impact on (Pre-existing) Loan Outcomes

A potential concern with our analysis is that the comparison between loan contracts before and after the tax policy change might involve different borrowers with varying monitoring needs. This could potentially confound the observed differences between split control and non-split control deals. To mitigate this concern, we complement our analysis in Section 5.3 with an examination of the tax policy's impact on the ex-policy performance of borrowers with pre-existing loan deals on their balance sheets. This approach enables us to isolate the effect of creditors' monitoring on the same set of borrowers, providing insights into whether intensified monitoring influences borrowers' real performance outcomes.

In our ideal thought experiment, we compare the performance changes of two borrowers — one that has split control contracts to one that does not — before and after the tax policy. To this end, we restrict our sample to firms with outstanding split or non-split control deals in 2013 when TD9599 was enacted. Specifically, we run the following regression specification, comparing how firms with pre-existing split control deals before the tax policy perform, compared to firms with pre-existing non-split control deals, after the passage of the policy:

$$\text{Perf}_{i,s,t} = \mu_i + \gamma_s + \mu_t + \beta \times \mathbb{1}[\text{Split control borrower}]_i \times \text{Post}_t + \epsilon_{i,s,t}, \quad (9)$$

where *split control borrowers* are defined as firms with pre-existing split control deals at the time of TD9599. The dependent variable is the performance of firm i of industry s in year t . The key explanatory variable, $\text{Split control borrower}_i \times \text{Post}_t$, is the interaction between an indicator for whether firm i has split control deals on its balance sheet and an indicator for whether year t is after TD9599. The dummy variable $\mathbb{1}[\text{Split control borrower}]_i$ takes a value of 1 if firm i had a split control deal in place prior to the policy change and the deal remained outstanding at the time of the policy change, and 0 otherwise. For the dependent variable, *Perf*, we estimate the firms' probability of bankruptcy within 1 year and within 3 years, respectively, using the approach outlined in Bharath and Shumway (2008a). To account for unobserved firm characteristics that may influence performance, we include firm fixed effects. Our regression specification also controls for industry and year fixed effects, as well as firms' balance sheet conditions, paralleling our previous regression models.

We present our findings in Table 12. We find that after the tax policy, firms with outstanding split control deals on their balance sheet experience significant improvements compared with firms with non-split control deals on balance sheet. As shown in Column (2) and column (6), on

average, the estimated probability of 1-year bankruptcy is decreased by an additional 1.28 percentage points for split control deal firms after TD9599; and the estimated probability of 3-year bankruptcy is decreased by an additional 1.82 percentage points. We show that these findings are robust in other columns.

These findings demonstrate that reductions in renegotiation costs — which strengthen creditor’s monitoring incentives — have a more pronounced impact on the performance of split control borrowers compared to non-split control borrowers. We defer detailed discussion on this issue and related policy implications to the next section.

5.5. *TD9599 or Leveraged Loan Guidance?*

To the best of our knowledge, no other regulatory or market events during this period can explain our findings. However, there is one salient event that might raise concerns: the leveraged loan guidance issued in March 2013. This guidance aimed to reduce financial system risk by discouraging banks from engaging in risky leveraged loan origination practices. A potential concern is that if non-banks began retaining larger shares of split control deals in response to this guidance, our findings might reflect the guidance’s effects rather than those of TD9599. However, Figure 3 demonstrates that the rise in split control deals reflects a longer-term trend beginning in 2005, rather than a direct response to the guidance. This trend coincides with a steady decline in bank participation in syndicated loan deals over the same period.

We rule out that our findings are driven by the leveraged loan guidance in several ways. First, unlike TD9599, the leveraged loan guidance did not alter renegotiation dynamics or create direct incentives for monitoring through rent extraction. The guidance focused on banks’ origination practices, whereas TD9599 had clear, measurable impacts on renegotiation behavior. This distinction supports the conclusion that the observed changes—particularly increases in amendment fees, covenant tightness, and monitoring intensity—are better explained by TD9599, which directly affected renegotiation costs, unlike the guidance. Additionally, split control deals depend on concentrated control rights to enable renegotiation, aligning with TD9599’s focus on making renegotiation more accessible and affordable. This mechanism does not connect directly with the leveraged loan guidance, which was oriented toward general risk management at origination.

Second, the timing differences between TD9599 and the leveraged loan guidance further support TD9599 as the main driver of our findings. The guidance, issued in March 2013, initially lacked enforcement clarity, clear penalties for non-compliance, and a precise definition of “leveraged loans.” As noted by Kim et al. (2018) and Calem et al. (2020), banks did not significantly alter their behavior until November 2014, when regulatory agencies issued clarifying FAQs. By contrast, our Appendix Figures A.4 and A.5 show a marked increase in renegotiation activity immediately following TD9599’s enactment in late 2012.

Finally, for our findings to be attributable to the leveraged loan guidance, the guidance would need to correlate closely with the presence of split control deals. However, our analysis spans both new and pre-existing deals, highlighting TD9599’s role. If the guidance were responsible, we

would not expect to see effects on pre-existing deals. In Section 5.4, we show that pre-existing split control deals outperformed non-split control deals after TD9599. Together, these points demonstrate that our findings are driven by the altered renegotiation environment introduced by TD9599, not by the leveraged loan guidance.

5.6. Discussion and Policy Implications

The dramatic increase in institutional investors' participation in the risky segment of corporate lending that requires intensive monitoring raises questions regarding the outcomes in related credit markets. In particular, we ask whether the resulting lower stake held by the bank lenders necessarily leads to insufficient monitoring and suboptimal loan outcomes. If so, how can regulatory and fiscal policy minimize the inefficiencies associated with the rising participation of institutional investors? While we do not aim to provide definitive normative answers to these questions, the findings we present above in this section have important policy implications regarding this issue.

Our findings indicate that the level of monitoring prior to the implementation of the tax policy may have been inadequate, as evidenced by the significant improvement in the performance of split control borrowers after the policy enactment. Put differently, if creditors had been sufficiently and effectively monitoring borrowers, we would expect minimal impact on loan outcomes following the reduction in renegotiation frictions. This implies that the inflow of non-monitoring institutional investors may be associated with insufficient monitoring in the leveraged loan market in the presence of frictions in the renegotiation process.

Finally, our findings on the contractual impact of the tax policy also have implications beyond the leveraged loan market. For instance, the decrease in bank lenders' usage of revolving credit after the tax policy, particularly for split control deals, suggests that in the presence of non-monitoring institutional investors, banks may rely heavily on revolving credit to commit to monitoring unless renegotiation frictions are sufficiently low. This, in turn, may increase the banking sector's vulnerabilities to demand-driven liquidity shocks or potentially squeeze the banking sector's supply of credit lines to borrowers who rely on them for liquidity insurance purposes. Therefore, policymakers may consider these implications when designing regulatory policies for credit markets that involve non-monitoring creditors with limited capabilities.

6. Conclusion

The increasing participation of institutional investors in the risky segment of corporate lending, where effective creditor monitoring is crucial, challenges the traditional view that banks must retain a substantial stake in their loan originations to maintain adequate monitoring incentives. This paper proposes a new mechanism that rationalizes this *monitoring with small stakes* puzzle and provides empirical evidence to support and identify this mechanism.

Creditor monitoring is driven by two key incentives: potential losses from inadequate monitoring and the prospect of rewards for effective monitoring. Building on this insight, we propose a novel framework that identifies two distinct mechanisms for motivating banks to engage in monitoring: skin in the game and rent extraction. The former relies on banks retaining loan ownership to align incentives through direct exposure to credit risk. The latter involves banks leveraging their concentrated control right initiate renegotiations and conduct monitoring, securing benefits that are not shared with non-monitoring creditors.

We apply this framework to examine contractual and real outcomes in the leveraged loan market, characterized by significant institutional investor participation. Our empirical analysis compares loan deal characteristics in this market segment and finds that split control arrangements are more likely in deals involving borrowers with lower agency frictions or where creditors possess stronger bargaining positions. In essence, banks can hold smaller stakes when monitoring is less important or alternative incentives for monitoring exist.

To empirically identify this renegotiation-based mechanism, we conduct an event-based analysis, leveraging the activation of the TD9599 tax credit as a natural experiment. This empirical design allows us to exploit the plausibly exogenous variation in creditors' expected payoffs from renegotiation and examine its impact on the leveraged loan market. Our findings show that a less frictional renegotiation environment improves creditors' incentives to monitor, especially for loans with concentrated control rights where renegotiation can be more flexibly initiated, and thus facilitates the participation of non-monitoring institutional investors.

Notably, our empirical analysis reveals an asymmetric policy impact on both contracting and real outcomes between loans with concentrated creditor rights (split control) and those with diffuse control rights (non-split control). On the contracting side, we find that the tax policy has a significant influence on the contractual features of new split control deals compared to non-split control deals. On the real side, we find that the passage of the tax policy has a greater impact on the performance of borrowers with existing split control deals compared to those without such deals. Importantly, we provide direct evidence that these differences are attributable to changes in banks' monitoring behavior, driven by increased payoffs during renegotiation.

In conclusion, our analysis sheds new light on the debate surrounding the efficacy of traditional bank-led monitoring in the leveraged loan market, particularly in the face of growing institutional investor participation. Our novel mechanism and empirical findings help rationalize the *monitoring with small stakes* puzzle in the leveraged loan market. Our findings offer valuable insights into the dynamics of the leveraged loan market and have broader implications for understanding lender composition shifts in other credit markets.

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Fig. 3. Aggregate Trend of the Leveraged Loan Market

This figures below show the aggregate trend of the leveraged loan market. The first figure (top left) plots the time trend of bank lender and non-bank lenders' dollar share in the leveraged syndicated loan market. The red dashed line shows the proportion of aggregate loan amount lent by non-bank lenders, the blue dashed line shows the proportion of aggregate loan amount lent by bank lenders. Non-bank lenders mainly include mutual funds, pension funds, hedge funds, and other types of institutional investors. The second figure (top right) shows the total dollar amount lent by bank lenders and lead bank lenders in the U.S. leveraged loan market. The dollar amount is calculated by multiplying dollar tranche amount with the percentage share contributed by bank lenders for each tranche, and then aggregate to year level. The proportion of deals with non-missing lenders' shares (and lenders' amount contributed) is demonstrated in Figure A.1. The third figure (bottom left) plots the time trend of the proportion of deals with non-bank lenders. The fourth figure (bottom right) shows the proportion of total dollar amount of deals with institutional lenders participation over time. The frequency of the data is annual.

