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ORIGINAL RESEARCH

Creditor control rights and borrower protection: the role of borrower consent clause in private debt contracts

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Abstract
We investigate how borrower consent clause (*BCC*) is used in private debt contracts as a contract design mechanism to protect borrower interests. We find that the probability of including a *BCC* in debt contracts increases in the intensity of creditor control rights measured by number of financial covenants. Furthermore, we document that performance covenants result in higher likelihood of *BCC* inclusion than capital covenants do. For robustness checks, we use alternative proxies for creditor control rights, and employ simultaneous equation and propensity score matching to address endogeneity. The baseline results still hold. Exploiting Anti-Recharacterization Law (ARL) as a quasi-natural experiment for strengthened creditor rights, we find that adoption of ARL increases the likelihood of *BCC* inclusion. Using credit default swap (CDS) trading as a setting of weakened creditor control rights, we document the inception of CDS trading is associated with lower likelihood of including *BCC*. Furthermore, we find that the association between creditor control rights and *BCC* is more pronounced for borrowing firms with good quality and more conservative financial reporting.

Keywords Borrower consent clause · Creditor control rights · Loan assignment · Incomplete contracting

JEL Classification G21 · G30 · L14

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1 Introduction

Borrower consent clause (*BCC*, hereafter) is a contracting term in bank loan contracts that requires creditors to seek the borrowers' consent before transferring some or all of a loan to a third party.[1] On the one hand, practitioners suggest that "borrowers are keen to maintain control over the composition of their syndicate as far as possible, so they know who they are dealing with at any given point" (Singleton 2017). On the other hand, *BCC* inclusion can reduce the flexibility of creditors to transfer their loans to a third party and thus impair loan trading liquidity (Loan Market Association 2017). Anecdotal evidence shows that it is common that borrowers refuse to grant consent to creditors who intend to assign their loans to hedge funds or similar investment vehicles (Kibbe et al. 2010). Overlooking this clause in loan contracts may result in nullification of loan transfer and even lawsuits (Carey 2018).

Despite the implications of *BCC* for both creditors and borrowers, existing literature mostly focus on creditor control rights, with little attention paid to *BCC* in debt contracting. Kamstra et al. (2014) and Pyles and Mullineax (2008) are two notable exceptions. Both studies use a sample of corporate loans prior to 2004, and find that loans with sale constraints (i.e., *BCC)* on average charge higher interest rates. However, neither study addresses a more fundamental question regarding why *BCC* is included, the circumstances under which lenders are willing to accept such a costly clause, and the equity market consequences of *BCC* inclusion for borrowing firms. We tackle these questions in this study to fill the gap in the literature, by using a sample of 5963 unique borrowing firms over the sample period of 1993–2015.

Why do borrowers use *BCCs*? We argue that borrowers include *BCCs* to reduce potential renegotiation costs due to the uncertainty in dealing with unknown creditors, especially those with strong creditor control rights. Because it is impractical to specify contracting parties' rights and obligations in all future state contingencies, incomplete contracting theory suggests that contracting parties tend to use noise but contractible signals (i.e., debt covenants) to allocate control rights, ensuring joint surplus and optimal contracting for them (Aghion and Bolton 1992; Bolton and Scharfstein 1996). A growing literature show that debt contracts include a wide range of financial and non-financial covenants (Dichev and Skinner 2003; Bradley and Roberts 2015), and covenant violation leads to creditors gaining control rights, which influences borrowers' corporate governance, investment, and financing decisions even in the absence of a payment default (Chava and Roberts 2008; Roberts and Sufi 2009a; Nini et al. 2012; Denis and Wang 2014).

While contingent allocation of control rights may benefit both contracting parties, frequent renegotiation and covenant violations also imply higher renegotiation costs and may become a concern for borrowers, especially when the contingent control rights can be transferred to a third party via loan assignments. Under this circumstance, borrowers face uncertainties regarding who gains the contingent control rights and with whom they will be dealing with during future renegotiations.[2] This issue is particularly important given that

[1] There are other types of assignment clauses in loan contracts in addition to *BCC*, including lead lender consent, buyer eligibility, minimum holding, minimum assignment, and Institutional Investor OK clause, which we discuss in detail in Sect. 3.2. We focus on *BCC* in this study.

[2] Borrowers often renegotiate their credits to adjust the terms of their loans or to manage the maturity they have left in their credits ((Roberts and Sufi 2009b; Mian and Santos 2018). Consistent with the view that transferring control rights through loan assignments is a source of concern for borrowers, Bord and Santos

banks have increasingly adopted the "originate-to-distribute model" in their lending business in the recent decades (Bord and Santos 2012), and the likelihood of loan sales and the transfer of creditor control rights therein have increased. Furthermore, existing literature suggests that creditors gain stronger contingent control rights *ex ante* when information asymmetry is high (Gârleanu and Zwiebel 2009; Hollander and Verriest 2016; Prilmeier 2017) and when borrowing firms want to signal their quality (Demiroglu and James 2010). However, whether borrowers use *BCCs* in debt contracts to address their concerns about the uncertainty associated with *ex post* loan transfer remains an empirical question. Accordingly, in our first hypothesis, we predict that the intensity of creditor control rights is associated with higher likelihood of *BCC* inclusion in debt contracts (*creditor control rights hypothesis*).

BCC inclusion is *costly* for creditors as it affects their management of credit risk and liquidity risk of loan portfolios. To mitigate the potential costs arising from accepting *BCC* in loan contracts, creditors may only accept *BCC* for loans made to good quality borrowers for two reasons. First, as credit worthy borrowers may *ex ante* concede greater contingent control rights to creditors to signal their high quality (Gârleanu and Zwiebel 2009; Demiroglu and James 2010), these borrowers are more likely to negotiate a *BCC* successfully. Second, granting a *BCC* to a quality borrower is also less costly to creditors as they are less concerned about rebalancing loan portfolios consisting of quality borrowers. Therefore, in our second hypothesis, we predict that the positive association between *BCC* and creditor control rights is more pronounced in high quality borrowers (*borrower quality hypothesis*).

As accounting ratios are usually used in debt contracting to facilitate the allocation of creditor control rights (Aghion and Bolton 1992), accounting conservatism, an accounting practice that recognizes economic losses more timely than gains, can tighten creditor control rights by triggering more timely covenant violation and renegotiations (Zhang 2008; Watts 2003). If the tightened control rights due to conservative financial reports are more of a concern for borrowers conceding control rights to creditors, we expect that the probability of including *BCC* increases with the extent of conservative reporting. Therefore, we expect the positive association between creditor control rights and *BCC* is more pronounced in loan contracts to borrowers with more accounting conservatism (*conservative reporting hypothesis*).

To test our hypotheses, we use data on all loan facilities extended to US borrowers in 1993–2015 in the DealScan database, which includes the initial loan terms and conditions and the identities of lenders and borrowers. We identify the contract terms pertaining to creditor control rights and various loan assignment clauses including *BCC* which restricts creditors' loan assignment, as well as other loan pricing and non-pricing information from DealScan. We obtain firm characteristics from Compustat and stock return data from the Center for Research in Security Prices (CRSP). Our sample includes 25,826 loan packages issued to 5963 unique firms constituting 21,977 firm-year observations from 1993 to 2015.

Our primary results show that the probability of BCC inclusion increases with the intensity of creditor control rights proxied by the number of financial covenants in loan contracts, supporting H1. The results are robust to using tightness of financial covenants as an alternative measure of creditor control rights. Christensen and Nikolaev (2012) classify

Footnote 2 (continued)

(2012) state that such transfers may "hinder the ability of corporate borrowers to renegotiate their loans after they have been issued. This difficulty may arise not only because the borrower will have to renegotiate with more investors but also because the universe of investors acquiring corporate loans is more heterogeneous.".

financial covenants into performance and capital covenants and find that the intensity of performance covenants is positively associated with probability of debt renegotiations, while capital covenants are not. We hence conduct additional analyses on the effects of performance and capital covenants on the probability of *BCC* inclusion. We find that the positive association between performance covenants and *BCC* is greater than that between capital covenants and *BCC*, implying that the control rights induced by the intensity of performance covenants are of a bigger concern for borrowers than those arising from capital covenants, consistent with the findings in Christensen and Nikolaev (2012) that the intensity of performance covenants is associated with stronger contingent control rights. The results of using financial covenant tightness and performance covenants tightness are qualitatively similar.

We also use the inception of credit default swaps (CDS) trading as a unique setting of weakened contingent control rights and examine its impact on the probability of *BCC* inclusion. Recent studies show that purchase of CDS dilutes creditors' incentives to monitor borrowers and results in fewer debt covenants being included in debt contracts (Ashcraft and Santos 2009; Subrahmanyam et al. 2014; Shan et al. 2019), implying that the inception of CDS trading could weaken creditors' demand for control rights. We expect and find a decline in the usage of *BCC* after the inception of CDS trading.

We employ three approaches to address the potential endogeneity issues of creditor control rights. First, we use a simultaneous equation framework to jointly estimate the determination of *BCC* inclusion and creditor control rights proxied by the number of financial covenants. We instrument the inclusion of *BCC* using the borrowing firm's industry average usage of *BCC*, and instrument the number of financial covenants using a bank's loan quality prior to (current) loan initiation. The results show that the usage of *BCC* continues to be associated with greater creditor control rights, consistent with our primary results.

Second, to address the endogeneity concern that creditor control rights may be determined by (observable) borrower and loan characteristics, we employ propensity score matching (PSM) method to match on firm and loan characteristics and obtain a matched sample. The diagnostic test results indicate that the matching procedure successfully removes all the observable differences between the treatment and control sample. The regression results continue to show that creditor control right is positively associated with *BCC* inclusion using the PSM matched sample.

Third, we exploit the staggered adoption of Anti-Recharacterization Law (*ARL*) in Texas and Louisiana in 1997 and then Alabama in 2001 as a quasi-natural experiment and an exogeneous shock to creditor rights and examine how *ARL* might affect *BCC*. *ARL* enables creditors to seize borrowers' collateral without any delay by facilitating the transfer of borrower's assets to a special purpose vehicle available to the creditors when the borrowing firm files for bankruptcy (Li et al. 2016), strengthening creditor rights during bankruptcy process. We show that loans syndicated in states after the enactment of *ARL* have much higher probability of *BCC* inclusion in loan contracts than loans in neighboring *non-ARL* states with similar firm- and loan-specific characteristics, suggesting that borrowers are more likely to demand the inclusion of *BCC* in response to strengthened creditor rights associated with *ARL*.

In our second hypothesis (H_2), we predict a stronger association between the presence of a *BCC* and creditor control rights when loans are extended to "good type" borrowers. Consistent with this prediction, we document that the positive relationship between *BCC* inclusion and creditor control rights is more pronounced for borrowing firms that have a higher market to book ratio, are larger, not financially constrained, and have rated bonds. In our third hypothesis (H_3), we predict that the positive association between creditor control

rights and *BCC* is more pronounced in loan contracts to borrowers with more conservative financial reporting. Following Basu (1997) and Ball and Shivakumar (2005), we use the return-based and non-return-based accrual and earnings change measure, respectively, to gauge the degree of accounting conservatism. We find that the likelihood of *BCC* inclusion is much higher when borrowers report more conservatively, consistent with H_3.

Next, we conduct additional analyses to further assess the economic consequences of *BCC* on creditors and borrowers. In particular, we explore the relationship between *BCC* inclusion and the ex-post loan trading liquidity, as well as the abnormal equity returns around loan announcement and/or loan initiation of borrowers. Consistent with the notion that a BCC imposes restriction on loan trading, we find that loans with a *BCC* are less likely to be traded in the secondary loan market compared to loans without such clause. Consistent with our prediction that borrower consent clause is granted to "high quality" borrowers, our empirical results show that loans with a *BCC* have a greater positive abnormal return in the equity market surrounding loan announcement or initiation, compared to similar loans without such clause.

Our study makes two contributions to the existing literature. First, we focus on the *BCC*, a relatively unexplored area of credit agreements, as an important mechanism in contract design to reduce future renegotiation costs for borrowers due to dealing with unknown creditors with strong creditor rights. We document that the probability of *BCC* inclusion increases with the intensity of creditor control rights. Complementing extant studies in financial contracting that focus on how creditor control rights improve contracting efficiency (Aghion and Bolton 1992; Bolton and Scharfstein 1996; Demiroglu and James 2010), we show that *BCC* is also an important contracting mechanism to address contract incompleteness and improve contracting efficiency in the originate-to-distribute banking era.

Second, our study sheds light on the circumstances under which *BCCs* are included in debt contracts. We show that *BCCs* are more likely to be included in loan contracts when creditor control rights are strong, when borrowers are of "good quality", and when borrowers issue more conservative financial reports.

The rest of the paper proceeds as follows. Section 2 presents the literature review and hypotheses development. Section 3 discusses data and models. Section 4 discusses the empirical results on creditor control rights and BCC, including robustness checks. Section 5 presents the results on the impact of BCC on lenders and borrowing firms. Section 6 concludes.

2 Literature review and hypotheses development

2.1 Incomplete contracting, creditor control rights, and debt covenants

Incomplete contracting theory suggests that financial contracts are incomplete because contracting parties cannot stipulate all future states or actions, resulting in contracting parties' ex post opportunistic behavior (e.g., Grossman and Hart 1986; Hart and Moore 1988; Aghion et al. 1994; Dewatripont and Tirole 1994). For example, borrowers may undertake risky projects after they secure loans from creditors, and lenders may terminate funding for a positive net present value project (Sharpe 1990; Rajan 1992). To reduce the *ex post* opportunism in incomplete contracting, allocation of decision rights is the key to maximize the joint surplus of the contracting parties in that borrowers with high credit risk should

delegate control rights to creditors, while borrowers with low default risk should retain control rights (Aghion and Bolton 1992; Bolton and Scharfstein 1996).

