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ABSTRACT

Using novel data on 1,240 credit agreements, we investigate sources of contractual complexity in the leveraged loan market. While negative covenants are widespread, carve-out and deductible clauses that weaken them are as frequent. We propose simple measures of contractual weakness, which uniquely explain the market-wide price reaction that followed the 2017 J.Crew restructuring, a high profile use of such contractual elements. Leveraged buyouts have significantly weaker loan agreements, and a larger non-bank funding of a loan is conducive to weaker contractual terms. Weak covenants translate to modestly higher issuance spreads. Overall, our findings are consistent with sophisticated borrowers catering to a reaching-for-yield phenomenon by exploiting contractual complexity.

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1 Introduction

Corporate indentures, especially loan agreements for highly leveraged firms, are lengthy and complex documents. Their scope goes well beyond defining the basic credit terms, or, to quote Fitch: "Credit agreements are jam-packed with legal jargon that often bears little resemblance to the English language."[1] As pointed out by Smith and Warner (1979), much of the contracting complexity results from the covenant structure designed to reduce the conflicts of interest between creditors and equity holders. This conflict is particularly acute for firms taking on large amounts of debt, such as leveraged loan users, the focus of this study. While the economic principles behind the contracting framework have been well understood for nearly forty years, the empirical advances in analyzing loan contracts and measuring contractual strength has been limited due to the qualitative and complex nature of the contractual language used in the debt space. Despite public alarms over the lack of understanding of deterioration in creditor protection in the recent years, especially in the $1.3 trillion US leveraged loan market, the academic literature and policy still fall short of articulating what constitutes weak contracts.[2]

In this paper, we exploit technological advances in contract processing allowing a novel data set focused on contractual provisions that parses 1,240 leveraged loan credit agreements to develop simple measures of negative covenant weakness. We analyze the full scope of negative covenants – a list of restrictions (hence, "negative") on borrower's actions – included in a typical credit agreement and provide the first comprehensive mapping by covering all categories of restrictions, including the six main ones: (i) restrictions on liens (or restrictions on use of collateral), (ii) restrictions on indebtedness, (iii) restrictions on payments to investors, (iv) restrictions on asset sales, (v) restrictions on affiliate transaction, and (vi) restrictions on investments. We show that restricting this set of borrower's actions is the norm. However, any covenant can be significantly weakened contractually through "fine print" type of clauses. In particular, we show that issuers commonly rely on carve-outs and deductibles (or "baskets," in the industry jargon)

[1] "Plain English Translations: General Asset Sales Basket," Fitch Solutions: Covenants Review, March 31, 2020.

[2] At least, since 2018, there have been escalating alarms about deterioration in credit standards in the leveraged loan market. E.g., see "Janet Yellen Sounds Alarm over Plunging Loan Standards," *Financial Times*, October 25, 2018; "Debt Machine: Are Risks Piling up in Leveraged Loans?", *Financial Times*, January 21, 2019; "Should the World Worry about America's Corporate-Debt Mount?", *the Economist*, March 14, 2019; "How Regulator, Republicans and Big Banks Fought for a Big Increase in Lucrative but Risky Corporate Bonds," *Washington Post*, April 26, 2019; Powel (2019), the Congressional hearings on "Emerging threats to stability: Considering the systematic risk of leveraged lending" held on June 4, 2019, and related media commentary.

to weaken core negative covenants, thereby reducing contractual creditor rights.

These two contractual elements are somewhat overlapping and ultimately both provide the borrower with optionality that may become highly valuable in specific contexts, such as distress. Indeed, as the leveraged loan market comes under stress in the context of the COVID-19 pandemic, several industry reports are trying to anticipate consequences of the use of the carve-outs and deductibles in different covenants.[3] As a simple example, a senior secured creditor might want to control any additional debt issuance and its type, as it might affect bankruptcy costs and its ultimate recovery. An issuance of additional secured debt without a clear delineation of collateral would dilute its claim and might require coordination in case of restructuring, thereby raising overall bankruptcy costs. To avoid these adverse effects for existing creditors, a typical credit agreement prohibits issuance of additional senior secured debt: the indebtedness restriction. However, when the contract includes a carve-out, the contract prohibits issuance of senior secured debt *except for* issuance of, say, second lien debt. When including a deductible, it prohibits issuance of senior secured debt *except for* issuance of such debt up to a certain amount, say, $100 million. A deductible therefore puts a threshold on the amount before the restriction is applied, whereas a carve-out is not capped, but applies to a specific type of action.

Overall, we provide a comprehensive empirical insight into contractual terms used in the leveraged loan market. We show that consistent with theory, restrictions to prevent actions from the issuer that increase risk for the lender are widespread in the leveraged loan market. However, the clauses that weaken these restrictions, deductibles and carve-outs, are ubiquitous. Importantly, there is significant heterogeneity in the use of these contractual provisions. We introduce simple measures of covenant weakening and show that they are not spanned by the existing measures of contract weakness in the literature. In particular, they differ from weak financial covenant enforcement, also known as "cov-lite" provisions. As the pressures building in the leveraged loan market has been becoming evident in recent years, industry services, such as Fitch and Moody's, have also started to score loan contracts. While their methodologies are comparable with ours, the extent to which such measures actually capture covenant weakness, and whether they complement previously used measures is yet unproven. Our contribution is therefore also methodological.

