

# Debt Contracting on Management

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## Abstract

This paper shows that lenders can influence firms' governance outside payment and technical default states by exerting ex-ante control over managerial turnover via retention and selection decisions. Examining private loan agreements, we find 8.5% of firms have change of management restriction (CMR) clauses. CEO turnover analysis suggests CMRs are binding. The inalienability of human capital motivates their presence. We also show that CMRs provide a way to contract on soft information and retain management with creditor-friendly style. Finally, CMRs are associated with lower yields, indicating they are in place to protect lenders, rather than to entrench management.

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An important question in corporate governance concerns the role of creditors in firm's governance (Shleifer and Vishny, 1997, Roberts and Sufi, 2009). One direct way for creditors to influence corporate governance is to exert control on managerial turnover. Past studies find that creditors can force executive replacement in the case of bankruptcy (Gilson, 1989) or covenant violations (Nini, Smith, and Sufi, 2012). However, this evidence relates only to ex-post renegotiation events where the firm has been performing poorly, and is now in payment or technical default. Little is known about the influence creditors exert on managerial turnover outside of such events.

Furthermore, motivated by the common notion that debt disciplines management through the threat of dismissal for poor performance (Harris and Raviv, 1990), the empirical literature has focused on testing the relevance of this threat. However, lenders might try to influence managerial turnover for other reasons, several of which point to management retention as opposed to dismissal. First, unlike physical and financial assets, ownership of human capital cannot be transferred to the firm, and thus human capital tied to management is lost if managers leave (Becker, 1964). This friction forms the premise of the theory of debt formulated in Hart and Moore (1994), in which the inability to transfer human capital from the individual to the firm is central in the debt structure.<sup>1</sup> Of course, shareholders value human capital as well. However, they have different risk preferences than creditors, which can play out in the selection of management. Additionally, managers could capture the debt contracting process since they, not shareholders, choose financing options (Novaes, 2003). In that case, lenders might agree to require managerial retention in return for higher interest rates. These alternative explanations have not been explored.

This paper aims to fill these gaps by examining if, how, and why lenders influence managerial turnover outside payment and technical default states. To that end, we study the contractual terms that govern the lender-borrower relationship. One direct way lenders could sway turnover is to include restricting clauses in the loan contract.

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<sup>1</sup> Theory also predicts the use of other types of contracts to mitigate this friction. For example, employment contracts may incorporate vesting requirements to improve the retention of talented managers (Oyer, 2004).

Our analysis centers on a novel data set collected from a sample of private loan contracts for 4,439 firms from 1995 to 2015.<sup>2</sup> We investigate whether the contracts contain clauses related to management turnover. We find that lenders can include change of management restrictions (CMRs) that explicitly prohibit firms from changing management or require them to submit any such change to lender approval. A violation of these clauses results in a technical default. These clauses are not uncommon: 8.5% of the firms have a CMR clause in at least one of their loan contracts.<sup>3</sup>

The presence of these clauses is important in at least three ways. First, it shows that lenders may aim to control the managerial turnover process outside of default events. Second, it indicates that they can do it via retention and selection, and not only through dismissal as documented in past studies. Third, although consistent with the notion that the inability to transfer human capital from the individual to the firm is important in debt design, the presence of CMRs suggests a broader contracting space than the one considered in Hart and Moore (1994). In their model, lenders adjust debt contract features, such as maturity and debt capacity, to compensate for the inalienability of human capital.

A natural question is whether these clauses are binding. Though it seems reasonable to contract on managers whom lenders deem important to the firm's future performance, lenders might not do so because it may be "dangerous" (Leichtling and Wong, 2000). Specifically, obtaining that much control over borrowers could lead to lenders being considered insiders under the bankruptcy code and open them to litigation by other stakeholders. We provide anecdotal and statistical evidence showing CMR clauses are binding and influence managerial turnover. The anecdotal evidence comes from the *State National Bank V. Farah Manufacturing Company* case in 1984, which revolves around the

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<sup>2</sup> One advantage of studying private loan contracts rather than bond indentures is that they contain more detailed and comprehensive information about the clauses that govern the lender-borrower relationship (Nini, Smith, and Sufi, 2009). Additionally, private lending is an important source of external financing (Sufi, 2007, Roberts, 2015), and private lenders are often viewed as stronger monitors than public creditors, particularly when firms present agency and information problems (Diamond, 1984, 1991).

<sup>3</sup> These financial claims represent an important portion of firm assets. We find loan deals containing CMRs represent on average 40% of pre-loan assets, while loans not containing CMRs are for 32% of pre-loan assets. Only 52 of the firms in the CMR sample have outstanding public debt. None of the indentures for these outstanding bonds have cross-default clauses, though indentures for 42 of these firms do have cross-acceleration clauses. These clauses could increase the cost to firms defaulting on a CMR clause if the lenders choose to respond by accelerating repayment.

inclusion of a CMR clause and shows that the bank directly influenced the managerial succession decision through threat of recalling the loan. For our statistical evidence, we show that the likelihood of CEO turnover decreases by 54% (relative to the unconditional probability) during the term of the CMR loan contract. Within CMR firms, we find that the probability of CEO turnover decreases when the CMR begins to be binding whereas it sharply increases when the CMR is no longer binding.

Our next goal is to understand the motivations for the use of CMR clauses. Three main results emerge from our analysis. First, a CMR clause is more likely to be adopted when managers possess unique skills or can more easily transfer to a competitor due to less stringent legal restrictions. Firms for which the CEO is the founder are more likely to have a CMR clause in their loan contracts. Subsequent contracts with the same firm are less likely to have the CMR clause once the founder is no longer the CEO. In addition, we find that CMR clauses are more likely to be adopted for firms in industries in which CEOs tend to be recruited from within (rather than outside of) the firm. In these industries, managerial skills tend to be more firm-specific and are more difficult to transfer to other firms (Cremers and Grinstein, 2014). Finally, CMR clauses are more likely to be adopted in firms operating in states where non-compete employment contracts are less enforceable (Garmaise, 2011). In these states, human capital risk is likely to be greater, and CMR inclusion would be beneficial for banks seeking to hedge that risk. Additionally, we find that the effect of covenant violations on CEO turnover, as documented in Nini, Smith, and Sufi (2012), is muted when a CMR clause is in place, which suggests that managers are important in CMR firms.<sup>4</sup>

Second, our results indicate that the information environment is an important determinant of the use of CMRs. These clauses are more likely to be adopted in contracts with smaller borrowers, where the asymmetric information problem is potentially more severe. When examining the syndicate structure, we find that loans containing a CMR clause tend to have fewer lenders and that the lead lenders hold a higher allocation of the loan, also consistent with information problems (Ball, Bushman, and Vasvari, 2008,

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<sup>4</sup> This is consistent with the arguments in Grinstein (2006) who shows that commitment to disciplinary actions is not optimal when management is highly invested in the company.

Ivashina, 2009, Sufi, 2007). Additionally, we find that a CMR clause is more likely to be adopted when the borrower is located close to a lead lender. As argued in Berger, Miller, Petersen, Rajan, and Stein (2005) the lender is likely to rely more heavily on soft information about the borrower when the two parties are closer. The closest lead lender in the borrower's subsequent contracts without CMRs is further away. Additional analysis on the granularity of CMRs shows that close proximity matters only when CMRs are written to retain a specific manager rather than retain the general management team or give the lenders selection rights over management replacement. Conversely, these results also suggest that when lenders do not have access to soft information, ex-post selection rights are more at play in the use of a CMR, which is consistent with arguments based on asymmetric information frictions developed in Garleanu and Zwiebel (2009).

Third, we find results consistent with lenders use CMR clauses to keep managers they believe are less likely to engage in risky behavior. We examine stock returns around the public filing dates of contracts containing CMRs. Across a variety of windows, the stock returns for firms disclosing debt contracts with CMRs are significantly more negative than the returns of other firms also disclosing new debt contracts. This result holds when using a sample of firms matched on firm and loan characteristics. We also find evidence that both cash flow and earnings volatility increase for firms bound by CMRs once those clauses are no longer binding. Finally, firms have lower CAPX when they have outstanding debt contracts with CMR clauses.

Our results are consistent with optimal contracting theories and the notion that restrictions in loan contracts are used to protect the lender by increasing the likelihood of repayment. However, these results could also be interpreted differently. Founder CEOs, firms in industries where CEOs tend to be insiders, and firms for which asymmetric information problems are more severe, could also indicate greater managerial power. The stock return event results could also point to that reasoning. This begs the question as to whether another motivation leads to the presence of a CMR clause: to entrench management. One way to disentangle these two interpretations is to examine the pricing of the loans. If the motivation to use CMRs is to protect the bank, then CMRs should decrease loan pricing like other covenants do. On the other hand, if the debt contracting process is

captured by management who petition for CMR inclusion, then we expect a positive relation between CMR inclusion and interest rates.

Testing the pricing implications of the inclusion of CMRs in the loan is challenging due to the simultaneous nature of the decision to include the covenant and the choice of yield. To address this difficulty, we follow the methodology set forth in Lee (1978), Miller and Puthenpurackal (2002), Goyal (2005), Miller and Reisel (2012), and Bradley and Roberts (2015) to control for the simultaneity of the covenant structure and loan pricing. We show that on average the presence of a CMR clause is positively related to a predicted decrease in the loan's yield. Furthermore, within the same firm, subsequent contracts without CMRs have higher interest rates. This evidence is consistent with these clauses on average being the outcome of an efficient contracting bargain to protect the lender, rather than to entrench the existing management.

This paper contributes to several strands of the literature. First, our results pertain to the general question of the role of creditors in the firm governance (Shleifer and Vishny, 1997, Roberts and Sufi, 2009). Our evidence indicates that lenders can have such an active role that they could be considered legal insiders. Our results extend those of Gilson (1989) and Nini, Smith, and Sufi (2012) by showing that lenders can exert control over managerial turnover outside payment and technical default states. While this prior literature focuses on ex-post renegotiation and infers creditors' roles by examining outcomes, we examine the explicit contractual terms, shedding light on the ex-ante intentions of the lenders. While they find lenders exerting control through dismissal, our evidence mirrors theirs by showing lenders can do it through retention and selection decisions as well. Our findings also complement those of Denis and Wang (2014), who find that creditors can influence firms' investment and financial policies outside of default states via covenant renegotiations.

Second, we contribute to the debt contracting literature. To our knowledge, this paper is the first empirical study examining debt contracting explicitly on management. This contracting practice relates to the theoretical framework in Hart and Moore (1994). Our evidence shows lenders can take a different approach by directly contracting on human capital via the inclusion of CMR clauses and can inform further theoretical research

in debt contracting.<sup>5</sup> Additionally, this paper sheds light on the bargaining process between borrower management and the lender. Unlike previous studies, we examine a contract clause giving lenders control rights over the choice of firm management. This allows us to derive and test predictions about the relation between covenant and loan pricing that could not have been done in previous work, which leads us to identify whether the contracting process is efficient from the firm's perspective or captured by firm management (at the expense of the shareholders). This approach is analogous to studies on CEO compensation contracts that examine the bargaining process between the firm and its management.<sup>6</sup> Our approach complements that of Chava, Kumar, and Warga (2010), who consider the implications of the simultaneous interaction among managers, shareholders, and bondholders on bond covenants. Our findings also complement research showing connections between executives and bankers are valuable in the lending relationship (Karolyi, 2014) and research showing management risk is related to debt pricing (Pan, Wang, and Weisbach, 2016).

Finally, our findings also relate to the literature on managing with style (Bertrand and Schoar, 2004). Our evidence suggests that CMR clauses provide a way for lenders to contract on soft information and retain management with creditor-friendly style. Our results provide an interesting contrast about the favored choice of management between lenders and shareholders. While Kaplan, Sensoy, and Stromberg (2009) show that in general venture capitalists (VCs) favor replacing the founder with a new CEO, we find instances when banks demand that the founder remains the CEO.<sup>7</sup> This observation is consistent with our negative market reaction results as well as with Ewens and Marx (2016), who show that founder replacements by VCs unlock value.

The paper continues as follows. Section I explains the data collection and sample construction. Section II describes the characteristics of the CMR clauses and studies the

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<sup>5</sup> The use of CMRs supports the theoretical framework developed in Aghion and Bolton (1992). In their model, the contracting space is quite general and lenders can make use of any contractible signals.

<sup>6</sup> See, e.g. Bebchuk and Fried (2003) for evidence on the contracting process being captured by the CEO.

<sup>7</sup> Note that past studies also find that VCs can contract with managers to enhance their retention when they see it as beneficial. For example, Kaplan and Stromberg (2003) report that VCs can require non-compete agreements. Also in examining biotechnology alliances, Robinson and Stuart (2007) report that client firms can require the partner firm to provide a certain amount of labor by key employees.

effect of CMRs on CEO turnover. Section III studies the determinants of the CMR inclusion. Section IV develops predictions about the relationship between CMR inclusion and the pricing of the loan and estimates this relation. Section V concludes. Appendix A defines the main variables used in this study.<sup>8</sup>

## I. Data and Sample Construction

Our study focuses on contracts for which the presence of a CMR clause can be verified. To create our sample, we download full loan contracts available through the SEC's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system. (See internet appendix 1 for full details on our data collection procedure). The SEC has encouraged firms to file material information in a timely fashion, using item 5 of an 8-K (Carter and Soo, 1999). However, Item 601 of Regulation S-K<sup>9</sup> requires firms to file material contracts as exhibits to the first Form 10-K or 10-Q subsequent to the contract initiation date. In 2004 with Release No. 34-49424,<sup>10</sup> the SEC amended the 8-K filing guidelines to include 'entry into a material definitive agreement' in the list of conditions which trigger an 8-K filing. This required firms to file the complete loan contracts in 8-Ks. We utilize the full text of contracts from these borrower filings to search for CMR clauses.

We obtain our sample of contracts from an initial merge of Standard and Poor's (S&P) Compustat database with a 2015 extract of the Thomson Reuters-DealScan database using the link data developed for Chava and Roberts (2008). We require that firms have non-missing total assets in Compustat. We also require valid deal active dates, price information, and deal amounts in DealScan. We constrain our sample to loans originating after January 1, 1995 because prior to that date, contracts are generally unavailable through the EDGAR. To match DealScan packages to EDGAR filings, we require the firms to have a valid Central Index Key (CIK), the EDGAR unique firm identifier which we obtain

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<sup>8</sup> We also provide five internet appendices (IA). IA.1 provides additional details about the data collection process. IA.2 presents some examples of CMR clauses in loan contracts. IA.3 describes the court case *State Nat. Bank V. Farah Mfg. Co.* IA.4 and IA.5 provide additional tables and figures.

<sup>9</sup> <https://www.law.cornell.edu/cfr/text/17/229.601>

<sup>10</sup> <https://www.sec.gov/rules/final/33-8400.htm#seciic>

from Compustat. This reduces the number of firms to 6,570 representing 29,662 unique loan packages.

We match DealScan packages to EDGAR filings using a keyword search approach similar to that of Nini et al. (2009). For each of the 6,570 firms in our merged DealScan and Compustat sample, we download and search through all 10-K, 10-Q, and 8-K filings for credit agreements, amendments, and restatements. We identify credit agreements by using regular expressions, which allow flexibility in stop-words, whitespace, and punctuation, to search for any collocated combination of the terms “*credit, loan, debt, borrowing, borrower, financing, revolving*” with “*agreement, contract, facility.*” This search results in 59,719 filings that match our search criteria. This number is approximately double the 29,662 DealScan contracts with valid CIKs, but includes amendments, renegotiations, and typically a separate filing for each facility in a package. We err on the side of false positives in our search results because we deem achieving the broadest possible sample worth the labor cost of hand filtering our final CMR sample.