Demiroglu and James (2010) show that borrowers concede more control rights to creditors to signal their quality. However, allocating more control rights to creditors could affect the probability and outcome of future renegotiations (Dewatripont and Tirole 1994), which may concern borrowers especially when creditor control rights can be transferred to third parties via loan assignment. Under this circumstance, borrowers, rather than creditors, face uncertainty regarding who gains the control rights and with whom they negotiate during future renegotiations.

Aghion and Bolton (1992) further indicate that as future states of nature may not be contractible, the allocation of control rights can be based on a contractible signal, although noisy, such as change in accounting ratios that reflect the uncontactable state of nature. Specifically, accounting-based covenants in debt contracts are used to facilitate the allocation of control rights, because failure to maintain the threshold of accounting ratios specified in debt contracts may result in creditors taking over the control rights and debt renegotiations. Recent empirical studies provide a wide range of evidence regarding the presence of covenants in debt contracts and the role of these covenants in facilitating the transfer of control rights. For example, Dichev and Skinner (2003) suggest that financial covenants in debt contracts serve as "trip wire" to facilitate the transfer of control rights. Bradley and Roberts (2015) show that financial and nonfinancial covenants are widely used in debt contracts. Recent studies also show that most covenant violations lead to deal renegotiations and allow creditors to undertake a wide range of actions such as modifying loans' maturity, interest rate, credit availability, and the structure of covenants and collaterals (e.g., Gopalakrishnan and Parkash 1995; Chen and Wei 1993; Roberts and Sufi 2009b; Chava and Roberts 2008; Nini et al. 2009; Roberts 2015). Upon covenant violation, creditors may also exercise control rights to influence the investment and financing activities of the borrowing firms and, in turn, corporate governance and firm value (e.g., Roberts and Sufi 2009a; Nini et al. 2012; Demiroglu and James 2010).[3] In addition, existing studies document that upon covenant violation creditors push for operational changes and within firm resource allocation for the most productive use, shape executive bonus plans, reduce CEO compensation and risk-taking incentives in compensation package, and limit corporate acquisition activity (Ersahin et al. 2021; Armstrong et al. 2022; Balsam et al. 2018; Becher et al. 2022).

2.2 Hypotheses development

As discussed in the previous section, in an incomplete contracting setting with high uncertainty about unverifiable future states, borrowers may *ex ante* concede control rights to creditors to signal their quality or reduce creditors' concern over borrowers' opportunistic behavior. However, conceding control rights to creditors may not be efficient for the borrowing firms because such concession may increase borrowing firms' uncertainty in dealing with creditors, especially when the originating lenders can transfer loans to third parties via loan assignment or outright loan sale. We argue that to balance the control rights granted to creditors, borrowers are likely to demand *BCC* to self-protect against the

[3] Ferreira et al. (2018) finds that even the combination of a borrowing firm's board of directors might change in reaction to a covenant violation. They find that the number of independent directors increases by about 24% following a violation. Most of the new directors have links to creditors.

possibilities that their loans with tight creditor control rights be assigned to unknown creditors. Furthermore, tighter creditor control rights may trigger covenant violations and debt renegotiation more frequently (e.g., Roberts and Sufi 2009b; Nikolaev 2018), which may prompt borrowers to demand *BCC* inclusion in debt contracts to reduce the potential renegotiation costs arising from dealing with unknown creditors in renegotiations. Therefore, we propose the following hypothesis:

Hypothesis 1 The probability of BCC inclusion is positively associated with the intensity of creditor control rights (creditor control rights hypothesis).

From creditors' perspective, *BCC* inclusion is costly because it restricts their flexibility to transfer loans to a third party, which makes it more difficult for them to manage the credit risk and liquidity risk of their loan portfolios. Hence, we predict that creditors are more likely to grant a *BCC* to "good types" borrowers especially when the latter accept tighter creditor control rights to signal their quality. Based on the above arguments, we propose the following hypothesis:

Hypothesis 2 The positive association between creditor control rights and BCC is more pronounced for "good types" borrowers (borrower quality hypothesis).

Financial contracts include accounting-based covenants to facilitate transfer of control rights (e.g., Aghion and Bolton 1992). Accounting conservatism that recognizes economic losses more timely than economic gains can speed up the transfer of control rights and therefore strengthen creditor control rights (Zhang 2008; Watts 2003). Accordingly, we predict that to alleviate their concerns over heightened creditor control rights associated with conservative financial reporting, borrowers that report conservatively are more likely to request *BCC* inclusion in debt contracts with more financial covenants.

Hypothesis 3 The positive association between creditor control rights and BCC is more pronounced for borrowers with more conservative financial reporting (conservative reporting hypothesis).

3 Data and sample

3.1 Sample selection

Our primary sources of data are DealScan and LSTA/LPC mark-to-market loan pricing database, both provided by Thomson Reuters's Loan Pricing Corporation (LPC). DealScan provides detailed information on loan contract characteristics at the time of loan initiation, including the identities of both borrowers and creditors, price and nonprice terms of loans. The LSTA/LPC mark-to-market loan pricing database contains secondary loan market information, including the identity of the borrowing firm as well as various price quotes and dealer information. We construct borrowing firms' characteristics by acquiring financial data from Compustat and stock market data from CRSP.

We assemble our sample in the following steps. First, we merge DealScan with the Compustat database using the DealScan-Compustat link file compiled by Chava and Roberts (2008). Each deal (package) reported in DealScan may contain more than one facility

(tranche) with different loan types (i.e., revolver or term loan), loan amounts, spreads, maturities, compositions of lenders, and loan purposes, but with the same collateral, covenants, and loan assignment clauses governing the whole loan package. As both the *BCC* (and other assignment clauses) and covenants information are provided at the package level, we conduct our *BCC* analyses at the package level and take the maximum value of the facility-level variables as the package-level variable. For example, we use the longest maturity of all loan facilities in a package as the package maturity and the largest number of lenders of all facilities as the number of lenders for the package, and so forth.[4] Our final sample includes 25,826 loan packages belonging to 5963 unique borrowers over the sample period of 1993–2015.

We complement our data with the covenant violation data provided by Professor Michael Roberts, which contains all covenant violations reported in the Securities and Exchange Commission (SEC) filings during the period 1996–2012 for publicly traded firms in the United States.[5] To identify loan trading data, we merge DealScan data with the LSTA/LPC mark-to-market loan pricing data by matching LIN numbers and DealScan facility numbers.

3.2 Identification of BCC

When loans are transferred to loan buyers, the creditor control rights associated with them along with cash flow rights are also transferred to loan buyer. A credit agreement may also contain a clause that prohibits or restricts the assignment of a portion or the entire loan to a third party. Also, an assignment clause can specify the eligibility requirements that a third party must meet in order to gain ownership in a loan. These requirements can be related to the type of financial institution that is allowed to buy a loan—for example, only commercial banks are allowed to buy participation of a certain loan—or they can be related to the minimum resources, net worth or capital, that the buyer is required to have—for example, the buyer needs to have a minimum capital and reserves of more than $1 billion to be an assignee in a particular loan. In particular, we examine the *BCC*, a clause that requires borrower consent for all loan transfers.

More specifically, we define six general types of assignment clauses: (1) whether the agreement includes a clause that requires borrower consent for all assignments (*BCC*); (2) whether the consent of lead lender is required for a lending syndicate member to transfer loan (lead lender consent clause); (3) whether the agreement has eligibility requirements for loan buyers: eligible loan buyers may be restricted to certain types of financial institutions, such as commercial banks, funds, insurance companies or may be defined based on minimum size of assets, capital, net worth, surplus, and so forth (buyer eligibility clause); (4) whether there are minimum holding requirements. This group of assignment clauses put restrictions on original lenders selling all their participations in the secondary market (minimum holding clause). It is very common that the agent lenders are required to retain all or a significant portion of their participation in a loan; (5) whether there are restrictions on the portion of the loan that can be assigned (minimum assignment clause); (6) whether the consent of institutional investors is required for a lending syndicate member to transfer

[4] The results are qualitatively similar using facility-level analysis or using weighted average of facility-level variable. The analysis of probability of loan trading is conducted at the facility level.

[5] The covenant violation data is available at http://finance.wharton.upenn.edu/~mrrobert/styled-9/styled-11/index.html.

loan (institutional investor OK clause). Of these clauses, the *BCC* and lead lender consent clause can be directly inferred from, respectively, the Company Consent and the Agent Consent variables in DealScan's Package table. To identify the other four clauses, we read the comment section of each credit agreement provided in DealScan's Package Assignment Comment table and infer whether the clause exists in the agreement.

Table 1, Panel A shows the yearly distribution of deals with *BCC*. The percentage of deals with a *BCC* range from 44% in 1993 to 69% in 2008. The portion of deals with a *BCC* is relatively larger in 2002–2008 than that in other periods, corresponding to the growth in the secondary loan trading market that facilitates loan trading. Panel B shows the distribution of different loan assignment clauses. Among our sample of 25,826 loan packages, 14,198 (55%) packages have a *BCC*, 14,756 (57.1%) have lead lender consent, 2347 (9.1%) have buyer restriction, 14,057 (54.4%) have minimum assignment, 1850 (7.2%) have minimum holding clause, and 935 (3.6%) have institutional investor OK clause.

3.3 Sample descriptive statistics

Table 2 presents the descriptive statistics. Out of 25,826 packages in our sample, 55% have a BCC. On average, each package has 1.422 financial covenants; among loan packages with financial covenants, the average number of performance (capital) covenants is 1.628 (0.694). Each package on average has 8.35 lenders, 90.8% are commercial banks, and 9.2% are nonbank institutional investors. An average borrowing firm has a total assets size of $7383.375 million, a market-to-book ratio of 1.701, a tangibility ratio of 34.8%, a profitability ratio of 2.3%, and a leverage ratio is 25.9%. On average, 23.2% of the borrowing firms have issued leveraged loans, and 16.6% of borrowing firms are financially constrained.

4 Empirical results

4.1 Creditor control rights and *BCC*

4.1.1 Baseline analysis

Our first hypothesis states that borrowers of loans with tighter creditor control rights are more likely to demand *BCC* inclusion in debt contracts to protect themselves. To test this conjecture, we employ the following firm-fixed effects linear probability model:[6]

$$BCC_{i,j,t} = \alpha_i + \delta_t + \beta_1 FinCov_{i,j,t} + \gamma X_{i,t-1} + \theta C_{i,j,t} + \varepsilon_{i,j,t} \quad (1)$$

where i, j, and t denote firm, loan packages, and time, respectively. *BCC* is an indicator that equals one if a loan package contains *BCC* and zero otherwise. α_i and δ_t represent firm and year fixed effects, respectively. $FinCov_{i,j,t}$ is the number of financial covenants, which is a measure of the intensity of creditor control rights, following Demiroglu and James (2010). $X_{i,t-1}$ is a set of firm-specific control variables, and $C_{i,j,t}$ is a set of loan package–level control variables to be discussed below.

[6] We also report the results based on probit model as a robustness test.

Table 1 Sample distribution

Panel A

Year	# of firms	# of deals	# of deals with BCC	%
1993	437	498	220	0.442
1994	721	820	417	0.509
1995	756	869	451	0.519
1996	943	1098	574	0.523
1997	1140	1386	748	0.54
1998	1059	1239	674	0.544
1999	1072	1242	669	0.539
2000	1262	1527	706	0.462
2001	1250	1498	721	0.481
2002	1253	1458	767	0.526
2003	1233	1473	826	0.561
2004	1283	1540	952	0.618
2005	1222	1473	930	0.631
2006	1123	1335	853	0.639
2007	1049	1262	800	0.634
2008	710	810	556	0.686
2009	513	574	344	0.599
2010	732	813	421	0.518
2011	1019	1146	577	0.503
2012	786	896	487	0.544
2013	844	1016	508	0.5
2014	832	983	487	0.495
2015	738	870	508	0.584
Total	21,977	25,826	14,196	

Panel B

Variable	N	Mean	SD	P25	P50	P75
BCC	25,826	0.55	0.498	0	1	1
Min Assi	25,826	0.544	0.498	0	1	1
Lead lender consent	25,826	0.571	0.495	0	1	1
Restriction on buyer type	25,826	0.091	0.287	0	0	0
Institutional Investor OK	25,826	0.036	0.187	0	0	0
Min Holding	25,826	0.072	0.258	0	0	0

This table presents the distribution of the sample from 1993 to 2015. Panel A presents the number and the percentage of loan deals with borrower consent and minimum assignment clause in each year. Panel B presents the distributions of other loan assignment clauses

We control for firm characteristics that proxy for information asymmetry and agency costs of debt that might affect creditor control rights. Among the firm characteristics, we include firm size, market-to-book ratio, tangibility, profitability, leverage, and an indicator for financial constraint. All variables are described in Appendix 1. Larger firms, more profitable firms, firms with better growth prospect, and firms less financially constrained

Table 2 Descriptive statistics

Variable	N	Mean	SD	p25	p50	p75
Loan characteristics						
BCC	25,826	0.550	0.498	0	1	1
FinCov	25,826	1.422	1.513	0	1	3
Nonbank prc	25,826	0.092	0.215	0	0	0.067
PerfCov	14,482	1.628	0.946	1	2	2
CapCov	14,482	0.694	0.749	0	1	1
FinCov_Tightness	11,725	0.373	0.416	0.013	0.118	0.906
PerfCov_Tightness	11,725	0.315	0.405	0	0.055	0.8
CapCov_Tightness	11,725	0.097	0.252	0	0	0.038
Deal/Assets	25,826	0.330	0.418	0.084	0.200	0.418
Log(Maturity)	25,826	3.702	0.666	3.584	4.078	4.094
Secured	25,826	0.467	0.499	0	0	1
Leveraged loan	25,826	0.232	0.422	0	0	0
Firm characteristics						
Log(Assets)	25,826	7.219	1.912	5.852	7.142	8.554
Mkbk	25,826	1.701	0.955	1.117	1.403	1.923
Tang	25,826	0.348	0.254	0.131	0.287	0.541
Roa	25,826	0.023	0.113	0.006	0.037	0.072
Levg	25,826	0.259	0.203	0.105	0.237	0.367
Fc	25,826	0.166	0.372	0	0	0