[3]For example, "Key Sources of General-Purpose Debt Capacity for US Companies Facing a Liquidity Crunch," Fitch Solutions: Covenant Review, March 25, 2020. Also, "Priming Debt and Inside-Maturity Debt Allowed Under US Credit Agreements," Fitch Solutions: Covenant Review, March 31, 2020.

To establish that we are looking at contractual features that weaken senior secured creditors rights and understand their economic consequences, we analyze the market response to a high-profile debt restructuring from J. Crew, which had its defining steps in 2017. In a nutshell, J. Crew management used a set of carve-outs and deductibles in its credit agreement to extract a significant share of collateral which was securing its loan, and issue new debt that was primarily used to refinance expiring unsecured debt. The economic significance of this transfer from J. Crew creditors brought markets attention to the importance of covenant weakening clauses. For example, in a Client Alert on February 24, 2017, Kind & Spalding LLC, a major corporate law firm, stresses in its conclusions: "J. Crew serves as a dangerous example of the risks of leakage which can arise absent a thorough and diligent review of covenants in a credit agreement before investing in a company's debt."This event led to market-wide consequences which go beyond direct applications of a "J. Crew maneuver" and drawn investors attention to the use of weak contractual language in general. Indeed, we conduct an event study where we look at the market reaction for loans and stock, for borrowers other than J. Crew. The focus is on differential market reaction from lenders and shareholders, and for firms characterized by higher use of carveouts and/or deductibles. We find that both loan and stock markets update their view on the value effects of such weakening clauses at the announcement of the J. Crew restructuring. The value transfer from lenders towards shareholders indicates that the incremental risk for creditors resulting from these clauses is not fully priced in at issuance.

We also show that weakening clauses are economically large and are concentrated on the actions with more direct impact on loan value: re-pledging the collateral and issuing additional debt, and in the most levered transactions. As a result, at origination about half of the firms have Total debt/EBITDA below 5x; however, *through use of deductibles and carve-outs*, over 70% of contracts allow the borrower to issue later on additional senior secured debt in excess of 5x EBITDA. Similarly, over three quarters of firms with 5x EBITDA leverage at the loan origination are allowed to issue debt in excess of 6x EBITDA later on. About the same fraction of firms with 6x EBITDA leverage can actually issue debt in excess of 7x EBITDA. The potential for dilution of senior secured creditors in distress is therefore large. The consequences for subordinated debt are potentially even more severe.

Next, we focus on understanding the contracting mechanism behind the weakening clauses. Buyout transactions stand out as the most intensive users of these provisions. Weakening clauses

in loan contracts appear particularly common when banks retain a smaller share of the loan because institutional investors, such as collateralized loans obligations and mutual funds, fund a large share of the loan, and when the borrower benefits from the high credit expertise of their financial sponsor. Weakening clauses are also associated with a higher loan spread. Taken together, these results are consistent with a reaching for yield phenomenon from institutional investors, with sophisticated borrowers potentially exploiting this phenomenon while banks face low incentives to fully monitor contracts.

For completeness, we investigate whether the weakening of creditor rights may result from addressing ex ante renegotiation costs, which is not mutually exclusive from the previous mechanism. Our data does not provide evidence in support for this mechanism playing an important role in the development of weakening clauses. For instance, more complex capital structures are associated with less weakening clauses, not more.

Our work contributes to the academic debate surrounding the expansion of the leveraged loan market and its implications, but also has practical implications. As lax credit conditions are a leading indicator of economic downturns (López-Salido et al., 2017, Greenwood and Hanson, 2013), measuring financial contract strength and understanding the underlying economic mechanism is of key interest to the regulators. The Leverage Lending Guidance issued jointly by the OCC, the Federal Reserve Board and the FDIC on March 21, 2013 was a key macro-prudential tool.[4] The goal of the Guidance was to assist financial institutions in providing leveraged lending to creditworthy borrowers in a safe-and sound manner.[5] The regulators attention to the "safety and soundness" of leveraged loans is unambiguous, but the measurement tools used by them are rather limited. In particular, one of the red flags raised in 2015 under the Guidance was the focus on loans with Total Debt/EBITDA in excess of 6:1 (see Zinder et al. (2016)).[6] While the intention of the Guidance is to include deductibles, it offers no methodological guidance on how to do it. Our study shows concrete magnitudes, and points out that the optionality introduced through the use of such clauses, and in particular optionality to increase the leverage, is

[4]The full text of the Guidance can be found at https://www.federalreserve.gov/supervisionreg/srletters/sr1303a1.pdf.

[5]Nevertheless, in October 2017, the Government Accountability Office (GAO) issued an opinion that Leveraged Lending Guidance would need to be submitted to Congress for review before it could have force and effect of law, which made it not enforceable. Since then, the Leveraged Loan Guidance has been a subject of debate between the industry and the regulators. See for instance https://www.lsta.org/news-and-resources/news/supervisory-statementsand-leveraged-lending-guidance.