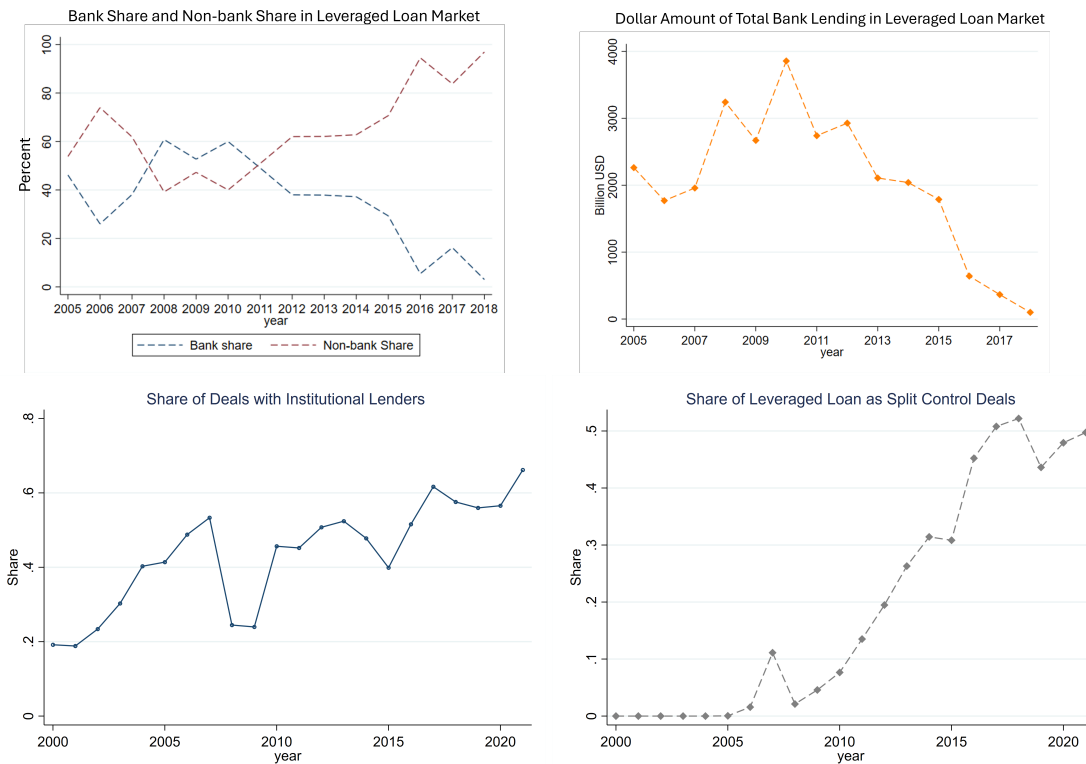


Fig. 4. Amendment Fee as a Form of Rent Extraction

4. Conditions of Effectiveness of Amendment. This Amendment shall not become effective until the Administrative Agent shall have received each of the following in form and substance satisfactory to the Administrative Agent:
- (a) Execution and Delivery. Each of the Loan Parties and the Required Banks shall have executed and delivered to the Administrative Agent this Amendment.
 - (b) Fees and Expenses. The Borrowers shall have paid or caused to be paid all fees and expenses for which the Administrative Agent is entitled to be paid or reimbursed, including fees
 - (c) Consents. The Loan Parties shall have delivered all material consents, if any, required to effectuate the transactions contemplated by this Amendment.
 - (d) Legal Details. All material legal details and proceedings, if any, in connection with the transactions contemplated by this Amendment shall be in form and substance satisfactory to the Administrative Agent and counsel for the Administrative Agent, and the Administrative Agent shall have received all such other counterpart originals or certified or other copies of such documents and proceedings in connection with such transactions, in form and substance satisfactory to the Administrative Agent and said counsel, as the Administrative Agent or said counsel may reasonably request.
 - (e) Amendment Fee. The Borrowers shall have paid or caused to be paid to the Administrative Agent, for the account of each Bank signatory hereto, an amendment fee (the “**Tenth Amendment Fee**”) equal to .15% of the aggregate amount of each such Bank’s outstanding Revolving Credit Commitments as of the date hereof. The Tenth Amendment Fee is due and payable on the date hereof, and fully earned and non-refundable on the date hereof.
 - (f) Other Documents and Deliveries. The Administrative Agent shall have received such other documents, instruments or other materials as it shall have reasonably requested.
5. Force and Effect. Each of the Loan Parties: (a) reconfirms, restates, and ratifies the Credit Agreement, the Loan Documents and all other documents executed in connection therewith except to the extent any such documents are expressly modified by this Amendment; (b) confirms that all such documents remain in full force and effect since the date of their execution; and (c) acknowledges and agrees that this Amendment is a Loan Document as defined under the Credit Agreement, and a violation of any provision of this Amendment shall constitute an Event of Default (after giving effect to any applicable grace period) under the Credit Agreement.
6. Governing Law. This Amendment shall be deemed to be a contract under the laws of the Commonwealth of Pennsylvania and for all purposes shall be governed by and construed and enforced in accordance with the internal laws of the Commonwealth of Pennsylvania without regard to its conflict of laws principles.
7. Counterparts. This Amendment may be signed by telecopy (or other electronic image scan transmission) or original in any number of counterparts each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.
8. Credit Agreement Unaffected. Each reference to “this Agreement” in the Credit Agreement or to “the Credit Agreement” in any other Loan Document shall hereafter be construed as a reference to the Credit Agreement as amended hereby. Except as herein otherwise specifically provided, all provisions of the Credit Agreement shall remain in full force and effect and be unaffected hereby.

(a) Amendment fees collected by lead arranger only

4. Conditions Precedent to Effectiveness. The effectiveness of this Amendment shall be subject to the satisfaction or waiver of only the following conditions precedent (first the date on which such conditions precedent are so satisfied or waived, the “Sixth Amendment Effective Date”):
- (i) the Borrower, the Administrative Agent, each Issuing Lender and each Lender with a Commitment on the Sixth Amendment Effective Date (after giving effect thereto) shall have signed a counterpart hereof (whether the same or different counterparts) and shall have delivered (including by way of facsimile, pdf or other electronic transmission) the same to the Administrative Agent;
 - (ii) the Administrative Agent shall have received a favorable customary legal opinion of Jones Day, counsel to the Borrower, addressed to the Administrative Agent and each of the Lenders party to this Amendment on the Sixth Amendment Effective Date and dated the Sixth Amendment Effective Date covering such matters incidental to this Amendment and the transactions contemplated hereby as the Administrative Agent may reasonably request;
 - (iii) the Administrative Agent shall have received (A) true and complete copies of resolutions of the board of directors of the Borrower approving and authorizing the execution, delivery and performance of this Amendment and the Amended Credit Agreement, certified as of the Sixth Amendment Effective Date by an Authorized Representative of the Borrower as being in full force and effect without modification or amendment and (B) a certificate of existence for the Borrower as of a recent date from the jurisdiction in which the Borrower is organized;
 - (iv) all of the representations and warranties made pursuant to Section 5 hereof shall be true and correct in all material respects on the Sixth Amendment Effective Date, both before and after giving effect to this Amendment, with the same effect as though such representations
- and warranties had been made on and as of the Sixth Amendment Effective Date (it being understood and agreed that (x) any representation or warranty which by its terms is made as of a specified date shall be required to be true and correct in all material respects only as of such specified date and (y) any representation or warranty that is qualified as to “materiality,” “Material Adverse Effect” or similar language shall be true and correct in all respects on such specified date);
- (v) both before and immediately after giving effect to the Reallocation and the occurrence of the Sixth Amendment Effective Date, since December 31, 2016, nothing shall have occurred (and neither the Administrative Agent nor the Lenders shall have become aware of any facts or conditions not previously known) which the Administrative Agent or the Lenders shall determine has had, or could reasonably be expected to have, a Material Adverse Effect;
 - (vi) the Borrower shall have paid all reasonable and documented out-of-pocket costs, fees, expenses of the Administrative Agent required to be paid or reimbursed pursuant to Section 13.01 of the Amended Credit Agreement, including the reasonable and documented fees, charges and disbursements of counsel for the Administrative Agent, in each case, invoiced at least three Business Days prior to the date hereof, and other amounts due and owing on the Sixth Amendment Effective Date pursuant to the Fee Letter, dated October 27, 2017, among the Borrower, the Administrative Agent and Deutsche Bank Securities Inc.;
 - (vii) the Borrower shall have paid (or cause to have been paid) on the Sixth Amendment Effective Date to the Administrative Agent for the account of each Lender party hereto, a one-time amendment fee (the “**Amendment Fee**”) in an amount, with respect to each Lender, equal to three basis points (0.03%) on existing Loans and Commitments under the Existing Credit Agreement that are converted into new Loans and/or Commitments under the Amended Credit Agreement and seven and one-half basis points (0.075%) on new or additional Loans and Commitments provided under the Amended Credit Agreement. The Amendment Fee will be paid on the aggregate amount of final allocations of commitments of each Lender and is payable in Dollars;
 - (viii) the Administrative Agent shall have received a solvency certificate substantially in the form of Exhibit H to the Existing Credit Agreement, which shall be addressed to the Administrative Agent and the Lenders and dated the Sixth Amendment Effective Date, setting forth the conclusions that, immediately after giving effect to the transactions contemplated in this Amendment and the incurrence of the financings contemplated hereby, each of the Borrower and the Borrower and its Subsidiaries, taken as a whole, is or are not insolvent and will not be rendered insolvent, and will not be left with unreasonably small capital with which to engage in its or their businesses and will not have incurred debts beyond its or their ability to pay such debts as they mature;
 - (ix) the Administrative Agent shall have received a written certification by an Authorized Officer of the Borrower certifying that the conditions precedent specified in Section 4(iv), (v) and (x) have been satisfied;

(b) Amendment fees go to all lenders

Notes: The figure demonstrates a screenshot of the “Condition of Effectiveness” section of a credit amendment. Panel (a) shows an example of split control deal amendment where amendment fee goes to the administrative agents only. Panel (b) shows an example of non-split control deal amendment where the amendment fee goes to all agents.

Table 1. Summary Statistics: Loan Contract and Renegotiation

Panel A	Mean	SD.	P25	Median	P75
1[Debt-to-ebitda]	0.0929	0.2903	0.0000	0.0000	0.0000
1[Fixed charge cov ratio]	0.0367	0.1881	0.0000	0.0000	0.0000
1[Interest coverage ratio]	0.0645	0.2456	0.0000	0.0000	0.0000
1[Debt]	0.0291	0.1680	0.0000	0.0000	0.0000
1[Other]	0.0020	0.0449	0.0000	0.0000	0.0000
Num of covenants	5.3143	4.5477	3.0000	3.0000	6.0000
Num of tranches	1.4334	0.7995	1.0000	1.0000	2.0000
Rounds renegotiation	3.2836	4.2810	2.0000	2.0000	3.0000
1[Renegotiation]	0.1683	0.3732	0.0000	0.0000	0.0000
Debt-to-ebitda	3.7215	0.9906	3.0000	3.5000	4.2500
Fixed charge cov ratio	1.6049	0.5482	1.2500	1.5000	1.6500
Interest cov ratio	2.8616	0.7386	2.5000	3.0000	3.2500
1[Financial statement]	0.2200	0.4144	0.0000	0.0000	0.0000
1[Field examination]	0.1084	0.3110	0.0000	0.0000	0.0000
1[Fee charged]	0.1576	0.3644	0.0000	0.0000	0.0000
Fee size (pp)	0.3365	0.4066	0.1250	0.2250	0.3625
Tightness	0.8192	0.1515	0.7090	0.8094	0.9040
Slack	3.9123	5.6867	2.7857	3.9795	5.9812
Prob bankrupt 1-yr	0.0429	0.1925	0.0000	0.0000	0.0000
Prob bankrupt 3-yr	0.0884	0.2690	0.0000	0.0000	0.0000

Panel B	N	N(pre-TD 9599)	N(post-TD9599)
Number of firms	626	298	455
Number of unique credit agreement	1156	409	747
Number of unique amendment	1732	640	1092
Number of unique amendment per firm	2.72	2.14	3.12

This table shows the summary statistics of credit agreements and renegotiation amendment. Panel A shows the summary statistics for the key dependent variables. “1[Debt-to-ebitda],” “1[Fixed charge cov ratio],” “1[Interest coverage ratio],” “1[Debt],” “1[other]” are indicator variables that equal to 1 if a deal contain the corresponding covenant. The classification of these covenants are provided in Section 5.3. “Num of covenants” is the total number of covenants contained in the deal. “Num of tranches” is the number of tranches in a deal.” “1[Renegotiation]” is an indicator variable that equals to 1 if the credit agreement is ever renegotiated. “Rounds renegotiation” is the total rounds of renegotiation. “Debt-to-ebitda,” “fixed charge cov ratio,” and “Interest cov ratio” are the levels of the financial covenants. “1[Financial statement]” and “1[Field examination]” are indicator variables which equal to 1 if the credit agreement contains requirements of financial statement delivery and field examination requirement. “1[Fee charged]” is an indicator variable that equals to 1 if extra amendment fee is charged. “Fee size” is the size of the amendment fee in percentage points of the principal amount of the deal. “Tightness” is the estimated covenant tightness based on [Murfin \(2012\)](#). “Slack” is the estimated covenant tightness based on [Demerjian and Owens \(2016\)](#). “Prob bankrupt 1-yr (3-yr)” is the estimated probability of firm bankruptcy based on [Bharath and Shumway \(2008b\)](#). Panel B summarizes the credit amendment files extracted from SEC.

Table 2. Deal Characteristics by Split Control and Non-Split Control

Panel A: Non-split Control	Mean	SD.	P25	Median	P75
Bank share	0.7121	0.2500	0.1583	0.5233	0.9500
No. of lead	2.4500	1.9333	1.0000	2.0000	3.0000
No. of lender	4.7455	5.3333	2.0000	3.0000	6.0000
Secured	0.6333	0.4867	0.0000	1.0000	1.0000
Maturity	1596.1000	624.6100	1096.0000	1826.0000	1827.0000
Amount	179.0100	424.0600	25.0000	65.0000	175.0000
\$ amount per lead bank lender	27.8405	52.6058	10.0000	19.9998	31.7361
Spread	347.1775	164.1992	225.0000	300.0000	425.0000
Panel B: Split-control	Mean	SD.	P25	Median	P75
Bank share	0.2252	0.4821	0.0000	0.1667	0.7500
No. of lead	3.7221	3.0909	1.0000	3.0000	5.0000
No. of lender	5.2000	4.3000	2.0000	4.0000	7.0000
Secured	0.9645	0.1925	1.0000	1.0000	1.0000
Maturity (Days)	2132.6453	529.9552	1826.0000	2192.0000	2557.0000
Amount	621.9999	806.3333	184.5000	365.5000	733.0500
\$ amount per lead bank lender	20.0341	5.6250	11.2500	20.9091	38.3601
Spread	406.667	173.6667	300.0000	375.0000	475.0000

The table above compares deal characteristics for split control and non-split control deals. Panel A presents deal characteristics for non-split control deals. Panel B presents firm characteristics for split control deals. Column 1 indicates various deal characteristics including bank share, average lead share, number of lead banks, number of lenders, probability of whether the deal is secured, maturity, amount, and spread. Columns 2 through 7 indicate the sample mean, 25th percentile, median, 75th percentile, mean, and standard deviation values. The table shows summary statistics for all deals between 2005-2018.