This table presents the descriptive statistics of the sample. *BCC* is an indicator variable that equals one if a loan deal contains a borrower consent clause and zero otherwise. *FinCov* is the number of financial covenants. *Nonbank prc* is the ratio of the number of nonbank lenders over the total number of lenders in a loan deal. *PerfCov* is the number of performance covenants in a loan deal. *FinCov_Tightness, PerfCov_Tightness*, and *CapCov_Tightness* are the Demerjian and Owens (2016) measures of covenant tightness for all financial covenants, performance covenants, and capital covenants, respectively. *Deal/Assets* is deal amount divided by total assets. *Log(Maturity)* is the natural logarithm of the number of days between the quarter end date to the loan maturity date. *Secured* is an indicator variable that equals one if a loan deal contains collateral requirement and zero otherwise. *Leveraged loan* is an indicator that equals one if a firm's credit rating is below BBB or a firm does not have a credit rating, and zero otherwise. *Log(Assets)* is the natural logarithm of total assets. *Mkbk* is market-to-book ratio. *Tang* is tangible assets divided by total assets. *Roa* is return on assets. *Levg* is leverage ratio proxied by total debt divided by total assets. *Fc* is an indicator variable for financial constraint that equals one if a firm's Whited and Wu (2006) financial constraint index is greater than the sample median, and zero otherwise

are assumed to be quality firms. Hence, we expect that they are more likely to be granted a *BCC*. Prior studies also suggest that firms with a larger proportion of tangible assets have higher liquidation costs (Bolton and Oehmke 2011; Favara et al. 2012) and creditors' bargaining position is stronger in firms with a larger proportion of tangible assets (Feldhütter et al. 2016). Therefore, we expect tangibility is positively associated with the existence of a *BCC*. Among loan-specific variables, we include the loan-to-asset ratio, loan maturity, revolver loan indicator, leveraged loan indicator, and security (an indicator for

loan collateral). Larger loans and revolvers loans are more likely to have a BCC because borrowers want to screen syndicated members to ensure that they are capable of meeting future funding obligations.

The results of estimating Equation (1) are presented in Table 3. Column (1) of Table 3 provides the results of a probit model, Column (2) presents the results with linear probability firm fixed effects, and Column (3) shows the results when we restrict the sample to loans with at least one financial covenant in a linear probability model. The results in Columns (1)–(3) indicate that the coefficients on the number of financial covenants are positive and significant at the 1% level, suggesting that loans with a larger number of financial covenants are more likely to have a *BCC*. In particular, in the linear probability model in Column (2), the coefficient on *FinCov* is 0.189 and significant at the 1% level, suggesting that the addition of one financial covenant leads to about 19% increase in the probability of including *BCC* in the contract.

Demerjian and Owens (2016) develop an aggregate measure of covenant tightness and show that their measure of covenant tightness is associated with higher probability of covenant violations and renegotiations.[7] We follow Demerjian and Owens (2016)and use tightness of financial covenants (*FinCov_Tightness*) as an alternative measure of the intensity of creditor control rights. Results reported in Column (4) of Table 3 show that the loans with tighter financial covenants are more likely to have *BCC*, consistent with the argument that contracts with stronger creditor control rights are more likely to include a *BCC*. Overall, these results suggest that *BCC* serves as an important contractual mechanism to improve contracting efficiency.

The coefficients on the control variables indicate that among borrower characteristics, larger firms and firms with less financial constraints are more likely to have a *BCC*. Among the loan-specific variables, larger loans are more likely to have a *BCC*.

4.1.2 The effect of performance covenants and capital covenants on BCC

Our baseline analysis shows that when debt contracts have tighter financial covenants, borrowers are more likely to demand *BCC* as tighter financial covenants may trigger more frequent renegotiations and covenant violations. Christensen and Nikolaev (2012) further classify financial covenants into performance covenants and capital covenants and show these two types of covenants have different implications for debt contracting.[8] In particular, they argue that while performance covenants are used as trip wires to reduce borrowers' *ex post* opportunistic behavior via the transfer of contingent control rights to creditors, capital covenants align the interests of shareholders and creditors *ex ante* by requiring that shareholders maintain sufficient capital within the firm to increase the sensitivity of the shareholder stake to managerial actions, thereby reducing agency costs of debt. They find that performance covenants, as trip wires to facilitate allocation of the contingent control rights, are associated with more frequent contract renegotiations; in contrast, capital covenants that are used to address agency problem *ex ante* do not lead to more frequent contract

[7] We obtain the measure from Professor Peter Demerjian's website: http://faculty.washington.edu/pdemerj/data.html.

[8] Performance covenants include cash interest coverage ratio, debt service coverage ratio, level of earnings before interest, taxes, depreciation, and amortization (EBITDA), fixed charge coverage ratio, interest coverage ratio, ratio of debt to EBITDA, and ratio of senior debt to EBITDA covenants). Capital covenants include quick ratio, current ratio, debt-to-equity ratio, loan-to-value ratio, ratio of debt to tangible net worth, leverage ratio, senior leverage ratio, and net worth requirement.

Table 3 Creditor control rights and borrower consent clause

Variables	(1) BCC	(2) BCC	(3) BCC	(4) BCC
FinCov	**0.620*****	**0.189*****	**0.030*****	
	[47.696]	**[51.469]**	**[5.067]**	
FinCov_Tightness				**0.038*****
				[2.588]
Log(Assets)	0.027*	0.022**	0.030**	0.027*
	[1.951]	[2.333]	[2.484]	[1.868]
Mkbk	0.064***	0.004	− 0.004	− 0.009
	[4.537]	[0.595]	[− 0.599]	[− 1.125]
Tang	0.011	0.060	0.080	0.061
	[0.131]	[1.202]	[1.248]	[0.836]
ROA	− 0.089	− 0.029	0.057	0.109**
	[− 0.831]	[− 0.711]	[1.138]	[2.084]
Levg	− 0.031	− 0.036	0.039	0.020
	[− 0.459]	[− 1.187]	[1.057]	[0.490]
Fc	− 0.577***	− 0.038**	− 0.058***	− 0.069***
	[− 13.133]	[− 2.278]	[− 2.853]	[− 3.010]
Secured	0.248***	0.086***	0.004	0.002
	[8.828]	[8.578]	[0.316]	[0.154]
Deal/Assets	0.097***	0.050***	0.064***	0.073***
	[2.803]	[4.307]	[3.970]	[4.207]
Log(Maturity)	− 0.048**	− 0.003	0.016	0.020*
	[− 2.490]	[− 0.507]	[1.620]	[1.884]
Leveraged	0.006	− 0.052	− 0.032	− 0.008
	[0.029]	[− 0.655]	[− 0.371]	[− 0.093]
Revolver	0.242***	0.054***	0.027**	0.021
	[8.127]	[5.770]	[1.972]	[1.463]
Constant	− 1.187***	0.165**	0.467**	0.656***
	[− 3.334]	[2.166]	[2.191]	[3.249]
Loan purpose fixed effects	Yes	Yes	Yes	Yes
Credit rating fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	No	No	Yes
Firm fixed effects	No	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	25,823	25,826	14,482	11,725
Pseudo R^2/Adjusted R^2	0.3182	0.626	0.579	0.600

Bold indicates variables of interest

This table presents the results of a probit model (Column (1)) and linear probability firm fixed effects model (columns (2)–(4)) estimating the effects of the number of financial covenants (*FinCov*) and tightness of financial covenants (*FinCov_Tightness*) on borrower consent clause (*BCC*). The dependent variable is an indicator variable *BCC* that equals 1 if a loan deal contains borrower consent clause and 0 otherwise. Column (2) reports the linear probability firm fixed effects results for the full sample and Column (3) reports the results for the sample with at least financial covenant. Column (4) reports the results using the tightness of financial covenants as the independent variable. Variable descriptions for all variables are provided in Appendix 1. Standard errors are clustered at the firm level with robust and clustered t-statistics provided in parentheses. Statistical significance at the 0.01, 0.05, and 0.10 level is indicated by ***, **, and *, respectively, using two-tailed tests

renegotiations. If *BCC* is used as a strategic response to the increased frequency of future renegotiations associated with the intensity of performance covenants rather than the *ex ante* agency problem, we expect that the positive association between performance covenants and *BCC* is stronger than that between capital covenants and *BCC*.

We report the results of these two types of financial covenants in Table 4, with columns (1)–(3) on the effect of the number of performance (*PerfCov*) and capital covenants (*CapCov*) and columns (4)–(6) on the effect of the tightness of these two covenants, respectively. Columns (1) and (2) show that the coefficient on *PerfCov* is positive and significant at the 1% level, while that on *CapCov* is negative yet insignificant. When we include both *PerfCov* and *CapCov* in the same regression (Column (3)), the coefficients on *PerfCov* and *CapCov* remain qualitatively similar to those in columns (1) and (2). The results suggest that performance covenants are associated with higher likelihood of *BCC* inclusion, while capital covenants are not. The results using the tightness of performance and capital covenants (columns (4)-(6)) are qualitatively similar to those of using the number of *PerfCov* and *CapCov*. Overall, the results in Table 4 are consistent with our argument that because performance covenants are more likely to trigger debt renegotiations than capital covenants, the intensity of performance covenants results in higher likelihood of *BCC* inclusion in debt contracts than that of capital covenants.[9]

4.1.3 The effect of the inception of credit default swap (CDS) trading on BCC

To corroborate the findings that borrowers demand *BCC* as a strategic response to tight contingent control rights, we examine how the inclusion of *BCC* varies with the inception of CDS trading which weakens creditors' demand for control rights. Once banks purchase CDS to offload credit risk and gain credit protection, they have less concern about borrower default (Ashcraft and Santos 2009), and become less flexible in subsequent debt renegotiations (Subrahmanyam et al. 2014). Shan et al. (2019) find that the inception of CDS trading reduces banks' incentives to monitor borrowers and leads to loosening of debt covenants, suggesting CDS trading substitutes for covenants on loan contracts as an alternative discipline mechanism on borrowers. If the inclusion of *BCC* is a strategic response to tight creditor control rights via contractual design, we would expect a decline in the usage of *BCC* after the inception of CDS trading.

We obtain CDS trading data between 2000 and 2012 from Markit CDS Composites Pricing database and identify the first and the last day a borrowing firm's CDS trading price appear in the database. We construct an indicator variable *Post_CDS* that equals one if a syndicated loan is originated after the first day of CDS trading but before the last day of trading, and zero otherwise. We replace *CCR* in Eq. (1) with *Post_CDS* and conduct

[9] Because the analysis in Table 4 intends to compare whether performance vs. capital covenants is associated with higher likelihood of including *BCC* in debt contracts, we only include loans with financial covenants in the analysis. As a sensitivity test to evaluate whether performance or capital covenants is associated with higher likelihood of *BCC* inclusion than debt contracts without any financial covenants, we also include loans without any financial covenants in the analysis. The untabuluated results show that in the full sample analysis, while the intensity of both performance and capital covenants are associated with higher likelihood of *BCC* inclusion, the magnitude of the impact of the performance covenants is larger than that of the capital covenants, consistent with our results in Table 4 using the sample of observations with at least one financial covenant. The results are available upon request.

Table 4 Performance, capital covenants and *BCC*

Variables	(1) BCC	(2) BCC	(3) BCC	(4) BCC	(5) BCC	(6) BCC
PerfCov	**0.046*****		**0.046*****			
	[5.892]		**[5.839]**			
CapCov		**− 0.008**	**− 0.003**			
		[− 0.824]	**[− 0.322]**			
PerfCov_Tightness				**0.044*****		**0.045*****
				[2.907]		**[2.963]**
CapCov_Tightness					**− 0.028**	**− 0.031**
					[− 1.179]	**[− 1.295]**
Log(Assets)	0.025**	0.027**	0.025**	0.025*	0.025*	0.025*
	[2.115]	[2.233]	[2.101]	[1.800]	[1.801]	[1.773]
Mkbk	− 0.003	− 0.005	− 0.004	− 0.007	− 0.01	− 0.007
	[− 0.500]	[− 0.739]	[− 0.503]	[− 0.908]	[− 1.229]	[− 0.896]
Tang	0.088	0.072	0.088	0.062	0.05	0.063
	[1.388]	[1.117]	[1.390]	[0.852]	[0.689]	[0.877]
Roa	0.053	0.066	0.053	0.111**	0.087*	0.111**
	[1.062]	[1.289]	[1.063]	[2.133]	[1.683]	[2.132]
Levg	0.038	0.05	0.037	0.027	0.037	0.029
	[1.028]	[1.330]	[1.021]	[0.650]	[0.882]	[0.692]
Fc	− 0.061***	− 0.063***	− 0.061***	− 0.071***	− 0.070***	− 0.072***
	[− 3.006]	[− 3.092]	[− 2.994]	[− 3.105]	[− 3.044]	[− 3.117]
Secured	0.001	0.007	0.001	0	0.004	0
	[0.056]	[0.498]	[0.048]	[0.012]	[0.265]	[0.035]
Deal/Assets	0.057***	0.065***	0.057***	0.073***	0.072***	0.073***
	[3.555]	[3.942]	[3.534]	[4.155]	[4.129]	[4.143]
Log(Maturity)	0.011	0.018*	0.011	0.021*	0.021**	0.020*
	[1.173]	[1.897]	[1.144]	[1.935]	[1.979]	[1.909]
Leveraged	− 0.031	− 0.039	− 0.032	− 0.01	− 0.009	− 0.011
	[− 0.361]	[− 0.472]	[− 0.365]	[− 0.115]	[− 0.104]	[− 0.129]
Revolver	0.029**	0.027**	0.029**	0.021	0.021	0.022
	[2.126]	[2.008]	[2.136]	[1.444]	[1.460]	[1.477]
Constant	0.541**	0.555**	0.546**	0.671***	0.711***	0.685***
	[2.461]	[2.529]	[2.461]	[3.603]	[3.752]	[3.882]
Loan purpose fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Credit rating fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	14,479	14,479	14,479	11,720	11,720	11,720
Adjusted R^2	0.582	0.578	0.582	0.602	0.601	0.602

Bold indicates variables of interest

This table presents the results of linear probability firm fixed effects model estimating the effects of performance covenants (*PerCov*), capital covenants (*CapCov*), and the tightness of *PerCov* (*PerfCov_Tightness*) and *CapCov* (*CapCov_Tightness*) on *BCC*. The dependent variable is an indicator variable *BCC* that equals 1 if a loan deal contains borrower consent clause and 0 otherwise. Columns (1)–(3) report the results for the effect of performance and capital covenants and columns (4)–(6) report the results for the effect of the tightness of the two types of covenants. Variable descriptions for all variables are provided in Appendix 1.