[6] ECB had proposed a very similar cutoff (e.g., https://www.lw.com/thoughtLeadership/LW-European-Central-Bank-Publishes-Guidance-on-Leveraged-Transactions.)

substantial and concentrated in highly-levered transactions.

Our work directly relates to a set of academic studies that aim to assess debt contract strengths and weaknesses, and more broadly understand the drivers and effects of debt contract design. By leveraging technological progress to overcome usual data limitations, we are able to analyze in a large sample a broad set of widely-used contractual terms that are currently overlooked in the literature. Nini et al. (2009) and Nini et al. (2012) provide empirical evidence on the key role of covenants for limiting investments and providing creditor governance. Murfin (2012) and Demerjian and Owens (2016) focus on financial covenants "slack", the headroom from the current level of financial ratios to violation threshold to measure contractual weakness. Both studies recognize the limitations in terms of scope and data availability for their exercise. Berlin et al. (2019) provides a framework to acurately measure "covenant-lite-ness". Most closely, our paper relates to Demiroglu and James (2010), Bradley and Roberts (2015), Billett et al. (2007). These studies integrate multiple contractual features, including financial covenants, in a holistic measure of contractual strength by aggregating dummies indicating whether some core contractual categories are present in a given contract. Their approach has three limitations. First, loan contract provisions have narrow coverage in public databases. Second, several of the variables that appear in such data sources have many missing values, creating the risk of significant composition effects.[7] Third, such methodology misses the variation in contractual weakness conditional on having a given negative covenant, and therefore does not account for carve-outs or deductibles, which as we will show is predominant tool for weakening credit agreements. We are able to substantially improve on all of these dimensions. Consistent with our assessment, we show that while directionally correlated, measures used in the previous literature, collectively or individually, capture little as compared to our variables of contractual weakness. Similarly, the previous measures have little explanatory power for understanding the market adjustment following the previously-mentioned court resolution. Ganglmair and Wardlaw (2017) use text analysis to look at the level of customization in covenants and default events, and conclude that there is a substantial heterogeneity in contractual terms, likely emanating more from firms than from lenders. While also holistic in nature, this analysis abstracts from the economics behind the contractual text or specific contracting tools. We focus on the weakening of creditors' rights,

[7]For instance, in Dealscan the variable on asset sales sweep exhibits 96.7% of missing values for the transactions over $100 million since 2011.

carve-outs and deductibles being the means for achieving it, and examine the specific channels that affects the contractual terms.

Our study complements the literature on financial contracting, both theoretical (Hart and Moore, 1988, Hart, 2001) and empirical (Kaplan and Strömberg, 2003, Roberts and Sufi, 2009), by documenting a novel mechanism driving contractual design. We cannot yet trace the consequences that the J. Crew event potentially had on contracting terms more broadly. Recent industry reports however suggest that borrower-friendly carveouts and deductibles continue to be a widespread phenomenon.[8] This persistence is consistent with theories where investors are inattentive to less salient risks or downturn indicators in good times (Reinhart and Rogoff, 2009, Gennaioli et al., 2015).

Our paper also ties to research on the debt expertise of private equity firms (Ivashina and Kovner, 2011, Axelson et al., 2013) and their potential effects, which can translate into improved financial performance for private equity firms and help portfolio firms navigate crisis despite high levels of leverage, but can also potentially distort usual signals from the credit market and facilitate value extraction from creditors. Our study illustrates a specific channel through which private equity funds exert their debt expertise, and some of the consequences associated with it.

Last, this study adds to the literature on the motives and effects of optionality in financial contracts. As options typically get ignored or mispriced by less sophisticated parties, their introduction can lead to mis-valuation in the venture capital space (Gornall and Strebulaev, 2018), increase in demand for financial products from households (Célérier and Vallée, 2017), or even an amplification of the principal-agent problems in the political system (Pérignon and Vallée, 2017). Our paper provides a novel and economically significant context in which a sophisticated party introduces contingent clauses in a financial contract to exploit the other party low demand elasticity to this type of clauses.

This paper is organized as follows: Section II discusses the negative covenant structure typical of a credit agreement in the leveraged loan market. Section III introduces the dataset and assesses its representativeness. This section also presents aggregate stylized facts and introduces empirical proxies of contractual weakening. Section IV provides evidence that contract weakening might be a source of concern. Section V studies the contracting mechanism at play. Section

[8] E.g., "The Top 10 Ways Loan Investors are Forfeiting Protections," Moody's Investor Services, November 13, 2018; "EBITDA on Steroids," Private Equity International, May 25, 2019.

VI considers alternative mechanisms for our empirical findings. Section VII concludes.

2 Elements of a Covenant Structure

2.1 The Role of Negative Covenants

Negative covenants are contractual provisions that serve as creditors' governance mechanism by restricting (hence, "negative") actions of the borrower. A violation of negative covenants puts control rights over the firm's assets in hands of the creditors that are covered by the contractual agreement. Our study provides the first holistic insight into the analysis of the negative covenants of large cash-flow based loans, which are the most complex debt contract.