Table 3. TD9599 and Renegotiation Occurrence/Frequency

	1[Renegotiation]					Rounds of renegotiation				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1[Split Control] × 1[Post]	0.0762*** (0.0120)	0.0552*** (0.0175)	0.0486** (0.0216)	0.0461** (0.0213)	0.0431** (0.0211)	0.3165*** (0.0548)	0.3104*** (0.0586)	0.0486** (0.0216)	0.4119*** (0.0726)	0.4229*** (0.0852)
1[Split Control]	-0.0146* (0.0087)	-0.0636*** (0.0133)	-0.0594*** (0.0172)	-0.0541*** (0.0189)	-0.0524*** (0.0194)	-0.0305 (0.0396)	-0.0556 (0.0445)	-0.0594*** (0.0172)	-0.1926*** (0.0644)	-0.1071* (0.0553)
1[Post]	0.2475*** (0.0059)					0.6251*** (0.0269)				
ln(Amount)		0.0056 (0.0049)	0.0051 (0.0063)	-0.0030 (0.0062)	-0.0014 (0.0068)		0.0078 (0.0165)	0.0051 (0.0063)	0.0111 (0.0211)	-0.0301 (0.0256)
Maturity		0.0013*** (0.0003)	0.0013*** (0.0004)	-0.0013 (0.0009)	0.0009 (0.0006)		-0.0015 (0.0011)	0.0013*** (0.0004)	-0.0054* (0.0030)	-0.0030** (0.0013)
Spread		-0.0002*** (0.0000)	-0.0002*** (0.0001)	-0.0002*** (0.0000)	-0.0002*** (0.0001)		-0.0000 (0.0001)	-0.0002*** (0.0001)	-0.0002 (0.0002)	0.0000 (0.0003)
ln(Assets)			0.0000* (0.0000)		0.0000** (0.0000)			0.0000* (0.0000)		-0.0000*** (0.0000)
Profitability			-0.5253** (0.2188)		-0.9697** (0.4017)			-0.5253** (0.2188)		-0.2795 (0.9050)
Tangibility			-0.0670 (0.0864)		-0.1307 (0.1039)			-0.0670 (0.0864)		-1.1296* (0.6298)
Retained earnings / Assets			0.0032 (0.0217)		-0.0073 (0.0179)			0.0032 (0.0217)		-0.0609 (0.0673)
Leverage ratio			0.0761* (0.0435)		0.0769* (0.0460)			0.0761* (0.0435)		0.3168* (0.1843)
Industry FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	N	Y	Y	Y	N	N	Y	Y	Y	N
Deal control	N	Y	Y	Y	Y	N	Y	Y	Y	Y
Firm control	N	N	Y	N	Y	N	N	Y	N	Y
Sample				2010-2016	Entropy balancing				2010-2016	Entropy balancing
N	14,576	12,809	7,805	7,178	7,805	14,576	12,809	7,805	7,178	7,805
AdR squared	0.35	0.19	0.19	0.20	0.20	0.26	0.29	0.19	0.39	0.35

The table presents the renegotiation status of credit agreements for split control and non-split control deals before and after the activation of TD9599. The regression equation is as follows:

$$\text{Renegotiation}_{d,s,t} = \gamma_s + \mu_t + \beta \times \mathbb{1}[\text{Split control}]_d \times \text{Post}_t + \beta_1 \mathbb{1}[\text{Split control}]_d + X_{d,s,t} + \epsilon_{i,s,t}$$

$\mathbb{1}[\text{Split control}]_d$ is an indicator variable that equals to 1 if deal d is a split control deal. The dependent variables are indicator variables indicating whether the deal d of borrower from industry s originated in year t is ever renegotiated and the rounds of renegotiation after origination. Industry classification (s) is at 2-digit SIC level. The regression is at deal-year level. Deal control variables (X) include the deal size, maturity, and loan spread. Firm level control variables include firms size, profitability, tangibility, retained earnings and leverage ratio. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 4. Impact of the Tax Policy: Ex-Post Renegotiation Outcomes

	1[Decrease commitment]			1[Extend maturity]			1[New covenants]		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1[Split control] × 1[Post]	0.0060 (0.0051)	0.0082*** (0.0026)	0.0139** (0.0069)	0.0283** (0.0125)	0.0229* (0.0134)	0.0323* (0.0166)	0.0204*** (0.0068)	0.0228*** (0.0074)	0.0273** (0.0110)
1[Split control]	-0.0047 (0.0034)	-0.0069* (0.0039)	-0.0120** (0.0055)	-0.0195** (0.0091)	-0.0375*** (0.0103)	-0.0392*** (0.0133)	0.0103** (0.0050)	0.0080 (0.0057)	0.0122 (0.0088)
ln(Amount)		0.0028* (0.0016)	0.0009 (0.0021)		0.0252*** (0.0038)	0.0230*** (0.0050)		0.0031 (0.0021)	0.0025 (0.0033)
Maturity		-0.0001 (0.0001)	-0.0001 (0.0001)		0.0006*** (0.0002)	0.0006*** (0.0002)		0.0001 (0.0001)	0.0002 (0.0002)
Spread		-0.0000 (0.0000)	-0.0000 (0.0000)		-0.0001*** (0.0000)	-0.0002*** (0.0000)		-0.0000 (0.0000)	0.0000 (0.0000)
ln(Assets)			0.0000 (0.0000)			-0.0000 (0.0000)			-0.0000 (0.0000)
Tangibility			0.0267 (0.0279)			0.0355 (0.0673)			-0.0541 (0.0444)
Retained earnings/Assets			-0.0042 (0.0070)			-0.0223 (0.0168)			-0.0021 (0.0111)
Profitability			-0.2541*** (0.0711)			-0.2199 (0.1718)			-0.0396 (0.1134)
Leverage ratio			0.0076 (0.0141)			-0.0028 (0.0339)			0.0140 (0.0224)
Industry FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Deal control	N	Y	Y	N	Y	Y	N	Y	Y
Firm control	N	N	Y	N	N	Y	N	N	Y
N	15,169	13,384	8,289	15,169	13,384	8,289	15,169	13,384	8,289
AdR squared	0.07	0.08	0.07	0.10	0.11	0.12	0.11	0.11	0.12

The table presents the renegotiation outcomes of credit agreements for split control and non-split control deals before and after the activation of TD9599. The regression equation is as follows:

$$\text{Renegotiation outcomes}_{d,s,t} = \gamma_s + \mu_t + \beta \times \mathbb{1}[\text{Split control}]_d \times \text{Post}_t + \beta_1 \mathbb{1}[\text{Split control}]_d + X_{d,s,t} + \epsilon_{i,s,t}$$

$\mathbb{1}[\text{Split control}]_d$ is an indicator variable that equals to 1 if deal d is a split control. The dependent variables are indicator variables indicating the occurrence of renegotiation outcome for a loan issued by borrower in industry s in year t . “1[Decrease commitment]” is an indicator variable that equals to 1 if the total commitment size of the deal was decreased after the renegotiation. “1[Extend maturity]” is an indicator variable that equals to 1 if the loan maturity is extended after the renegotiation. “1[New covenants]” is an indicator variable that equals to 1 if new covenants were included after the renegotiation. Industry classification (s) is at 2-digit SIC level. The regression is at deal-renegotiation-year level. Deal control variables (X) include the deal size, maturity, and loan spread. Firm level control variables include firms size, profitability, tangibility, retained earnings and leverage ratio. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 5. TD9599 and Renegotiation Outcome: Fee Charge

	1[Fee charge]							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1[Split control] × 1[Post]	0.0392*** (0.0056)	0.0403*** (0.0056)	0.0269*** (0.0070)	0.0382*** (0.0080)	0.0058** (0.0026)	0.0319** (0.0130)	0.0516*** (0.0117)	0.0447*** (0.0135)
1[Split control]	0.0048 (0.0033)	0.0043 (0.0033)	0.0082* (0.0044)	0.0011 (0.0055)	0.0020 (0.0020)	0.0113 (0.0100)	0.0012 (0.0083)	-0.0008 (0.0066)
1[Post]	0.0136*** (0.0023)							
ln(Amount)				0.0040* (0.0020)	0.0013* (0.0008)	0.0035 (0.0037)	0.0035 (0.0031)	0.0025 (0.0030)
Maturity				0.0001 (0.0001)	0.0001 (0.0000)	0.0003 (0.0002)	0.0003* (0.0002)	0.0003*** (0.0001)
Spread				0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000* (0.0000)
ln(Assets)							-0.0000 (0.0000)	-0.0000* (0.0000)
Profitability							-0.0931 (0.1038)	-0.1403 (0.1114)
Tangibility							-0.0018 (0.0427)	0.0102 (0.0442)
Retained earnings/Assets							0.0089 (0.0102)	0.0133 (0.0089)
Leverage ratio							0.0037 (0.0212)	0.0028 (0.0214)
Industry FE	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	N	N	Y	Y	Y	Y	Y	Y
Year FE	N	Y	Y	Y	Y	Y	Y	Y
Deal control	N	N	N	Y	Y	Y	Y	Y
Firm control	N	N	N	N	N	N	Y	Y
Sample					All firms	2010-2016		Entropy balancing
N	15,760	15,760	14,586	10,806	30,756	5,537	6,689	6,689
AdR squared	0.02	0.02	0.11	0.13	0.07	0.15	0.14	0.19

The table presents the renegotiation status of credit agreements for split control and non-split control deals before and after the activation of TD9599. The regression equation is as follows:

$$\text{Fee charge}_{d,s,t} = \gamma_s + \mu_t + \beta \times \mathbb{1}[\text{Split control}]_d \times \text{Post}_t + \beta_1 \mathbb{1}[\text{Split control}]_d + X_{d,s,t} + \epsilon_{i,s,t}$$

$\mathbb{1}[\text{fee charge}]_e$ is an indicator variable that equals to 1 if deal d is a split control. The dependent variable $\mathbb{1}[\text{Fee charge}]$ is an indicator variable that equals to 1 if amendment fee is ever charged during the renegotiation after the deal is originated. Industry classification (s) is at 2-digit SIC level. The regression is at deal-renegotiation-year level. Deal control variables (X) include the deal size, maturity, and loan spread. Firm level control variables include firms size, profitability, tangibility, retained earnings and leverage ratio. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 6. TD9599 and Renegotiation Outcome: Fee Size

	Fee size							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1[Split Control] × 1[Post]	0.0815*** (0.0288)	0.0836*** (0.0290)	0.0596*** (0.0186)	0.0957** (0.0472)	0.0205** (0.0075)	0.0504** (0.0198)	0.1386* (0.0726)	0.1170** (0.0557)
1[Split Control]	0.0115 (0.0172)	0.0114 (0.0173)	-0.0097 (0.0242)	-0.0341 (0.0320)	-0.0107 (0.0119)	-0.0489 (0.0683)	-0.0483 (0.0515)	-0.0352 (0.0490)
Post	0.0107 (0.0119)							
ln(Amount)				0.0043 (0.0120)	0.0013 (0.0045)	0.0078 (0.0254)	0.0113 (0.0196)	0.0096 (0.0109)
Maturity				0.0004 (0.0006)	0.0002 (0.0002)	0.0006 (0.0012)	0.0006 (0.0009)	0.0007* (0.0004)
Spread				-0.0000 (0.0001)	-0.0000 (0.0000)	0.0000 (0.0002)	-0.0001 (0.0002)	-0.0001 (0.0001)
ln(Assets)							-0.0000 (0.0000)	-0.0000 (0.0000)
Profitability							0.0489 (0.6448)	0.1688 (0.3592)
Tangibility							0.0068 (0.2652)	0.0354 (0.1207)
Retained earnings/Assets							-0.0148 (0.0634)	-0.0215 (0.0293)
Leverage ratio							-0.0292 (0.1316)	-0.0610 (0.1112)
Industry FE	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	N	N	Y	Y	Y	Y	Y	Y
Year FE	N	Y	Y	Y	Y	Y	Y	Y
Deal control	N	N	N	Y	Y	Y	Y	Y
Firm control	N	N	N	N	N	N	Y	Y
Sample					All firms	2010-2016		Entropy balancing
N	15,744	15,744	14,570	10,794	30,744	5,527	6,678	6,678
AdR squared	0.00	0.00	-0.02	-0.11	-0.18	-0.19	-0.14	-0.12

The table presents the renegotiation status of credit agreements for split control and non-split control deals before and after the activation of TD9599. The regression equation is as follows:

$$\text{Fee size}_{d,s,t} = \gamma_s + \mu_t + \beta \times 1[\text{Split control}]_d \times \text{Post}_t + \beta_1 1[\text{Split control}]_d + X_{d,s,t} + \epsilon_{i,s,t}$$

$1[\text{fee charge}]_e$ is an indicator variable that equals to 1 if deal d is a split control. The dependent variable “fee size” is the size of amendment fee after the renegotiation in percentage points of the principal amount of the deal or the commitment size of the agent lenders. Industry classification (s) is at 2-digit SIC level. The regression is at deal-renegotiation-year level. Deal control variables (X) include the deal size, maturity, and loan spread. Firm level control variables include firms size, profitability, tangibility, retained earnings and leverage ratio. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 7. Impact of the Tax Policy: Monitoring in Financial Contracts

	1[Financial statement]				1[Field exam]			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1[Split control]×1[Post]	0.0157** (0.0061)	0.0211** (0.0088)	0.0061* (0.0031)	0.0217* (0.0014)	0.0082* (0.0042)	0.0163*** (0.0062)	0.0062** (0.0024)	0.0188** (0.0093)
1[Split control]	0.0158*** (0.0043)	0.0202*** (0.0071)	0.0319*** (0.0088)	0.0128* (0.0065)	0.0145*** (0.0029)	0.0171*** (0.0050)	0.0183*** (0.0060)	0.0115** (0.0053)
ln(Amount)	0.0035** (0.0017)	0.0051* (0.0026)	0.0050* (0.0028)	0.0030 (0.0029)	-0.0022* (0.0012)	-0.0037** (0.0019)	-0.0029 (0.0019)	-0.0049*** (0.0017)
Maturity	0.0001* (0.0001)	0.0003** (0.0001)	0.0003** (0.0001)	0.0005*** (0.0001)	0.0001 (0.0001)	0.0001* (0.0001)	0.0001 (0.0001)	0.0002*** (0.0001)
Spread	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	-0.0000** (0.0000)	-0.0000** (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
ln(Assets)		-0.0000 (0.0000)		-0.0000 (0.0000)		-0.0000 (0.0000)		-0.0000*** (0.0000)
Tangibility		-0.0835** (0.0356)		-0.1120* (0.0595)		-0.0680*** (0.0251)		-0.0783 (0.0518)
Retained earnings/ Assets		-0.0132 (0.0089)		-0.0002 (0.0076)		-0.0137** (0.0063)		-0.0057 (0.0065)
Profitability		0.0996 (0.0909)		-0.0925 (0.1155)		0.0551 (0.0642)		-0.0727 (0.0985)
Leverage ratio		0.0247 (0.0179)		0.0357* (0.0200)		0.0045 (0.0127)		0.0106 (0.0208)
Industry FE	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Deal control	Y	Y	Y	Y	Y	Y	Y	Y
Firm control	N	Y	N	Y	N	Y	N	Y
Sample			2010-2016	Entropy balancing			2010-2016	Entropy balancing
N	13,398	8,303	8,632	8,303	13,398	8,303	8,632	8,303
AdR squared	0.27	0.27	0.29	0.38	0.33	0.35	0.37	0.50