Table 4 (continued)

Standard errors are clustered at the firm level with robust and clustered t-statistics provided in parentheses. Statistical significance at the 0.01, 0.05, and 0.10 level is indicated by ***, **, and *, respectively, using two-tailed tests

the analyses with and without the measure of creditor control rights (i.e., number of financial covenants).[10] As Shan et al. (2019) focus on the substitution effect of CDS trading for covenants as alternative monitoring device, we use the sample with at least one financial covenant for this analysis. The results are provided in Table 5.

Columns (1) to (3) of Table 5 report the results analyzing the relation between CDS inception and the inclusion of *BCC* using our full sample (loans belong to borrowers with and without CDS market). As we control for firm and year fixed effects in these estimations, we expect the coefficients on *Post_CDS* to capture the time-variant response in contracting terms to the inception of CDS trading. The negative coefficient on *Post_CDS* (column (1): *coefficient* = − 0.088*; t-statistics* = − 5.056) suggests that the inception of CDS trading is associated with a lower likelihood of including a *BCC* in debt contracts. The results are qualitatively similar when controlling for the number of financial covenants (Columns (2)). We then interact *Post_CDS* with *FinCov* to check whether the inception of CDS trading attenuates the impact of financial covenants on the inclusion of *BCC*. Results reported in Column (3) of Table 5 show that the coefficient on the interaction term *Post_CDS* × *FinCov* is positive yet insignificant, suggesting the inception of CDS trading does not mitigate the effect of financial covenants on the likelihood of *BCC* inclusion.

We also conduct the analysis using a subsample of loans to borrowers with outstanding CDS only. The results reported in Columns (4) to (6) show that the inception of CDS trading is still negatively associated with the likelihood of *BCC* inclusion with and without controlling of *FinCov*, consistent with the results using the full sample. The coefficient on the interaction term *Post_CDS* × *FinCov* remains positive yet insignificant.

4.2 Addressing endogeneity issues

4.2.1 Joint determination of BCC and creditor control rights

Our analyses so far show that in response to strong creditor control rights, borrowing firms demand a *BCC* clause to reduce the potential renegotiation costs arising from dealing with unknown creditors in renegotiations. However, *BCC* also reduces the marketability of loans for the creditor. Therefore, creditors and borrowers might negotiate and tradeoff between the inclusion of *BCC* and imposing financial covenants in debt contracts. In other words, the inclusion of *BCC* and use of financial covenants may be jointly determined.

To address this simultaneity concern, we follow Bharath et al. (2011) and model a setting in which the inclusion of *BCC* and the intensity of financial covenants are jointly determined. Using this framework, we need instruments for the two endogenous variables *BCC* and creditor contingent control rights. Murfin (2012) finds that banks that experienced loan defaults in the past write tighter debt contracts on subsequent loans than their peers do because recent defaults update the banks' perception about their own poor

[10] We include the number of financial covenants to control for the effect of financial covenants that is not accounted for by the inception of CDS trading. We interpret the coefficient on *Post_CDS* as capturing borrowers' reactions to reduced demand for creditor control rights due to CDS trading.

Table 5 The inception of CDS trading and *BCC*

Variables	Firms with and without CDS			Firms with CDS only		
	(1)	(2)	(3)	(4)	(5)	(6)
	BCC	BCC	BCC	BCC	BCC	BCC
Post_CDS	**− 0.088*****	**− 0.091*****	**− 0.123*****	**− 0.036***	**− 0.036***	**− 0.061***
	[− 5.056]	**[− 5.268]**	**[− 3.840]**	**[− 1.869]**	**[− 1.922]**	**[− 1.834]**
FinCov		0.037***	0.035***		0.041***	0.035***
		[4.816]	[4.363]		[3.813]	[2.836]
Post_CDS×FinCov			**0.016**			**0.013**
			[1.183]			**[0.914]**
Log(Assets)	0.022	0.021	0.021	− 0.023	− 0.021	− 0.022
	[1.379]	[1.301]	[1.289]	[− 0.995]	[− 0.933]	[− 0.958]
Mkbk	− 0.008	− 0.007	− 0.006	− 0.005	− 0.001	− 0.001
	[− 0.840]	[− 0.705]	[− 0.695]	[− 0.372]	[− 0.102]	[− 0.101]
Tang	0.115	0.118	0.119	− 0.051	− 0.036	− 0.035
	[1.280]	[1.326]	[1.340]	[− 0.370]	[− 0.256]	[− 0.254]
Roa	0.151**	0.139**	0.139**	0.113	0.106	0.105
	[2.411]	[2.255]	[2.252]	[1.089]	[1.027]	[1.005]
Levg	0.082*	0.072	0.072	0.081	0.077	0.075
	[1.746]	[1.543]	[1.533]	[1.108]	[1.053]	[1.028]
Fc	− 0.059**	− 0.057**	− 0.057**	0.002	0.001	0.002
	[− 2.215]	[− 2.130]	[− 2.132]	[0.025]	[0.012]	[0.029]
Secured	0.029*	0.021	0.021	0.014	0.003	0.003
	[1.785]	[1.311]	[1.281]	[0.657]	[0.155]	[0.150]
Deal/Assets	0.058***	0.055***	0.055***	0.029	0.026	0.028
	[2.780]	[2.662]	[2.680]	[0.898]	[0.830]	[0.871]
Log(Maturity)	0.019*	0.015	0.015	0.015	0.011	0.011
	[1.652]	[1.346]	[1.355]	[0.998]	[0.714]	[0.737]
Leveraged	− 0.014	− 0.004	− 0.006	− 0.195	− 0.195	− 0.198
	[− 0.119]	[− 0.032]	[− 0.044]	[− 1.575]	[− 1.611]	[− 1.635]
Revolver	0.017	0.018	0.018	0.016	0.017	0.017
	[1.106]	[1.149]	[1.155]	[0.788]	[0.857]	[0.860]
Constant	0.513***	0.430***	0.436***	1.058***	0.949***	0.968***
	[4.252]	[3.570]	[3.619]	[4.952]	[4.409]	[4.476]
Loan purpose fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Credit rating fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	No	No	Yes	Yes	Yes
Firm fixed effects	No	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9768	9768	9768	3056	3056	3056
Adjusted R^2	0.643	0.647	0.647	0.365	0.373	0.373

Bold indicates variables of interest

This table presents the results of the linear probability firm-fixed effects model estimating the effects of the inception of credit default swap (CDS) trading on the probability of *BCC* for a sample of loans borrowed in 2000–2012. The dependent variable is an indicator variable *BCC* that equals one if a loan deal contains *BCC* and zero otherwise. The independent variable *Post_CDS* is an indicator variable that equals one if a loan deal is initiated after the CDS of the borrowing firm is traded and before the trading ceased and zero

Table 5 (continued)

otherwise. Columns (1) to (3) present the results for firms with and without CDS trading during the sample period, and Columns (4) to (6) present the results for the sample firms with CDS trading only. Variable descriptions for all variables are provided in Appendix 1. Standard errors are clustered at the firm level, and robust and clustered t-statistics are provided in parentheses. Statistical significance at the 0.01, 0.05, and 0.10 level is indicated by ***, **, and *, respectively, using two-tailed tests

screening ability. As a result, banks impose tighter covenants to make up for the weaker *ex ante* screening. Following this logic, we expect banks that had high credit risk exposures in the past would tighten creditor control right on the loans made subsequently (relevance restriction). On the other hand, banks' credit risk exposure should not directly affect the probability of *BCC* inclusion other than through banks' demand for tighter credit control rights (exclusion restriction). Therefore, we use banks' ex-ante loan portfolio quality, proxied by the number of lead lenders with an increase in net loan charge-off in the quarter prior to loan initiation (*Increase_Chargeoff*), as an instrumental variable for *FinCov*. We employ the average percentage of *BCC*s used by the borrowing firm's peers in the same industry based on two-digit SIC code (*SIC2_BCC*), to instrument for the usage of *BCC* by the borrowing firm. Given the peer effect, the industry usage of *BCC* can affect individual firm's demand for *BCC* (relevance restriction), but unlikely affect the number of financial covenants included in debt contracts (exclusion restriction).

We estimate the following simultaneous equations to account for the joint determination of inclusion of BCC and the intensity of financial covenants:

$$Prob(BCC_{i,j,t} = 1) = \delta_t + \beta_1 FinCov_{i,j,t} + \emptyset_1 SIC2\_BCC_{k,t} + \gamma X_{i,t-1} + \theta C_{i,j,t} + \varepsilon_{i,j,t} \quad (2)$$

$$FinCov_{i,j,t} = \delta_t + \beta_2 BCC_{i,j,t} + \emptyset_2 Increase\_Chargeoff_{i,j,t} + \gamma X_{i,t-1} + \theta C_{i,j,t} + \varepsilon_{i,j,t} \quad (3)$$

In the 1st stage we estimate the reduced forms (excluding the two endogenous variables, *FinCov* and *BCC*, on the right- hand side) of equation (2) and (3) to obtain the predicted values for each endogenous variable (*Predicted_BCC* and *Predicted_FinCov*, respectively). Then we substitute the reduced form fitted values (*Predicted_FinCov* and *Predicted_BCC*) for the endogenous variables (*BCC* and *FinCov*) in equations (2) and (3), which are the second stage models.

Columns (1) and (2) of Table 6 present the results of the IV estimation of the effect of *FinCov* on *BCC*. The first stage results in Column (1) show that the coefficient on *Increase_Chargeoff* is positive and significant at the 1% level, indicating the increase in bank net charge off ratio is associated with a greater number of financial covenants. The second stage results in Column (2) show that the coefficient on *Predicted_FinCov* is positive and significant at the 1% level, suggesting *FinCov* is associated with higher likelihood of *BCC* inclusion. Columns (3) and (4) report the results for the IV estimation of the effect of *BCC* on *FinCov.* The first stage results in Column (3) show that the coefficient on industry usage of *BCC* (*SIC2_BCC*) is positive and significant at the 1% level, indicating the industry usage of *BCC* is associated with higher likelihood of *BCC* inclusion by individual firm in the same industry. The second stage results in Column (4) show that the coefficient on *Predicted_BCC* is positive and significant at the 1% level, suggesting the usage of *BCC* is associated with a greater number of financial covenants. We also test the relevance and validity of our instrument variables. The under-identification test statistics (*Kleibergen-Paap rk LM statistic*) for both *BCC* and *FinCov* regressions are significant, rejecting the null hypothesis that the excluded instruments are not correlated with the endogenous regressors. The weak

Table 6 Robustness check: simultaneous equations

Variables	(1) 1st stage: *FinCov*	(2) 2nd stage:*BCC*	(3) 1st stage:*BCC*	(4) 2nd stage: *FinCov*
Increase_Chargeoff	0.043*** [5.693]			
Predicted_FinCov		0.521*** [7.164]		
SIC2_BCC		0.066* [1.869]	0.155*** [4.527]	
Predicted_BCC				0.683*** [3.440]
Constant	1.759*** [13.017]	− 0.776** [− 4.683]	0.392*** [7.215]	1.561 [12.283]
Control variables	Yes	Yes	Yes	Yes
Under-identification test (Kleibergen-Paap rk LM statistic):		33.378		20.452
Chi-sq(1) P-val		0.000		0.000
Weak identification test				
Cragg-Donald Wald F statistic		34.23		28.56
Stock-Yogo weak ID test critical values: 10% maximal IV size		16.38		16.38
Endogeneity test		26.240		1.467
Chi-sq(1) P-val		0.000		0.226
Observations	19,865	19,865	19,865	19,865
Adjusted R^2	0.324	0.392	0.157	0.471

This table presents simultaneous equation results of jointly estimating creditor control rights and BCC inclusion. The number of lead lenders with increasing net charge-off (*Increase_Chargeoff*) is used as an instrument for creditor control rights proxied by number of financial covenants; the average percentage of BCC inclusion in peer firms of the borrowing firm's industry based on two-digit SIC code in the year prior to current loan year (*SIC2_BCC*) is used as an instrument for *BCC* inclusion. The t-stats (z-stats) reported in parentheses are based on White standard errors corrected for firm clustering. The statistical significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively. All variables are defined in Appendix 1

identification test statistics (Cragg-Donald Wald *F*-statistics) are all higher than the Stock and Yogo (2005) critical value of 16.38, suggesting that *Increase_Chargeoff* is a strong instrument for *FinCov* and that *SIC2_BCC* is a strong instrument for *BCC*.