The indentures that one can see in the public space, as well as credit agreements for small loans, or asset-backed loans, tend to be much simpler. There are several reasons behind it. Lenders have the ability to obtain confidential information (because loans are excluded from the 1933 Securities Act and are covered by a confidentiality agreement) and are typically concentrated. By contrast, bonds are covered by the Regulation Fair Disclosure and have a dispersed and heterogeneous creditor base, which makes renegotiation in case of contractual violations very difficult (Bolton and Scharfstein, 1996). As a result, the allocation of control rights to bondholders through a tight covenant structure might not be desirable (e.g., Becker and Ivashina (2016); and Green (2018)). This difference between bond and loan contracts is also consistent with the prediction in Park (2000) that monitoring should be delegated to senior secured debt, i.e., lenders.

On the other hand, for small borrowers, creditors hold alternative non-contractual governance mechanisms, because information asymmetry is large in this space, and these firms are dependent on "relationship lending." The intensity of contractual differences for small cap vs. large cap loans are easily notable even with a simple page count. Albeit credit agreements for small and medium firms are not readily available, we were able to obtain a representative credit agreement from a regional bank for a term loan granted in April 2016 to a firm with roughly $2.2m in EBITDA. The length of this agreement is 53 pages. Similarly, Gompers and Broussard (2009) provide an actual credit proposal for a small firm (EBITDA equivalent to $27 million in 2016): the proposal -which is intended to specify the key terms- is five pages long. Neither example contains a definition of EBITDA. By comparison, the main text of the 2017 Credit

Agreement for Outback Steakhouse (EBITDA equivalent to $450 million in 2016) is 170 pages long. The definition of EBITDA alone takes 1,733 words. This anecdotal evidence is consistent with the importance of relationship banking for small firms. Due to heightened information asymmetry of small borrowers, lender substitution is costly (e.g., Dell'Ariccia and Marquez (2004)), putting much of the bargaining power on the lender side and reducing the need for contractual governance. For an overview of the literature on this subject, see Berger and Udell (1995) or, more recently, Saunders and Steffen (2011).

There are other reasons why contractual governance rights might not be valuable to creditors. For example, if a loan is over-collateralized and there is certainty of a quick recovery of principal in default through the liquidation of collateral, there is little value in trying to control the borrower ahead for its default on payments. So, the intensity of covenants also depends on the nature of the collateral and Asset Based Lending ("ABL") (as compared to Cash-Flow lending which are the loans in our sample) uses few covenants. A car loan provides a simple illustration: some basic screening of the borrower's income and credit history is typical of the loan approval process, yet there are no negative covenants written in such contracts. The lending process relies primarily on the value of the collateral. If the borrower defaults, the collateral –the car– is ceased and liquidated in a routine procedure. ABL is the corporate equivalent of this type of loan.[9]

Not all firms possess large enough "commodity" collateral. Yet almost all firms have other types of assets, and it is common to use the totality of these other assets as collateral in the cash-flow based loans. Tracking, valuing, and selling such assets is a costly and uncertain process. For example, an apparel retailer has inventories, but those inventories constantly change. Moreover, such retailer may have intellectual property (its brand), but there is high uncertainty on its value, particularly in the context of default. Contractual governance rights are therefore most relevant to cash-flow lending, which is the focus of our study. More broadly, Lian and Ma (2018) show that over 80% of syndicated corporate loans reported in the commonly used DealScan database are cash-flow based.

The rich theoretical literature on covenants mostly focuses on when covenants should be included, while providing little guidance on which covenants should be included. Expanding

[9]Examples of assets used for ABL include receivables (and especially credit-card receivables common for restaurants and retailers), real estate, planes, and heavy-equipment.

on Smith and Warner (1979), we formalize the rationale for the different types of covenant as follows. The covenants structure of a loan contract is designed to manage potential conflict of interest between debt holders and equity holders. Besides protecting the integrity of the collateral backing the loans, contracts for cash-flow based loans should aim to address core economic channels through which managers of a firm could transfer value from debt holders to equity holders. The value of firm's equity E can be expressed as a call option on its assets V, with the exercise prices equal to the face value of its debt F (Black and Scholes, 1973). The value of debt, thus, is its value as risk-free bond minus a default put. Following notation in Myers (2003):

$$E = V - D = V - D(riskfree) + P(V, \sigma, t, F), \qquad (1)$$

where σ is the standard deviation of assets and t is debt maturity. Equation (1) helps to formalize the four channels of potential value transfer from creditors to shareholders (which are the focus of the covenant structure). In particular:

- $\frac{dP}{d\sigma} > 0$: equity holders could benefit from higher volatility of cash flows at the expense of debt holders (Jensen and Meckling, 1976), so the credit agreement should seek to prevent risk shifting or asset substitution;

- $\frac{dP}{dV} < 0$: if equity is under water, firm's management might pass on positive NPV projects, i.e., underinvest, if the benefits accrue to the debt (Myers, 1977), thus credit agreement should seek to influence the investment policy;

- $\frac{dP}{dF} > 0$: equity holders benefit from diluting the claim of the existing debtholders, so the credit agreement should seek to control issuance of additional debt;

- $\frac{dP}{dt} > 0$: credit agreement should seek to set tight covenant provisions that would allow them to gain control rights and make sure that they are receiving accurate information.