From the sample of all filings in EDGAR that meet our debt contract search criteria, we match 15,557 contracts to DealScan based on CIK and date, which equates to 57% of the valid DealScan packages. We have a higher contract match rate than that of Nini et al. (2009), 57% compare to 40%, likely due to our more relaxed search requirements and time period effects. Of the 6,570 firms searched, we find contracts for 4,439, or 77%. The DealScan database is formed by collecting data from SEC filings, lending institutions, and borrowers (Nini et al., 2009, Bradley and Roberts, 2015). We do not expect to find all of the DealScan packages listed in EDGAR because some of the contracts are gathered from other sources.

For the set of 15,557 matched contracts, we identify those containing CMR clauses by using a two-step approach: the first, conducting a broad search erring on the side of false positives and the second, filtering out non-CMR clauses. The broad, textual search is based on some indication of change and managerial position terms. For example, “change” followed shortly within the paragraph by “management,” “CEO,” etc. This search results in 17,251 paragraphs containing general change language. Using two independent reviewers, we filtered the paragraphs to eliminate clauses which did not specifically limit changes to

management, resulting in approximately 2,100 paragraphs. We then manually read through and filtered this reduced set of paragraphs to arrive at a final set of 594 contracts that contain a CMR clause. For these contracts, we verify that the signing date, syndicate members, and deal amount match the data in DealScan. We drop 34 of the contracts containing CMR clauses that fail to meet these criteria and an additional 29 contracts from utilities or financials (SIC codes 40-45 and 60-64) following Ivashina (2009).<sup>11</sup> The remaining 531 contracts comprise the final CMR sample. Internet appendix IA.1 and Table IA.I summarize our sample size after each stage of the filtering process.

## II. Analysis of the CMR Clauses and of their Binding Effects on CEO Turnover

### A. Clause Characteristics

Table I shows summary statistics for the clause details for the 531 contracts with the CMR clause, separated into the four dimensions over which they are categorized. *Severity* (category A) describes how binding the contracts are, from automatic default to requiring ex-post lender authorization to change management. *Replacement Approval* (category B) describes whether the contract explicitly requires lender approval for any replacements. *Source* (category C) describes whether the clause specifies that the restriction applies to termination by the board, managers voluntarily leaving, or both/unspecified. *Management definition* (category D) describes whom and what positions the CMR clause explicitly references. Categories A1-A4, C1-C3, and D1-D4 are each mutually exclusive and collectively exhausted for contracts, but not for firms and banks. This is because some firms and banks have multiple contracts with different clause types, i.e. one firm can be in both A1 and A2.

[Insert Table I here]

We categorize the clauses into four levels of *Severity*. The most severe CMR clauses, which account for 30% of the sample, stipulate that any change in management unconditionally causes default (type A1). Nine percent of the clauses constrain change in

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<sup>11</sup> Our results are robust to the inclusion of these contracts.

management but specify conditions under which it will not trigger a default, typically allowing for death or disability (type A2). In all but six cases, these covenants also specify that the lenders must approve the subsequent replacement. Twenty six percent of the clauses specify that firms must receive permission prior to any management change (type A3). The least severe restrictions, comprising 35% of the sample, stipulate that borrowers must acquire lender approval after a change in management occurs, typically within a time period ranging from 30 days to half a year (type A4). Note that this classification also captures the extent to which the clause aims to retain current management (as opposed to have selection rights over replacement).

The *Replacement approval* category consists of two types, with 48% of the sample explicitly requiring lender approval over any replacement (type B1). The complement (type B2) is omitted for brevity. Eight percent and twelve percent of the contracts with A1 and A3 types have clauses with type B1. This contrasts with clause types A2 and A4, which are 88% and 99% type B1 respectively.

The *Source* category consists of three types. The majority (type C1) use either general or all-encompassing terms, such as “any change” or “cease for any reason.” Clauses restricting the removal or firing of managers comprise 9% of the sample (type C2), using language like “shall not remove.” Clauses restricting managerial initiated departure or retirement comprise 9% of the sample (type C3), using language like “shall resign.”

The *Management definition* category consists of four types, which arise from CMR clauses explicitly naming individuals, positions, or both. Clauses which name individuals (but not their position) (D1), name positions only (D2), or name both (D3) comprise 29%, 9%, and 21% respectively. Clauses that are general, including neither names nor specific conditions (e.g. “change in management”) make up the remaining 41% of the sample. Internet appendix IA.2 provides specific examples of CMR clauses.

## *B. The Binding Effect of CMR on CEO Turnover: Legal and Statistical Evidence*

CMR clauses are arguably unimportant unless they are shown to be binding. We provide anecdotal evidence of this through the description of a court case and statistical

evidence in the full sample by examining the binding effect of CMR clauses on CEO turnover.

### *B.1. Legal Evidence*

State National Bank V. Farah Manufacturing Company is a court case which revolved around the inclusion of a CMR clause, the lenders' enforcement of it, and the subsequent actions taken by the lender-chosen replacement CEO. After a series of steep losses, Farah's CEO, William Farah, was replaced by a Mr. Leone, though Farah remained on the board. The lending syndicate renegotiated their outstanding loan with Farah Manufacturing to include a CMR clause after this change in management. When the interim CEO was unable to improve firm operations, Mr. Farah attempted, from his position on the board, to regain the CEO position. In response, two banks from the syndicate threatened to accelerate the loan under the terms of the CMR clause if the board re-elected Mr. Farah. The threat of default from the bank was enough to persuade the board to refuse Mr. Farah's bid for the CEO position, and instead replaced Mr. Leone with a third individual proposed and supported by the banks. This replacement subsequently sold firm assets to repay the banks, and the CEO was eventually replaced with Mr. Farah.

This lawsuit hinged on the board's decision to elect the candidate chosen by the banks as CEO rather than Mr. Farah because of the expected losses from the loan default. Thus, the board chose firm management that was, ex-post, not in its best interests partially based on the limitations imposed by the CMR clause. However, since this decision, the courts have established precedents which require a more stringent demonstration of interference to rule against banks, to the extent that "the Supreme Court of Texas today would have likely overturned the tortious interference part of the Farah decision" (Cohen, 2012). Internet appendix IA.3 provides a more detailed explanation of the court case.

### *B.2. CEO Turnover Evidence*

We provide statistical evidence that CMR clauses are binding by following the previous literature and modeling the turnover decision (Parrino, 1997; Kaplan and Minton, 2012; Jenter and Kanaan, 2015). We use a probit model to estimate the probability of turnover as a function of firm performance and CEO characteristics. We include an

indicator variable for active loans with a CMR clause to test whether it constrains the change in management.

Table II presents the results of this analysis in six specifications. Specifications (1) and (2) use the previous year's returns (total shareholder return, i.e. the stock return including dividends reinvested) to capture the immediate firm performance, excluding and including year fixed effects respectively. Specifications (3) and (4) use the return over the previous three years as a longer horizon performance measure, also excluding and including year fixed effects respectively. Specifications (5) and (6) repeat specifications (2) and (4) respectively, adding an indicator for whether the firm ever has a CMR clause, to demonstrate that the turnover differences are robust to an average difference in turnover between the CMR firms and the full sample. All specifications include the *ROA* for the previous year to control for firm financial performance. We use two measures to control for CEO characteristics following Jenter and Kanaan (2015). We include *CEO High Ownership*, an indicator variable for firms with CEOs owning more than 5% of the outstanding shares, to control for CEOs who may be more difficult to remove due to increased influence, voting or otherwise. We also include an indicator variable for whether the CEO is of retirement age (between 63 and 66, inclusive) to control for the normal course of retirement. Lastly, following Jenter and Kanaan (2015), we restrict our sample to those CEOs who have been in place for more than 24 months.

Consistent with CMR clauses being binding, we find that inclusion of a CMR clause decreases the probability of a turnover by 5.3%. This is equivalent to a 54% decrease in the probability of a turnover from the unconditional mean (5.3%/9.82%).<sup>12</sup> When controlling for three year past firm performance, this estimate increases slightly to 5.8%, corresponding to a 59% reduction in turnover probability from the unconditional mean. In Specifications (5) and (6), we add an indicator variable equal to one if a firm has a contract with a CMR clause at any point in our sample to ensure we are not capturing a firm effect. Our results continue to be robust and the indicator fails to load in either specification. We conclude from this that CMR clauses can be binding, and strongly influence borrower turnover decisions.

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<sup>12</sup> 9.82% of the contracts used in this test have CMR clauses.

[Insert Table II here]

To further demonstrate the binding effect of the CMR clause, we plot the impact of entering into a CMR contract on the probability of CEO turnover in Figure I. We model the impact of a CMR clause on the probability of CEO turnover as the average difference between realized turnover and predicted turnover, which we define as abnormal turnover. Predicted turnover is derived from a probit model matching that of specification (2) of Table II, which we run for the full sample of firms that have a CMR bearing contract at any point in their history. Figure I.A shows the effect of entering into a contract containing a CMR. For every CMR contract, we average the abnormal turnover across two year periods starting four years before the CMR clause becomes binding, and four years after. Figure I.B shows the effect of the cessation of a contract containing a CMR clause, using the same methodology. Consistent with the CMR clause being binding, we observe a sharp decrease in the probability of turnover after firms enter into a contract containing a CMR clause. Figure I.B suggests that this decreased probability of turnover persists through the duration of the contract and disappears when the CMR is no longer binding. This graphical evidence further suggests the conclusion that CMR clauses are in fact binding, and do affect firm behavior and turnover decisions.

[Insert Figure I here]

### **III. Why Do Lenders Include CMR Clauses in the Contract?**

#### *A. Hypotheses Development*

In this subsection, we develop three hypotheses that predict when it is most beneficial for the lenders to include CMR clauses in the contract in order to protect their claim.

##### *A.1. Human Capital Risk*

One important benefit of including the CMR clause is that it potentially mitigates human capital risk. Indeed, unlike physical and financial assets, ownership of human capital cannot be transferred to the firm, and thus human capital tied to management is lost

if managers leave (Becker, 1964). This friction forms the premise of the theory of debt formulated in Hart and Moore (1994), in which the inability to transfer human capital from the individual to the firm is central in the debt structure. By contracting directly on management via the CMR clause, the lenders partially hedge this risk.

We thus expect that the benefits of using CMR clauses are greater when the value of human capital tied to management is more important. For example, the departure of a CEO with specific networks or knowledge, could negatively impact the prospect of the firm and its ability to repay the loan. This risk stems from the fact that it is difficult to find an appropriate replacement for the CEO. Therefore, our hypothesis predicts that lenders are more likely to include CMR clauses when it is more difficult or costly to replace current management.

*H.A.1: The CMR clause is more likely to be adopted when it is more costly to replace management.*

#### *A.2. Soft Information*

The previous argument rests on the notion that the lenders have information or some priors about the value of current management and the potential difficulty to find and hire appropriate replacement. This suggests that the lender has a good set of information about current management. Hence, the motivation to include the CMR clause can come from adverse selection issues (in the spirit of models such as Leland and Pyle, 1977). When the lenders can form a reasonable prior that current management is vital to the health of the firm (due their network or specific knowledge), the benefit of including the CMR clause, if needed, should be greater.

Capturing this information is difficult, particularly when human capital is more specific, and might require the collection of soft information about current management. Hence, we expect lenders to be more likely to include a CMR clause when they are able to collect and evaluate enough information about current management, which allows them to determine the necessity of management retention. We expect this to be the case when it is easier for the lender to collect soft information.

*H.A.2: The CMR clause is more likely to be adopted when it is easier for the lender to collect soft information.*

### *A.3. Manager Risk-Taking/Shifting Tendencies*

Shareholders value human capital as well. However, they have different risk preferences than creditors (Jensen and Meckling, 1976), which can play out in the selection of management. The literature examining the use of covenants or clauses restricting firm's actions in loan contracts usually involves the notion of conflicts of interests between the equity holders and creditors. It is possible that new management may adopt corporate policies that would benefit them or the equity holders at the expense of the creditors. By restricting the change of management, creditors may be protected and more willing to lend money to the firm.

For example, one important corporate policy that the manager controls is firm investment, which has direct implications on firm's risk profile. Potential risk shifting behavior is an important concern for credit holders, as it would benefit equity holders at the expense of the creditors (Jensen and Meckling, 1976).

Under that scenario, if the risk of moral hazard is likely to be at play with the selection of future management, the benefit to the lender of including the CMR clause is greater. Hence, we expect lenders to be more likely to include CMR clauses to keep managers they believe are less likely to engage in riskier behavior, which may be preferred by equity holders (Aghion and Bolton, 1992).

This argument leads to us to expect that the CMR clause is more likely to be adopted when lenders can more easily collect information about risk-taking behavior of current management, similar to the prediction in *H.A.2*. We should observe evidence of less risk-taking/shifting tendencies when the CMR clause is in place.

*H.A.3: The CMR clause is associated with less risk-shifting.*

## *B. Univariate Analysis*

### *B.1. Firm Characteristics*

Table III shows summary statistics for the 376 firms with contracts having CMRs and the sample of 4,063 firms not having any CMR contracts.<sup>13</sup> On average, the CMR firms are significantly smaller in size by \$2.6 billion and are much less likely to have credit ratings, which is consistent with CMR firms having greater information asymmetry. CMR firms tend to be younger with an average age of 9 years compared to the non-CMR sample age of 16.5. Their CEOs are also paid less than those in the non-CMR firms. The firms do not have significantly different leverage, tangibility, Z-scores, or CEO tenure. Overall, CMR firms tend to be smaller and younger than non-CMR firms, but their leverage and Z-scores do not indicate greater risk. There is no statistical difference in the concentration of CMR and non-CMR firms for 8 of the 12 industries in the Fama-French classification. Two industries are relatively under-represented in the CMR sample compared to the non-CMR sample: Utilities and Shops (wholesale and retail). Two industries have relatively higher incidence of CMR clauses compared to the full sample: Healthcare and Real-Estate/Trusts. More detail on year and industry distribution is included in the internet appendix Table IA.II.

[Insert Table III here]

### *B.2. Loan and Syndicate Characteristics*

Table III also presents summary statistics for the loans in the CMR sample and the non-CMR sample. The loans are different across almost all dimensions. CMR loans on average have higher spreads, lower principal (facility amount), shorter maturity (measured in months), more financial covenants, fewer lenders, and are more likely to be collateralized and less likely to use performance pricing. The average CMR facility amount is \$94MM compared to \$393MM in the non-sample. In untabulated analysis, we find that on average the facility amounts for the CMR loans represent 35% of firm assets prior to entering into the loan contract versus 28% for the non-CMR sample. Lead lenders of loans

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<sup>13</sup> We examine the CMR firms at the fiscal year end prior to contract initiation and the control firms the first time they appear in DealScan for the univariate firm characteristic analysis. For the multivariate analysis, which is conducted at the contract-level, firm-level controls are taken from the most recent fiscal year end prior to contract initiation.

with CMR clauses hold a significantly larger percent of the loan as well, with many of the loans having only a single lender. In untabulated analysis, we also find that far more loans in the CMR sample are first time Dealscan loans (23.9%) than those in the non-CMR sample (11.3%). Overall, these results show the CMR loans are shorter, smaller, more expensive, more restrictive, and more likely to be first time loans than non-CMR loans.<sup>14</sup>

### *C. Determinants of CMR Inclusion: Baseline Specification*

In Table IV, we examine the determinants of including a CMR in a syndicated loan contract using a probit analysis. In Table V, we add proxies for human capital characteristics and in Table VI we add proxies for the information environment. The tables report the coefficients from a probit regressing an indicator variable equal to one if a loan contains a CMR clause and zero otherwise. All specifications include year and industry (Fama-French 12) fixed effects.