4.2.2 Propensity score matching

Another endogeneity issue is that creditor control rights may be determined by (observable) borrower and loan characteristics. To address such endogeneity concern, we employ propensity score matching (PSM) method to match on firm and loan characteristics by estimating the following probit model and obtain a matched control sample.

$$Probit(Hcov_{i,jt} = 1) = i_i + \delta_t + \gamma X_{i,t-1} + \theta C_{i,j,t} + \varepsilon_{i,j,t} \quad (4)$$

where *Hcov* is an indicator variable that equals 1 if a loan contract contains at least one financial covenant and 0 otherwise.[11] i_i and δ_t represent industry and year fixed effects, respectively. $X_{i,t-1}$ is a set of firm-specific control variables including firm size, market-to-book, tangibility, profitability, leverage, and financial constraint indicator, as defined in Sect. 4.1.1. $C_{i,j,t}$ is a set of loan package–level control variables including loan-to-asset, maturity, revolver loan indicator, leveraged loan indicator, and collateral indicator, as discussed in Sect. 4.1.1. Specifically, we first match each loan with at least one financial covenant (*Hcov = 1*), without replacement, with a loan without any financial covenant (*Hcov = 0*), requiring the difference in the probability of having at least one financial covenant between the two observations not exceeding 1% (i.e., clipper = 0.01).

We report the results of the probit model in Panel A of Table 7. Column (1) shows that several firm and loan characteristics are significantly related to the probability of having at least one financial covenant. More specifically, larger firms and financially constrained firms are less likely to have financial covenants, while firms with higher market to book ratio and loftier profitability are more likely to have financial covenants.

We then conduct a diagnostic test to verify whether firm- and loan-specific characteristics in treatment (*Hcov*=1) and control (*Hcov*=0) groups are comparable, and report the results in Panel B of Table 7. Before the PSM matching, all firm- and loan-specific characteristics are significantly different except for *ROA*. After the PSM matching, none of the differences in observable firm- and loan-specific characteristics between the two groups is statistically significant. The diagnostic test results suggest that our matching procedure successfully removes almost all the observable differences between the treatment and control sample. Columns (2) and (3) of Panel A report the results using the dichotomous variable (*Hcov*) and continuous variable of financial covenants (*FinCov*) as the independent variables, respectively, based on the PSM matched sample. The coefficients on both *Hcov* and *FinCov* are significant at the 1% level, suggesting that our baseline results are robust to using PSM method to address the endogeneity issue of creditor control rights due to observable borrowing firm- and loan-specific characteristics.

4.2.3 Quasi-natural experiment: the anti-recharacterization law (ARL)

In this section, we exploit *ARL* as a quasi-natural experiment and an exogeneous shock to creditor rights and assess its impact on the likelihood of *BCC* inclusion. Several U.S. states enacted *ARL* in late 1990s and early 2000s to ensure that creditors can seize the collateral pledged by borrowing firms timely during bankruptcy process. Firms conducting secured borrowing can transfer collateral to a special purpose vehicle (SPV) and minimize the risk exposure of SPV. In theory, an SPV allows creditors to possess the collateral without any delay during bankruptcy process. However, in practice whether creditors can timely claim the collateral in an SPV depends on a bankruptcy court's ruling on the characterization of the asset transferred to an SPV. If bankruptcy courts rule that the assets under an SPV is considered as a loan rather than sales, creditors cannot recover their claim in an SPV until the borrowing firm is liquidated or restructured, which introduces significant uncertainty and delays in creditors' access to collateral. Consequently, the enactment of *ARL*

[11] We use the dichotomous variable *Hcov* instead of the continuous variable *FinCov* to estimate the probit model in Eq. (4).

Table 7 Robustness check: propensity score matching

Panel A. Regression results based on PSM matched sample

Variables	(1)	(2)	(3)
	Hcov	*BCC*	*BCC*
Hcov		**2.130*****	
		[65.869]	
FinCov			**0.721*****
			[41.786]
Log(Assets)	− 0.141***	0.022	0.066***
	[− 10.301]	[1.370]	[4.010]
Mkbk	0.050***	0.046**	0.071***
	[3.543]	[2.569]	[4.037]
Tang	0.025	− 0.021	− 0.054
	[0.328]	[− 0.207]	[− 0.514]
ROA	0.676***	0.040	− 0.229
	[6.896]	[0.274]	[− 1.628]
Levg	− 0.066	− 0.068	− 0.160*
	[− 0.998]	[− 0.747]	[− 1.791]
Fc	− 0.236***	− 0.427***	− 0.429***
	[− 6.288]	[− 7.579]	[− 7.217]
Secured	0.650***	0.386***	0.300***
	[23.478]	[10.234]	[7.908]
Deal/Assets	− 0.092***	0.002	0.029
	[− 2.872]	[0.051]	[0.626]
Log(Maturity)	0.080***	− 0.074***	− 0.125***
	[4.215]	[− 2.870]	[− 5.126]
Leveraged	0.149	− 0.042	0.090
	[0.945]	[− 0.211]	[0.531]
Revolver	0.520***	0.184***	0.130***
	[18.769]	[4.696]	[3.421]
Constant	− 3.772***	− 1.158***	− 1.377***
	[− 11.927]	[− 6.418]	[− 7.710]
Loan purpose fixed effects	Yes	Yes	Yes
Credit rating fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Observations	25,808	14,704	14,704
Pseudo R^2	0.208	0.41	0.318

Panel B. Diagnostic test results before and after match

	Before match				After match			
	N = 11,329	N = 14,479			N = 7352	N = 7352		
	Hcov = 0	Hcov = 1	Differences	t-stats of diff	Hcov = 0	Hcov = 1	Difference	t-stats of diff
Log(Assets)	7.711	6.834	0.878	37.583	7.379	7.392	− 0.013	− 0.423
Mkbk	1.672	1.725	− 0.053	− 4.409	1.674	1.681	− 0.007	− 0.438

Table 7 (continued)

Panel B. Diagnostic test results before and after match

	Before match				After match			
	N = 11,329	N = 14,479			N = 7352	N = 7352		
	Hcov = 0	Hcov = 1	Differences	t-stats of diff	Hcov = 0	Hcov = 1	Difference	t-stats of diff
Tang	0.363	0.336	0.027	8.572	0.355	0.354	0.001	0.213
ROA	0.023	0.022	0.001	0.530	0.021	0.019	0.001	0.642
Levg	0.264	0.255	0.008	3.336	0.267	0.265	0.002	0.661
Fc	0.129	0.196	− 0.067	− 14.376	0.144	0.143	0.001	0.118
Secured	0.314	0.587	− 0.273	− 45.295	0.400	0.405	− 0.005	− 0.639
Log(Maturity)	3.621	3.766	− 0.145	− 17.487	3.711	3.696	0.015	1.317
Deal/Assets	0.274	0.374	− 0.100	− 19.120	0.312	0.305	0.007	1.012

Bold indicates variables of interest

This table presents the results using propensity score matching to match on firm- and loan-specific characteristics in loans without financial covenants to obtain the matched sample. *Hcov* is an indicator that equals 1 if a loan has at least one financial covenant and 0 otherwise. *Hcov* is regressed on firm and loan characteristics to obtain propensity score for each observation and the observations with the difference in the propensity score within 0.01 are kept as the control sample. Column (1) of Panel A reports the probit results for *Hcov*. Panel B shows the diagnostic test results that compare the firm and loan characteristics before and after the match. Column (2) and (3) of Panel A shows the estimation results of probit model regressing *BCC* on *Hcov* and *FinCov* using the matched sample. The z-stats reported in parentheses are based on White standard errors corrected for firm clustering. The statistical significance at the 10%, 5%, and 1% levels are indicated by *, **, and ***, respectively. All variables are defined in Appendix 1

significantly strengthened creditor rights in seizing collateral by stipulating that collateral held under an SPV be characterized as sales.

This law was introduced by Texas and Louisiana in 1997, by Alabama in 2001, Delaware in 2002, South Dakota in 2003, Virginia in 2004, and Nevada in 2005. However, the Reaves Brokerage Company, Inc. v. Sunbelt Fruit & Vegetable Company Inc. case in 2003 significantly reduces the influence of *ARL* because the ruling of this case completely relies on a federal standard to determine the nature of assets in SPV and override the influence of *ARL* of Texas. As a result, the influence of the *ARL* is weakened after 2003.

We argue that while the inclusion of more covenants in debt contracts strengthens *creditor control rights* by triggering covenant violation and renegotiation, *ARL* strengthens *creditor rights* by ensuring creditor's claim of borrowers' secured assets during liquidation process and may result in borrowers demanding for *BCCs* to avoid deal with unknown creditors during the liquidation process. Accordingly, we use *ARL* as a shock to *creditor rights* and employ a difference-in-differences approach to analyze the effect of *ARL* on borrowers' demand for *BCC* during the period in which the *ARL* has stronger impact, i.e., years before 2003.[12] As only Texas, Louisiana, and Alabama enacted this law before 2003, we focus on the loans made in 1995–2003. We use the loans made to firms located in the neighboring states of these three states as the control sample, i.e., New Mexico, Oklahoma,

[12] Although the *creditor rights* arisen from *ARL* and the intensity of financial covenants are different, they both represent the rights enjoyed by creditors with the former representing rights in liquidation process and the latter allowing creditors to take over control during technical default.

Arkansas as neighbors of both Texas and Louisiana, and Georgia, Florida, and Tennessee as neighbors of Alabama.[13] We estimate the following empirical model:

$$Prob(BCC_{i,j,t} = 1) = \alpha_i + \beta_1 ARL + \beta_2 Post + \beta_3 Post \times ARL + \beta_4 FinCov + \gamma X_{i,t-1} + \theta C_{i,j,t} + \varepsilon_{i,j,t} \quad (5)$$

where *ARL* is an indicator that equals 1 if a loan deal is syndicated for a borrower headquartered in one of the *ARL* states during the sample year, i.e., in 1995–1996 or 1998–1999 in Texas or Louisiana, or in 1999–2000 or 2002–2003 in Alabama; and 0 if a loan is syndicated for a borrower headquartered in one of the non-*ARL* neighboring states. *Post* is an indicator that equals 1 if a loan is borrowed by a firm in Texas, Louisiana or their neighboring states (Alabama or its neighboring states) in 1998–1999 (2002–2003) and 0 otherwise. All other variables are defined as in Eq. (1).

The results are reported in Table 8. Columns (1) and (2) report the results for a sample of syndicated loans in *ARL* states. The coefficient on *Post* is positive and significant at the 1% level. The results of the fully specified model (Eq. (5)) are reported in columns (3) and (4). The coefficient on *ARL* is negative yet insignificant, suggesting that before the enactment of *ARL*, the probability of including *BCC* in loans made to firms in the adopting states is not significantly different from that in the non-adopting states. The coefficient on *Post* is insignificant, suggesting that there is no significant change in the probability of including *BCC* in the non-ARL states in the post-period. Finally, the positive and statistically significant coefficient on *ARL*×*Post* (*coefficient* = *0.369, t-statistics* = *2.412*) indicates that the probability of *BCC* inclusion is higher for loans borrowed by firms in the *ARL* states in the post *ARL* period, compared to the loans borrowed by firms in the *non-ARL* states in the same period. The marginal effect reported in Column (4) suggests that all else equal, the probability of including *BCC* in the post *ARL* period increases by 14% for firms in *ARL* states.

In the difference-in-differences analysis reported in Table 8, we select a sample of loans made to firms in the neighboring non-ARL states as the control sample and find that *ARL* strengthens creditor rights, resulting in higher likelihood of borrowers demanding inclusion of *BCC* in debt contracts. However, as selecting the control sample based on only the location of borrowers may omit firm and loan characteristics that systematically affect the control and treatment sample, we conduct further analysis by using propensity score matching to match loans in *ARL* states and their neighboring non-ARL states based on loan- and firm- characteristics and then re-estimate Eq. (5) using the matched sample.[14]

We report the results in Table 9. The diagnosis test results reported in Panel A show that while the loan- and borrower-specific characteristics are statistically different in most dimensions before the matching, none of the firm- and loan-specific variables is statistically significant after matching, suggesting the PSM matching procedure successfully removes the observable differences and hence the control group (i.e., loans in non-*ARL* states) is comparable to the treatment firms (i.e., loans in *ARL* states). Regression results based on the matched sample are presented in Panel B of Table 9. Column (1) shows the coefficient on *ARL* is negative and significant (*coefficient* = − 0.567*; t-statistics* = − 2.457),

[13] Mississippi is a neighbor state of both Louisiana and Alabama, but Louisiana and Alabama have different *ARL* implementation year. Therefore, Mississippi is excluded.

[14] As in Sect. 4.1.1, firm-specific characteristics include firm size, market-to-book, tangibility, profitability, leverage, and financial constraint indicator; loan-specific characteristics include loan-to-asset, maturity, revolver loan indicator, leveraged loan indicator, and collateral indicator. We thank the referee for suggesting the additional robustness test.