The table presents the contractual monitoring indicators for credit agreements initiated before and after the activation of TD9599:

$$\text{Monitoring}_{d,s,t} = \gamma_s + \mu_t + \beta \times \mathbb{1}[\text{Split control}]_d \times \text{Post}_t + \beta_1 \mathbb{1}[\text{Split control}]_l + X_{d,s,t} + \epsilon_{i,s,t}$$

$\mathbb{1}[\text{Split control}]_d$ is an indicator variable that equals to 1 the deal is a split control deal. The dependent variables are indicator variables indicating the monitoring obligation and intensity in the credit agreement. “1[Financial Statement]” indicates that the creditors requests submission of financial statement. “1[Field Exam/Inspection]” indicates the commitment of field examination and inspection of firms assets in the credit agreement. The regression is at the deal-year level. Deal control variables (X) include the deal size, maturity and loan spread. Industry classification (s) is at 2-digit SIC level. γ_s captures the industry fixed effects. μ_t captures the year fixed effects. Firm level control variables include firms size, profitability, tangibility, retained earnings and leverage ratio. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 8. Changes in Contract Features After the Tax Policy: Number of Covenants

	Number of Covenants				
	(1)	(2)	(3)	(4)	(5)
1[Split control]×1[Post]	1.8499*** (0.1532)	1.6693*** (0.1249)	0.4218*** (0.0600)	1.7341*** (0.1464)	1.8699*** (0.2143)
1[Split control]	-0.4318*** (0.1429)	-0.1701* (0.0994)	0.1480** (0.0577)	-0.3934*** (0.1334)	-0.5454*** (0.1861)
ln(Amount)	0.2408*** (0.0409)	0.1060*** (0.0369)	0.0793*** (0.0166)	0.1969*** (0.0420)	0.2320*** (0.0670)
Maturity	0.0000 (0.0001)	-0.0003 (0.0001)	-0.0000 (0.0000)	0.0001 (0.0001)	-0.0000 (0.0001)
Spread	-0.0011*** (0.0003)	-0.0006* (0.0003)	-0.0004*** (0.0001)	-0.0007** (0.0003)	-0.0017*** (0.0005)
ln(Assets)		-0.0000 (0.0000)			-0.0000 (0.0000)
Tangibility		-1.2486** (0.5016)			-0.2287 (0.9657)
Retained earnings/ Assets		-0.0330 (0.1259)			-0.1181 (0.1273)
Profitability		0.7842 (1.2698)			-0.4804 (1.9045)
Leverage ratio		0.0459 (0.2524)			0.2365 (0.4683)
Industry FE	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Deal control	Y	Y	Y	Y	Y
Firm control	N	Y	N	N	Y
Sample			All firms	2010-2016	Entropy balancing
N	7,382	7,805	21,507	5,544	4,777
AdR squared	0.37	0.30	0.33	0.43	0.45

The table presents the heterogeneous changes of the total number of financial covenants for split and non-split control deals in response to the activation of TD9599. The regression equation is as follows:

$$\text{Contract feature}_{d,s,t} = \gamma_s + \mu_t + \beta \times \text{Split Control}_{d,t} + \beta_1 \times \text{Split Control}_{d,t} \times \mathbb{1}[\text{Post}]_t + X_{d,s,t} + \epsilon_{d,s,t}$$

“Num Cov” is the total number of financial covenants. Industry-year included. Industry classification (s) is at 2-digit SIC level. Deal control variables (X) include the deal size, maturity and loan spread. The regression is at deal-year level. γ_s captures the industry fixed effects. μ_t captures the year fixed effects. Firm level control variables include firms size, profitability, tangibility, retained earnings and leverage ratio. The regression is at the deal level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 9. Changes in Contract Features After the Tax Policy: Covenant Types

	1[Debt-to-ebitda]		1[Fixed charge]		1[Int cov]		1[Debt issuance]		1[Other]	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1[Split control]×1[Post]	0.0862*** (0.0117)	0.1142*** (0.0160)	0.0324*** (0.0078)	0.0383*** (0.0091)	0.0338*** (0.0105)	0.0464*** (0.0143)	-0.0228*** (0.0072)	-0.0244*** (0.0075)	-0.0031 (0.0021)	0.0003 (0.0026)
1[Split control]	-0.0376*** (0.0089)	-0.0403*** (0.0127)	-0.0026 (0.0059)	-0.0118 (0.0072)	-0.0127 (0.0080)	-0.0105 (0.0114)	0.0199*** (0.0055)	0.0134** (0.0060)	0.0033** (0.0016)	0.0001 (0.0021)
ln(Amount)	0.0052 (0.0033)	0.0029 (0.0047)	0.0008 (0.0022)	-0.0001 (0.0027)	0.0025 (0.0030)	-0.0004 (0.0042)	0.0015 (0.0020)	0.0019 (0.0022)	-0.0003 (0.0006)	-0.0009 (0.0008)
Maturity	0.0017 (0.0019)	0.0023 (0.0026)	0.0009 (0.0012)	-0.0012 (0.0015)	0.0032* (0.0017)	0.0032 (0.0023)	0.0027** (0.0011)	-0.0002 (0.0012)	0.0001 (0.0003)	0.0003 (0.0004)
Spread	-0.0001* (0.0000)	-0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0000* (0.0000)	-0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0000*** (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)
ln(Assets)		-0.0000*** (0.0000)		-0.0000* (0.0000)		-0.0000*** (0.0000)		-0.0000 (0.0000)		0.0000 (0.0000)
Profitability		-0.1495 (0.1628)		0.0384 (0.0925)		-0.0390 (0.1455)		0.0669 (0.0761)		0.0483* (0.0262)
Tangibility		-0.1727*** (0.0643)		-0.0458 (0.0365)		-0.0015 (0.0575)		0.0368 (0.0300)		-0.0345*** (0.0104)
Retained earnings/Assets		0.0105 (0.0161)		-0.0033 (0.0092)		0.0184 (0.0144)		-0.0126* (0.0075)		-0.0003 (0.0026)
Leverage ratio		0.0094 (0.0324)		0.0232 (0.0184)		-0.0152 (0.0289)		-0.0156 (0.0151)		0.0014 (0.0052)
Industry FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Deal control	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm control	N	Y	N	Y	N	Y	N	Y	N	Y
p-value ($\beta_{\text{Split} \times \text{Post}} - \beta_{\text{Debt Split} \times \text{Post}}^{\text{Debt}}$)	0.0000		0.0000		0.0020					
N	12,809	7,805	12,809	7,805	12,809	7,805	12,809	7,805	12,809	7,805
AdR squared	0.39	0.41	0.34	0.34	0.34	0.37	0.32	0.36	0.09	0.06

The table presents the heterogeneous responses of covenant inclusions for split and non-split control deals in response to the activation of TD9599. The regression equation is as follows:

$$\text{Contract feature}_{d,s,t} = \gamma_s + \mu_t + \beta \times \text{Split Control}_{d,t} \times \mathbb{1}[\text{Post}]_t + \beta_1 \times \text{Split Control}_{d,t} + X_{d,s,t} + \epsilon_{d,s,t}$$

The left-hand side variables of the regression are indicator variables which equal to 1 if the loan contract d (issued by a borrower in industry s) in year t has Debt-to-Ebitda ratio covenant, interest coverage ratio covenant, fixed charge coverage ratio covenant, debt issuance covenant and “Other” types of covenants. Some typical examples of “Other” covenants include extra collateral provision, restrictions on sales of assets, restrictions on changes in management team, etc. Industry classification (s) is at 2-digit SIC level. Deal control variables (X) include the deal size and maturity. γ_s captures the industry fixed effects. μ_t captures the year fixed effects. Firm level control variables include firms size, profitability, tangibility, retained earnings and leverage ratio. The regression is at the deal-year level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 10. Changes in Contract Features After the Tax Policy: Covenant Tightness

	Debt-ebitda		Fixed charge		Int coverage	
	(1)	(2)	(3)	(4)	(5)	(6)
1[Split Control]×1[Post]	-1.3142*** (0.4409)	-1.1211*** (0.3213)	2.7150*** (0.1724)	1.265** (0.4552)	1.6521*** (0.3092)	1.2322*** (0.3356)
1[Split Control]	1.2429*** (0.4375)	-0.1069** (0.0456)	-2.7212*** (0.1691)	0.0066 (0.0415)	0.0387 (0.0408)	0.0212 (0.0377)
ln(Amount)	0.0584** (0.0246)	0.0713** (0.0284)	-0.0072 (0.0118)	-0.0111 (0.0252)	-0.0220 (0.0232)	0.0060 (0.0219)
Maturity	-0.0024** (0.0012)	-0.0029** (0.0014)	0.0002 (0.0006)	0.0013 (0.0015)	0.0000 (0.0010)	0.0007 (0.0010)
Spread	0.0010*** (0.0002)	0.0009*** (0.0002)	-0.0001 (0.0002)	-0.0000 (0.0003)	-0.0002 (0.0003)	-0.0001 (0.0002)
ln(Assets)		0.0000 (0.0000)		0.0000 (0.0000)		-0.0000 (0.0000)
Tangibility		-0.2210 (0.5419)		0.3317 (0.6061)		0.4326 (0.4104)
Retained earnings/ Assets		-0.5810*** (0.1493)		0.0343 (0.1297)		0.4773*** (0.1382)
Profitability		1.6929 (1.5753)		1.9802 (1.9747)		0.4354 (1.1723)
Leverage ratio		0.9148*** (0.1901)		-0.0934 (0.1470)		-0.2172 (0.1726)
Industry FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Deal control	Y	Y	Y	Y	Y	Y
Firm control	N	Y	N	Y	N	Y
N	952	720	348	168	672	512
AdR squared	0.90	0.89	0.97	0.96	0.90	0.92

The table presents the heterogeneous changes of loan covenant values for split and non-split control deals in response to the activation of TD9599. The regression equation is as follows:

$$\text{Cov value}_{d,s,t} = \gamma_s + \mu_t + \beta \times \text{Split Control}_{d,t} + \beta_1 \times \text{Split Control}_{d,t} \times \mathbb{1}[\text{Post}]_t + X_{d,s,t} + \epsilon_{d,s,t}$$

We explore how do the most commonly utilized financial covenants vary among split and non-split control deals before and after the tax policy. “Debt-Ebitda” is the value of debt-to-ebitda ratio of a loan contract, “Int-Coverage” is the value of interest coverage ratio of a loan contract, and “Fixed Charge Coverage” is the value of fixed charge coverage ratio of a loan contract. Industry classification (s) is at two-digit SIC level. Deal control variables (X) include the deal size and maturity. γ_s captures the industry fixed effects. μ_t captures the year fixed effects. Firm level control variables include firms size, profitability, tangibility, retained earnings and leverage ratio. The regression is at the deal-year level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are reported in in parentheses.

Table 11. Changes in Contract Features After the Tax Policy: Covenant Tightness

	Covenant Tightness (Murfin (2012))			
	(1)	(2)	(3)	(4)
1[Split control] × 1[Post]	0.3084*** (0.0617)	0.3517*** (0.0667)	0.2818*** (0.0706)	0.3542** (0.1646)
1[Split control]	-0.3209*** (0.0611)	-0.3518*** (0.0662)	-0.2995*** (0.0697)	-0.3491** (0.1641)
ln(Amount)	0.0217*** (0.0071)	0.0177** (0.0081)	0.0236** (0.0106)	0.0142 (0.0102)
Maturity	-0.0010* (0.0006)	-0.0007 (0.0006)	-0.0015** (0.0008)	-0.0005 (0.0006)
Spread	-0.0000 (0.0001)	-0.0001 (0.0001)	0.0001 (0.0001)	-0.0001 (0.0001)
ln(Assets)		-0.0000 (0.0000)		-0.0000 (0.0000)
Tangibility		-0.0294 (0.0442)		0.0020 (0.0830)
Retained earnings/Assets		0.0167 (0.0124)		0.0122 (0.0147)
Profitability		0.3811 (0.2336)		0.5598* (0.3168)
Leverage ratio		0.0628 (0.0406)		0.0374 (0.0396)
Industry FE	Y	Y	Y	Y
Firm FE	N	N	N	N
Year FE	Y	Y	Y	Y
Deal control	Y	Y	Y	Y
Firm control	N	Y	N	Y
Sample			2010-2016	Entropy balancing
N	575	547	314	547
AdR squared	0.22	0.21	0.15	0.25

The table presents the heterogeneous changes of loan covenant tightness for split and non-split control deals in response to the activation of TD9599. The regression equation is as follows:

$$\text{Tightness}_{d,s,t} = \gamma_s + \mu_t + \beta \times \text{Split Control}_{d,t} + \beta_1 \times \text{Split Control}_{d,t} \times \mathbb{1}[\text{Post}]_t + X_{d,s,t} + \epsilon_{d,s,t}$$

The dependent variables are the financial covenant tightness measure following [Murfin \(2012\)](#). Industry classification (s) is at two-digit SIC level. Deal control variables (X) include the deal size and maturity. γ_s captures the industry fixed effects. μ_t captures the year fixed effects. Firm level control variables include firms size, profitability, tangibility, retained earnings and leverage ratio. The regression is at the deal-year level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are reported in in parentheses.