#### *C.1. Borrower Characteristics*

We begin by examining borrower characteristics and then add syndicate and loan characteristics. Specifications (1) and (2) report the results for borrower characteristics. In Specification (1), we find that CMR clauses are included in contracts when borrowers are smaller and lack a credit rating. Using the average marginal effect, a one standard deviation increase in size is associated with a 3.20% decrease in the probability that a firm's loan contracts will include CMRs. Having a bond rating decreases the likelihood that a one of that firm's contracts will have CMRs by 1.0%. Since greater information asymmetry surrounds smaller firms and firms lacking credit ratings, our results indicate that a CMR is less likely to be in a lending contract for a firm in a richer information environment.

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<sup>14</sup> We also consider the possibility that CMR inclusion may be driven by the lead banks negotiating the contracts. There are 912 lead banks for our non-CMR sample and 184 for the CMR sample. Of those 184, 165 of those banks are also leads for contracts in the non-CMR sample. So we only have 19 lead banks for the CMR sample that did not issue loans without a CMR as well in our sample. Thus, it does not look like CMR inclusion is simply a bank effect.

We add two additional controls to capture firm risk in Specification (2), tangibility and Altman's Z-score<sup>15</sup>, since lenders may be more inclined to include CMRs for important managers when firms are more risky and managers of such firms may be more incentivized to entrench themselves due to operational uncertainty. Firm size remains significant at the 1% level, as it does in all specifications, while leverage and the existence of a credit rating become insignificant. Altman's Z-score is negative, consistent with more risky borrowers being more likely to have this clause in a debt contract. This result holds in all specifications, regardless of which control variables are included. This is consistent with lenders including CMRs for more risky firms, which they may do if the management of such firms have specific knowledge or ability useful in managing a risky borrower. This is also consistent with the lenders including these clauses to prevent a change in management that might be more risky.

### *C.2. Syndicate Characteristics*

We add syndicate characteristics to the probit and report the coefficients in Specifications (3) and (4). In Specification (3) we include the log number of lenders to proxy for the extent of risk sharing among syndicate participants. The significantly negative coefficient on the number of lenders indicates the inclusion of CMRs is more likely when there is less risk sharing among syndicate participants. This is consistent with CMRs being used to preserve desired managers when the loan is more risky.

We also separately test proxies specific to the lead arrangers in Specification (4). *Lead Percentage*, measures the percentage of the loan held by the lead arrangers, and *Local Lead* captures whether any of the lead lenders are headquartered in the same state as the borrower. Prior research shows that lead arrangers hold more of the loan when there are greater information problems (Sufi 2007). We also assume that a local lead arranger may have private information about the borrower or a relationship making the lender more willing to allow entrenchment. We find the percent of the loan held by the lead arrangers to

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<sup>15</sup> We use the Altman's Z-Score for private firms as a control variable because of the number of private firms we have in our sample. It is calculated as  $0.717 \times \text{Working Capital} / \text{Total Assets} + 0.847 \times \text{Retained Earnings} / \text{Total Assets} + 3.107 \times \text{EBIT} / \text{Total Assets} + 0.420 \times \text{Book Value of Equity} / \text{Total Liabilities} + 0.998 \times \text{Sales} / \text{Total Assets}$  (Altman, 2000). Results are robust when using the original Altman's Z-score without the market-to-book factor.

be marginally significant but find no effect for *Local Lead*. In the rest of our specifications, we rely on the log of the number of lenders because using the lead arrangers' allocation significantly limits our sample size. In untabulated results, we include an indicator variable (*Relationship*) capturing whether the borrower has a prior loan issued within the last three years from any of the lead lenders on the current loan. We fail to find it to be statistically significant. However, a higher percentage of CMR loans are first time loans compared to the non-CMR loans.<sup>16</sup>

### *C.3. Loan Characteristics*

In Specifications (5) and (6), we add additional controls for contract features and covenants. In Specification (5), we add the deal amount scaled by firm assets, the log of the maturity of the loan in months, and the number of financial contracts contained in the loan covenants. We also include four indicator variables equal to one if the loan is for the purpose of acquiring assets or other firms (Loan Purpose), is a revolver, is collateralized, or contains a performance pricing grid and zero otherwise. We find loan collateralization and the number of financial covenants positively correlated with the inclusion of a CMR. Loan maturity is negatively correlated with CMR inclusion in Specification (6). In untabulated tests, we find that our results are robust to controlling for investment covenants. We also investigate whether the loan purpose is related to the specific language in the CMR clause. We find that clauses which disallow unauthorized changes in management (types A1, A2, A3) are more common (p-value = 0.028) for loans that are intended for corporate purposes (working capital, capital expenditures, etc.). Loans which are intended for acquisition purposes (LBOs, takeovers, acquisitions, etc.) are more likely to require replacement approval than to retain existing management (p-value = 0.003). This is consistent with lenders wanting to be able to replace borrower executives if an acquisition goes poorly.

[Insert Table IV here]

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<sup>16</sup> 23.9% of the loans with CMRs are first time loans (first time in DealScan). 11.3% of the other loans are first time in DealScan.

#### D. *CMR Inclusion and Human Capital Risk*

Table V adds human capital characteristics, firm specific knowledge and talent departure costs, to the analyses in Table IV. Specifications (1) through (8) in Panels A and B add proxies for management's firm-specific human capital and how costly it is for the manager to leave the firm. Specifications (1) and (5) in both panels use the borrower characteristics found in specification (2) of Table IV as controls. The rest of the specifications use the full set of borrower, syndicate, and loan controls found in specification (6) of Table IV as controls. Specifications (1), (2), (5), and (6) use an indicator variable for the presence of a CMR as the independent variable to test for the characteristics of CMR inclusion. We also perform a sub-sample analysis of the CMR clauses by splitting on severity from Table I. Specifications (3) and (7) repeat specifications used in Specifications (2) and (6) respectively, replacing the dependent variable with an indicator variable equal to 1 if the CMR clause is of type A1, A2, or A3, and 0 otherwise. Likewise Specifications (4) and (8) use the same specifications with the dependent variable equal to one if the CMR clause is of type A4, and zero otherwise. This allows us to examine whether our proxies for human capital better predict CMR inclusion when lenders include language prohibiting any unauthorized changes in management. This helps capture whether lenders' intentions when including the CMR clause are more about retention or selection rights over replacement.

Our first measure in Specifications (1) through (4) of Panel A, *Founder CEO*, is an indicator variable equal to one if the CEO at the time of the initiation of the loan agreement was also the CEO when the firm first went public.<sup>17</sup> This measure has been used in the literature to approximate whether the CEO is the founder of the firm (see, e.g., Bebchuk, Cremers and Peyer, 2011). We expect that founder CEOs are likely to have firm-specific skills that make them difficult to replace. Thus, we expect increased use of CMR clauses when the CEO is the founder and for this effect to be stronger when lenders include stricter retention criteria.

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<sup>17</sup> Note that in this specification, the indicator variable for public firms is not included because all of these firms are public (see column (8)).

Our second measure in Specifications (5) through (8), *% Insider (Ind.)*, is the percentage of new CEOs in an industry who have been promoted within the firm as opposed to hired from outside of the firm. These data are obtained from Cremers and Grinstein (2014) for the Fama and French 48 industry classification. CEOs from firms in industries with high *% Insider (Ind.)* tend to have been promoted within their firms. As argued in Cremers and Grinstein (2014), these industries are more heterogeneous in nature. This implies that managerial skills from inside the firm are harder to reproduce and transfer across different firms. Therefore, in these industries, the impact of a change of management on firm performance and viability is likely to be more important. We expect banks to be more likely to adopt CMR clauses for firms in these industries.

In Panel B, we utilize two proxies to capture how difficult it is for managers to leave the borrower. Our first measure in Specifications (1) through (4), *Non-Compete Index (High)*, is a measure of the enforceability of non-compete clauses at the state level. The data are obtained from Garmaise (2011) for the 50 US states, 47 which have a constant index across our time period and three which exhibit time series variation (Texas, Louisiana, and Florida). Garmaise (2011) develops this measure from a survey, conducted by the law firm Beck Reed Riden LLP, of legal practitioners in each of the 50 states. The questions regard the enforceability of non-compete contracts at the state level. Higher values of the index connote more enforceable non-compete contracts, and our variable is one if the index in a given state is above the median level. Garmaise (2011) argues firms in states with high *Non-Compete Indexes* tend to exhibit lower executive mobility and their CEOs invest less in personal human capital as a result. These findings show firms use non-compete clauses, to differing levels of success, to maintain their human capital investments. More heavily enforced non-compete clauses increase the cost of leaving a firm to the manager because the enforcement makes it harder for her to find another comparable position. Such non-compete clauses could potentially substitute for CMR contracts if lenders prefer limiting human capital mobility. Therefore, we expect firms in states with stronger non-compete clauses, which exhibit lower executive mobility, to have lower incidences of CMR clause inclusion.

Our second measure in Specifications (5) through (8), *CEO Ownership %*, is the percentage of outstanding firm shares held by the CEO. If the firm violates the CMR clause, it defaults on the loan, which could result in a transfer of control rights to the lenders and negatively impacts residual claimants such as shareholders. Therefore, managers with a larger portion of ownership should find violation of a CMR covenant relatively more costly. This direct wealth effect could act as an effective channel through which banks can contract on the managers' human capital by making the clause more costly. Therefore, we predict CMR inclusion to be positively related to CEO ownership.

Consistent with CMRs being used to keep talented managers with borrowing firms throughout the lending period, we find that the coefficients for *Founder CEO* and *% Insider (Ind.)* are positive and statistically significant. If the CEO is the founder, the probability of including a CMR clause increases by 1.1%, which represents a 32% ( $1.1\%/3.4\%$ ) increase relative to the sample unconditional probability. A one standard deviation (14%) increase in the *% Insider (Ind.)* is associated with a 0.57% ( $14\% \times 4.1\%$ ) increase in the probability of CMR inclusion, which represents approximately a 17% ( $0.57\%/3.4\%$ ) increase relative to the sample unconditional probability. We conclude that these relations are both statistically and economically significant.

Furthermore, firms in states with above median non-compete enforcement environments exhibit on average 0.7% lower probability of CMR clause inclusion, which represents approximately a 21% ( $0.7\%/3.4\%$ ) decrease relative to the sample unconditional probability. A one standard deviation (6%) increase in *CEO Ownership %* is associated with a 0.5% ( $6\% \times 7.8\%$ ) increase in the probability of a CMR clause being included, which represents a 15% ( $0.5\%/3.4\%$ )<sup>18</sup> increase over the unconditional sample probability. This suggests CMR inclusion is more likely to occur when there is a higher threat of managers leaving for competitors because they have a lower cost of doing so.

The subsample results all support the interpretation that the retention of human capital is important to banks (see results in Specifications (3), (4), (7) and (8) in Panel A and B). When the CMR clause prohibits unauthorized change in management (types A1, A2,

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<sup>18</sup> 3.4% of sample contracts contain CMR clauses.

and A3), the proxies for human capital are strongly related to the inclusion of the CMR clause. However when the CMR clause contains language merely requiring approval of the change in management ex-post, the human capital proxies are less predictive of the inclusion of a CMR clause. In untabulated results, the omission of replacement approval language (not type B1) is also strongly related to our proxies for human capital. Together this evidence suggests that lenders explicitly intend to retain valuable human capital within the firm.

[Insert Table V here]

### *E. CMR Inclusion and Soft Information*

Next, we test an information environment characteristic which affects the syndicates' information asymmetry. This characteristic is intended to capture lenders' ability to monitor or collect and contract on soft information. Specifications (1) and (2) include the controls of Specification (2) and (6) from Table IV respectively.

Our measure of information asymmetry, *Distance (normalized)*, is the normalized distance between the borrower and closest lead lender. Coval and Moskowitz (2001) provide evidence that geographic proximity lends an information advantage to mutual funds, resulting in higher returns for investments in stocks closer to the mutual fund headquarters. Hollander and Verriest (2015) suggest this local information advantage extends to debt contracts with their findings that borrowers headquartered further away from syndicate leads have stricter contract terms. Alternatively, closer lenders are better able to collect soft information about the borrower. Therefore, they may be more likely to include CMR clauses because they see the importance of firm-specific human capital on firm performance. We follow previous literature and proxy for the location of the borrower and lead using their headquarter address (Coval and Moskowitz, 2001), which we collect from the ExecuComp database (excluding those headquartered outside of North America). We use the U.S. Geological Survey Geographic Names Information System to convert lead lender and borrower postal codes to latitude and longitude.<sup>19</sup> We then calculate the

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<sup>19</sup> Downloaded from an aggregator located at: <http://download.geonames.org/export/dump/>.

distance using an orthodromic distance metric, which assumes the earth is a perfect sphere.<sup>20</sup> We keep the minimum distance between the borrower and lead lenders for each loan. In our sample, the mean (median) distance between lender and borrower is, 825 (617) miles and standard deviation is 687 miles. For the regressions, we normalize the distance to have a zero mean and unit standard deviation.

We find the coefficient on distance is negative and strongly significant. This is consistent with the lender relying more heavily on soft information about the borrower when the two parties are in closer proximity (Berger, Miller, Petersen, Rajan, and Stein, 2005), and with soft information being more relevant in the contracting space when human capital is important. A one standard deviation decrease in the distance corresponds to a 1% increase in the probability of including a CMR clause, which represents a 29% (1%/3.4%) increase relative to the sample unconditional probability.

[Insert Table VI here]

We provide further evidence of the importance of soft information by examining the effect of soft information availability on the specific type of CMR clause as defined in Table I. Specifications (3) through (8) repeat the analysis of Specification (2), replacing the dependent variable with an indicator variable equal to one when the CMR is of the type listed, and zero otherwise. This allows us to study the determinants of including specific types of CMRs. Specification (3) groups clause type A1, A2, and A3 together because they all require at least ex-ante approval and at most, disallow any managerial turnover entirely. A contrast to this in Specification (4) is type A4 requiring ex-post approval of any change in management, which implies that the retention of the individual might not be the intent of the clause inclusion. We expect soft information to matter less when the retention is less important. We find that soft information is significantly predictive of CMR inclusion for CMR clauses which focus on retention (type A1, A2, and A3), name the specific individuals or positions (type D1, D2, and D3) or when lenders omit requirements for replacement approval (type B2).

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<sup>20</sup> This simplifying assumption results in an error of approximately 1% for distances spanning North America. The 1% error rate is theoretically calculated based on the geometry of the earth, as well as verified by hand for a random sample of ten distances. We assume earth's radius to be 6,372.795 miles.

Specification (5) is clause type B1, in which lenders require explicit approval over the replacement of any management position. If lenders have approval over potential replacements, then the ability or style of current management may be relatively less important. Conversely if lenders do not require replacement approval, as in type B2, we expect them to be relatively more informed and prefer the current management's type or ability. We find evidence supporting this: soft information is relatively more important when CMR clauses do not include explicit replacement approval. Lastly, Specification (7) groups together types D1, D2, and D3, which explicitly name either the position or individual which the clause protects. This is a clear situation in which lenders express preference for known individuals. When soft information is more readily available, lenders will be more likely to name the individuals they wish to retain within the company. We find evidence supporting this: the coefficient on distance is larger and more significant when the contract explicitly names the individuals or positions than when it is vague as to whom is to be retained.

Finally, we note that the results in Table V and Table VI are robust when all of these proxies (*Founder CEO*, *% Insider (Ind.) Non-Compete Index (High)*, *CEO Ownership %*, and *Distance (normalized)*) are included simultaneously. The significance on *CEO Ownership %* drops to 10%; however, *Non-Compete Index (High)* becomes statistically significant at the 1% level.