Table 8 Robustness check: Anti-recharacterization law (*ARL*) as a quasi-natural experiment

Variables	Firms in ARL only		Firms in both ARL and non-ARL	
	(1)	(2)	(3)	(4)
	BCC	*BCC* dF/dx	*BCC*	*BCC* dF/dx
Post	5.300***	0.998***	0.014	0.006
	[15.177]		[0.038]	
ARL			− 0.441	− 0.168
			[− 1.552]	
ARL*×*Post			**0.369****	**0.137****
			[2.412]	
FinCov	0.399***	0.159***	0.474***	0.183***
	[16.476]		[8.443]	
Other control variables	Yes	Yes	Yes	Yes
Constant	− 1.179***		− 0.949**	
	[− 2.719]		[− 2.323]	
Loan purpose fixed effects	Yes	Yes	Yes	Yes
Credit rating fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	691	691	1258	1258
Pseudo R^2	0.302		0.326	

Bold indicates variables of interest

This table presents the results of the probit model estimation of *ARL* on BCC inclusion. Columns (1) and (2) show the results for a sample of loans syndicated to borrowers in *ARL* states only, while columns (3) and (4) present the results for those in both *ARL* and non-ARL neighboring states. The dependent variable is an indicator variable *BCC* that equals 1 if a loan deal contains *BCC* and 0 otherwise. *ARL* is an indicator variable that equals 1 if a loan deal is syndicated in 1995 -1996 or 1998–1999 for a borrower headquartered in Texas or Louisiana or syndicated in 1999–2000 or 2002–2003 for a borrower headquartered in Alabama; and 0 if a loan is syndicated for a borrower headquartered in one of the non-adopting neighboring states. *Post* is an indicator variable that equals 1 if a loan is borrowed by a firm in Texas, Louisiana or their neighboring states (Alabama or its neighboring states) in 1998–1999 (2002–2003) and 0 otherwise. *ARL*×*Post* is an interaction term between *ARL* and *POST*. Variable descriptions for all variables are provided in Appendix 1. Standard errors are clustered at the state level with robust and clustered t-statistics provided in parentheses. Statistical significance at the 0.01, 0.05, and 0.10 level is indicated by ***, **, and *, respectively, using two-tailed tests

suggesting that before the enactment of *ARL*, the probability of including *BCC* in loans made to firms in *ARL* states is smaller than that in non-ARL states. The coefficient on *Post* is positive yet insignificant (*coefficient* = 0.025*; t-statistics* = 0.067), suggesting that there is no significant change in the probability of *BCC* inclusion in non-*ARL* states in the post-period. On the other hand, the coefficient on *ARL*×*Post* is positive and significant (*coefficient* = 0.459*, t-statistics* = 2.829), suggesting that firms in *ARL* states are more likely to demand *BCC* in the post-*ARL* period, compared to their matched firms in bordering non-*ARL* states. The results are consistent with those in Table 8 where firms from neighboring states are selected as the control group.

As the passage of *ARL* and intensity of financial covenants strengthens different creditor rights, we also use the matched sample to analyze the interactive effect of *ARL* and *FinCov* by including the three-way interaction term $ARL \times Post \times FinCov$ and relevant two-way interaction terms in Eq. (5).[15] We report the corresponding results in Column (2). We find that the coefficient on $ARL \times Post$ remains positive and significant at the 5% level ($coefficient = 0.399$), while the coefficient on *ARL* becomes insignificant. Furthermore, the coefficient on the three-way interaction $ARL \times Post \times FinCov$ is positive yet insignificant, suggesting that strengthening creditor rights via *ARL* and tightening creditor control rights imposed by financial covenants do not lead to greater demand for *BCC*. The insignificant result may be because the creditor rights arising from *ARL* and the intensity of financial covenants are different. Specifically, *ARL* is an exogenous shock to creditor rights by ensuring creditor's claim of borrowers' secured assets during liquidation process, while imposing financial covenants in debt contracts strengthens creditor control rights by triggering covenant violation and renegotiation.

4.3 Test of H_2: creditor control rights, borrower quality, and BCC

In our second hypothesis, we argue that high quality borrowers who concede the control rights to creditors are more likely to negotiate a *BCC* protection successfully. Furthermore, it is less costly for creditors to grant *BCC* to good quality borrowers. In this section, we investigate whether the positive association between BCC and creditor control rights is more pronounced for quality borrowers. We classify large borrowers, borrowers with access to public debt market, and borrowers with high market to book ratio and low financial constraint as high quality borrowers. We then estimate the following equations:

$$BCC_{i,j,t} = \alpha_i + \delta_t + \beta_0 HQ_{i,t-1} + \beta_1 FinCov_{i,j,t} + \beta_2 HQ_{i,t-1} \times FinCov_{i,j,t} + \gamma X_{i,t-1} + \theta C_{i,j,t} + \varepsilon_{i,j,t} \tag{6}$$

HQ is a placeholder for a group of indicator variables for high market to book (*High Mkbk*), rated (*Rated*), large firms (*Large*), and not financially constrained firms (*Unconstrained*). *High Mkbk* (*Large*) equals 1 if the market to book ratio (firm assets) is greater than the sample median and 0 otherwise. *Rated* equals 1 if a borrower has S&P long term debt rating and 0 otherwise. *Unconstrained* equals 1 if a borrower's Whited-Wu index (*WW index*) (Whited and Wu 2006)is greater than the sample median and 0 otherwise.[16]

The results reported in Table 10 indicate that the coefficients on $HQ_{i,t-1} \times FinCov_{i,j,t}$ are all positive and significant at the 1% level, with the magnitude of coefficients ranging from 0.015 ($Hmkbk_{i,t-1} \times FinCov_{i,j,t}$) to 0.101 $\left(Large_{i,t-1} \times FinCov_{i,j,t}\right)$, suggesting that given the same level of creditor control rights, the likelihood of high quality borrowers obtaining BCC increases by 1.5% to 10.1%,compared to low quality borrowers.

[15] Because the intensity of financial covenants used in debt contracts could be different due to observable firm and loan characteristics during the sample period, the matched sample is a more appropriate for this analysis. We thank the referee for suggesting this additional test.

[16] *WW index* is from Whited and Wu (2006), which is defined as—0.091 × Cash flow + 0.062 × Dividend dummy + 0.021 × Long-term debt—0.044 × Size + 0.10VI2 × Industry sales growth—0.035 × Sales growth.

Table 9 *ARL* and *BCC* inclusion using PSM matched sample

Panel A. Diagnostic test results before and after match

	Before match				After match			
	N = 636	N = 622			N = 438	N = 438		
	ARL	Non-ARL	Difference	t-stats of diff	ARL	Non-ARL	Difference	t-stats of diff
Fin Cov	1.821	1.995	− 0.174	− 1.821	1.906	1.925	− 0.019	− 0.159
Lat	6.488	6.482	0.006	0.052	6.529	6.569	− 0.04	− 0.338
MKBK	1.556	1.672	− 0.116***	− 2.468	1.59	1.542	0.048	0.931
Tang	0.485	0.341	0.144***	9.242	0.398	0.408	− 0.01	− 0.527
ROA	0.012	0.004	0.008	1.099	0.014	0.017	− 0.003	− 0.348
Leverage	0.294	0.263	0.031***	2.719	0.27	0.276	− 0.006	− 0.465
FC	0.236	0.268	− 0.033	− 1.333	0.239	0.237	0.002	0.079
Secured	0.505	0.564	− 0.059**	− 2.121	0.523	0.539	− 0.016	− 0.473
Maturity	3.633	3.508	0.125***	3.193	3.577	3.562	0.015	0.319
Dealtoassets	0.467	0.350	0.117***	4.269	0.385	0.373	0.012	0.469

Panel B. Regression results

Variables	(1)	(2)
	Matched Sample: *BCC*	Matched Sample: *BCC*
ARL	− 0.567**	− 0.402
	[− 2.457]	[− 1.434]
Post	0.025	− 0.303
	[0.067]	[− 0.871]
ARL*×*Post	**0.459*****	**0.399****
	[2.829]	**[2.001]**
Post×*FinCov*		0.205*
		[1.801]
ARL×*FinCov*		− 0.142
		[− 1.530]
ARL*×*Post*×*FinCov		**0.062**
		[0.428]
FinCov	0.453***	0.427***
	[7.698]	[5.502]
Other control variables	Yes	Yes
Constant	− 1.900***	− 1.677***
	[− 3.340]	[− 2.803]
Loan purpose fixed effects	Yes	Yes
Credit rating fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Observations	876	876
Pseudo R^2	0.322	0.333

Table 9 (continued)

Bold indicates variables of interest

This table presents the results of the probit model estimation of *ARL* on *BCC* inclusion using a PSM approach, with the matching based on firm- and loan-specific characteristics in neighboring *non-ARL* states. Panel A shows the diagnostic test results that compare the firm and loan characteristics before and after the match. Panel B shows the estimation results of the probit model. The dependent variable is an indicator variable *BCC* that equals 1 if a loan deal contains a *BCC* and 0 otherwise. *ARL* is an indicator variable that equals 1 if a loan deal is syndicated in 1995–1996 or 1998–1999 for a borrower headquartered in Texas or Louisiana or syndicated in 1999–2000 or 2002–2003 for a borrower headquartered in Alabama; and 0 if a loan is syndicated for a borrower headquartered in one of the non-adopting neighboring states. *Post* is an indicator variable that equals 1 if a loan is borrowed by a firm in Texas, Louisiana or their neighboring states (Alabama or its neighboring states) in 1998–1999 (2002–2003) and 0 otherwise. Variable descriptions for all variables are provided in Appendix 1. Standard errors are clustered at the state level with robust and clustered t-statistics provided in parentheses. Statistical significance at the 0.01, 0.05, and 0.10 level is indicated by ***, **, and *, respectively, using two-tailed tests

4.4 Test of H_3: creditor control rights, accounting conservatism, and BCC

In the third hypothesis, we predict that borrowers that report conservatively are more likely to request the inclusion of a *BCC* in contracts with more financial covenants. To test this prediction, we construct three alternative accounting conservatism measures, *AT1*, *AT2*, and *AT3*. First, we follow Basu (1997) and estimate the following equation to obtain a return-based measure of accounting conservatism, asymmetric timeliness (*AT1*):

$$\frac{E_{it}}{P_{it-1}} = \alpha_0 + \alpha_1 DR_{it} + \alpha_2 R_{it} + \alpha_3 DR_{it} \times R_{it} + \varepsilon_{it} \tag{7}$$

where E_{it} is the earnings per share before extraordinary items of firm i in year t; P_{it-1} is the stock price of firm i at the end of year $t—1$; R_{it} is the buy-and-hold return for firm i over the 12-month period ending three months after the end of fiscal year t; DR_{it} is an indicator variable that equals 1 if R_{it} is negative, and 0 otherwise.α_3 captures the asymmetric timeliness (*AT1*) of economic losses recognition in earnings relative to economic gains in earnings.

The send measure, *AT2,* is based on the following Ball and Shivakumar (2005) model:

$$TACC_{it} = \beta_0 + \beta_1 DCFO_{it} + \beta_2 CFO_{it} + \beta_3 DCFO_{it} \times CFO_{it} + \varepsilon_{it} \tag{8}$$

where *TACC* is the total accruals *(ib-oancf)* scaled by total assets at the beginning of the year, *CFO* is cash flow from operating activities (*oancf*) scaled by total assets at the beginning of the year, *DCFO* is an indicator that equals 1 if *CFO* is negative and 0 otherwise. The coefficient β_3 on $DCFO \times CFO$ represents the relative speed of economic losses are recognized into accruals. The higher the β_3, the greater the asymmetric timeliness of accruals to recognize economic losses relative gains (*AT2*), and the more conservative the financial reporting.

The third measure *AT3* is based on the following Ball and Shivakumar (2005) model:

$$\Delta E_{it} = \gamma_0 + \gamma_1 D\Delta E_{it-1} + \gamma_2 \Delta E_{it-1} + \gamma_3 D\Delta E_{it-1} \times \Delta E_{it-1} + \varepsilon_{it} \tag{9}$$

where ΔE_{it} is the change in net income in year t, ΔE_{it-1} is the change in net income in year $t-1$, and $D\Delta E_{it-1}$ is an indicator variable if change in net income ΔE_{it-1} is negative and 0 otherwise. A more negative coefficient Δ_3 on $D\Delta E_{it-1} \times \Delta E_{it-1}$ implies more timely recognition of the losses that are transitory and reverse sooner.

Table 10 Borrower quality, creditor control rights, and *BCC*

Variables	(1) BCC	(2) BCC	(3) BCC	(4) BCC
FinCov	0.183***	0.159***	0.152***	0.121***
	[41.234]	[37.386]	[39.018]	[19.984]
High_Mkbk	0.002			
	[0.140]			
High_Mkbk×*FinCov*	**0.015*****			
	[2.869]			
Rated		− 0.071***		
		[− 3.412]		
Rated×*FinCov*		**0.066*****		
		[11.489]		
Large			− 0.188***	
			[− 9.865]	
Large×*FinCov*			**0.101*****	
			[15.353]	
Unconstrained				− 0.136***
				[− 6.224]
Unconstrained×*FinCov*				**0.086*****
				[12.812]
Other control variables	Yes	Yes	Yes	Yes
Constant	0.163**	0.221***	0.159**	0.259***
	[2.157]	[2.924]	[2.072]	[3.513]
Loan purpose fixed effects	Yes	Yes	Yes	Yes
Credit rating fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Observations	25,808	25,808	25,808	25,808
Adjusted R^2	0.626	0.631	0.638	0.632

Bold indicates variables of interest

This table presents the estimation results of the linear probability firm fixed effects model estimating the effects of the number of financial covenants on *BCC* conditioning on firms' market to book ratio (*High_Mmkbk*), access to public debt market (*Rated*), firm size (*Large*), and financial constraint index (*Unconstrained*). *BCC* is an indicator that equals 1 if a loan contains borrower consent clause and 0 otherwise. *FinCov* is the number of financial covenants in a loan contract. *High_Mkbk* is an indicator that equals 1 if firms' market to book ratio is greater than the sample median and 0 otherwise. *Rated* is an indicator that equals 1 if a firm has long-term S&P debt rating and 0 otherwise. *Large* is an indicator that equals 1 if a firm's assets are greater than the sample median and 0 otherwise. *Unconstrained* is an indicator that equals 1 if a firm's WW financial constraint index is smaller than the sample median and 0 otherwise. Variable descriptions for all variables are provided in Appendix 1. Standard errors are clustered at the firm level with robust and clustered t-statistics provided in parentheses. Statistical significance at the 0.01, 0.05, and 0.10 level is indicated by ***, **, and *, respectively, using two-tailed tests