Table 12. Ex-Post Firm Performance

	Prob bankrupt 1 year				Prob bankrupt 3 year			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1[Split control] × 1[Post]	-0.0126** (0.0063)	-0.0128** (0.0064)	-0.0153** (0.0071)	-0.0175** (0.0086)	-0.0172* (0.0103)	-0.0182* (0.0105)	-0.0139* (0.0062)	-0.0278** (0.0111)
1[Split control]	0.0066 (0.0056)	-0.0078 (0.0057)	0.0082 (0.0069)	-0.0142** (0.0071)	0.0229** (0.0090)	0.0138 (0.0094)	0.0294*** (0.0084)	0.0106 (0.0091)
ln(Assets)		-0.0000*** (0.0000)		0.0000 (0.0000)		-0.0000** (0.0000)		-0.0000 (0.0000)
Tangibility		0.0729*** (0.0270)		0.0208 (0.0156)		0.1510*** (0.0443)		0.0695*** (0.0215)
Retained earnings/Assets		-0.0197*** (0.0045)		-0.0109 (0.0090)		-0.0180** (0.0074)		-0.0141 (0.0100)
Profitability		-0.0048 (0.0814)		0.2349 (0.1552)		-0.3834*** (0.1337)		-0.2524 (0.1607)
Leverage ratio		0.5248*** (0.0129)		0.5352*** (0.0297)		0.5542*** (0.0212)		0.5589*** (0.0321)
Industry FE	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Firm control	N	Y	N	Y	N	Y	N	Y
Sample			2010-2016	Entropy balancing			2010-2016	Entropy balancing
N	16,557	14,292	11,597	14,470	16,557	14,292	11,789	14,470
AdR squared	0.42	0.50	0.46	0.35	0.23	0.29	0.04	0.23

The table presents the heterogeneous of firm performances in response to the activation of TD9599. The regression equation is as follows:

$$\text{Perf}_{i,s,t} = \alpha_i + \gamma_s + \mu_t + \beta \times \mathbb{1}[\text{Split control}]_i \times \text{Post}_t + \epsilon_{i,s,t}$$

$\mathbb{1}[\text{Split control}]_t$ is an indicator variable that equals to 1 if firm i is a split control firm (with unmaturred split control loans on balance sheet in 2013). “Prob bankrupt 1 year (3 years)” is the estimated probability of bankruptcy of a company in 1 year (3 years) following [Bharath and Shumway \(2008a\)](#). Post is an indicator variable that equals to 1 for years later than 2013. Industry classification (s) is at two-digit SIC level. Deal control variables (X) include the deal size and maturity. γ_s captures the industry fixed effects. μ_t captures the year fixed effects. Firm level control variables include firms size, profitability, tangibility, retained earnings and leverage ratio. The regression is at firm-year level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Internet Appendix for:
“Monitoring with Small Stakes”

Appendix A. Additional Figures

Fig. A.1. Availability of Bank Share Information in Dealscan

The figures below show proportion of deals in Dealscan that has lenders' share contributed over time and bank lenders' dollar contribution per deal over time. The top panel shows the proportion of deals in Dealscan that is "non-missing" in lenders' share information. For each deal, the deal is defined as "non-missing" in lenders' shares (and dollar amount contributed) if each of the lenders' shares is not "N/A." The bottom panel shows the average dollar contribution of bank lenders per deal over time. The average dollar contribution of bank lenders per deal is calculated by dividing the total amount of dollars contributed by bank lenders in the Dealscan and scaled by the number of deals with non-missing lenders' share information.

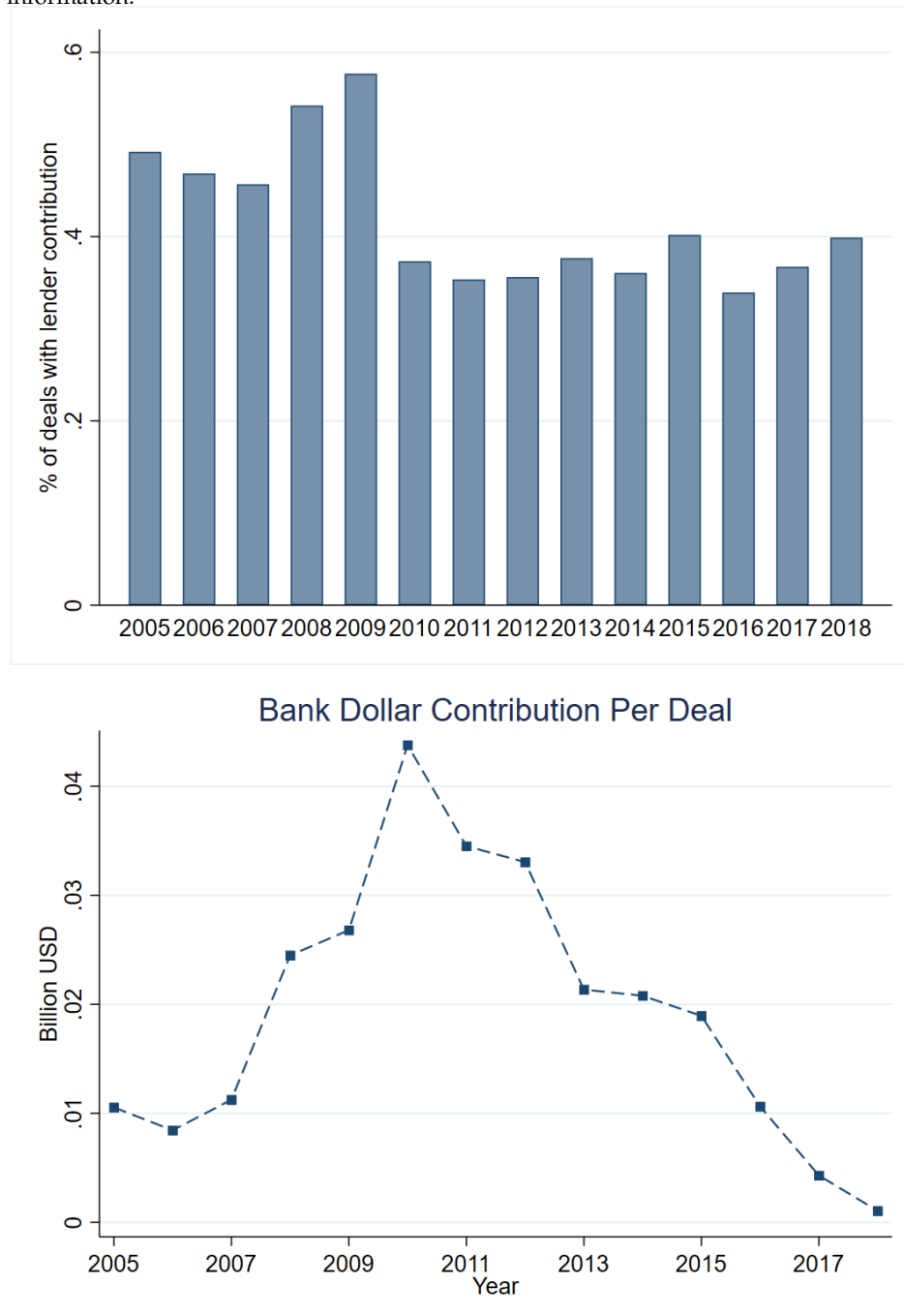
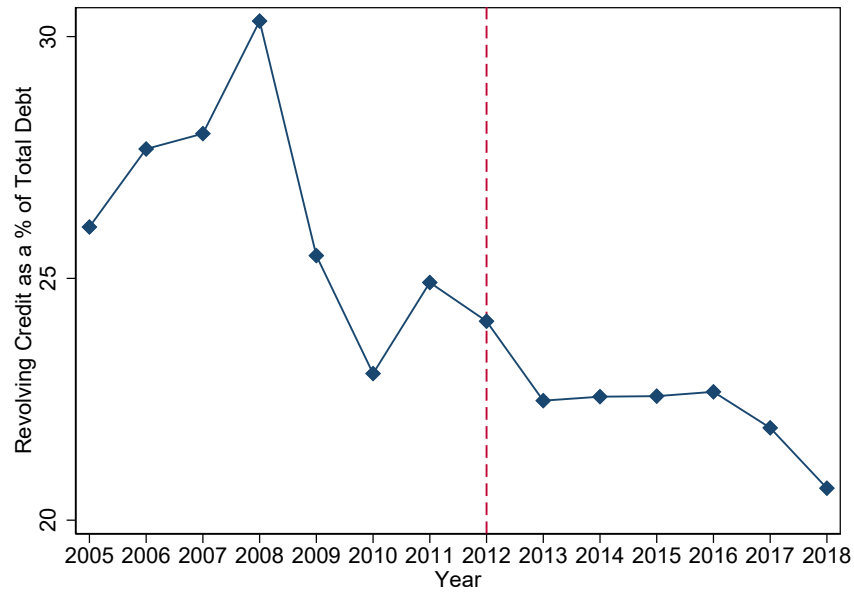
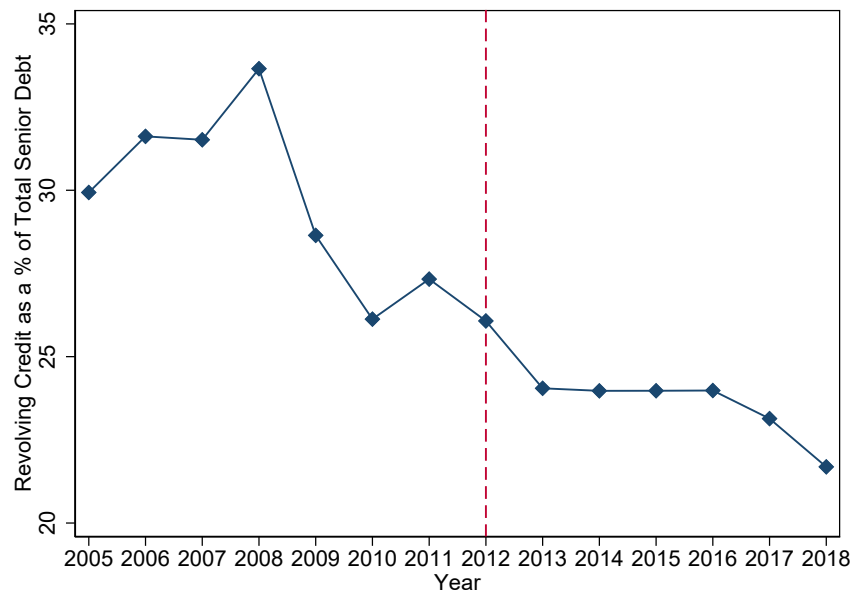


Fig. A.2. Bank Share of Total Debt

This figure presents the share of revolving credit as a percent of debt. Figure (a) presents firms' share of revolving credit as a percent of total debt. Figure (b) presents firms' share of revolving credit as a percent of total senior secured debt.



(a) Bank Share of Total Debt



(b) Bank Share of Total Senior Debt

Fig. A.3. Industry Distribution: Split and Non-Split Control

This figure presents the industry distribution for split control and non-split control loans. The x-axis reports the industry. The y-axis presents the percent of loans that fall within the industry category designated in the x-axis. Split control deals are represented by the red bars. Non-split control deals are represented by the blue bars.