Turning to the actual provisions included in a credit agreement, the negative covenants can be divided into six main categories: (i) restrictions on liens; (ii) restrictions on indebtedness, (iii) restrictions on asset sales, (iv) restrictions on payments, (v) restrictions on capital expenditures, and (vi) restrictions on affiliate transactions. While there is no exclusive mapping of the typical

covenants to economic principals outlined above, protection of collateral and desire to manage the four sources of misalignment of incentives between equity and debt underpin most of the provisions included in a cash-flow based credit agreement. Restrictions on liens prevent the borrower from re-pledging its assets in other secured transactions. Restrictions on indebtedness limit borrower's ability to incur additional debt. Both these restrictions aim at preventing claim dilution. Restrictions on asset sales limit borrower ability to sell its assets, which would reduce the collateral of the loans, and may also change the risk profile of the business. Restrictions on payments limit certain types of cash outflows, typically dividend payments, to focus the cash flows towards debt repayment. Restrictions on capital expenditure regulate the use of funds, limiting the borrower's ability to invest into a potentially risky project. Lastly, restrictions on affiliate transactions limit the borrowing entity ability to enter into transactions with other entities of the same economic group that are not necessarily covered by the credit agreement.

2.2 Weakening Negative Covenants

The focus of our study is not only on whether the above provisions are included in the loan contract – they typically are – but it is also to measure the weakness of these provisions. The two main channels for weakening a negative covenant we investigate are the introduction of "carve-outs" and deductibles ("baskets")."[10]

A carve-out on a covenant insulates certain borrower actions from contractual restrictions. For instance, a contract can include a subordinated debt carve-out to the restriction on additional indebtedness, which means that the latter does not apply to the issuance of subordinated debt, and the borrower can issue such debt freely. In the case of Outback Credit Agreement, principal accreted under paid-in-kind (PIK) debt is carved-out.

A deductible on a covenant creates a threshold until which the restriction does not apply. For instance, the 2007 Credit Agreement backing the 2007 buyout of Outback Steakhouse includes the following terms:[11]

- Indebtedness: General deductible of $100 million;

- Liens: General deductible of $40 million;

[10] "Carve-outs" and "Baskets" are not contractual terms, but terms commonly used by practitioners like "cov-lite."

[11] Credit Agreement Dated as of June 14, 2007, for OSI Restaurant Partners, LLC.

- Asset Dispositions: Deductible of $35 million;

- Investments: Deductible of $100 million;

- Restricted Payments: Deductible of $50 million.[12]

Outback therefore has contractual option/permission from creditors to issue additional debt of up to $100 million, pledge up to $40 million in collateral (that otherwise lenders would have senior claim on) to new creditors, sell certain assets for up to $35 million in value, do investments for up to $100 million, and pay off claims other than lenders for an amount of $50 million.

How do borrowers decide on which of these options-like clauses to introduce? Discussions with several financial sponsors suggest that it is hard, even for sophisticated issuers, to predict which clause will actually be used, and consequently on which they should focus their effort when negotiating the contract. This uncertainty partly results from the timeline, as some of these clauses do not come into play for years.[13] Borrowers therefore most likely try to figure out what covenants they can drop from the credit agreement, and what carve-outs and deductibles they might include without substantially driving the cost of debt up. Economically, this corresponds to the borrower assessing lenders price elasticity to these optional clauses and embedding as many quasi-free options as it can. Some of these clauses have already been put to use by issuers with substantial economic consequences for both the senior secured creditors and the shareholders. In Section 4, we will elaborate on the 2017 J. Crew restructuring, but several others have followed since.

3 Data, Facts, and Empirical Proxies

3.1 Data Sample

This study uses a novel dataset developed by Street Diligence, a private FinTech firm specialized in contract covenant visualization. The firm granted us access to their product for credit agreements. This data is targeted towards credit investors, private equity firms, and investment

[12] A "general deductible" on a restriction includes any type of actions falling under this covenant, while some deductibles only cover a set of actions defined in the Credit Agreement. For example, a general deductible on liens of $40 million means that the borrower can pledge any assets up to $40 million of the collateral for purposes of issuing new debt. An alternative to that is that a specific set of assets-e.g., inventories- up to $40 million in value could be pledged as collateral for issuance of new debt.

[13] E.g., in the J. Crew's case that we use in our event study, the deductible on liens was written nearly five years before it got used.

banks to improve the speed and accuracy of their benchmarking and due diligence, and covers a large sample of loans. Street Diligence builds its loan database from SEC filings and document contributions from its clients. For each credit agreement, Street Diligence breaks down and aggregates the key covenant terms in a transparent, verifiable, and highly granular manner. While datasets used in the literature, such as DealScan, focus on financial covenants or a limited set of easily identified clauses, Street Diligence data provides the first comprehensive coverage of the loan contractual terms, as the whole credit agreement is parsed out through a proprietary methodology that mixes algorithmic and manual actions. Being a young company, the Street Diligence contract sourcing and processing capacity are quickly evolving. The description of the data presented here is specific to the data shared with us as of 2016 and might not be representative of their current coverage of the loan space.