The firm-year accounting conservatism measure is obtained by estimating the above three regressions for each two-digit NAICS industry over a five-year period prior to the loan syndication year. Each industry with the number of firm-years less than 200 and the number of firms less than 20 is removed from the estimation to avoid small sample bias. We interact

creditor control rights proxied by *FinCov* with each of the three measures of accounting conservatism *AT1*, *AT2*, and *AT3,* and estimate the following linear probability model with firm fixed effects to evaluate the incremental impact of accounting conservatism on the probability of *BCC* in response to tighter creditor control rights.

$$BCC_{i,j,t} = \alpha_i + \delta_t + \beta_0 Hat_{i,t-1} + \beta_1 FinCov_{i,j,t} + \beta_2 Hat_{i,t-1} \times FinCov_{i,j,t} + \gamma X_{i,t-1} + \theta C_{i,j,t} + \varepsilon_{i,j,t} \quad (10)$$

Table 11 Accounting conservatism, creditor control rights, and *BCC*

Variables	(1) *BCC*	(2) *BCC*	(3) *BCC*
Hat1	− 0.034***		
	[− 3.064]		
Hat1 × *FinCov*	**0.027*** **		
	[5.349]		
Hat2		− 0.057***	
		[− 5.085]	
Hat2 × *FinCov*		**0.035*** **	
		[7.214]	
Hat3			− 0.039***
			[− 3.543]
Hat3 × *FinCov*			**0.023*** **
			[4.689]
FinCov	0.178***	0.174***	0.181***
	[41.266]	[41.109]	[43.505]
Other control variables	Yes	Yes	Yes
Constant	0.149*	0.135*	0.160**
	[1.933]	[1.765]	[2.075]
Loan purpose fixed effects	Yes	Yes	Yes
Credit rating fixed effects	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Observations	24,979	25,373	25,373
Adjusted R^2	0.628	0.629	0.628

Bold indicates variables of interest

This table presents the estimation results of the linear probability firm fixed effects model estimating the effects of financial reporting conservatism on the relationship between the number of financial covenants (*FinCov*) and *BCC*. *AT1*, *AT2*, and *AT3* are three different measures of accounting conservatism with *AT1* based on the Basu (1997) return-based model and *AT2* (*AT3*) based on the Ball and Shivakumar (2005) non-return-based accrual (earnings change) model. *Hat1* and *Hat2* are indicators that equal 1 if *AT1* and *AT2* are greater than the sample median and 0 otherwise, respectively. *Hat3* equals 1 if *AT3* is negative and 0 otherwise. *BCC* is an indicator that equals 1 if a loan contains *BCC* and 0 otherwise. Variable descriptions for all other variables are provided in Appendix 1. Standard errors are clustered at the firm level with robust and clustered t-statistics provided in parentheses. Statistical significance at the 0.01, 0.05, and 0.10 level is indicated by ***, **, and *, respectively, using two-tailed tests

where *Hat* is a placeholder for *Hat1*, *Hat2*, and *Hat3*. *Hat1*(*Hat2)* equals 1 if *AT1* (*AT2*) is greater than the sample median, and 0 otherwise. *Hat3* equals 1 if *AT3* is negative, and 0 otherwise. All other control variables are defined in equation (1).

Table 11 reports the results. Consistent with our expectation, the results show that the coefficients on all the interaction terms between *Hat1*, *Hat2*, and *Hat3* and *FinCov* are positive and significant at the 1% level (Column (1): *coefficient =0.027; t-statistics =5.349*; Column (2): *coefficient =0.035; t-statistics = 7.214*; Column (3): *coefficient =0.023; t-statistics =4.689*). These results suggest that borrowers with conservative financial reporting are more likely to require *BCC* in the debt contracts to alleviate the concern of strong creditor control. The negative and significant coefficients on *Hat1* and *Hat2* suggest that in firms with loan contracts containing fewer financial covenants, their conservative financial reporting has a negative association with the inclusion of *BCC*.

5 Additional analyses

To further examine the impact of the inclusion of a *BCC* on lenders and borrowing firms, we explore the association between *BCC* inclusion and the probability of loan trading and the equity market response surrounding the announcement and initiation of loans with *BCC*.

5.1 BCC and the probability of loan trading

A *BCC* requires lenders to obtain borrower permission before they can transfer loans, imposing a constraint on creditors' ability to transfer loans. We expect that loans with a BCC are less likely to be traded in the secondary market. To test this conjecture, we employ the following model:

$$\Pr(Trade = 1)_{i,qt} = \alpha_1 + \beta_1 BCC + \gamma X_{i,qt} + \theta C_{i,j} + \mu_{2ind} + \delta_{qt} + \varepsilon_{i,qt} \tag{11}$$

where *Trade* is an indicator variable if a loan is traded in quarter *t* and 0 otherwise. *BCC* is an indicator variable that equals one if a firm loan contains a *BCC* and zero otherwise. μ_{2ind} and δ_{qt} denote two-digit industry and quarter fixed effects, respectively. We follow Drucker and Puri (2009) and include firm and loan characteristics to control for factors affecting the probability of loan trading. $X_{i,qt}$ is a vector of firm characteristics measured at the beginning of each quarter, including natural logarithm of total assets (*Log(Assetsq)*)), market-to-book ratio (*Mkbkq*), return on assets (*Roaq*), leverage ratio (*Levgq*), and investment grade and noninvestment grade indicators. $C_{i,j}$ denotes a vector of loan characteristics including loan size (*Lloansize*), loan maturity (*Log(Maturity)*), collateral indicator (*Secured*), percentage of nonbanks (*Nonbank Prc*), total number of financial covenants (*FinCov*), the number of days between loan syndication and the first trading date (*Log(Loan age)*) and indicator for revolver loan (*Revolver*) and institutional loans (*Institutional*). We also control for loan purpose fixed effects and credit rating fixed effects.

Table 12 reports the results. Consistent with our conjecture, we find that loans with a BCC are less likely to be traded in the secondary loan market (Column (1) coefficient on *BCC* = − 0.154*; t-statistics* = − 3.819), suggesting that BCC does restrict creditors' flexibility in transferring their loans in the secondary loan market. In Column (2), we show the results with other loan assignment clauses, including buyer restriction, minimum assignment, minimum holding, and institutional investor OK clause. The coefficient on *BCC* is

Table 12 *BCC* and the probability of trading

Variables	(1) Traded	(2) Traded
BCC	**− 0.154*****	**− 0.179*****
	[− 3.819]	**[− 3.165]**
Institutional Investor OK		0.258***
		[2.592]
Min Holding		− 0.122**
		[− 2.072]
Restriction on buyer type		− 0.156**
		[− 2.063]
Min Assignment		0.049
		[0.779]
Log(Assetsq)	0.331***	0.332***
	[14.385]	[14.387]
Mkbkq	0.007	0.006
	[0.396]	[0.347]
Roaq	0.172	0.174
	[1.149]	[1.161]
Levgq	1.088***	1.085***
	[12.040]	[11.963]
Log(Loan age)	− 0.054***	− 0.053***
	[− 8.214]	[− 8.002]
Inv grade	0.481***	0.484***
	[2.755]	[2.756]
Non-Inv grade	0.834***	0.837***
	[5.762]	[5.741]
Lloansize	0.034**	0.034**
	[2.484]	[2.492]
Log(Maturity)	0.219***	0.215***
	[7.475]	[7.385]
Secured	0.515***	0.514***
	[14.074]	[14.034]
Nonbank prc	0.137**	0.139**
	[2.030]	[2.033]
FinCov	0.051***	0.048***
	[3.913]	[3.480]
Revolver	− 0.015	− 0.015
	[− 0.562]	[− 0.548]
Institutional	0.535***	0.532***
	[14.680]	[14.635]
Constant	− 5.336***	− 5.324***
	[− 13.462]	[− 13.411]
Loan purpose fixed effects	Yes	Yes
Credit rating fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Quarter fixed effects	Yes	Yes
Traded quarters	128,668	128,668

Table 12 (continued)

Variables	(1) Traded	(2) Traded
Observations	404,545	404,545
Pseudo R^2	0.366	0.366

Bold indicates variables of interest

This table reports the effect of the inclusion of *BCC* on the probability of loan trading. The dependent variable is an indicator *Traded*, that equals one if a firm quarter has at least traded loan and zero otherwise. The independent variable of interest is *BCC* that equals one if a loan contains BCC and zero otherwise. Variable descriptions for all other variables are provided in Appendix 1. Standard errors are clustered at the firm level with robust and clustered t-statistics provided in parentheses. Statistical significance at the 0.01, 0.05, and 0.10 level is indicated by ***, **, and *, respectively, using two-tailed tests

still negative and significant at the 1% level, which is qualitatively similar to that reported in Column (1). The coefficients on both *Min Holding* and *Restriction on Buyer Type* are negative and significant at the 5% level, but smaller in magnitude than the coefficient on *BCC*; the coefficient on *Institutional Investor OK* is positive and significant at the 1% level; and the coefficient on *Min Assignment* is positive yet insignificant. These results are generally consistent with our expectation that strict assignment clause reduces loan trading liquidity, while relaxed clause increases loan trading liquidity.

5.2 Equity market reactions to the announcement of loans with BCC

Our main premise for creditors accepting *BCC* is that borrowers who are granted with such clause are of good quality and the costs of lower loan liquidity is mitigated by the benefits of lending to such quality borrowers. If this is the case, then granting the clause could convey positive private information about borrower quality to public investors. We examine whether the announcement and initiation of loans with *BCC* is accompanied with a higher abnormal return of the borrowing firm in the equity market.

Table 13 Abnormal returns around loan announcement and loan initiation date

BCC	(1) Loan initiation		(2) Loan announcement	
	N	*CAR [− 1,1]*	*N*	*CAR [− 1,1]*
BCC = 1	*10,376*	0.004	1779	0.004
BCC = 0	*9599*	0.002	885	− 0.001
Diff		0.002		0.005
t-value in diff		2.75***		2.03**

This table reports the market adjusted cumulative abnormal return (CAR) in the equity market over [− 1,1] surrounding loan initiation (Column (1)) and loan announcement(Column (2)) for loans with and without *BCC*. Statistical significance at the 0.01, 0.05, and 0.10 level is indicated by ***, **, and *, respectively, using two-tailed tests

The results are reported in Table 13. First, we compare the cumulative market-adjusted abnormal returns over a three-trading-day window (centered on the loan initiation date) between the loans with and without *BCC*. The results in Column (1) show that the abnormal returns around loan initiation are higher for loans with a *BCC* than for loans without such a clause. Because loan initiation date may lag announcement date, we conduct an additional test by drawing a random sample of 7000 loans from our original sample. Then for each loan, we search Factiva archives for news report on loan announcements to identify the actual loan announcement date. We find announcement dates for 2665 loans and compare cumulative market-adjusted abnormal returns around the actual loan announcement date for loans with and without a *BCC*. We still find that loans with BCC experience more positive abnormal return following loan announcement, compared to loans without such a clause, and the difference is positive and significant at the 5% level (Column (2)). More specifically, we find that the abnormal return of loans with *BCC* is 20–50 basis points higher than that of loans without such a clause. The difference is significant both economically and statistically.

6 Conclusion

We examine the inclusion of *BCC* as a contractual mechanism to reduce renegotiation costs and protect borrowers from negotiating with unknown creditors. Using the number of financial covenants to proxy for creditor control rights, we document that borrowers demand *BCC* as a strategic response to strong creditor control rights, suggesting that *BCC* serves as an important contractual mechanism to improve contracting efficiency. The baseline results are robust to using covenant tightness as an alternative proxy for creditor control rights. Furthermore, we find that performance covenants result in higher likelihood of *BCC* inclusion than capital covenants do. Using the inception of CDS trading as a unique setting of weakened creditor control rights, we find that the inception of CDS trading is associated with a lower likelihood of *BCC* inclusion.

To address the potential endogenous issues, we employ three approaches including a simultaneous equation framework to jointly estimate *BCC* inclusion and creditor control rights, propensity score matching to address endogeneity due to observable firm and loan characteristics, and exploiting the adoption of *ARL* as a quasi-natural experiment and an exogenous shock to creditor rights. We find that the baseline results are robust to addressing endogeneity issues using all these approaches. Moreover, cross sectional analyses reveal that the positive association between *BCC* and creditor control rights is stronger for quality borrowers and borrowers with more conservative financial reporting. Our study contributes to the extant literature by documenting that *BCC* serves as an important contracting mechanism to address contract incompleteness and improve contracting efficiency in the originate-to-distribute banking era.