#### *F. CMR Inclusion and Manager Risk-Taking/Shifting Tendencies*

We test whether firms constrained by a contract containing a CMR clause engage in risk shifting in two ways. First we measure the difference in market reaction to the filing of debt contracts between those that contain a CMR clause and those that do not. We measure market reaction using cumulative abnormal returns over multiple event windows. Results are materially unchanged when using average abnormal returns. Results are presented in Panel A of Table VII. Firms without a CMR clause on average exhibit abnormal returns of -0.23% in the week subsequent to the contract filing, while firms with a CMR clause have on average -1.14% abnormal returns, or 0.91% significantly lower ( $t=-2.47$ ). This difference

persists for up to two months after the filing date. This suggests that shareholders perceive the banks' protection of certain managers to be detrimental to shareholder value. It is thus consistent with a risk shifting argument.<sup>21</sup> We also construct a matched sample based on market cap, leverage, the market-to-book ratio, the number of financial covenants, the presence of performance pricing or collateral, the loan amount and maturity, and all-in-drawn yield. We verify that our matched sample of non-CMR firms does not differ statistically from CMR firms with respect to these matching variables. We present the market reaction test for this sample in Panel B. The market reaction for the CMR sample is negative and significant for every window while it is statistically not different from zero in the matched sample. In addition, the difference in market reaction is more negative in the CMR sample than it is for the non-CMR sample for every window and this difference is statistically significant in five of the seven windows.

[Insert Table VII here]

Secondly, we conduct an event study examining the change in operating cash flow and earnings volatility following the expiration of CMR clauses. If banks wish to retain managers who are willing to limit borrower risk to appease lenders, then we would expect an increase in risky behavior after CMR clauses are no longer binding. Admittedly, the expiration of a CMR clause is not exogenous, but we believe these results to be suggestive. We follow Nini et al. (2012) in our regression specification, and compare cash flow and earnings volatility for the two years prior to a contract with a CMR maturing to the first two years after. Our results are reported in Table VIII. We include an indicator variables equal to one if the firm had a contract that includes a CMR at any point during our sample (*CMR Firm*) or if the volatility is measured after the CMR has expired (*Post Loan*). We are interested in whether the interaction of these two variables is significantly positive, which would indicate an increase in volatility for firms constrained by CMRs once these clauses are no longer binding. Specifications (1) and (3) presents our baseline results examining the volatility of cash flows (earnings). Both specifications show that firms became riskier after CMRs were no longer binding. The second and fourth specifications include controls

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<sup>21</sup> We split our sample into two periods, representing the different regimes for how quickly new debt contracts were required to be disclosed, 1995-2003 and 2004-2015. We find that all of our market reaction results are robust in both periods.

for the squared values of the cash flow, leverage, interest coverage, net worth, current ratio, market-to-book, PPE, and log of asset variables, i.e. Higher Order Controls (Nini et al., 2012). We continue to find robust results consistent with CMRs limiting firm risk taking behavior.

[Insert Table VIII here]

We also measure the effect of CMR clauses on investment activity. Nini, Smith, and Sufi (2009) demonstrate lenders limit firm investment, especially when borrowers are seen as riskier. Thus we test the relation between the presence of a CMR clause and firm capital expenditure investments. To do so we run a time series regression in which we regress the change in capital expenditure on the presence of a CMR clause and the firm controls used in Nini, et al. (2012). We use the controls from the 2012 study rather than the 2009 study for two reasons: to be consistent with our cash flow and earnings volatility tests, and because the 2012 study has a broader set of controls allowing us to show more robust results. Results are presented in Table IX. Specification (1) includes only the *CMR Clause Binding* indicator, which is one when a firm has an outstanding contract containing a CMR clause. Specification (2) adds an additional dummy to allow those firms which have at any point had a CMR clause (CMR Firm) to have a different average level of investment growth. Specification (3) includes firm fixed effects, and Specification (4) is the same as Specification (1), but just for the subsample of CMR firms.<sup>22</sup> Together the results suggest that when CMR clauses are in place, there is less investment in capital expenditures, which supports the claim that lenders protect managers with incentives more aligned with their own.

[Insert Table IX here]

### *G. Additional Results on Covenant Violations and CEO Turnover: The Mitigating Effect of CMR Clauses*

Nini, Smith and Sufi (2012) examine creditor influence on corporate governance of firms in violation of financial covenants but still outside of payment default. They find a

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<sup>22</sup> All of these results are robust to not including higher order controls.

significant increase in CEO turnover during the quarter of covenant violation, consistent with creditors influencing managerial turnover. If lenders write CMR clauses on particular executives because they consider those executives integral to the borrower repaying the loan, we would expect to find this turnover effect muted for executives protected by CMRs.

We replicate Nini, Smith, and Sufi (2012) using our sample and their covenant violation data. We examine CEO turnover following financial covenant violations in both the CMR and non-CMR samples. We follow the Nini et al. (2012) specification in their Table 8 and report our results in Table X. Consistent with the Nini et al. (2012) results, we find that when a non-CMR firm violates a covenant, the CEO is likely to be replaced (Specification 1). Actually, we find stronger evidence in the non-CMR sample that executive turnover is more likely following covenant violations in the prior four quarters (t-1 through t-4). However, we find no statistical evidence that turnover increases around the time of a covenant violation for CMR firms (Specification 2). Again, this evidence is consistent with CMRs being put in place to protect executives considered to be valuable to the lenders.

[Insert Table X here]

#### *H. Additional Results on the Addition and Removal of CMR Clauses*

We also examine changing firm and contract characteristics for firms in our sample that have CMR clauses in some loan contracts but not in others to further address CMR clause inclusion. The first test examines a sample of contracts from firms with CMR contracts and at least one prior contract without a CMR clause. We find no statistical difference between the means of any reported variables. The differences in means of unreported variables are consistent with these firms growing over time. Our second test examines a sample of contracts from firms with CMR contracts and at least one subsequent contract without a CMR clause. Here, we find that subsequent contracts without CMR clauses have higher yields, suggesting the inclusion of CMRs reduces the interest rate borrowers pay. We also find that the CEO is less likely to be the firm founder for subsequent contracts. This is again consistent with the lenders wanting to retain the

founder because of her valuable human capital. We find the distance between the borrower and nearest lead lender is greater for these contracts, suggesting greater difficulty in collecting verifiable soft information about the borrower.<sup>23</sup> These results are reported in Table IA.III in the internet appendix.

### *I. Interpretation of the Results*

Our analysis so far indicates that CMR clauses in loan contracts are not uncommon, and their use is generally concentrated in small firms, in industries where management tends to be promoted from within the firm and in firms where the CEO is also the founder. These results suggest that CMR clauses tend to be adopted when it is difficult to replace management due to their unique skills and when asymmetric information problems are worse. We also find that stock returns around the public filing dates of contracts containing CMRs are significantly negative, return volatility and idiosyncratic volatility both increase for firms entering new contracts without CMRs, and firms have lower CAPX when CMR clauses are in place. The results are consistent with the argument that lenders use CMRs to keep managers they believe are less likely to engage in riskier behavior.

Overall, our evidence is consistent with our hypotheses and the overarching notion that CMRs in loan contracts are used to protect the lender. However, it is potentially consistent with another motivation: to entrench management. In the next section, we consider this possibility and aim to disentangle whether the motivation for the inclusion of the CMR clause is to protect the lender or to entrench management.

## **IV. Alternative Explanation: CMR Inclusion to Entrench Management**

### *A. The Motivation to Include CMR Clauses and its Implications on Loan Pricing*

As mentioned above, from the bank's perspective, one of the costs associated with the CMR clause is that it shields managers from external monitoring and consequently

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<sup>23</sup> We also examine renegotiations of these contracts and only find one instance where the CMR clause is dropped. We find no introduction of CMR clauses into contracts Dealscan identifies as renegotiations.

entrenches them. This could lead to suboptimal performance and potentially increases the risk of bankruptcy and the possibility of not recovering loan principal.

Similar to rent extraction and managerial power arguments proposed in the CEO compensation literature (see, e.g., Bebchuk and Fried, 2003), it is possible that the debt contracting process has been captured by the existing management. In that case, managers may petition for CMRs to be included in the loan contract.

Identifying which argument is at play is difficult because most of the cross-sectional implications are similar. Under the first set of arguments, banks are more likely to adopt CMRs when the management have unique skills or are difficult to replace. This is likely to be the case when management tends to be stronger, which is also consistent with the entrenchment argument. Another implication involves the level of asymmetric information. Under both the optimal contracting framework and the entrenchment argument, CMR clauses are more likely to be adopted when asymmetric information problems are more severe. All these relations are confirmed in our data (see results in previous section).

One way to disentangle the two arguments is to examine the pricing of the loan. If the motivation to use CMRs is to protect the bank, then CMRs should be priced in the loan contract, similarly to other types of covenants (see, e.g., Bradley and Roberts, 2015). In this case, we expect a negative relation between the presence of CMRs and the cost of the loan. On the other hand, if the debt contracting process is captured by the management, we would expect a positive relation: managers petition for CMRs and agree to a higher loan rate at the expense of the equity holders.<sup>24</sup>

*H.B.1: If the motivation to include CMRs is to protect lenders, then the inclusion of the CMR clause will be associated with a discount in the pricing of the loan.*

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<sup>24</sup> It is possible that some firms choose lenders based on the lenders' willingness to include CMRs in the loan contract. However, we would not expect to see a pricing effect, or at least not a negative pricing effect, for these contracts.

*H.B.2: If the debt contracting process is captured by the management, then the inclusion of the CMR clause will be associated with a premium in the pricing of the loan.*

In this section, we use this insight to investigate whether CMR inclusion is the outcome of an efficient contracting process or the result of the management capturing the debt contracting process.

### *B. Empirical Methodology*

To test the pricing implications of CMR covenant inclusion, we follow the methodology set forth in Lee (1978), Miller and Puthenpurackal (2002), Goyal (2005), Miller and Reisel (2012), and Bradley and Roberts (2015). We assume that the negotiation process simultaneously determines prices and covenant structure. Thus, the decision to include the CMR covenant is determined by the cost of non-inclusion exceeding the benefits of inclusion, as shown below in equation (1):

$$Par * Yield_{NoCMR} > Par * Yield_{CMR} + Cost\ of\ CMR \quad (1)$$

where  $Par$  is the loan amount and  $Yield_{NoCMR}$  and  $Yield_{CMR}$  are the rates charged for comparable contracts which differ only by the inclusion of a CMR covenant. When the cost a bank imposes through the yield for a contract without the restriction is higher than the cost to the firm of holding to the restriction, the firm will choose to pay a lower yield and accept the inclusion of a CMR clause. Alternatively, this can be expressed as  $Yield_{NoCMR} - Yield_{CMR} > Cost\ of\ CMR / Par$ , which is to say that the yield difference is greater than the cost of the covenant.

The difference between yields on loans with and without the CMR clause included will be equal to the relative cost of covenant adoption at the point of indifference. Testing the pricing difference between comparable loan packages with and without CMRs will shed light on whether the CMR inclusion is beneficial to the lender or the management. If the contract clause is included because it is beneficial to the bank, the yield on a CMR contract

will be lower than it would have been without the clause. In the case that the contracting process is captured by the manager, this would be a negative cost: the manager pays a higher yield to the bank because she benefits from the CMR inclusion, which decreases the likelihood of her dismissal.

Following Bradley and Roberts (2015) we use a latent variable approach to test this inequality, assuming the costs of covenant inclusion can be approximated by a vector of firm characteristics:  $CMR\ Cost \sim Z\beta_{cc} + \varepsilon_{cc}$ :

$$CMR^* = \alpha + \delta(LogYield_{NoCMR} - LogYield_{CMR}) + Z\beta_c + \varepsilon \quad (2)$$

where  $CMR^*$  is a dummy variable equal to 1 if the covenant is included,  $\beta_c = -\beta_{cc}$ , and  $\delta$  relates to the relative cost of the covenant to the firm. To estimate the yields in equation (2), we specify yields conditionally on outcome, as shown in equations (3) and (4):

$$LogYield_{NoCMR,i} = X_{NoCMR,i}\beta_{NoCMR} + v_{NoCMR,i} \quad (3)$$

$$LogYield_{CMR,i} = X_{CMR,i}\beta_{CMR} + v_{CMR,i} \quad (4)$$

Equations (2)–(4) cannot be estimated directly because the yield equations are estimated conditional on the covenant inclusion outcome, which results in inconsistent estimates as discussed in Heckman (1979). To account for this, Lee (1978) uses a modified version of the Heckman correction to estimate the expected yields, allowing for unbiased estimates of the difference. This is done by predicting the covenant inclusion decision for the full sample by substituting equations (3) and (4) into equation (2) (effectively the first stage of the Heckman correction):

$$CMR_i^* = \alpha + X_i\theta + Z_i\xi + \zeta_i \quad (5)$$

where  $\theta = \delta(\beta_{NoCMR} - \beta_{CMR})$  and  $\zeta_i = \delta(v_{NoCMR,i} - v_{CMR,i}) + \varepsilon_i$ . We use the predicted value of covenant inclusion  $\widehat{CMR}_i^* = X_i\theta + Z_i\xi$  to derive the inverse mills ratios (*IMRs*). The inverse mills ratios are defined as:  $IMR_{CMR,i} = -\phi(\widehat{CMR}_i^*)/\Phi(\widehat{CMR}_i^*)$  when the CMR covenant is included in a contract, and  $IMR_{NoCMR,i} = \phi(\widehat{CMR}_i^*)/(1 - \Phi(\widehat{CMR}_i^*))$  when it is not included, where  $\phi$  is the probability density function and  $\Phi$  is the cumulative density

function of a normal distribution. The *IMRs* are used to estimate the unbiased yields as shown in equations (6) and (7):

$$\text{LogYield}_{NoCMR,i} = X_{NoCMR,i}\beta_{NoCMR} + \text{IMR}_{NoCMR,i} + v_{NoCMR,i} \quad (6)$$

$$\text{LogYield}_{CMR,i} = X_{CMR,i}\beta_{CMR} + \text{IMR}_{CMR,i} + v_{CMR,i} \quad (7)$$

The second stage estimates the yield conditionally on the inclusion or exclusion of the CMR covenant. Therefore, the variables that affect the CMR inclusion decision but not the pricing conditional on inclusion can be excluded from *X* and used as instruments in *Z* for identification. The estimates for the differences in yield are then calculated for the whole sample as:

$$\text{Log}\widehat{\text{Yield}}_{NoCMR,i} - \text{Log}\widehat{\text{Yield}}_{CMR,i} = X_i(\hat{\beta}_{NoCMR} - \hat{\beta}_{CMR}) \quad (8)$$

which is substituted into equation (2) to derive the unbiased estimate of  $\delta$ :

$$\text{CMR}^* = \alpha + \delta(\text{Log}\widehat{\text{Yield}}_{NoCMR} - \text{Log}\widehat{\text{Yield}}_{CMR}) + Z\beta_c + \varepsilon \quad (9)$$

Equation (9) represents our final specification tabulated in Table XI. We discuss the selection of the *X* and *Z* vectors in the section below.

### C. Results

To test the pricing effects of CMR covenants, we present four specifications in Panel A of Table XI. The specifications are chosen to mirror the progression of models presented in Table IV. Each specification has two components, the pricing vector (*X* from above) and the covenant-cost vector (*Z* from above). Common to each specification and vector are the log of total assets, *ROA*, *Leverage*, and indicators for public firms and rated firms. Similar to Goyal (2005) and Bradley and Roberts (2015) we include instruments in *Z* which are excluded from *X*. These exclusions aid in identification as they act like instruments for covenant-costs.

Following previous literature (Bradley and Roberts, 2015), we identify syndicate variables in Z as instruments for the covenant-costs, and exclude them from X. The intuition is based on the mechanism through which we expect the variables to impact yields. Changes in management to ex-ante unknown third parties can be costly to the lenders due to the large information asymmetry associated with the uncertainty. We expect this cost to affect the decision to include a CMR covenant, and consequently yields. However, Bradley and Roberts (2015) argue that the competitive lending environment dampens price heterogeneity and that we should not expect the syndicate characteristics to directly affect the yields except through covenant decision. Thus, we exclude from X the syndicate level variables which act as instruments in Z.