Unlike other data sources such as Xtract Research, which is a widely used contract evaluation service, Street Diligence do not provide qualitative assessment, instead focusing on parsing contracts. Their value proposition is therefore based on the absence of "black box" or subjective judgement. Instead, their product is intended and marketed as a platform for efficiently navigating and displaying a credit agreement. At any point, the summary information provided by the platform can be cross-checked against the underlying PDF of the credit agreement; which displays how the text is parsed. The usefulness of Street Diligence product, therefore, crucially relies on complete coverage of the text of the contract.

To illustrate the comprehensiveness of the Street Diligence contract coverage, in Table 1, we map the full covenant section for the standard LSTA credit agreement (Bellucci and McCluskey, 2017) into Street Diligence covenant categories. Because the platform is intended to be mostly a transparent processing tool, it displays each individual carve out and deductible as a separate bullet point – the data we aggregate for this study.

[Insert Table 1]

Each observation in our sample corresponds to a loan package described by a given Credit Agreement. We conduct our analysis at this level as only the maturity and coupon varies at the facility level within a given loan package, while contract covenants are defined at the package level by the credit agreement. We combine this dataset on contractual terms with issuance characteristics from DealScan. The resulting dataset covers 1,240 packages and 1,857 facilities,

spanning the period from 2011 to 2016. We match borrowers to financial data from Compustat. Table 2 shows summary statistics for our data sample and compares them to two benchmark groups: (i) all loan packages over $100 million in DealScan issued after 2011, and (ii) all leveraged loan packages issued after 2011, as defined by DealScan Market Segment information. For the purpose of our event study, we also merge our sample with daily loan price data from Markit, and daily stock price data from Datastream.

77% of loans in our sample fall within the "Leveraged loan" segment based on DealScan classification. According to Standard and Poor's (2014), leveraged borrowers are "issuers whose credit ratings are speculative grade and who are paying spreads (premium above LIBOR or another base rate) sufficient to attract the interest of nonbank term loan investors, typically LIBOR + 200bps or higher, though this threshold moves up and down depending on market conditions." The threshold also varies across different data providers. This being a new data source, the coverage of the data over time is not uniform. It is lower in the earlier years: 8% of leveraged loans in 2011 vs. 45% of leveraged loans in 2014. For this reason, much of our analysis is cross-sectional in nature. Consistent with the sample being composed primarily of leveraged loans, Total Debt/EBITDA leverage ratio is close to the DealScan leveraged subsample. However, our sample is biased toward larger loans: loans covered in our sample are comparable to the syndicated loans above $100 million. This bias is consistent with the primary source of credit agreements being SEC filings.

[Insert Table 2]

3.2 Aggregate Stylized Facts

We first document the extent to which credit agreements restrict the actions detrimental to the lenders as outlined in Section II. Panel A of Figure 1 displays the frequency that loans have restrictions for each of these categories of actions in our sample. Credit agreements more frequently restrict actions that circumvent or dilute the priority of debt holders: 92% of loan contracts have restrictions on liens and 87% on incurring additional debt. On the other hand, credit agreements less frequently restrict actions that potentially increase operational risk: 73% of credit agreements have restrictions on asset sales and only 31% of contracts on investments.[14]

[14] As a reference point, Nini et al. (2009) study restrictions on investments in a broader sample of syndicated loans. In their sample, 32% of credit agreements carry such explicit restrictions.

[Insert Figure 1]

Overall the frequency of these restrictions is high, which is consistent with credit agreements being a widespread tool to address conflicts between lenders and borrowers. However, the mere existence of a negative covenant does not necessarily grant full protection to the lender in that regard, as this can be significantly weakened through use of carve-outs and deductibles. The natural next step of our analysis is therefore to study which restrictions are getting weakened using these contractual elements, and to which extent.

Panel B of Figure 1 displays the frequency of deductibles conditional on having the related restriction. Deductibles are frequent: 96% of credit agreements include at least one kind of deductible. The actions that are most frequently restricted –issuance of additional debt and re-pledging of collateral– are also the ones that are most frequently weakened through deductibles. While 92% of credit agreements have restriction on liens, only 14% of these do not have collateral subject to deductibles. Similarly, while 87% of credit agreements have restrictions on additional debt, 92% of these allow some additional debt issuance.

Panel A of Figure 2 displays the average size of deductibles by covenant type, which we scale by EBITDA.[15] This figure reveals the large economic significance of these contractual terms. The restriction on indebtedness in particular exhibits deductibles representing more than 2.3x EBITDA multiples on average, nearly a half of the 5x EBITDA debt levels, which is common for leveraged loans. Senior secured loan creditors historically recover about 70 cents on a dollar, which gives a sense of the value of collateral and assets of the borrower. In this context, the average deductible of 35% of EBITDA for collateral and 39% of EBITDA for assets sales also appears sizable. Panel B of Figure 2 shows that about 10% of the credit agreements from the sample have no deductibles, while the median agreement exhibits 8 baskets over all covenants.[16]

[Insert Figure 2]

In Figure 3, we turn our attention to carve-outs. We include carve-outs on all types of covenants, as well as on EBITDA, which affects contractual strength through financial

[15] We aggregate deductible size at the covenant level, as a covenant typically has several deductibles of different scopes. A small fraction of deductibles are conditional to a financial ratio meeting a threshold, or are limited in scope. For the purpose of the analysis, we treat them as regular deductibles and aggregate them with regular deductibles when both are present. Our results are virtually unchanged if we drop them.