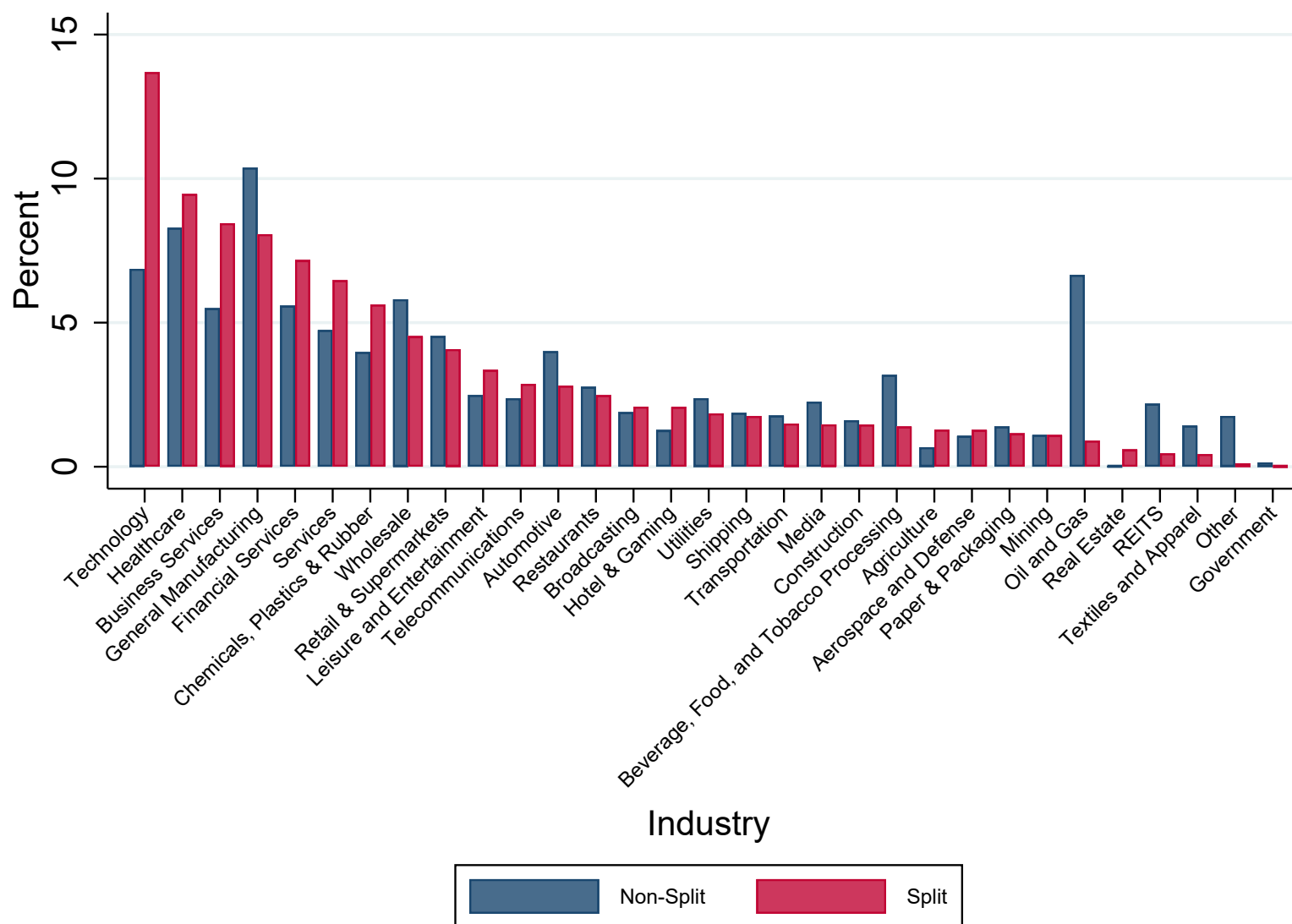


Fig. A.4. TD9599 and Renegotiation

The figures below show the aggregate trend of rounds of renegotiation for split control deals and non-split control deals around the activation of TD9599. The left panel shows the average rounds of renegotiation for split control deals and non-split control deals respectively. Details on variable definition and construction are provided in Section 3. The frequency of the data is annual. The right panel shows the time-varying coefficients of the following regression specification:

$$\text{Rounds of renegotiation}_{d,s,t} = \gamma_s + \eta_t + \mu \times 1[\text{Split}]_{d,t} + \sum_{\substack{j \neq 2012 \\ j \in [2009, 2015]}} \beta_j 1[\text{Split}]_{d,s,t} \times 1[t=j] \times + \pi X + \epsilon_{d,s,t}$$

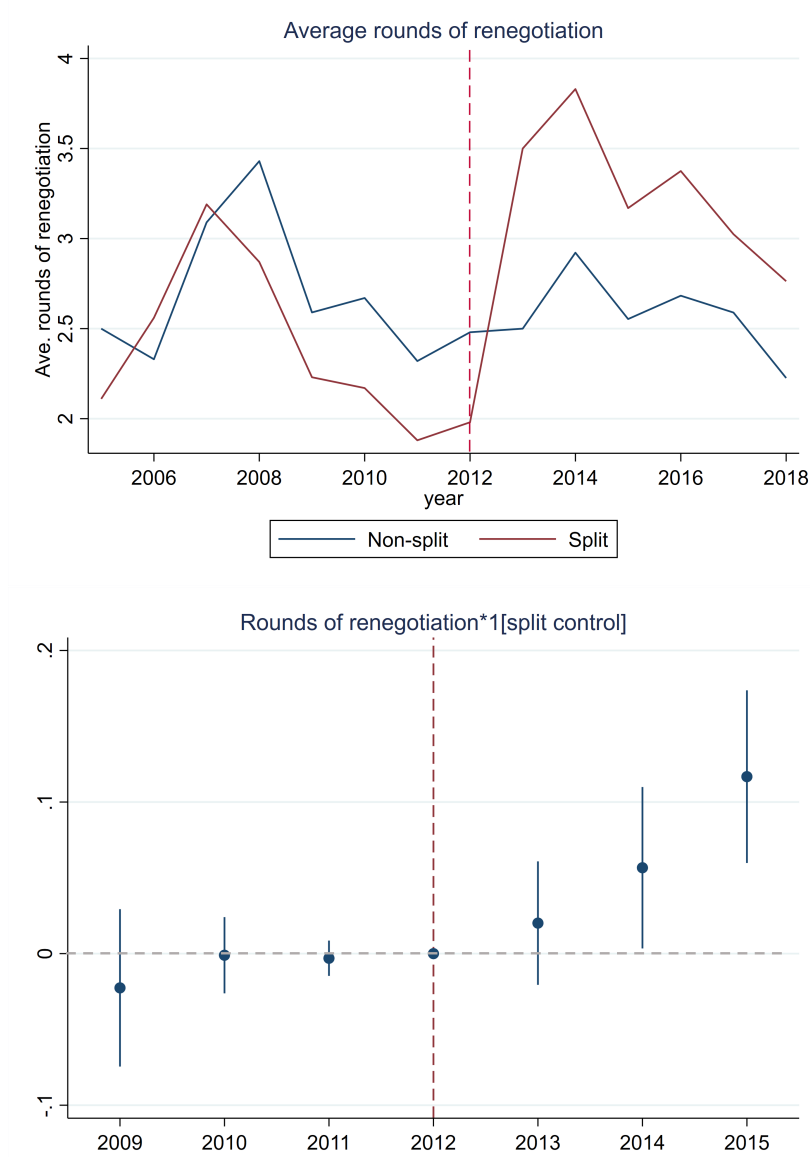


Fig. A.5. Differential Responses of Contract Features by Split and Non-split Control around Tax Policy Change

The figures below show the estimated coefficients capturing differential responses of contract features in split control and non-split control deals around the time window of the tax policy change. The regression equation is as follows:

$$\text{contract feature}_{d,s,t} = \gamma_s + \eta_t + \mu \times 1[\text{Split}]_{d,t} + \sum_{j \in [2009, 2015]}^{j \neq 2012} \beta_j 1[\text{Split}]_{d,s,t} \times 1[t=j] \times + \pi X + \epsilon_{d,s,t}$$

Coefficients β_j 's are plotted. Control variables include logarithmic of loan amount and loan maturity. Details on variable definition and construction are provided in Section 3. The frequency of the data is annual.

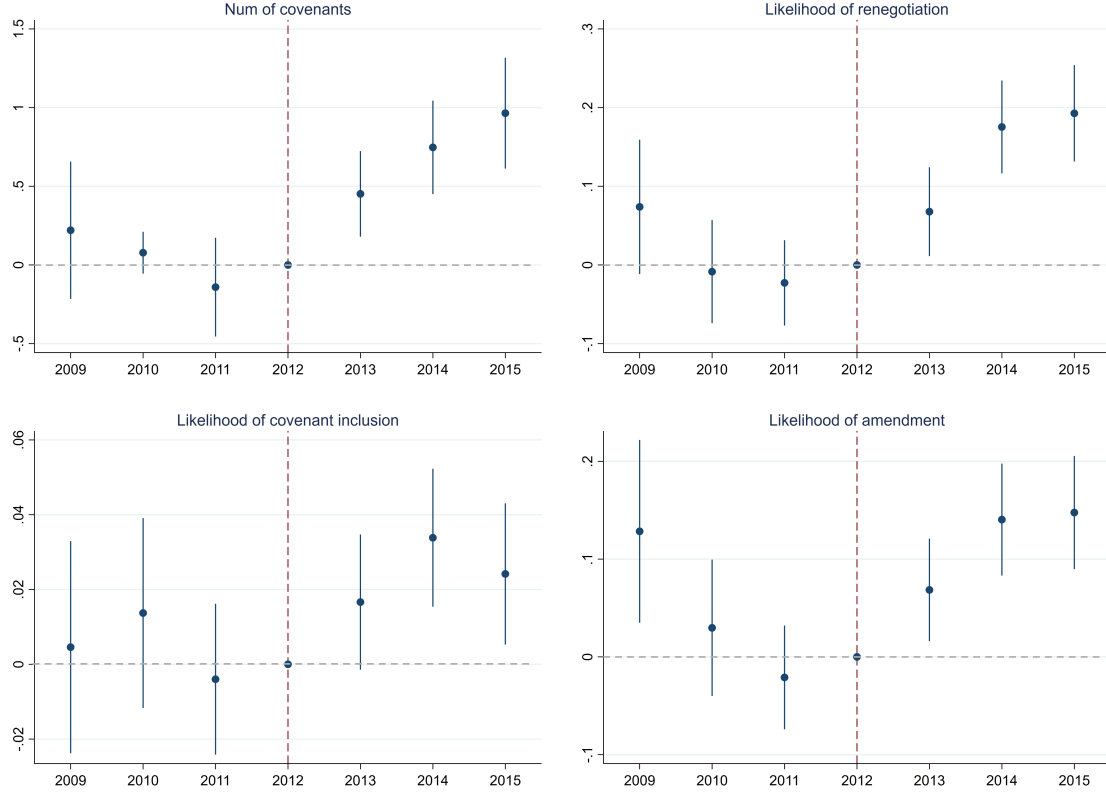
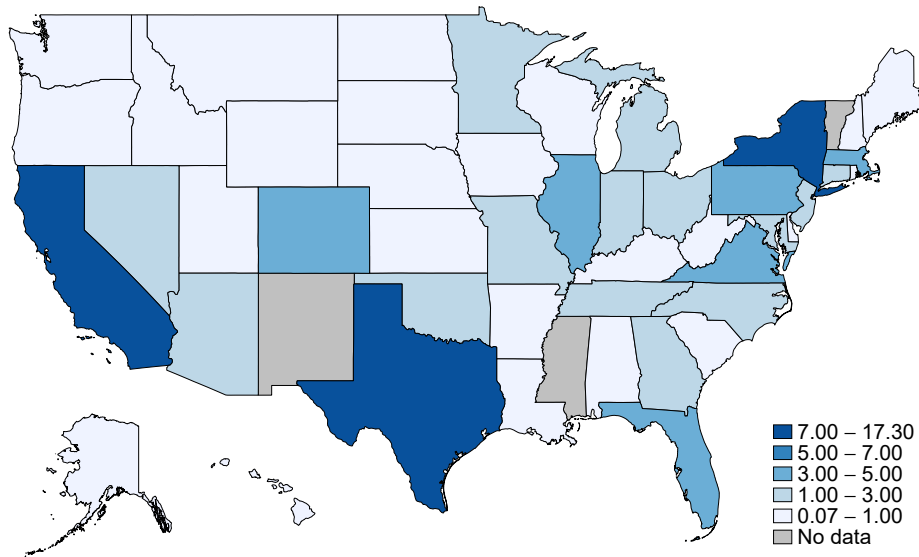
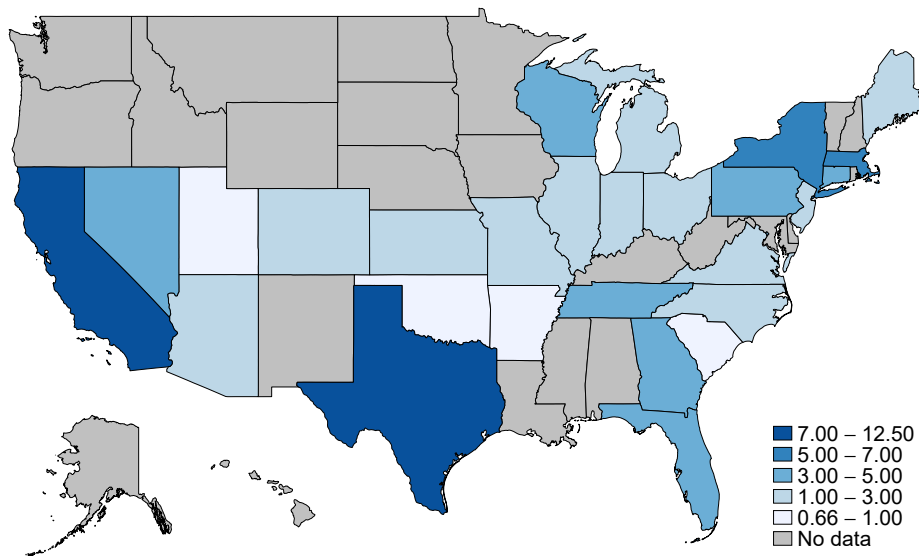


Fig. A.6. Geography of Borrowers: Split and Non-Split Control

The figures present the geography of borrowers at the time a deal becomes active for split and non-split control borrowers. The blue gradient indicates the frequency bin of firms operating in that particular geography, e.g., darkest blue indicates that between 7.00% and 11.73% of all firms in the sample operate in that state.



(a) Non-Split Control



(b) Split Control

Fig. A.7. Industry Distribution: Pre- and Post-Policy

This figure presents the industry distribution for split control loans before and after the tax policy in 2012. The x-axis reports the industry. The y-axis presents the percent of loans that fall within the industry category designated in the x-axis. Split control loans before the tax policy are represented by the red bars. NSplit control loans after are represented by the blue bars.