The first two specifications include only firm and syndicate variables in the Z vector, mirroring Specifications (3) and (4) from Table IV. In addition to the variables listed above, Specification (1) includes in Z the logged number of lenders. Specification (2) replaces the number of lenders with the fraction of the loan retained by the lead lender in the syndicate (% Lead Allocation) and an indicator for whether the lender and borrower are headquartered in the same state. Data on the syndicate allocations are sparse, decreasing the number of observations without missing data to 4,944 from 12,161 in Specification (1). Therefore, for Specifications (3) and (4) we employ the same Z vector as that in the Specification (1).

Specifications (1), (2), and (3) use the same X vector in the yield pricing equations. They include all the variables used in Specification (6) of Table IV, excluding number of lenders. Therefore, the first stage of Table XI Specifications (1) and (2) is equivalent to Specification (6) of Table IV. Specification (3) in Table XI adds deal level variables to the Z vector that we expect to correlate with the risk based costs associated with restricting changes in management. These include maturity, which conceivably amplifies the costs or benefits of CMR, and scaled loan amount, which could proxy for the relative cost to the firm for violating the covenant. Specification (4) adds an industry-level measure of the percentage of CEO changes that are replaced by an insider from the firm to both the X and Z vectors. This is intended to proxy for human capital intensive industries, which affects the

value banks place on managers. It could also proxy for the market for corporate control, which would also affect the cost to the firm or management of a CMR clause.

[Insert Table XI here]

We find that the coefficient for  $\widehat{\text{LogYield}}_{\text{NoCMR}} - \widehat{\text{LogYield}}_{\text{CMR}}$  is positive and significant in all the four different specifications. This means that, on average, the inclusion of a CMR clause is related to a lower predicted yield. This evidence is consistent with the argument that the inclusion of a CMR covenant is the outcome of an efficient bargaining process rather than managerial entrenchment.

To further test the effect of CMR inclusion, we constrain our pricing tests to the sample of contracts containing CMR clauses. In Panel B, we rerun the structural models in Panel A for the subsample of CMR contracts, replacing the *Restrict* dummy variable with a strictness indicator, *Strict*. *Strict* takes a value of one if the CMR clause either disallows any changes to management (A1), potentially allows for limited, uncontrollable circumstances (A2), or requires prior approval of any changes (A3). We expect a greater yield reduction for the stricter covenants. If this is the case, then we should see a higher premium discount for stricter CMR clauses (categories A1-A3) than for CMR clauses which just require ex-post permission (A4). Consistent with this prediction we find a significantly positive coefficient on  $\widehat{\text{LogYield}}_{\text{Least Severe}} - \widehat{\text{LogYield}}_{\text{Most Severe}}$ , implying that on average, stricter CMR clauses are associated with lower predicted yield.<sup>25</sup>

## V. Conclusion

In this paper, we document and examine a novel aspect of debt contracting: control rights over managerial retention and selection. Using a hand-collected sample of debt contracts, we find private loan agreements for 8.5% of our sample firms contain explicit change of management restrictions (CMRs). We provide anecdotal and statistical evidence showing CMR clauses are binding and influence managerial turnover. For example, we

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<sup>25</sup> In untabulated tests, we compare yields for CMR contracts in category A4 to the non-CMR sample and still find a yield reduction for these contracts. This implies our results in Panel B are not driven solely by banks wanting to retain current managers because CMR contracts which just convey the right over replacement approval also exhibit an average discount.

show that the likelihood of CEO turnover decreases by 54% (relative to the unconditional probability) during the term of the CMR loan contract.

We find CMR clauses are more likely to be adopted when firm-specific knowledge is important. Specifically, we find higher incidences of CMR clause adoption among firms with founder CEOs, and firms in industries where replacement CEOs are commonly promoted from within the firm. CMR clauses are also more likely to be adopted in firms operating in states where non-compete employment contracts are less enforceable.

Contracts are more likely to include CMR clauses when information asymmetry is high, namely for smaller, riskier firms and in syndicates with fewer lenders and higher lead lender loan allocation. Additionally, we find the CMR clause is more likely to be adopted when the borrower is located close to a lender, consistent with the lender being able to rely more heavily on soft information about the borrower. When human capital is more specific, soft information is likely to be more relevant in the contracting space. Thus, proximity between the two parties would be important. Additionally, we find evidence consistent with lenders using CMR clauses to retain or select managers who will limit firm risk taking activities. All of these results are compatible with CMR clauses being used to protect lenders and ensure the ability of the borrower to repay the loan.

Alternatively, if managers are able to capture the bargaining process, CMR clauses could be used to entrench management by increasing the cost of their removal rather than to protect lenders. To differentiate between these competing explanations, we employ a structural model used in prior literature (Goyal, 2005, Bradley and Roberts, 2015) to test the price effects of covenant inclusion. We find that on average inclusion of a CMR is related to a lower predicted yield. This suggests that, on average, the inclusion of a CMR covenant is the outcome of an efficient bargaining process rather than managerial entrenchment.

Our paper contributes to the literature in several ways. First, it complements prior work by showing that lenders can exert control over managerial turnover outside payment and technical default states and not only influences dismissal but also retention and selection decisions. Second, while prior research assumes lenders adjust debt contract features, such as maturity and debt capacity, to compensate for the inability to transfer

human capital from the individual to the firm, our evidence shows lenders can take a different, direct approach by contracting explicitly on it. We also shed light on the bargaining process between lenders and management in the presence of agency costs. Our evidence supports the notion that the CMR clauses are incorporated into the loan contracts to protect the lenders from adverse selection costs, rather than to entrench management. Finally, our work also relates to the literature on managing with style. Our findings suggest that soft information about management is important in the contracting process and that lenders can exert influence over management retention when the style is more creditor-friendly.

## Appendix A: Description of the Main Variables.

Appendix A describes the main variables used in this study. All Compustat variables are measured at the most recent fiscal year end preceding the package deal active date.

Variable	Description	Source
<b>Panel A: Firm/Borrower Characteristics</b>		
Assets	Book value of total assets (Millions)	Compustat
Sales	Net Sales (Millions)	Compustat
Leverage	Ratio of total liabilities to total assets	Compustat
ROA	Ratio of Income Before Extraordinary Items to Total Assets	Compustat
Tangibility	Ratio of Net PP&E to Total Assets	Compustat
Market Cap	Equity value measured most recent fiscal year end	Compustat
Book Value of Equity	Total Assets – Total Liabilities – Preferred Stock (AT-LT-PSTK)	Compustat
MTB	Ratio of Market Cap to Book value of equity	Compustat
Rated	Dummy variable equal to 1 if firm has a current credit rating	Compustat
Public Firm	Dummy variable equal to 1 if firm has publicly owned equity	CRSP
TSR 1 year	1 year stock return including dividend payments	ExecuComp
TSR 3 years	3 year stock return including dividend payments	ExecuComp
% Insider (Ind.)	Fama-French 48 industry measure of percentage of CEO turnover replacements that come from inside the firm.	Cremers and Grinstein (2014)
Z-Score	Altman's Z-score of the borrower. Equal to: $(0.717 * \text{Working Capital} + 0.847 * \text{Retained Earnings} + 3.107 * \text{Pretax Income} + 0.998 * \text{Net Sales}) / (\text{Total Assets}) + 0.42 * \text{Book Value of Equity} / (\text{Total Liabilities})$	Compustat
Non-Compete Index (High)	Dummy variable equal to 1 if firm's headquarters is in state with above median Non-Compete index	Garmaise (2011)
<b>Panel B: Manager Characteristics</b>		
CEO Compensation	CEO total direct compensation ( <i>TDC1</i> )	ExecuComp
CEO Tenure	Number of years CEO has held current position	ExecuComp
Founder CEO	Dummy variable equal to 1 if CEO tenure $\geq$ Firm CRSP age	ExecuComp/CRSP
CEO Ownership %	Percent of outstanding firm shares owned by CEO	ExecuComp / Compustat
CEO High Ownership	Dummy variable equal to 1 if CEO owns more than 5% of outstanding firm shares	ExecuComp / Compustat
CEO Retirement Age	Dummy variable equal to 1 if CEO age is between 63 and 66 inclusive	ExecuComp

(Continued...)

*Appendix A: Description of the Main Variables (Continued from previous page)*

Variable	Description	Source
<b>Panel C: Loan Characteristics</b>		
All-in spread drawn	Spread over LIBOR or Prime, plus fees (basis points)	DealScan
Facility amount	Face value of facility in Millions of US dollars	DealScan
Scaled amount	Facility amount scaled by firm's total assets	DealScan/Comp.
Maturity	Maturity of facility in months	DealScan
Revolver	Dummy variable equal to 1 if largest facility in the package is a revolver	DealScan
Number of facilities	Number of facilities in package	DealScan
Collateralized	Dummy variable equal to 1 if loan is securitized	DealScan
# of Financial cov.	Number of financial covenants included in package contract	DealScan
Prime base rate	Dummy variable equal to 1 if loan uses prime as a base rate	DealScan
Perf. pricing	Dummy variable equal to 1 if loan uses performance pricing	DealScan
Loan Purpose	Dummy equal to 1 if deal purpose is listed as: Acquis. line, Equipment Purchase, LBO, Merger, Mortgage Warehouse., Project finance, Real estate, or Takeover.	DealScan
<b>Panel D: Syndicate/Bank/Lender Characteristics</b>		
% Lead Allocation	Percentage of facility amount held by lead arranger	DealScan
Local Lead	Dummy equal to 1 if firm and lead lender are in the same state	DealScan
Number of lenders	Number of lenders included in syndicate	DealScan
Number of leads	Number of lead arrangers defined in package	DealScan
Distance (normalized)	Normalized distance between zip codes of lender and borrower using 'as the crow flies' distance algorithm.	Coval and Moskowitz (2001)

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**Table I**  
**CMR Clause Characteristics**

Table I describes the characteristics of the clauses related to restricting changes in management. For each lettered category, every contract with a CMR clause will have one of the numbered classifications with B2 being implicit. *Severity of restriction* pertains to how binding the CMR clause is. The most binding are clauses in which any change in management triggers a default. Subsequently less binding is clauses in which only voluntary changes in management trigger defaults, allowing lenience for uncontrollable events such as death or disability. The third category consists of those clauses that allow for changes in management given prior consent from the firms, e.g. no change in management without consent from the administrative agent. The least restrictive category consists of those clauses that require ex-post consent from the lender. *Replacement Approval* pertains to whether the clause explicitly requires lender approval of the replacement choice in the event of a change. This is distinct from severity in that A2 and A3 may or may not explicitly require approval over the replacement choice. *Source of the Change* describes whether the wording of the clause pertains to a board’s ability to change the management of the firm, or managers’ ability to leave or change their acting capacity. If the clause is unspecific (e.g. a change shall occur) or if it is inclusive of initiation from either party (e.g. suffer, for any reason, a change) it is categorized as General. *Management definition* pertains to the subject for which the clause restricts change. Clauses referring to specific individuals by name only, by specific position only (e.g., CEO, CFO, Chairman etc.), or both name and specific position are considered ‘Named’ in their respective categories. General position references such as “change of management” are denoted as Vague.

Clauses	Loans		Firms		Banks		
	#	%	#	%	#	%	
A) Severity of the restriction							
A1)	Any change triggers default	158	30%	121	32%	83	45%
A2)	Voluntary change triggers default	49	9%	31	8%	31	17%
A3)	Authorization required prior to change	139	26%	116	31%	75	41%
A4)	Ex-post authorization required	185	35%	124	33%	97	53%
B) Replacement Approval							
B1)	Explicit replacement approval required	255	48%	170	45%	116	63%
C) Source of the change							
C1)	General (unspecified or inclusive of both)	437	82%	313	83%	159	86%
C2)	Firm Initiated (removal/termination)	48	9%	38	10%	34	18%
C3)	Manager Initiated (leaving/failing to retain)	46	9%	30	8%	41	22%
D) Management definition							
D1)	Named individual(s)	153	29%	111	30%	86	47%
D2)	Named management position(s)	47	9%	38	10%	34	18%
D3)	Named individuals(s) and position(s)	112	21%	70	19%	69	38%
D4)	Vague (unnamed, e.g. management)	219	41%	177	47%	106	58%
	References to CEO position	281	53%	186	49%	129	70%
	References to other executives (CFO, etc.)	244	46%	158	42%	119	65%

**Table II**  
**The Effect of CMR Clause on CEO Turnover**

Table II reports results from probit regressions. The dependent variable is an indicator variable for CEO turnover. The independent variables are defined in Appendix A. Robust standard errors are clustered at the firm-level and z-statistics are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at 0.01, 0.05, and 0.10 levels respectively.

	Dependent Variable = CEO Turnover (t)					
	(1)	(2)	(3)	(4)	(5)	(6)
<b>CMR Clause Binding (t)</b>	<b>-0.408***</b> <b>(-2.59)</b>	<b>-0.411***</b> <b>(-2.65)</b>	<b>-0.454***</b> <b>(-2.78)</b>	<b>-0.467***</b> <b>(-2.93)</b>	<b>-0.364**</b> <b>(-1.97)</b>	<b>-0.414**</b> <b>(-2.21)</b>
TSR 1 year (t-1)	-0.151*** (-4.72)	-0.157*** (-4.41)			-0.157*** (-4.41)	
TSR 3 years (t-1)			-0.330*** (-4.98)	-0.402*** (-5.59)		-0.402*** (-5.59)
ROA (t-1)	-0.011*** (-6.82)	-0.011*** (-7.11)	-0.008*** (-4.95)	-0.008*** (-4.88)	-0.011*** (-7.11)	-0.008*** (-4.89)
CEO High Ownership (t-1)	-0.279*** (-5.55)	-0.273*** (-5.40)	-0.285*** (-5.48)	-0.279*** (-5.35)	-0.273*** (-5.38)	-0.278*** (-5.32)
CEO Retirement Age (t-1)	0.585*** (15.4)	0.589*** (15.4)	0.583*** (15.1)	0.587*** (15.0)	0.589*** (15.4)	0.587*** (15.1)
CEO Tenure (t-1)	0.001*** (5.26)	0.001*** (5.17)	0.001*** (5.20)	0.001*** (5.06)	0.001*** (5.17)	0.001*** (5.06)
CMR Firm					-0.048 (-0.55)	-0.055 (-0.66)
<i>CMR Clause Binding: Average Marginal Effect</i>	<i>-0.052</i>	<i>-0.053</i>	<i>-0.057</i>	<i>-0.058</i>	<i>-0.048</i>	<i>-0.053</i>
Year F.E.	N	Y	N	Y	Y	Y
Pseudo R <sup>2</sup>	0.038	0.042	0.037	0.042	0.042	0.042
Observations	17,107	17,107	16,608	16,608	17,107	16,608

**Table III**  
**Firm and Loan Characteristics**

Table III compares firm and loan characteristics between the sample of firms (packages) with CMR clauses and the ones from the universe of firms (packages) in Dealscan which do not. Variables are defined in Appendix A.