[16] A small number of deductibles apply to covenants not displayed in Panel A of figure 2.

covenants.[17] Indeed, indebtedness is typically restricted through a maximum Debt/EBITDA ratio. However, EBITDA, for purposes of the credit agreement, follows a contractual definition, and as such it is also subject to weakening. For example, pro-forma cost savings could be accounted for in EBITDA calculations. Panel A shows that the average contract allows for twelve modifications to the standard financial definition of EBITDA.

As with the deductibles, the use of carve-outs is the prevalent practice. Indeed, virtually all credit agreements (99%) with negative covenants exhibit at least one carve-out per category of covenants. The average credit agreement includes 79 distinct carve-outs. Similar to deductibles, carve-outs are the most numerous for the restrictions on liens (22 on average) and indebtedness (15 on average). Panel B of Figure 3 illustrates again the significant heterogeneity in the use of carve-outs, which displays a skewed distribution.

The abundance of carve-outs and deductibles and the significant variation across contracts in their use support their importance and the sophistication that is required to interpret them. The large number of borrower-friendly clauses is consistent with the rationale of sophisticated borrowers embedding as many quasi-free options in the credit agreements as possible, as described by practitioners.

[Insert Figure 3]

3.3 Contractual Weakness Proxies

To study the cross-sectional variation in contractual terms, we focus on the measures plotted in Panels B of Figures 2 and 3, that is the total number of carve-outs and deductibles over all negative covenants and the EBITDA definition.[18] The rationale for these proxies is to measure the intensity of the contract weakening as expressed by the amount of optionality embedded in the contract. Some of the contractual provisions that we observe are mutually exclusive. The numbers of carve-outs and of deductibles should therefore be interpreted as an upper bound of the contract flexibility on each of these measures, as we cannot account for the degree of additivity

[17] Albeit, a more appropriate name for certain of these items is "add-backs."

[18] More sophisticated numerical aggregation techniques are also possible. However, such approaches do not change the central takeaways, yet they lose the intuitive appeal. In particular, we extracted the first principal component of the number or size of deductibles for each covenant, and of the number of carve-outs for each covenant. This approach yields a measure which has correlation of 0.9 with the measure plotted in Figure 2, Panel B. Our methodological choice is also immune against miscategorization of the covenant for which carve-outs and deductibles apply.

of these provisions. A widely used measure of shareholders' rights, the G-index (Gompers et al., 2003), is subject to the same critique. In addition, some of the carve-outs and deductibles are benign. For example, investments restriction should carve-out cash and liquid assets, which they typically do. While we treat all carve-out and deductible provisions the same, all the regressions in our empirical analysis include industry fixed effects that absorb industry-specific standard clauses.

In addition to the benchmark aggregate measures, we also zoom-in on two key covenants categories: restrictions on indebtedness and restrictions on liens. When studying these specific covenant categories, we use the size of the deductibles expressed as a fraction of EBITDA. By nature of carve-outs, the size of the associated deduction is not explicitly stated in the contract. For example, in the Outback case, we could only have a noisy proxy for the expected size of the payment-in-kind carve-out. We therefore use the numbers of carve-outs for each of these covenants throughout.

Several existing studies use elements of debt contracting to assess contractual strength/weakness. One question that arises is whether analyzing the full range of negative covenants, and their deductibles and carve-outs, sheds a new light on the economic mechanism underlying debt contracting. To what degree do the existing measures of weak contractual creditor rights, such as number of financial covenants, or "cov-lite"-ness, span our novel measures?

Before evaluating the relative power of these approaches, we want to highlight the substantial measurement improvement that our study brings: (i) we have a comprehensive approach to covenants, (ii) we provide a detailed insight into the use of carve-outs and deductibles, and (iii) we de not rely on covenant data provided by DealScan. Whereas DealScan focuses on a limited set of contractual terms, namely financial covenants and cash-proceeds sweeps, our data offer a comprehensive coverage of the credit agreement. For example, as previously documented, restrictions on liens – which are not covered in DealScan – are central to any credit agreement, as this contract is intended to protect senior secured debt. Furthermore, DealScan variables on contractual terms are hard to exploit due to their high share of missing values. For instance, the variable on asset sales sweep exhibits 96.7% of missing values for the transactions over $100 million since 2011. Limitations of the DealScan data are also highlighted by Demerjian and Owens (2016) and Ganglmair and Wardlaw (2017). These differences need however to be economically meaningful, and that, say, "cov-lite" indicator is not a simple shortcut to capture

contractual weakness, which is mostly how the market and policy makers have been using it.