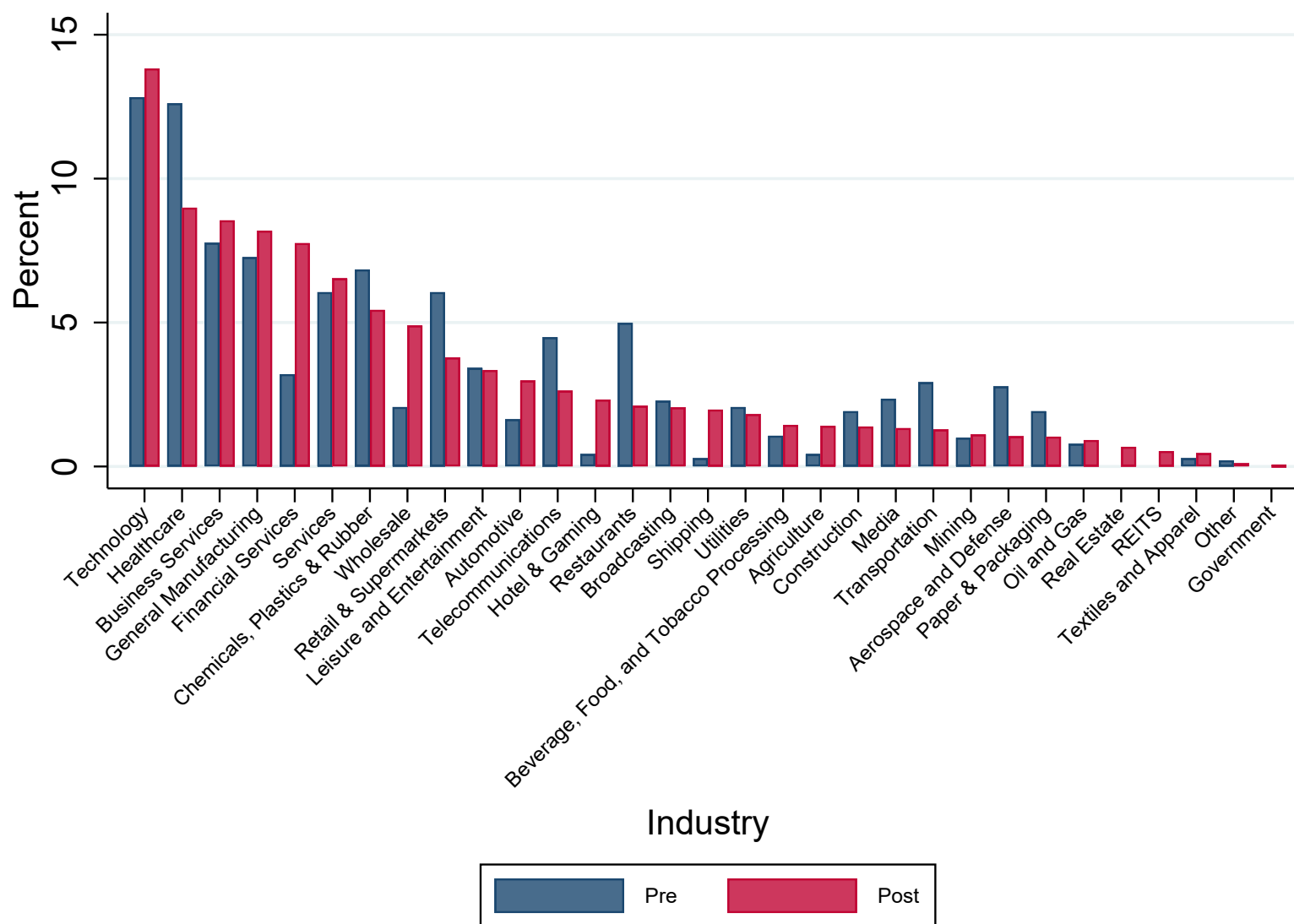
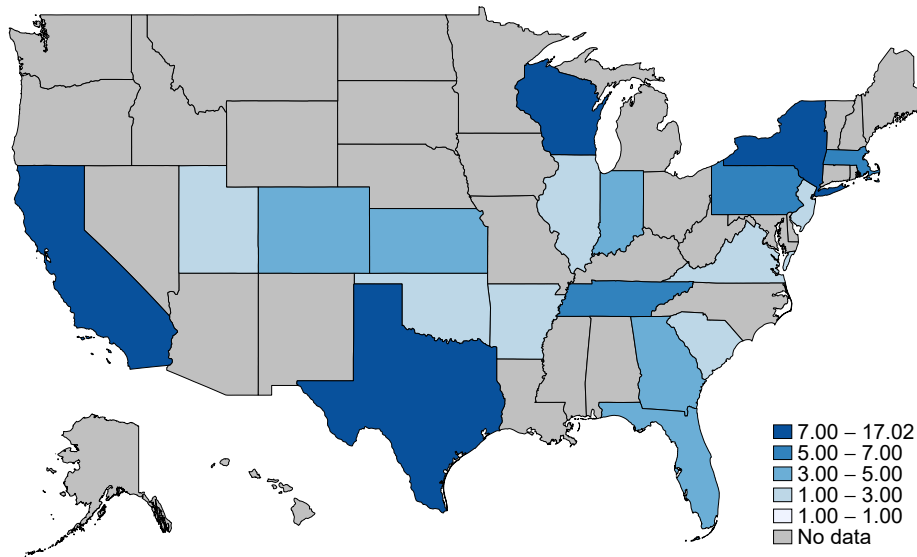
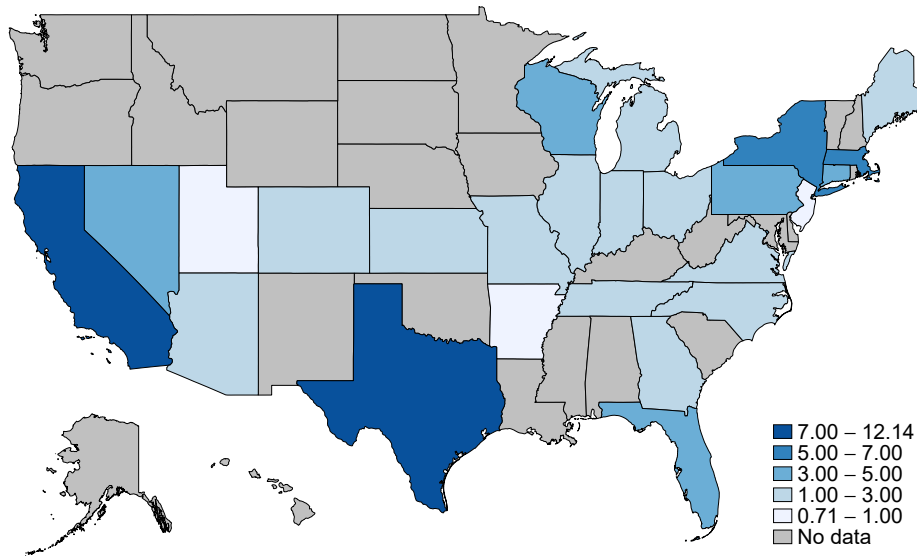


Fig. A.8. Geography of Split Control Borrowers: Pre- and Post-Policy

The figures present the geography of borrowers at the time a deal becomes active for split control borrowers, before and after the tax policy in 2012. The blue gradient indicates the frequency bin of firms operating in that particular geography, e.g., darkest blue indicates that between 7.00% and 17.02% of all firms in the sample operate in that state.



(a) Before



(b) After

Appendix B. Additional Tables

Table B.1. Variable Descriptions

Variable	Description	Source
1[Fee charged]	An indicator variable that equals to 1 if the amendment fee is charged.	SEC 10K, 10Q
Fee size	Amount of fee indicated in the loan amendment filing, denominated in basis points of the lender's commitment amount. If the negotiated fees in the original documents were in dollars, it will be converted to percentage points of the lender's commitment amount.	SEC 10K, 10Q
1[Financial covenant]	Indicator variable that equals to 1 if the credit agreement contains certain financial covenant.	SDC Platinum, SEC 8K
1[Renegotiation]	Indicator variable that equals to 1 if the credit agreement is ever amended as reported in SDC Platinum or if the credit amendment files are exhibited in SEC 10K/10Q.	SDC Platinum, SEC 10K
Round renegotiation	Rounds of renegotiation of a credit agreement. It is calculated as the maximum number of times a covenant is ever modified of a deal as reported in SDC Platinum or the maximum rounds of amendments as reported by the amendment files of a credit agreement as exhibited in SEC 10K/10Q.	SDC Platinum, SEC 10K
Num covenants	Total number of financial covenants in the credit agreement or the number of financial covenants as shown in the credit agreement exhibits in SEC 8K filings.	SDC Platinum, SEC 8K.
Tightness	Estimated tightness of financial covenants based on Murfin (2012) . We restrict the estimation to companies with at least 16 consecutive quarters of non-missing observations in the accounting ratios as set up in the financial covenants before the credit agreement year.	SDC Platinum, SEC 8K, Compustat
1[Financial statement]	An indicator variable that equals to 1 if the credit agreement contains requirement of financial statement delivery.	SEC 8K
1[Field examination]	An indicator variable that equals to 1 if the credit agreement contains requirement of periodic field examinations or inspections.	SEC 8K
Prob def 1 yr (3 yr)	Estimated probability of bankruptcy in 1 year or 3 years according to Bharath and Shumway (2008a) .	Compustat, CRSP
ln(Amount)	Natural log total dollar amount of a deal.	Dealscan, SDC Platinum
Maturity	Maturity of a syndicated deal denominated in the number of months. If a deal has multiple tranches, the maturity is calculated as the average maturity among all tranches.	Dealscan, SDC Platinum
Loan spread	The "All-in-spread" of a syndicated loan deal. If a deal has multiple tranches, the spread is calculated as the average spread of all tranches.	Dealscan, SDC Platinum
ln(Asset)	Natural log of a firm's total asset (atq).	Compustat
Market-to-book	Market-to-book value of a firm ($\text{prccq} \times \text{cshoq} + \text{dlcq} + \text{dlttq}$, scaled by atq).	Compustat
Tangibility	Tangibility of a company, defined as property, plants and equipment, scaled by total assets (ppentq/atq).	Compustat
Profitability	Operating income before depreciation scaled by total assets (oibdpq/atq).	Compustat
Retained earnings	Retained earnings (req), expressed as a fraction of total assets (atq).	Compustat
Upfront Fee	Fee paid by borrower to lenders upon closing of a deal, expressed in basis points	DealScan
Annual Fee	Annual charge (facility fee) against entire commitment amount, whether used or unused, expressed in basis points	DealScan
Revolving Deal Share	Revolving credit, expressed as a fraction of total deal amount	DealScan

Table B.1. Variable Descriptions

Variable	Description	Source
1[Sponsorship]	An indicator variable that equals to 1 if the loan has a sponsor.	DealScan
1[Guarantor]	An indicator variable that equals to 1 if the loan has a guarantor.	DealScan
1[Buyout]	An indicator variable that equals to 1 if the primary purpose of the loan is for buyout.	DealScan
1[Unitranche]	An indicator variable that equals to 1 if the loan has a unitranche structure (combines senior and subordinated debt into one amount with a blended interest rate).	DealScan
1[Speculative]	An indicator variable that equals to 1 if the loan has a Moody's Current Debt Rating below B3.	DealScan
1[Secured]	An indicator variable that equals to 1 if the loan is secured.	DealScan
1[Asset-based]	An indicator variable that equals to 1 if the loan is issued against accounts receivable, inventory, and/or fixed assets, which are pledged to support solely the given asset based loan.	DealScan
1[Cov-Lite]	An indicator variable that equals to 1 if the loan is not restricted by maintenance covenants.	DealScan

The table reports the definitions and sources of key outcome variables used in our analysis. Column (1) reports the variable. Column (2) describes the construction of the variable. Column (3) reports the data source.

Table B.2. Borrower Characteristics

Panel A: Split v.s. Non-split control	Non-split control		Split control		Comparison	
	Mean	Median	Mean	Median	Diff ((2)-(4))	t-stat
	(2)	(3)	(4)	(5)	(6)	(7)
ln(Assets)	5227.644	9121.030	4992.095	9788.974	235.549	(0.738)
ROA	0.006	0.040	0.004	0.059	0.002	(1.360)
Debt-to-ebitda	22.290	228.364	28.260	134.116	-5.970	(-0.908)
Market-to-book	1.280	0.799	1.483	4.287	-0.203	(-1.822)
Retained earnings/assets	0.049	0.448	-0.032	0.511	0.081***	(4.887)
Profitability	0.030	0.028	0.029	0.042	0.001	(0.681)
Short-term debt/asset	0.028	0.053	0.025	0.053	0.003	(1.690)
Interest coverage	13.505	39.793	13.752	48.919	-0.247	(-0.145)
Capex/assets	0.618	0.523	0.522	0.683	0.096***	(4.509)
Tangibility	0.332	0.281	0.243	0.229	0.089***	(10.241)
Sales/assets	0.246	0.293	0.261	0.318	-0.015	(-1.419)
Total liability/assets	0.378	0.197	0.432	0.251	-0.054***	(-6.967)
Long-term debt/assets	0.289	0.201	0.335	0.244	-0.046***	(-6.117)
Observations	1,964		1,612		3,576	
Panel B: Split-control firms: Pre v.s. Post	Pre-TD9599		Post-TD9599		Comparison	
	Mean	Median	Mean	Median	Diff ((2)-(4))	t-stat
	(2)	(3)	(4)	(5)	(6)	(7)
ln(Assets)	5746.800	10620.854	4014.304	7011.709	1732.496***	(4.551)
ROA	0.007	0.020	0.007	0.021	0.000	(0.376)
Debt-to-ebitda	24.658	79.784	32.649	157.703	-7.991	(-1.388)
Market-to-book	1.585	5.057	1.321	0.820	0.264	(1.697)
Retained earnings/assets	0.008	0.359	0.034	0.437	-0.025	(-1.442)
Profitability	0.031	0.039	0.030	0.038	0.001	(0.527)
Short-term debt/asset	0.026	0.050	0.025	0.052	0.001	(0.397)
Interest coverage	10.421	21.616	10.287	20.667	0.134	(0.133)
Capex/assets	0.574	0.651	0.444	0.569	0.130***	(4.901)
Tangibility	0.297	0.239	0.194	0.204	0.103***	(10.774)
Sales/assets	0.264	0.356	0.268	0.215	-0.004	(-0.303)
Total liability/assets	0.455	0.246	0.395	0.238	0.060***	(5.805)
Long-term debt/assets	0.363	0.250	0.297	0.226	0.065***	(6.430)
Observations	1,149		1,052		2,201	

The table compares characteristics of borrowers. Panel A compare borrowers of split-control deals and non-split control deals. Panel B compares borrowers entered into split control deal before TD9599 and those entered into split control deals post TD9599. In Panel A: Column (2) and Column (3) report the mean and median of firm characteristics borrowing non-split control deals, and Column (4) and (5) report the mean and median of firm characteristics borrowing split-control deals. In Column (6) and (7), we report the difference of the mean of characteristics between non-split control deals and split-control deals and the t-stats of the differences in mean. In Panel B, Column (2) and Column (3) report the mean and median of firm characteristics borrowing split control deals during the pre-TD9599 period, and Column (4) and (5) report the mean and median of firm characteristics borrowing split-control deals during the post-TD9599 period. In Column (6) and (7), we report the difference of the mean of characteristics between non-split control deals and split-control deals and the t-stats of the differences in mean.