	<i>Firms (Packages) with CMR clause</i>				<i>Firms (Packages) with no CMR clause</i>				Difference in Means	T-stat
	N	Mean	Median	Std	N	Mean	Median	Std		
<i>Firm Characteristics</i>										
Assets	376	340.07	94.85	765.79	4,063	2961.11	517.85	8305.90	2621.04	19.25
ROA	361	-0.04	0.02	0.22	3,944	-0.01	0.03	0.18	0.03	2.43
Leverage	362	0.28	0.23	0.24	3,954	0.29	0.26	0.24	0.02	1.28
Public	376	0.89	1.00	0.31	4,063	0.93	1.00	0.26	0.04	2.36
Rated	376	0.11	0.00	0.32	4,063	0.35	0.00	0.48	0.24	13.28
Tangibility	320	0.27	0.16	0.25	3,823	0.29	0.21	0.24	0.02	1.31
Z-Score	291	1.66	1.79	2.12	3,576	1.77	1.84	1.80	0.12	0.91
Firm Age	340	9.44	5.92	9.93	3,689	16.52	11.24	16.47	7.08	11.74
Founder CEO	83	0.42	0	0.50	1,714	0.30	0	0.46	-0.12	-2.25
<i>Loan and Syndicate Characteristics</i>										
All-in spread drawn	531	246.11	250	117.26	15,046	201.87	175	131.63	-44.24	-8.51
Facility amount	531	93.81	35	139.05	15,046	393.48	200	576.69	299.67	39.18
Maturity	531	34.61	36	18.91	14,692	45.34	48	21.04	10.73	12.79
Loan purpose	531	0.16	0	0.36	15,046	0.16	0	0.37	0.00	0.14
Revolver	531	0.78	1	0.41	15,046	0.71	1	0.46	-0.07	-3.97
Collateral	531	0.74	1	0.44	15,046	0.52	1	0.50	-0.22	-11.35
Financial covenants	531	2.01	2	1.31	15,046	1.63	2	1.30	-0.37	-6.45
Performance pricing	531	0.47	0	0.50	15,046	0.57	1	0.50	0.10	4.55
Local lead	444	0.29	0	0.45	11,878	0.15	0	0.35	-0.14	-6.55
Number of lenders	531	3.39	1	3.94	15,033	7.65	6	7.17	4.25	23.55
% Lead allocation	425	78.53	100	31.20	7,793	59.25	50	36.77	-19.29	-12.29

**Table IV**  
**Determinants of Restricting Change of Management in Debt Contracting**

Table IV reports the results from probit regressions. The dependent variable is an indicator variable for the CMR clause inclusion. The independent variables are defined in Appendix A. We control for credit and term spread (not reported). Industry fixed effects are defined using the Fama-French 12 industry classification. Robust standard errors are clustered at the firm-level and z-statistics are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at 0.01, 0.05, and 0.10 levels respectively.

Dependent Variable = CMR Clause						
	(1)	(2)	(3)	(4)	(5)	(6)
Log(AT)	-0.272*** (-11.2)	-0.319*** (-12.5)	-0.259*** (-8.85)	-0.244*** (-6.59)	-0.238*** (-7.79)	-0.221*** (-6.45)
Log(ROA)	-0.067 (-0.52)	0.255 (1.25)	0.325 (1.64)	0.332 (1.38)	0.347* (1.73)	0.312 (1.46)
Leverage	0.163 (1.33)	-0.215 (-1.45)	-0.184 (-1.26)	-0.198 (-1.07)	-0.162 (-1.12)	-0.244 (-1.62)
Public Firm	0.085 (0.81)	0.071 (0.55)	0.050 (0.40)	-0.055 (-0.34)	0.076 (0.58)	0.085 (0.64)
Rated	-0.174* (-1.90)	-0.081 (-0.81)	-0.036 (-0.35)	-0.204 (-1.41)	-0.042 (-0.40)	-0.067 (-0.67)
Tangibility		-0.096 (-0.53)	0.045 (0.27)	-0.115 (-0.49)	0.035 (0.20)	-0.062 (-0.34)
Z-score		-0.050** (-2.03)	-0.056** (-2.31)	-0.049* (-1.73)	-0.055** (-2.28)	-0.051** (-2.07)
Log(# of Lenders)			-0.167*** (-2.77)		-0.183*** (-2.79)	-0.191*** (-2.77)
% Lead Allocation				0.267* (1.84)		
Local Lead				0.082 (1.07)		
Scaled Loan Amount					0.171* (1.77)	0.148 (1.43)
Log(Maturity)					-0.098** (-2.31)	-0.120*** (-2.92)
Loan Purpose					-0.068 (-0.86)	-0.100 (-1.26)
Revolver						0.018 (0.28)
Collateralized						0.226*** (2.75)
# of Fin Cov						0.046* (1.95)
Performance Pricing						-0.011 (-0.16)
Year FE & Ind FE	Y	Y	Y	Y	Y	Y
Pseudo R <sup>2</sup>	0.16	0.17	0.17	0.14	0.17	0.19
Observations	15,208	12,446	12,498	5,047	12,221	12,161

**Table V**  
**CMR Clause Inclusion and Human Capital**

Table V reports results from probit regressions. The dependent variable is either an indicator variable for the CMR clause inclusion, or an indicator variable for CMR inclusion with the specified severity defined in Table I. The even and odd specifications with a CMR indicator as the dependent variable correspond to specifications (2) and (6) from Table IV respectively, with the addition of the X variable as listed. The Specifications with CMR Type (A1-A4) correspond to Specification (6) from Table IV. The independent variables are defined in Appendix A. We control for credit and term spread. Industry fixed effects are defined using the Fama-French 12 industry classification. Robust standard errors are clustered at the firm-level and z-statistics are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at 0.01, 0.05, and 0.10 levels respectively.

<b>Panel A: Firm Specific Knowledge / Relationships</b>								
X=	Founder CEO				% Insider (Ind.)			
	CMR Clause		A1,A2,A3	A4	CMR Clause		A1,A2,A3	A4
Dependent Variable =	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
X	0.384**	0.391**	0.528**	-0.007	0.694***	0.598**	0.857**	-0.195
	(2.18)	(2.14)	(2.30)	(-0.042)	(2.61)	(2.19)	(2.39)	(-0.42)
<i>Average Marginal Effect</i>	<i>0.011</i>	<i>0.011</i>	<i>0.011</i>	<i>-0.000</i>	<i>0.041</i>	<i>0.035</i>	<i>0.036</i>	<i>-0.005</i>
Firm Controls	Y	Y	Y	Y	Y	Y	Y	Y
Syndicate & Loan Cont.	N	Y	Y	Y	N	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Ind. FE	Y	Y	Y	Y	N	N	Y	Y
Pseudo R <sup>2</sup>	0.22	0.24	0.28	0.24	0.17	0.18	0.21	0.16
Obs.	5,872	5,778	5,239	2,792	12,428	12,143	12,143	11,566
<b>Panel B: Talent Departure Costs</b>								
X=	Non-Compete Index				CEO Ownership %			
	CMR Clause		A1,A2,A3	A4	CMR Clause		A1,A2,A3	A4
Dependent Variable =	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
X	-0.115*	-0.109*	-0.120	-0.046	2.543***	2.630***	2.958***	1.760*
	(-1.77)	(-1.65)	(-1.60)	(-0.48)	(3.49)	(3.67)	(3.38)	(1.82)
<i>Average Marginal Effect</i>	<i>-0.007</i>	<i>-0.006</i>	<i>-0.005</i>	<i>-0.001</i>	<i>0.078</i>	<i>0.079</i>	<i>0.067</i>	<i>0.043</i>
Firm Controls	Y	Y	Y	Y	Y	Y	Y	Y
Syndicate & Loan Cont.	N	Y	Y	Y	N	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Ind. FE	Y	Y	Y	Y	Y	Y	Y	Y
Pseudo R <sup>2</sup>	0.17	0.19	0.20	0.16	0.23	0.26	0.29	0.30
Obs.	12,273	11,991	11,991	11,416	3,175	3,111	2,417	1,584

**Table VI**  
**CMR Clause Inclusion and Information Environment**

Table VI reports results from probit regressions. The dependent variable for specifications (1) and (2) is an indicator variable for the CMR clause inclusion. The dependent variables used in specifications (3) through (8) are indicator variables for a CMR clause inclusion of the type labeled in the table, where the types correspond to the categories in Table I. Specifications (1) and (2) correspond to specifications (2) and (6) from Table IV respectively. Specifications (3) through (8) correspond to specification (6) from Table IV. Industry fixed effects are defined using the Fama-French 12 industry classification. Robust standard errors are clustered at the firm-level and z-statistics are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at 0.01, 0.05, and 0.10 levels respectively.

Independent Variable:	Full Sample		Retention		Selection		Specificity	
	CMR (1)	CMR (2)	A1,A2,A3 (3)	A4 (4)	B1 (5)	B2 (6)	D1,D2,D3 (7)	D4 (8)
Distance	-0.141*** (-2.88)	-0.143*** (-2.88)	-0.167*** (-3.02)	-0.078 (-1.21)	-0.102* (-1.69)	-0.156*** (-2.70)	-0.202*** (-3.37)	-0.066 (-1.14)
<i>Average Marginal Effect</i>	<i>-0.01</i>	<i>-0.01</i>	<i>-0.008</i>	<i>-0.002</i>	<i>-0.004</i>	<i>-0.007</i>	<i>-0.010</i>	<i>-0.002</i>
<b>Controls:</b>								
Firm	Y	Y	Y	Y	Y	Y	Y	Y
Syndicate & Loan	N	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y	Y	Y
Pseudo R <sup>2</sup>	0.21	0.25	0.24	0.25	0.24	0.25	0.25	0.19
Observations	5,048	4,941	4,941	4,353	4,371	4,923	4,484	4,583

**Table VII**  
**Market Reaction to Debt Contract Filings**

Table VII reports the cumulative abnormal returns for multiple event time windows around the contract filing date on EDGAR. Daily abnormal returns are derived using the Fama-French three factor model calculated over the 232 business days preceding the 30 business days prior to the filing date. Tstart and Tend denote business days relative to the filing date at T=0. Panel B matches CMR firms to the firms from the full sample by year based on: Market Cap, Leverage, Market-to-Book, # of financial covenants, performance pricing, collateral, Loan amount, maturity, and All-in-drawn. \*\*\*, \*\*, and \* indicate significance at 0.01, 0.05, and 0.10 levels respectively.

<b>Panel A: Full Sample</b>													
<i>Event Window</i>		<i>Cumulative Abnormal Returns (CMR Firms)</i>					<i>Cumulative Abnormal Returns (No CMR Firms)</i>					<i>Difference</i>	
<i>T<sub>start</sub></i>	<i>T<sub>end</sub></i>	<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>Std</i>	<i>T-Test</i>	<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>Std</i>	<i>T-Test</i>	<i>Mean</i>	<i>T-stat</i>
0	3	326	-0.69*	-0.79	0.06	-1.95	12,933	-0.05	-0.13	0.06	-0.94	-0.65**	-2.08
0	5	326	-1.14**	-0.86	0.08	-2.55	12,933	-0.23***	-0.25	0.07	-3.93	-0.91**	-2.47
-5	5	326	-1.31**	-1.56	0.11	-2.13	12,933	-0.26***	-0.43	0.09	-3.35	-1.04**	-2.08
-5	10	326	-1.89**	-2.55	0.13	-2.57	12,933	-0.39***	-0.60	0.11	-4.09	-1.50**	-2.45
-21	21	326	-2.82**	-3.48	0.24	-2.11	12,933	-0.70***	-1.47	0.19	-4.23	-2.13**	-2.00
-21	42	326	-3.94**	-5.35	0.30	-2.40	12,933	-1.07***	-2.46	0.25	-4.94	-2.87**	-2.07
-30	60	326	-5.91***	-9.03	0.37	-2.92	12,933	-1.17***	-3.44	0.36	-3.66	-4.73**	-2.32
<b>Panel B: Matched Sample</b>													
<i>Event Window</i>		<i>Cumulative Abnormal Returns (CMR Firms)</i>					<i>Cumulative Abnormal Returns (No CMR Firms)</i>					<i>Difference</i>	
<i>T<sub>start</sub></i>	<i>T<sub>end</sub></i>	<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>Std</i>	<i>T-Test</i>	<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>Std</i>	<i>T-Test</i>	<i>Mean</i>	<i>T-stat</i>
0	3	258	-0.63*	-0.80	0.06	-1.69	258	-0.06	-0.55	0.06	-0.16	-0.56	-1.04
0	5	258	-1.10***	-0.74	0.07	-2.61	258	-0.46	-1.01	0.08	-0.96	-0.65	-1.02
-5	5	258	-1.22**	-1.50	0.09	-2.14	258	0.44	-0.21	0.11	0.65	-1.65*	-1.88
-5	10	258	-1.64**	-2.25	0.11	-2.47	258	0.14	-1.16	0.13	0.17	-1.77*	-1.71
-21	21	258	-3.11**	-2.69	0.20	-2.54	258	0.75	-1.18	0.21	0.58	-3.87**	-2.16
-21	42	258	-5.02***	-5.79	0.24	-3.32	258	0.55	-1.41	0.28	0.32	-5.58**	-2.44
-30	60	258	-7.50***	-9.30	0.30	-4.07	258	-0.15	-3.97	0.34	-0.07	-7.35***	-2.63

**Table VIII**  
**The Effect of CMR Clauses on Cash Flow and Earnings Volatility**

Table VIII reports results from risk shifting regressions. The dependent variables are measures of cash flow and earnings volatility. The independent variables are defined in Appendix A. Higher order controls comprise square terms of all control variables except the first difference of PP&E and Log(Assets). Robust standard errors are clustered at the firm-level and t-statistics are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at 0.01, 0.05, and 0.10 levels respectively.

Dependent Variable =	Vol(CFO)		Vol(ROA)	
	(1)	(2)	(3)	(4)
CMR Firm	-0.000 (-0.00)	-0.007** (-2.07)	-0.001 (-0.12)	-0.012 (-1.48)
Post Loan	0.001*** (2.69)	0.001 (1.17)	0.000 (0.10)	-0.001 (-1.39)
<b>CMR Firm * Post Loan</b>	<b>0.007** (2.17)</b>	<b>0.009*** (2.71)</b>	<b>0.015** (2.16)</b>	<b>0.017** (2.52)</b>
Operating Cash Flows / Assets	-0.011 (-1.23)	-0.197*** (-17.50)	-0.135*** (-7.60)	-0.316*** (-13.20)
Leverage	-0.081*** (-11.10)	-0.105*** (-7.76)	-0.114*** (-7.36)	-0.117*** (-3.78)
Interest Expense / Assets	0.191** (2.93)	0.576*** (4.95)	0.980*** (6.22)	1.337*** (4.34)
Net Worth / Assets	-0.060*** (-10.40)	-0.032*** (-3.80)	-0.092*** (-6.72)	-0.130*** (-4.62)
Current Ratio	0.003*** (5.40)	0.005*** (3.47)	0.003*** (2.66)	0.001 (0.41)
Market to Book	0.001*** (4.13)	-0.000 (-0.34)	0.001*** (3.57)	0.001* (1.84)
PP&E / Assets	-0.003 (-0.97)	0.002 (0.29)	-0.020*** (-2.87)	-0.048** (-2.52)
$\Delta$ PP&E / Assets	-0.001 (-0.19)	-0.002 (-0.23)	0.002 (0.14)	-0.000 (-0.00)
Log(Assets)	-0.011*** (-24.80)	-0.023*** (-9.23)	-0.015*** (-14.10)	-0.043*** (-8.06)
$\Delta$ Log(Assets)	-0.027*** (-12.30)	-0.020*** (-10.70)	-0.034*** (-6.10)	-0.026*** (-4.82)
Year F.E.	Y	Y	Y	Y
Industry F.E.	Y	Y	Y	Y
Higher Order Controls	N	Y	N	Y
R <sup>2</sup>	0.38	0.50	0.28	0.33
Observations	25,869	25,869	25,869	25,869

**Table IX**  
**Capital Expenditure Investments and CMR Clauses**

Table IX reports the results of linear time-series regressions at the yearly level. The dependent variable is the change in capital expenditure over total assets. The variable *CMR Clause Binding* is a dummy variable equal to 1 if, for the given year, the firm has an outstanding loan containing a CMR clause. The variable *CMR Firm* is a dummy variable equal to 1 if the firm has any loan at any time with a CMR clause. The independent variables are defined in Appendix A. Specifications (1) through (3) use the full sample, and specification (4) restricts the sample to just those firms with at least one CMR bearing contract. Industry fixed effects are defined using the Fama-French 12 industry classification. Robust standard errors are clustered at the firm-level and t-statistics are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at 0.01, 0.05, and 0.10 levels respectively.