Appendix 1: Variable definitions

Variables	Definitions
BCC	An indicator variable that equals one if a loan deal contains a borrower consent clause and zero otherwise
Min Assi	An indicator variable that equals one if a loan deal contains a minimum assignment clause and zero otherwise
Lead lender consent	An indicator variable that equals one if a loan deal contains a lead lender consent clause and zero otherwise
Restriction on buyer type	An indicator variable that equals one if a loan deal contains a restriction on buyer type clause and zero otherwise
Institutional Investor OK	An indicator variable that equals one if a loan deal contains an institutional investor OK clause and zero otherwise
Min Holding	An indicator variable that equals one if a loan deal contains a minimum holding clause and zero otherwise
FinCov	The total number of fin covenants contained in a loan deal
Increase_ Chargeoff	The number of lead lenders with an increase in the net chargeoff in the quarter prior to loan syndication
Predicted_Fin-Cov	The number of predicted financial covenants obtained from the first-stage regression model (Eq. (2)) in the instrumental variable estimation. The instrument is *Increase_ Chargeoff*
SIC2_BCC	The percentage of loans with BCCs syndicated in the borrowing firm's SIC 2-digit industry and in the year prior to the firm's loan year
Predicted_BCC	The predicted probability of including BCC in debt contracts from the first stage regression model (Eq. (2) in the instrumental variable estimation. The instrument is the percentage of loans with BCC syndicated in a firm's SIC two-digit industry and the year prior to the firm's loan year (SIC2_BCC)
PerfCov	The number of performance covenants in a loan deal based on Christensen and Nikolaev's (2012) classification, including (1) Cash interest coverage ratio, (2) Debt service coverage ratio, (3) Level of EBITDA, (4) Fixed charge coverage ratio, (5) Interest coverage ratio, (6) Ratio of debt to EBITDA, and (7) Ratio of senior debt to EBITDA
CapCov	The number of capital covenants in a loan deal based on Christensen and Nikolaev's (2012) classification: (1) Quick ratio, (2) Current ratio, (3) Debt-to-equity ratio, (4) Loan-to-value ratio, (5) Ratio of debt to tangible net worth, (6) Leverage ratio, (7) Senior leverage ratio, and (8) Net worth requirement
FinCov_Tight-ness	The aggregated measure of covenant tightness based on all financial covenants (Demerjian and Owens 2016)
PerfCov_Tight-ness	The aggregated measure of covenant tightness based on all performance covenants (Demerjian and Owens 2016)
CapCov_Tight-ness	The aggregated measure of covenant tightness based on capital covenants (Demerjian and Owens 2016)
Post_CDS	An indicator variable that equals one if a loan deal is initiated after the inception of CDS trading and zero otherwise
Log(Assets)	Natural logarithm of total assets
Mkbk	Market-to-book ratio
Tang	Tangible assets (ppent/at)
Roa	Return on assets (ni/at)
Inv Grade	An indicator variable that equals one if a borrower has an S&P long-term debt rating of BBB or above, and zero otherwise

Variables	Definitions
Non-Inv Grade	An indicator variable that equals one if a borrower has an S&P long-term debt rating of below BBB or does not have a credit rating, and zero otherwise
Levg	Leverage (dltt/at)
Fc	An indicator variable for financial constraint that equals one if a firm's Whited and Wu (2006) financial constraint index is greater than the sample median, and zero otherwise. Whited and Wu (2006) index = − 0.091 * cash – 0.062 * dvt + 0.021 * dltt/at – 0.044 * log(at) + 0.102 * industry_sale_growth – 0.035 * sale_growth
Not_Rated	An indicator variable that equals one if a firm has S&P long-term credit rating and zero otherwise
Secured	An indicator variable that equals one if a loan deal contains collateral requirement and zero otherwise
Deal/Assets	deal mount/total assets
Log(Maturity)	Natural logarithm of loan maturity. The longest maturity of all tranches in a loan deal is used for the loan deal
Leveraged loans	An indicator variable that equals one if a firm's credit rating is below BBB or a firm does not have a credit rating, and zero otherwise
Revolver	An indicator variable that equals one if a deal contains at least one revolver loan and zero otherwise
ARL	An indicator variable that equals 1 if a loan deal is syndicated in 1995–1996 or 1998–1999 for a borrower headquartered in Texas or Louisiana or syndicated in 1999–2000 or 2002–2003 for a borrower headquartered in Alabama; and 0 if a loan is syndicated for a borrower headquartered in one of the non-adopting neighboring states
Post	An indicator variable that equals 1 if a loan is borrowed by a firm in Texas, Louisiana or their neighboring states (Alabama or its neighboring states) in 1998–1999 (2002–2003) and 0 otherwise
AT1 and Hat1	A measure of accounting conservatism based on the Basu (1997) model in which accounting earnings (epsx/price$_{t-1}$) is regressed on stock returns (R_{it}), an indicator variable for negative R_{it} (D), and an interaction term $D \times R_{it}$. The coefficient on $D \times R_{it}$ represents the relative speed of economic losses are recognized into earnings (*AT1*). The higher the coefficient on $D \times R_{it}$, the more timely the losses are recognized into earnings. The firm-year accounting conservatism measure is obtained by estimating the regression for each two-digit NAICS industry over a five-year period prior to the loan syndication year. Each industry with the number of firm-years less than 200 and the number of firms less than 20 is removed from the estimation to avoid small sample bias. *Hat1* is an indicator variable that equals 1 if AT1 is greater than the sample median, and 0 otherwise
AT2 and Hat2	A measure of accounting conservatism based on the Ball and Shivakumar (1997) model in which accounting total accruals ((ib-oancf)/at$_{t-1}$) is regressed on cash flow (*CFO*: oancf/at$_{t-1}$), an indicator variable for negative cash flow (*DCFO*), and an interaction term $DCFO \times CFO$. The coefficient on $DCFO \times CFO$ represents the relative speed of economic losses are recognized into accruals (*AT2*). The higher the coefficient on $DCFO \times CFO$, the more timely the losses are recognized into accruals. The firm-year accounting conservatism measure is obtained by estimating the regression for each two-digit NAICS industry over a five-year period prior to the loan syndication year. Each industry with the number of firm-years less than 200 and the number of firms less than 20 is removed from the estimation to avoid small sample bias. *Hat2* is an indicator variable that equals 1 if *AT2* is greater than the sample median, and 0 otherwise

Variables	Definitions
AT3 and Hat3	A measure of accounting conservatism based on the Ball and Shivakumar (1997) model in which accounting change in net income (ΔE_{it}) is regressed on change in net income in year t−1(ΔE_{t-1}), an indicator variable for the negative change in net income in year t−1 ($D\Delta E_{t-1}$), and an interaction term $D\Delta E_{t-1} \times \Delta E_{t-1}$. A more negative coefficient on $D\Delta E_{t-1} \times \Delta E_{t-1}$ implies more timely recognition of the losses that are transitory and reverse sooner (*AT3*). The firm-year accounting conservatism is estimated same as the *AT1* for each 2-digit NAICS industry. *Hat3* is an indicator variable that equals 1 if *AT3* is negative, and 0 otherwise
High_Mkbk	An indicator variable that equals 1 if firms' market to book ratio is greater than the sample median and 0 otherwise
Rated	An indicator variable that equals 1 if a firm has long-term S&P debt rating and 0 otherwise
Large	An indicator variable that equals 1 if firms' assets is greater than the sample median and 0 otherwise
Unconstrained	An indicator variable that equals 1 if a firm's WW financial constraint index smaller than the sample median and 0 otherwise
Institutional	An indicator variable set to one if the loan is designed to be sold to institutional investors, and zero otherwise
CAR	Cumulative abnormal returns adjusted for value weighted market returns around loan announcement or loan initiation
Log(Maturity)	The natural logarithm of the number of days between the quarter end date to the loan maturity date
Mkbkq	Market-to-book ratio at quarter end
Roaq	Quarterly Return on Assets
Log(assetsq)	log(at) at quarter end
Traded	An indicator variable that equals one if a loan is traded in a quarter and zero otherwise
Log(loan age)	Natural logarithm of the days between loan initiation and the quarter end date

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Declarations

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References

Armstrong C, Kepler JD, Kim C, Tsui D (2022) Creditor control rights and executive bonus plans. Working Paper, Stanford University

Ashcraft AB, Santos JAC (2009) Has the credit default swap market lowered the cost of corporate debt? J Monet Econ 56(4):514–523

Aghion P, Bolton P (1992) An "incomplete contracts" approach to financial contracting. Rev Econ Stud 59:473–494
Aghion P, Dewatripont M, Rey P (1994) Renegotiation and design with unverifiable information. Econometrica 62:257–282
Ball R, Shivakumar L (2005) Earnings quality in UK private firms: comparative loss recognition timeliness. J Account Econ 39:83–128
Balsam S, Gu Y, Mao C (2018) Creditor influence and CEO compensation: evidence from debt covenant violations. Account Rev 93(5):23–50
Basu S (1997) The conservatism principle and the asymmetric timeliness of earnings. J Account Econ 24:3–37
Becher DA, Griffin TP, Nini G (2022) Creditor control of corporate acquisitions. Rev Financ Stud 35(4):1897–1932
Bharath ST, Dahiya S, Saunders A, Srinivasan A (2011) Lending relationships and loan contract terms. Rev Financ Stud 24(4):1141–1203
Bolton P, Oehmke M (2011) Credit default swaps and the empty creditor problem. Rev Financ Stud 24:2617–2655
Bolton P, Scharfstein DS (1996) Optimal debt structure and the number of creditors. J Polit Econ 104:1–25
Bord V, Santos JAC (2012) The rise of the Originate-to-Distribute model and the role of banks in financial intermediation. Econ Policy Rev 18(2):21–34
Bradley M, Roberts MR (2015) The structure and pricing of bond covenants. Q J Financ 5:1–37
Carey K (2018) Woodbridge Group of Companies, LLC. No. 17–12560 in the United States Bankruptcy Court for the District of Delaware
Chava S, Roberts MR (2008) How does financing impact investment? The role of debt covenants. J Finance 63:2085–2121
Chen KCW, Wei KCJ (1993) Creditors' decisions to waive violations of accounting-based debt covenants. Account Rev 68:218–232
Christensen H, Nikolaev V (2012) Capital versus performance covenants in debt contracts. J Account Res 50:75–116
Demerjian PR, Owens EL (2016) Measuring the probability of financial covenant violation in private debt contracts. J Account Econ 61:433–447
Demiroglu C, James CM (2010) The information content of bank loan covenants. Rev Financ Stud 23:3700–3737
Denis DJ, Wang J (2014) Debt covenant renegotiations and creditor control rights. J Financ Econ 113:348–367
Dewatripont M, Tirole J (1994) A theory of debt and equity: diversity of securities and manager-shareholder congruence. Quart J Econ 109:1027–1054
Dichev ID, Skinner DJ (2003) Large-sample evidence on the debt covenant hypothesis. J Account Res 40:1091–1123
Drucker S, Puri M (2009) On loan sales, loan contracting, and lending relationships. Rev Financ Stud 22:2835–2872
Ersahin N, Irani RM, Le H (2021) Creditor control rights and resource allocation within firms. J Financ Econ 139(1):186–208
Favara G, Schroth E, Valta P (2012) Strategic default and equity risk across countries. J Financ 67:1057–1099
Feldhütter P, Hotchkiss E, Karakas O (2016) The value of creditor control in corporate bonds. J Financ Econ 121:1–27
Ferreira D, Ferreira MA, Mariano B (2018) Creditor control rights and board independence. J Financ 73(5):2385–2423
Gârleanu N, Zeiebel J (2009) Design and renegotiation of debt covenants. Rev Financ Stud 22:749–781
Gopalakrishnan V, Parkash M (1995) Borrower and lender perceptions of accounting information in corporate lending agreements. Account Horiz 9:13–26
Grossman SJ, Hart OD (1986) The costs and benefits of ownership: a theory of vertical and lateral integration. J Polit Econ 94:691–719
Hart O, Moore J (1988) Incomplete contracts and renegotiation. Econometrica 56:755–785
Hollander S, Verriest A (2016) Bridging the gap: the design of bank loan contracts and distance. J Financ Econ 119:399–419
Kamstra MJ, Roberts GS, Shao P (2014) Does the secondary loan market reduce borrowing costs? Rev Finance 18:1139–1181

Kibbe J, Fraser BS, Rosen ES (2010) Court tests a borrower's ability to block loan transfer to competitors. http://apps.americanbar.org/buslaw/newsletter/0093/materials/pp2c.pdf
Li S, Whited TM, Wu Y (2016) Collateral, taxes, and leverage. Rev Financ Stud 29(6):1453–1500
Loan Market Association (2017) A loan market association guide: Improving liquidity in the loan market. Published by Loan Market Association
Mian A, Santos JAC (2018) Liquidity risk and maturity management over the credit cycle. J Financ Econ 127(2):264–284
Murfin J (2012) The supply-side determinants of loan contract strictness. J Financ 67:1565–1601
Nikolaev V (2018) Scope for renegotiation in private debt contracts. J Account Econ 65(2–3):270–301
Nini G, Smith D, Sufi A (2009) Creditor control rights and firm investment policy. J Financ Econ 92:400–420
Nini G, Smith DC, Sufi A (2012) Creditor control rights, corporate governance, and firm value. Rev Financ Stud 25:1713–1761
Prilmeier R (2017) Why do loans contain covenants? Evidence from lending relationship. J Financ Econ 123:558–579
Pyles MK, Mullineax DJ (2008) Constraints on loan sales and the price of liquidity. J Financ Serv Res 33:21–36
Rajan R (1992) Insiders and outsiders: the choice between informed and arm's-length debt. J Financ 47:1367–1400
Roberts MR (2015) The role of dynamic renegotiation and asymmetric information in financial contracting. J Financ Econ 116:61–81
Roberts MR, Sufi A (2009a) Control rights and capital structure: an empirical investigation. J Financ 64:1657–1695
Roberts MR, Sufi A (2009b) Renegotiation of financial contracts: evidence from private credit agreements. J Financ Econ 93:159–184
Shan SC, Tang DY, Winton A (2019) Do banks still monitor when there is a market for credit protection? J Account Econ 68(2–3):101241
Sharpe S (1990) Asymmetric information, bank lending and implicit contracts: a stylized model of customer relationships. J Financ 45:1069–1087
Singleton R (2017) Restrictions on assignment: the law and loan agreements. *Butterworths Journal of International Banking and Financial Law.* Accessed on November 1. 2018 https://blogs.lexisnexis.co.uk/loanranger/wp-content/uploads/sites/9/2017/04/Restrictions-on-assignment.pdf
Subrahmanyam M, Tang DY, Wang SQ (2014) Does the tail wag the dog? The effect of credit default swaps on credit risk. Rev Financ Stud 27:2927–2960
Watts R (2003) Conservatism in accounting Part I: evidence and research opportunities. Account Horiz 17(4):287–301
Whited TM, Wu G (2006) Financial constraints risk. The Rev Financ Stud 19:531–559
Zhang J (2008) Efficiency gains from accounting conservatism: benefits to lenders and borrowers. J Account Econ 45:27–54