Table B.3. Bank Balance Sheet and Split Control Deals

	1[Split control]						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Tier-1 capital/Assets	0.1060*** (0.0277)						
ROA		1.7420** (0.6830)					
Loan/Deposits			0.0054 (0.0150)				
Noninterest income/Total income				-0.0165 (0.0109)			
Equity/Assets					0.0944*** (0.0264)		
Bank Size						-0.0408*** (0.0042)	
1[Previous Relationship]							0.0266*** (0.0070)
Bank FE	✓	✓	✓	✓	✓	✓	✓
Industry × Year FE	✓	✓	✓	✓	✓	✓	✓
Deal Controls	✓	✓	✓	✓	✓	✓	✓
AdR-squared	0.21	0.21	0.21	0.21	0.21	0.21	0.21
N	25,469	25,474	25,449	25,474	25,494	26,901	26,901

The table presents the correlation between banks' characteristics and the likelihood of entering a split control deal contract in the leveraged loan market. The regression equation is as follows:

$$1[\text{Split control}]_{b,s,t} = \gamma_s + \gamma_t + \pi_b + \beta \times \text{Bank Char}_{b,t} + \mu\mathbf{X} + \epsilon_{b,s,t}$$

Tier-1 capital/assets is defined as the sum of retained earnings and common equity scaled by total assets, ROA is defined as net income scaled by total assets, Loan/Deposits is defined as total deposits scaled by total loans, Non-interest income/Total income is defined as non-interest income scaled by total income, Equity/Assets is defined as total equity scaled by total assets, Bank Size is defined as the logarithmic of total assets. "1[Relationship] is a dummy variable that equals to 1 if the borrower and the bank had issued any syndicated loans before the current deal. Deal controls include the logarithmic of deal amount, maturity and spread. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are reported in the brackets.

Table B.4. TD9599 and Financial Covenant Inclusion: Robustness

Panel A: All firms	1[Debt-to-ebitda]	1[Fixed charge]	1[Int cov]	1[Debt issuance]	1[Other]
	(1)	(2)	(3)	(4)	(5)
1[Split Control]×1[Post]	0.1469*** (0.0105)	0.0575*** (0.0076)	0.0906*** (0.0085)	0.0105* (0.0059)	-0.0039*** (0.0015)
1[Split Control]	0.0062 (0.0085)	0.0155** (0.0062)	0.0163** (0.0069)	0.0254*** (0.0048)	0.0042*** (0.0012)
Industry FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Deal control, Firm Control	Y	Y	Y	Y	Y
N	34,522	34,522	34,522	34,522	34,522
AdR squared	0.26	0.25	0.22	0.23	0.00
Panel B: 2010-2016	1[Debt-to-ebitda]	1[Fixed charge]	1[Int cov]	1[Debt issuance]	1[Other]
	(1)	(2)	(3)	(4)	(5)
1[Split control]	-0.0040 (0.0098)	0.0075 (0.0072)	0.0059 (0.0075)	0.0203*** (0.0052)	0.0000 (0.0002)
Split control × Post	0.0935*** (0.0121)	0.0433*** (0.0089)	0.0419*** (0.0093)	-0.0017 (0.0064)	-0.0002 (0.0003)
Industry FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Deal control, Firm Control	N	Y	Y	Y	Y
N	23,308	23,308	23,308	23,308	23,308
AdR squared	0.07	0.03	0.05	0.04	-0.00
Panel C: Entropy balancing	1[Debt-to-ebitda]	1[Fixed charge]	1[Int cov]	1[Debt issuance]	1[Other]
	(1)	(2)	(3)	(4)	(5)
1[Split control]	-0.0353*** (0.0110)	-0.0055 (0.0068)	0.0003 (0.0100)	0.0191*** (0.0044)	-0.0020 (0.0021)
Split control × Post	0.1015*** (0.0182)	0.0260** (0.0111)	0.0293* (0.0163)	-0.0242*** (0.0063)	0.0011 (0.0020)
Industry FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Deal control, Firm Control	Y	Y	Y	Y	Y
N	8,127	8,127	8,127	8,127	8,127
AdR squared	0.44	0.37	0.39	0.39	0.08

The table presents the heterogeneous responses of covenant inclusions for split and non-split control deals in response to the activation of TD9599 for different categories of financial covenants. The regression equation follows the specification in Table 9. Panel A shows the results for all firms. Panel B shows the results for a shorter time window around TD9599 from 2010 to 2016. Panel C shows the results under entropy balancing specification.

Table B.5. Split vs Non-Split Control Contract Features

Panel A: 2005-2018	Non-split control		Split control		Comparison	
	Mean	Median	Mean	Median	Diff	t-stat
Upfront Fees	117.6518	100.0000	81.5233	50.0000	36.1285	13.1677
Annual Fees	49.8187	37.5000	34.5227	30.0000	15.2960	1.4946
Revolving Deal Share	0.4311	0.2968	0.0980	0.0617	0.3332	49.1174
1[Sponsorship]	0.4273	0.0000	0.7605	1.0000	-0.3331	-65.6793
1[Buyout]	0.1209	0.0000	0.2218	0.0000	-0.1009	-28.3099
1[Speculative]	0.0374	0.0000	0.1510	0.0000	-0.1136	-41.3775
1[Secured]	0.6493	1.0000	0.9367	1.0000	-0.2874	-61.0792
1[Asset-based]	0.1000	0.0000	0.0593	0.0000	0.0407	13.3734
1[Cov-Lite]	0.0258	0.0000	0.6382	1.0000	-0.6125	-248.0003
Observations	61,303		10,756		72,059	

Panel B: 2010-2016	Non-split control		Split control		Comparison	
	Mean	Median	Mean	Median	Diff	t-stat
Upfront Fees	122.0210	100.0000	103.0204	50.0000	19.0005	5.2201
Annual Fees	54.59863	50.0000	27.0454	37.5000	17.5532	1.4967
Revolving Deal Share	0.4030	0.2727	0.1142	0.0729	0.2889	32.7501
1[Sponsorship]	0.4589	0.0000	0.7626	1.0000	-0.3036	-42.9360
1[Buyout]	0.1081	0.0000	0.2233	0.0000	-0.1152	-24.0413
1[Speculative]	0.0417	0.0000	0.1537	0.0000	-0.1120	-27.3066
1[Secured]	0.5529	1.0000	0.9387	1.0000	-0.3857	-57.1427
1[Asset-based]	0.1096	0.0000	0.0615	0.0000	0.0481	10.9780
1[Cov-Lite]	0.0301	0.0000	0.6374	1.0000	-0.6072	-167.5751
Observations	29,010		5,673		34,683	

The table compares contract features between split and non-split control loans. Columns (2)-(3) report the mean and median of the contract feature indicated in column (1) for non-split control deals, respectively. Columns (4)-(5) report the mean and median of the contract feature indicated in column (1) for non-split control deals, respectively. Column (6) reports the difference (non-split-split). Column (7) reports the t-statistic associated with the t-test on the equality of means between the two groups. Panel A conducts the comparison for the entire sample period, from 2005 through 2018. The sample in Panel B is restricted to the years around the tax policy, from 2010 through 2016.

Table B.6. Split Control Contract Features: Pre- and Post-Policy

Panel A: 2005-2018	Pre-TD9599		Post-TD9599		Comparison	
	Mean	Median	Mean	Median	Diff	t-stat
Upfront Fees	162.6875	100.0000	73.8209	50.0000	88.8667	11.9326
Annual Fees	40.06250	37.5000	31.0357	30.0000	9.5893	0.9664
Revolving Deal Share	0.1216	0.0730	0.0942	0.0598	0.0273	4.1619
1[Sponsorship]	0.8168	1.0000	0.7521	1.0000	0.0648	5.3068
1[Buyout]	0.4198	0.0000	0.1921	0.0000	0.2277	19.4737
1[Speculative]	0.0908	0.0000	0.1584	0.0000	-0.0676	-5.0948
1[Secured]	0.9223	1.0000	0.9388	1.0000	-0.0165	-2.3718
1[Asset-Based]	0.0691	0.0000	0.0578	0.0000	0.0113	1.6702
1[Cov-Lite]	0.3550	0.0000	0.6807	1.0000	-0.3258	-24.3223
Observations	1,403		9,353		10,756	

Panel B: 2010-2016	Pre-TD9599		Post-TD9599		Comparison	
	Mean	Median	Mean	Median	Diff	t-stat
Upfront Fees	151.1983	100.0000	95.0775	50.0000	56.1207	6.0026
Annual Fees	32.0000	25.0000	41.2500	43.7500	9.2500	-1.1028
Revolving Deal Share	0.1160	0.0699	0.1138	0.0731	0.0022	0.2398
1[Sponsorship]	0.8089	1.0000	0.7533	1.0000	0.0556	3.6652
1[Buyout]	0.3110	0.0000	0.2059	0.0000	0.1052	7.1075
1[Speculative]	0.1000	0.0000	0.1638	0.0000	-0.0638	-3.8818
1[Secured]	0.9246	1.0000	0.9415	1.0000	-0.0168	-1.9652
1[Asset-Based]	0.0690	0.0000	0.0600	0.0000	0.0090	1.0465
1[Cov-Lite]	0.3301	0.0000	0.6986	1.0000	-0.3684	-22.4069
Observations	942		4,731		5,673	

The table compares contract features for split control deals, before and after the activation of TD9599 in 2012. Columns (2)-(3) report the mean and median of the contract feature indicated in column (1) for split control deals pre-policy, respectively. Columns (4)-(5) report the mean and median of the contract feature indicated in column (1) for split control deals post-policy, respectively. Column (6) reports the difference (pre-post). Column (7) reports the t-statistic associated with the t-test on the equality of means between the two groups. Panel A conducts the comparison for the entire sample period, from 2005 through 2018. The sample in Panel B is restricted to the years around the tax policy, from 2010 through 2016.

Table B.7. Loan Purpose Distribution: Split and Non-Split Control

Loan Purpose	Non-Split (%)	Split (%)
General Purpose	54.1703	54.0722
Leveraged Buyout	10.4351	12.6534
Sponsored Buyout	1.5480	9.3715
Takeover	5.4206	8.5348
Dividend Recapitalization	4.3913	5.3087
Acquisition	9.8870	3.8118
General Purpose/Refinance	2.1516	3.2075
Merger	0.3050	1.0878
Spinoff	0.4796	0.7903
Recapitalization	0.6297	0.1952
Exit financing	0.6378	0.1859
Dividend or Distribution to Shareholders	0.0783	0.1673
Management Buyout	0.1109	0.1581
Working capital	7.7517	0.1581
Capital expenditure	0.3605	0.0837
IPO Related Financing	0.1582	0.0744
General Purpose/Stock Repurchase	0.2463	0.0651
Debtor-in-possession	0.8841	0.0558
Stock Repurchase	0.0718	0.0186

The table compares loan purpose for split and non-split control borrowers. The first column lists the 20 most common loan purposes. The second (third) column indicates the percent of non-split control (split control) loans used towards the loan purpose designated in the first column.

Table B.8. Loan Purpose Distribution: Pre- and Post-Policy

Loan Purpose	Pre (%)	Post (%)
General Purpose	39.2017	56.3028
Sponsored Buyout	7.4127	9.6653
Leveraged Buyout	34.5688	9.3660
Takeover	6.0584	8.9062
Dividend Recapitalization	6.2010	5.1748
Acquisition	1.3542	4.1805
General Purpose/Refinance	3.0649	3.2289
Merger	0.1426	1.2296
Spinoff	0.7840	0.7912
Recapitalization		0.2245
Exit financing	0.1426	0.1925
Dividend or Distribution to Shareholders		0.1925
Management Buyout		0.1818
Working capital	0.4277	0.1176
IPO Related Financing		0.0855
Debtor-in-possession		0.0642
General Purpose/Stock Repurchase	0.2138	0.0428
Capital expenditure	0.4277	0.0321
Stock Repurchase		0.0214

The table compares loan purpose for split and non-split control borrowers. The first column lists the 20 most common loan purposes. The second (third) column indicates the percent of split control deals used towards the loan purpose designated in the first column, before (after) the tax policy in 2012.