	Dependent Variable = $\Delta$ Capital Expenditure			
	(1)	(2)	(3)	(4)
<b>CMR Clause Binding</b>	<b>-0.003*</b> <b>(-1.92)</b>	<b>-0.004**</b> <b>(-2.25)</b>	<b>-0.005***</b> <b>(-2.59)</b>	<b>-0.004**</b> <b>(-2.01)</b>
CMR Firm		0.001** (1.98)		
Operating Cash Flows / Assets	0.022*** (11.4)	0.022*** (11.4)	0.031*** (11.0)	0.019*** (2.97)
Leverage	0.002 (0.52)	0.002 (0.52)	-0.004 (-0.72)	-0.019 (-1.13)
Interest Expense / Assets	-0.093** (-2.39)	-0.093** (-2.40)	-0.267*** (-5.06)	0.158 (0.91)
Net Worth / Assets	-0.002 (-0.83)	-0.002 (-0.84)	-0.005 (-1.38)	-0.013 (-1.24)
Current Ratio	-0.001 (-1.59)	-0.001 (-1.63)	-0.001*** (-2.58)	-0.000 (-0.019)
Market to Book	0.000*** (3.14)	0.000*** (3.14)	0.000*** (3.79)	-0.000 (-0.53)
PP&E / Assets	-0.000 (-0.034)	-0.000 (-0.027)	-0.025*** (-3.43)	-0.004 (-0.32)
$\Delta$ PP&E / Assets	0.236*** (35.6)	0.236*** (35.6)	0.267*** (36.1)	0.255*** (9.59)
Log(Assets)	-0.000 (-0.36)	-0.000 (-0.21)	0.001 (1.13)	-0.002 (-0.93)
$\Delta$ Log(Assets)	0.003*** (3.39)	0.003*** (3.38)	0.004*** (3.68)	0.022*** (5.74)
Constant	0.005** (2.32)	0.004** (2.16)	0.027*** (6.28)	0.014 (1.50)
Year F.E.	Y	Y	Y	Y
Industry F.E.	Y	Y	N	Y
Firm F.E.	N	N	Y	N
Higher Order Controls	Y	Y	Y	Y
R <sup>2</sup>	0.14	0.14	0.16	0.17
Observations	45,529	45,529	45,529	2,945

**Table X**  
**Covenant Violations and CEO Turnover: The Mitigating Effect of CMR**

Table X reports results from probit regressions on CEO turnover. The dependent variable is an indicator variable for CEO turnover. The first specification comprises the set of firms with no CMR clause, and the second comprises those firms with a CMR clause. A Chi squared test of the joint difference in coefficients is presented below the estimates. Both specifications contain the following controls defined in Appendix A: Ln(Assets), the ratio of operating cash flow to average assets, leverage ratio, the ratio of interest expense to average assets, the ratio of net worth to total assets, the current ratio, and the market to book ratio. Both specifications include industry fixed effects using the Fama-French 12 industry specification, fiscal quarter fixed effects, and calendar quarter fixed effects. Robust standard errors are clustered at the firm-level and z-statistics are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at 0.01, 0.05, and 0.10 levels respectively.

Dependent Variable = CEO Turnover		
	(1)	(2)
New Covenant Violation <sub>t+1</sub>	0.104 (1.29)	-0.478 (-0.90)
New Covenant Violation <sub>t</sub>	0.138* (1.74)	-0.433 (-0.82)
New Covenant Violation <sub>t-1</sub>	0.286*** (3.70)	-0.721 (-1.10)
New Covenant Violation <sub>t-2</sub>	0.276*** (3.49)	0.0274 (0.06)
New Covenant Violation <sub>t-3</sub>	0.314*** (4.02)	0.0686 (0.16)
New Covenant Violation <sub>t-4</sub>	0.277*** (3.42)	-0.0447 (-0.11)
X <sup>2</sup> Test of difference in coefficients		11.40
Probability > X <sup>2</sup>		0.077*
X <sup>2</sup> Test of difference in lagged coefficients		9.59
Probability > X <sup>2</sup>		0.048**
Firm Characteristics Controls	Y	Y
Industry Fixed Effects	Y	Y
Calendar/Fiscal Time Fixed Effects	Y	Y
R <sup>2</sup>	0.0140	0.2379
Observations	22,271	621

**Table XI**  
**CMR Inclusion and Predicted Yield Differential**

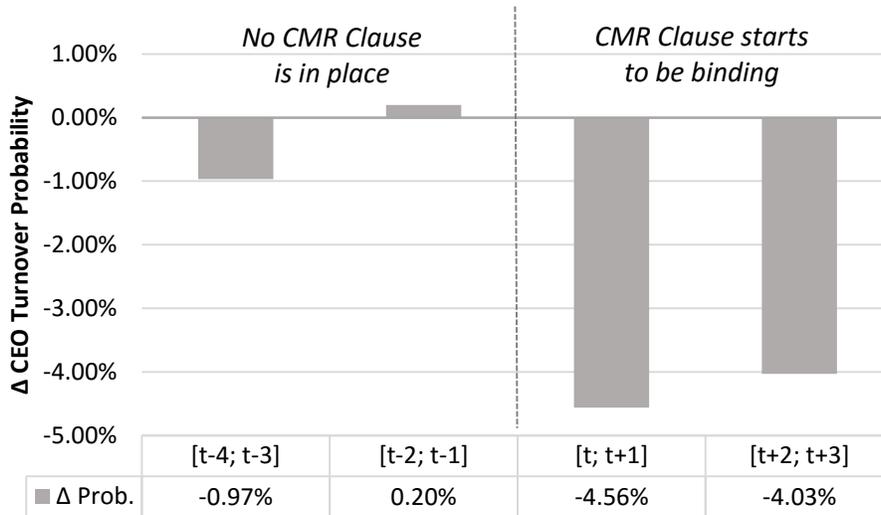
Table XI Panel A reports the results from probit regressions of CMR inclusion on the selection adjusted predicted yield differential and controls. Panel B reports the subsample results from a probit regression of CMR clause severity on the selection adjusted predicted yield differential and controls. The subsample consists of all contracts containing CMR clauses. Severe CMR clauses are defined as categories A1, A2, or A3 from Table I. The controls used for specifications (1) through (4) are displayed in full in the internet appendix Table 5. We include credit and term spread (not reported). Industry fixed effects are defined using the Fama-French 12 industry classification. Robust standard errors are clustered at the firm-level and z-statistics are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at 0.01, 0.05, and 0.10 levels respectively.

<b>Panel A: Full sample</b>				
Dependent Variable = CMR Clause				
	(1)	(2)	(3)	(4)
$\widehat{LogYield}_{NoCMR} - \widehat{LogYield}_{CMR}$	0.551** (2.32)	0.795*** (3.60)	0.894*** (3.05)	0.898*** (3.12)
<i>Average Marginal Effect</i>	<i>0.033</i>	<i>0.074</i>	<i>0.053</i>	<i>0.053</i>
<b>Controls:</b>				
Firm & Syndicate	Y	Y	Y	Y
Loan	N	N	Y	Y
Year F.E.	Y	Y	Y	Y
Industry F.E.	Y	Y	Y	Y
Pseudo R <sup>2</sup>	0.18	0.15	0.19	0.19
Observations	12,161	4,944	12,161	12,143
<b>Panel B: CMR clause type subsample analysis</b>				
Dependent Variable = Strict CMR Clause (A1, A2, or A3)				
	(1)	(2)	(3)	(4)
$\widehat{LogYield}_{Least\ Severe} - \widehat{LogYield}_{Most\ Severe}$	0.937*** (3.99)	1.809*** (4.79)	1.158*** (3.86)	1.320*** (4.33)
<i>Average Marginal Effect</i>	<i>0.263</i>	<i>0.424</i>	<i>0.320</i>	<i>0.356</i>
<b>Controls:</b>				
Firm & Syndicate	Y	Y	Y	Y
Loan	N	N	Y	Y
Year F.E.	Y	Y	Y	Y
Industry F.E.	Y	Y	Y	Y
Pseudo R <sup>2</sup>	0.21	0.27	0.22	0.24
Observations	309	248	309	309

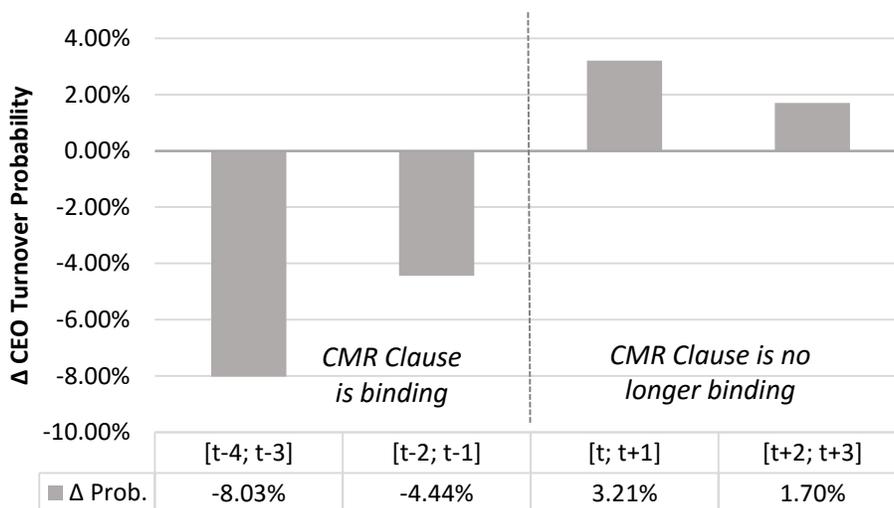
## Figure I The Effect of the CMR Clause on CEO Turnover

Figure I plots the effect of a CMR clause on CEO turnover. Change in CEO turnover probability is calculated as the difference between realized turnover and predicted turnover, derived from the probit model of Table II on the sample of firms with any contracts containing a CMR. Figure I.A shows the effect of initiation of a debt contract containing a CMR clause at time  $t$ . Figure I.B shows the effect of a cessation of a contract containing a CMR clause at time  $t$ .

**Figure I.A: CMR clause starts to be binding in year  $t$**



**Figure I.B: CMR clause is no longer binding in year  $t$**



Internet Appendix

for

**Debt Contracting on Management**

By Brian Akins, David De Angelis, and Maclean Gaulin

## IA.1. Database Construction Detail

Section IA.1 details the contract search and sample selection methodology. See Section IA.2 for examples of change of management restriction clauses.

To match contracts filed by companies via the SEC's EDGAR system, we first search through all 10-K, 10-Q, and 8-K exhibits for debt contracts filed by companies in our sample of CIKs identified by the Compustat and DealScan merge. We use regular expressions to search for inexact phrases related to debt contracts within the header of the exhibit (defined as the first 5% of the length of the document). The use of loose regular expressions allows for inexact wordings of the titles, which we believe will result in more comprehensive matches given the variance in wording observed in our sample. Our search terms include the phrases used by Nini et al. (2009); however, we do not require a table of contents to be present. We drop this requirement because in reviewing contracts we found that even full contracts do not always contain a table of contents.<sup>26</sup> Unlike Nini et al. (2009), we attempt to include contract amendments which in some cases only include relevant changes rather than the full contract terms (and are missing a full table of contents). We make this decision based on anecdotal evidence from the court case detailed in Appendix D in which the CMR clause was added in an amendment to an existing contract. Our contract search algorithm results in 59,719 contracts to which we merge the sample of DealScan packages.

We merge the contracts from EDGAR to our DealScan sample based on the filing date of the contract in EDGAR and the date from DealScan. We require that the exhibit is filed within one month of the DealScan variables: *dealactivedate* or *amendeddate*, but if no contract is found, we expand the window to four months. We use this two stage approach of expanding windows to allow for the change in SEC filing rules, as well as late filings (in violation). Prior to the 2004 rule change, firms typically filed debt contracts as exhibits included in the next 10-Q or 10-K. For example, on June 28<sup>th</sup> 2002, Dynamics Research Corporation entered into a loan contract which was filed as Exhibit 10.1 to form 10-Q on

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<sup>26</sup> Example: [http://www.sec.gov/Archives/edgar/data/5768/000110465903026261/a03-4850\\_1ex10ddxi.htm](http://www.sec.gov/Archives/edgar/data/5768/000110465903026261/a03-4850_1ex10ddxi.htm)

August 14<sup>th</sup> 2002, more than one month later.<sup>27</sup> Firms did have the option to file the contracts as Item 5 of form 8-K (Carter and Soo, 1999), but we observe very few of these cases.

In 2004, the SEC amended its rules regarding 8-K filings. After this change, instruction B.1 of Item 1.01 for Form 8-K was amended to include material contracts as a triggering event for timely filings. This effectively moved the bulk of debt contracts from exhibits in quarterly or annual reports to Item 1.01 filings in 8-Ks. This affected the timing of filing, as 8-Ks are required to be submitted to the SEC within four business days of the triggering event, in this case entering into a debt contract.<sup>28</sup> Rather than employ different matching pre- and post-2004, we use the relaxed matching restrictions to capture late filings which we might otherwise miss. This decision trades the cost of manually filtering out false positives for the increased breadth of contracts found.

The merge of DealScan and EDGAR filings results in 23,572 potential contract matches for 16,857 contracts before dropping financial firms and utilities (15,577 afterward). The duplicates are primarily due to multiple contract exhibits in one filing. For example on July 17<sup>th</sup> 1997, Atwood Oceanics Inc. entered into a \$125 Million Revolving Credit Facility with a syndicate led by Bank One, Texas.<sup>29</sup> The filings consist of two exhibits, EX-99.1, and EX-99.2, both of which match our criteria of a credit agreement. The first exhibit is a \$100 Million revolving credit facility and the second a \$25 Million revolving credit facility which DealScan jointly classifies as package ID 37077 with a deal amount of \$125 Million. These 15,577 contracts comprise the full sample of packages for the extent of our analyses.

To derive our sample of contracts containing CMR clauses, we search the 23,572 documents using loose regular expressions for the following terms (and all conjugations and plural forms thereof): *change, replace, terminate, nominate, fire, death, remove, switch, modify, dismiss, or pass away*. We then require these terms to be succeeded in the paragraph by the following terms (and all conjugations and plural forms thereof):

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<sup>27</sup> <http://www.sec.gov/Archives/edgar/data/30822/000092701602004094/0000927016-02-004094-index.htm>

<sup>28</sup> See <https://www.sec.gov/about/forms/form8-k.pdf>

<sup>29</sup> Url: <http://www.sec.gov/Archives/edgar/data/8411/0000008411-97-000031.txt>

*management, executive, officer, chief, president, leadership, head, board member, chair, chairman, owner, treasurer, founder, partner, counsel, lawyer, director, controller, VP, CEO, CFO, COO, CIO, Mrs, Mr, Dr, or Ph.D.*

These search requirements result in 17,251 paragraphs, which we then search by hand to remove false positive results. The hand checking was performed independently by two individuals. The instructions given to the research assistants were to verify that the paragraphs concern or be suggestive of any limitation of management change. The research assistance filtered the sample down to approximately 2100 paragraphs which were plausibly related to restricting changes in management. We conducted the final verification by reading the matched paragraph in the context of the full contract to ensure the clause is contractually binding, which typically consisted of inclusion in the Negative Covenants or Default Event sections. The two most common paragraphs eliminated in this verification stage were those requiring notice of, as opposed to restricting, a change in management, and those concerning conditions precedent.<sup>30</sup>

This last verification resulted in 594 contracts containing CMR clauses. We verified the contracts matched the DealScan packages by comparing the date of the contract, the syndicate members, the amount of the package, and in some cases maturity (when the EDGAR contract contained only one facility in a package). Of these, 34 do not match the data in DealScan and are dropped from the sample. After dropping contracts from financial firms and utilities, the final sample of contracts with CMR clauses consists of 531 packages across 376 firms. This represents 8.5% of the full sample of firms in the DealScan/Compustat universe with valid CIKs matched.

## **IA.2. Examples of Change of Management Restriction Clauses**

Section IA.2 illustrates our sample construction of default event via five examples. Portions highlighted in bold represent the text matched from the search program.

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<sup>30</sup> Conditions precedent require conditions be met previous to the closing date of the contract, but do not extend through the term of the loan. For example, the lenders might require the CEO with whom they negotiated the contract still be in office on the date when the final version is signed. We do not consider this a strongly binding CMR thus we exclude such clauses from our CMR criteria.

Felcor Suite Hotels Incorporated, November 14<sup>th</sup> 1996, \$250,000,000 par amount.

*ARTICLE VII NEGATIVE COVENANTS*

*7.14. Management Continuity. The Borrower acknowledges that the Lenders have made their determination to enter into this Agreement and the transactions contemplated herein on the basis of reliance upon the experience, expertise and reputations of Messrs. Hervey A. Feldman and Thomas J. Corcoran, Jr. as experts in the ownership and asset management of Suite Hotels, and the Borrower will not suffer or permit its business to be without the active management of at least one such Person, provided that, in the event of death, incapacitation or dismissal of both Messrs. Hervey A. Feldman and Thomas J. Corcoran, Jr. a **replacement management team** shall be appointed for the Borrower, such team to be (i) proposed by the Borrower within 120 days of the event referred to above, and (ii) approved by the Majority Lenders in their sole and absolute discretion.*

Natural Gas Services Group Incorporated, December 16<sup>th</sup> 2010, \$20,000,000 par amount.

*ARTICLE VI Negative Covenants*

*Section 6.05 Nature of Business; Management. Neither Borrower nor any of its Subsidiaries will (a) change the nature of its business in any material respect or enter into any business which is substantially different from the business in which it is presently engaged, other than any Permitted Other Business Lines, or (b) permit a **change in the Chief Executive Officer** and/or President of the Borrower.*

Birner Dental Management Services, March 28<sup>th</sup> 2002, \$6,000,000 par amount.

*6. NEGATIVE COVENANTS*

*m. Change in Management. Borrower shall not permit any Change in Management. "**Change in Management**" shall mean any **change in the management** positions of or the acceptance of a resignation or other termination, without Lender's prior written consent, of any of the following officers of Borrower: Dennis Genty, Fred Birner or Mark Birner.*

Telespectrum Worldwide Incorporated, January 24<sup>th</sup>, 1997. 70,000,000 par amount.

*SECTION 7. NEGATIVE COVENANTS:*

*7.11 **Change in Executive Management:** Borrowers shall not remove or replace any Person who is a member of Executive Management without the prior written consent of the Majority Lenders, such consent not to be unreasonably withheld. In the event of the death or any member of Executive Management, Borrowers shall have ninety (90) days to replace such Person, and any such replacement shall be acceptable to the Majority Lenders in their reasonable discretion.*

Day Runner Incorporated, December 18<sup>th</sup> 2000, \$112,163,875 par amount.

*ARTICLE X. EVENTS OF DEFAULT AND REMEDIES UPON EVENT OF DEFAULT*

*(h) Any Change in Control occurs; "CHANGE IN CONTROL" means any of the following without the advance written consent of the Agent, (a) any termination of, modification of, or increase or reduction in the scope or term of engagement by Day Runner of Crossroads LLC as in effect on the Effective Date, (b) any **termination of John Ausura as chief executive officer** of Day Runner with full authority to manage the day to day affairs of Day Runner and its Subsidiaries as in effect on the Effective Date, or (c) any alteration, modification, increase or decrease in the compensation, financial terms or incentives of Crossroads LLC or John Ausura;*

### **IA.3. Court Case - State Nat. Bank V. Farah Mfg. Co.**

The court case between Farah Manufacturing and State National Bank (as well as other lenders) revolved around a CMR clause and demonstrates a syndicate of lenders enforcing the clause by replacing the CEO. The Jury found the bank committed “tortious interference” when it used threats of default under the CMR clause to prevent a potentially beneficial change of management. The contract in question contained the following change of management restriction clause in item (g) of the default section:

*Any change in the office of President and Chief Executive Officer of Farah [Manufacturing Company, Inc.] or any other change in the executive management of Farah [Manufacturing Company, Inc.] which any two Banks shall consider, for any reason whatsoever, to be adverse to the interests of the Banks.*

This clause was added in an amendment and restated version of a previous contract, potentially in response to the \$43,965,000 in accumulated pre-tax losses suffered under the recently departed CEO, William Farah. The new CEO (named in the suit only as Leone) was hired to resuscitate the firm, but after a year of further declining sales, William Farah attempted to regain his former position as CEO. What followed was a lengthy control battle between the lenders, who wanted one of their board members, William Conroy, rather than Farah to replace Leone as CEO. The bank threatened to accelerate the loan repayment under the CMR clause. The borrower’s board, faced with the decision to potentially bankrupt the firm if they selected Farah as the replacement CEO, decided to agree to the banks demands and elected Mr. Conroy to the position of CEO.

Over the subsequent year, Farah Manufacturing’s financial condition continued to deteriorate. The CEO brought in a consultant, supported by the banks, who proceeded to sell off firm assets at auctions to meet loan payments. In response, William Farah gave notice of a proxy fight to regain control of the firm, which was eventually successful. As CEO, he quickly improved the strategy of the company, and after a year was able to pay off the restructured loans containing the CMR clause.<sup>31</sup> He sued the banks for interference, and was awarded \$18 Million in damages. Since this decision, however, the courts have over

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<sup>31</sup> Full legal proceedings can be found at:  
[https://web.archive.org/web/20151029083607/http://www.leagle.com/decision/19841339678SW2d661\\_11247.xml/STATE%20NAT.%20BANK%20v.%20FARAH%20MFG.%20CO](https://web.archive.org/web/20151029083607/http://www.leagle.com/decision/19841339678SW2d661_11247.xml/STATE%20NAT.%20BANK%20v.%20FARAH%20MFG.%20CO)

time tended to rule more in the lenders' favor. Current precedent requires a stronger demonstration of interference, "to prevail on a claim for tortious interference with prospective relations, the plaintiff must plead and prove that the defendant engaged in an independently tortious act (such as fraud, assault, libel) that caused the relationship not to be formed" (Cohen, 2012).

## IA.4. Supplementary Tables

**Table IA.I**  
**Sample Construction**

Table IA.I details the construction of our sample and the sample for which there are loan contracts with clauses that restrict the change of management.

<b>Loans/Packages</b>	<b>Firms</b>	<b>Filter Description</b>
40,633	8,835	DealScan / Compustat match
31,834	7,933	1995 - 2015
29,662	6,570	Valid CIK match
15,577	4,439	Debt contract found (final sample)
531	376	Change of management restriction clause

**Table IA.II**  
**Year and Industry Distribution**

Table IA.II compares the year (Fama-French 12 industries) distribution between the sample of packages (firms) with restricting clauses about changes in management and the ones that do not.

	Firms (Packages) with CMR clause		Firms (Packages) with no CMR clause		Difference	T-stat
	Frequency	Percent	Frequency	Percent		
Year						
1995	6	1.13	115	0.76	0.37	0.94
1996	20	3.77	387	2.57	1.19	1.70
1997	66	12.43	1012	6.73	5.70	5.09
1998	66	12.43	897	5.96	6.47	6.08
1999	48	9.04	778	5.17	3.87	3.91
2000	42	7.91	775	5.15	2.76	2.80
2001	44	8.29	766	5.09	3.20	3.26
2002	51	9.60	841	5.59	4.01	3.91
2003	37	6.97	878	5.84	1.13	1.09
2004	31	5.84	1048	6.97	-1.13	-1.01
2005	16	3.01	1067	7.09	-4.08	-3.63
2006	18	3.39	968	6.43	-3.04	-2.83
2007	21	3.95	889	5.91	-1.95	-1.89
2008	17	3.20	568	3.78	-0.57	-0.68
2009	9	1.69	403	2.68	-0.98	-1.39
2010	12	2.26	614	4.08	-1.82	-2.10
2011	8	1.51	915	6.08	-4.57	-4.39
2012	7	1.32	701	4.66	-3.34	-3.63
2013	7	1.32	709	4.71	-3.39	-3.67
2014	3	0.56	607	4.03	-3.47	-4.05
2015	2	0.38	108	0.72	-0.34	-0.92
Industry (FF 12)						
1 -NonDurb	32	8.51	273	6.72	1.79	1.31
2 -Durbl	8	2.13	126	3.10	-0.97	-1.06
3 -Manuf	44	11.70	508	12.50	-0.80	-0.45
4 -Energy	24	6.38	234	5.76	0.62	0.49
5 -Chems	3	0.80	91	2.24	-1.44	-1.86
6 -BusEqp	66	17.55	672	16.54	1.01	0.51
7 -Telcm	10	2.66	182	4.48	-1.82	-1.66
8 -Utils	3	0.80	157	3.86	-3.07	-3.05
9 -Shops	37	9.84	618	15.21	-5.37	-2.81
10 -Health	44	11.70	326	8.02	3.68	2.47
11 -REIT	55	14.63	237	5.83	8.79	6.58
12 -Other	50	13.30	596	14.67	-1.37	-0.72

**Table IA.III**  
**Adding and Removing CMR Clauses**

Table IA.III reports results from a T-test on the difference of means. The dependent variable is a dummy variable indicating whether the new loan contract adds (removes) a clause related to restricting changes in management. The independent variables are defined in Appendix A. \*\*\*, \*\*, and \* indicate significance at 0.01, 0.05, and 0.10 levels respectively.

	<i>Adding CMR Clause</i>				<i>Removing CMR Clause</i>			
	Pre-period Mean	CMR Mean	Difference in Means	T-stat	CMR Mean	Post-period Mean	Difference in Means	T-stat
All-in spread drawn	238.63	232.00	-6.64	0.90	215.59	254.58	39.00***	5.09
Maturity	34.93	35.28	0.35	-0.25	36.34	45.19	8.85***	6.42
Founder CEO	0.44	0.48	0.04	-0.39	0.48	0.24	-0.24***	-3.38
Distance	690.51	652.26	-38.26	0.41	714.22	890.04	175.81**	2.54
Relationship	0.35	0.35	0.00	0.05	0.28	0.51	0.23***	6.50

**Table IA.IV**  
**CMR Inclusion and Predicted Yield Differential**

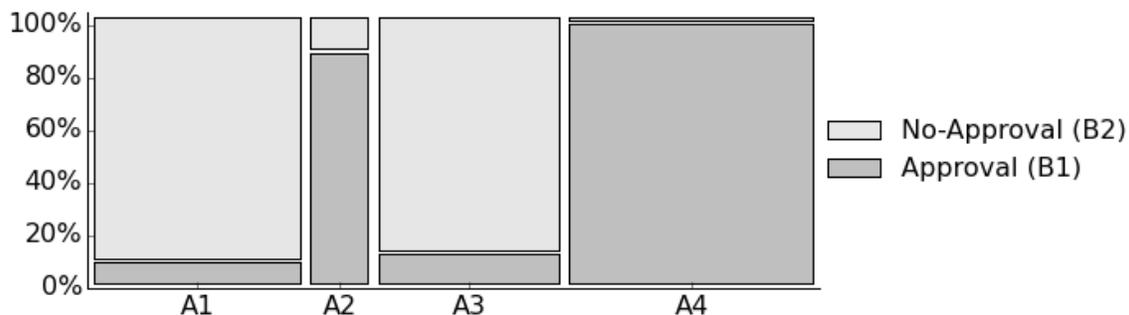
Table IA.IV reports the results from probit regressions of CMR inclusion on the selection adjusted predicted yield differential and controls. Variables are defined in Appendix D. We include credit and term spread (not reported). Industry fixed effects are defined using the Fama-French 12 industry classification. Robust standard errors are clustered at the firm-level and z-statistics are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at 0.01, 0.05, and 0.10 levels respectively.

	Dependent Variable = CMR Clause			
	(1)	(2)	(3)	(4)
$\widehat{LogYield}_{NoCMR} - \widehat{LogYield}_{CMR}$	0.551** (2.32)	0.795*** (3.60)	0.894*** (3.05)	0.898*** (3.12)
Log(# of Lenders)	-0.175*** (-2.81)		-0.181*** (-2.70)	-0.178*** (-2.64)
% Lead Allocation		0.219 (1.49)		
Local Lead		0.065 (0.84)		
Log(AT)	-0.214*** (-5.52)	-0.121** (-2.27)	-0.150*** (-3.16)	-0.151*** (-3.15)
Log(ROA)	0.186 (1.17)	0.269 (1.53)	0.490** (2.37)	0.480** (2.32)
Leverage	-0.149 (-1.06)	-0.222 (-1.25)	-0.275* (-1.82)	-0.259* (-1.71)
Public Firm	0.107 (0.83)	-0.093 (-0.58)	0.173 (1.28)	0.179 (1.33)
Rated	0.015 (0.15)	-0.112 (-0.76)	0.051 (0.50)	0.053 (0.52)
Log(Maturity)			-0.099** (-2.53)	-0.100** (-2.54)
Scaled Loan Amount			0.276** (2.49)	0.273** (2.45)
Loan Purpose			-0.182** (-2.18)	-0.178** (-2.14)
Tangibility			-0.016 (-0.086)	-0.013 (-0.074)
Z-score			-0.019 (-0.70)	-0.018 (-0.64)
% Insider (Ind.)				0.699** (2.17)
$\widehat{LogYield}_{NoCMR} - \widehat{LogYield}_{CMR}$ : Average Marginal Effect	0.033	0.074	0.053	0.053
Year FE & Ind FE	Y	Y	Y	Y
Pseudo R <sup>2</sup>	0.18	0.15	0.19	0.19
Observations	12,161	4,944	12,161	12,143

## IA.5. Supplementary Figures

**Figure IA.I**  
**Severity and Replacement Approval Interaction**

Figure IA.I plots the interaction of Severity (category A) with Replacement Approval (category B). The width of the bars indicates the relative number of contracts in each Severity category (A1-A4), and the height of the dark bar indicates the portion of clauses within each category that also requires replacement approval (B1). The Severity category has four types from most to least severe. A1: any change in management causes a default unconditionally. A2: there exists a set of conditions under which a change in management will not trigger a default, typically allowing for death or disability. A3: firms must receive permission prior to any management change. A4: borrowers must acquire lender approval after a change in management occurs, typically within a time period ranging from 30 days to half a year. The Approval category is binary: B1 requires replacement approval from the lenders, B2 does not.



**Figure IA.II**  
**Management Definition and Replacement Approval Interaction**

Figure IA.II plots the interaction of Management Definition (category D) with Replacement Approval (category B). The width of the bars indicates the relative number of contracts in each Management definition category (D1-D4), and the height of the dark bar indicates the portion of clauses within each category that also requires replacement approval (B1). The Management Definition category consists of four types. D1: Clause specifically names individuals but not the exact positions which they are to hold. D2: Clause names a specific position which shall not undergo a change in the holder, but does not specify the name of the current holder. D3: Clause includes both the name and specific position in which the named individual shall remain. D4: Clause names neither individual nor specific position, instead generic position is referenced (e.g. management). The Approval category is binary: B1 requires replacement approval from the lenders, B2 does not.