Overall, existing literature tackling contractual provisions in the credit space can be divided into three groups. First, several of the papers on contractual strength look at the "slack" implied in financial covenants, which corresponds to how much room the borrower has on financial covenants until control rights are shifted to creditors. Dichev and Skinner (2002) use covenant slack as reported in Dealscan. Dyreng (2009) looks at slack on a range on a comprehensive set of financial covenants which, in addition to restrictions on debt, includes current ratio, interest coverage ratio, quick ratio, debt to EBITDA, tangible net worth, and net worth. He estimates the financial slack as a difference between the quarterly Compustat data and the covenant threshold scaled by the standard deviation of the actual value over the previous eight quarters. Demiroglu and James (2010) construct a similar measure at the loan origination, using instead a twelve-quarter window to compute the standard deviation. They also use an alternative approach where instead they use cross-sectional median as a benchmark, rating contracts with lower slack than the median as restrictive. Drucker and Puri (2008) employ somewhat similar methodology for computing slack on net worth and current ratio financial covenants and complement it with overall number of financial covenants. Finally, Murfin (2012) estimates the ex-ante probability of shift in control assuming normal distribution of the ratios underlying the financial covenants, using borrowers' actual financial ratios from Compustat. Similar to Murfin (2012), Demerjian and Owens (2016) focus on financial covenants slack, however they recognize severe limitations of DealScan as a source of information on covenants. Instead, they collect information on the specific definitions of financial covenants, arriving to a more precise measure of covenant slack and probabilty of covenant violation.

A second set of papers is more closely related to our work as it goes beyond financial covenants and instead tries to integrate multiple contractual features in a holistic measure of contractual strength. Demiroglu and James (2010) and Bradley and Roberts (2015) use DealScan data to construct a contractual weakness index for loans, following a methodology similar to the governance index of Gompers et al. (2003). Specifically, they count the number of contractual provisions based on the following six categories: (i) whether the loan is secured, and whether the credit agreement includes (ii) dividend restriction, (iii) more than two restricted financial

ratios,[19] (iv) asset sales sweep, (v) debt issuance sweep, or (vi) equity issuance sweep.[20] The resulting index is discrete and ranges from 0 through 6. Billett et al. (2007) instead use FISD bond data (vs. loans), which reports the incidence of over 50 different bond-holder protective and issuer restrictive covenants. They code these covenants with 15 indicator variables and produce a discrete index ranging between 0 and 15.

Finally, the share of "cov-lite" loan contracts, that is contracts where financial covenants do not have an automatic periodic verification but are checked only upon incurrence of certain actions by borrower, has been a central metric of contractual weakness in the 2013 Leveraged Loan Guidance.[21] Cov-lite loans also have been at the heart of the public debate on the deterioration of corporate lending standard in the recent years (e.g., Stein (2013), Yellen (2018)), although, work by Becker and Ivashina (2016), and Berlin et al. (2019) questions whether cov-lite is an accurate measure of contractual weakness.

In Table 3, we evaluate the relation between our weakness indices and measures previously used in the literature. The focus is on the R^2 in the OLS regressions, and the takeaway is that the relation is weak. The combination of the three main measures from the literature only yield a R^2 of 0.5. We run separate regressions for the slack measures as their coverage is by construction significantly lower. We find an even lower R^2. When looking at coefficients in details, more numerous (and larger) deductibles and carve-outs appear in general correlated with contract weakness as measured by the literature. Cov-lite transactions and contracts with few financial covenants exhibit more and larger deductibles and more carve-outs. However, we can observe some counterintuitive relations. For instance, covenant intensity displays a weak positive correlation with our measures of weakness.

[Insert Table 3]

In the next section, we provide evidence supporting the claim that our approach better captures contractual weakness, and that it allows us to document novel findings in the cross-section of contracts.

[19] Given that a standard credit agreement includes Total Debt/EBITDA and Senior Debt/EBITDA ratios, whether the contract includes more than two financial covenants is a proxy for whether the contract includes financial covenants other than indebtedness.

[20] Sweeps are contractual provisions that give the creditors seniority over the extraordinary cash proceeds, such as assets sales, or new issuance of debt or equity. Sweeps can be partial, requiring to pay to the lenders only a fraction of proceeds.

[21] https://www.occ.gov/news-issuances/bulletins/2013/bulletin-2013-9.html

4 A Source of Concern?

Our goal is not merely to highlight the pervasive use of baskets and carve-outs in the leveraged loan market, but to show that they do weaken lenders rights. Traditionally, such claim would be supported by looking at defaults and recovery rates. However, there is not a large enough sample of defaults in the leveraged loan market to conduct such exercise, especially to do so since its expansion after the Great Financial Crisis.

Grasping the implications of contractual weakening in credit agreements requires time and sophistication. The bulk of institutional retail-investors exposed to such provisions might be reluctant to pay the information acquisition and processing costs they create. This however might change if there is a tangible illustration of harmful borrower actions that weaker contractual languages permits. If the extent of the value transfer that weaker covenants entail is large, investors' attention is likely to shift to these provisions and make them invest in information acquisition. This is the setting offered by J. Crew's 2017 restructuring.

4.1 J. Crew Event Study: A Market-Wide Shock

The significance and legacy of this event is summarized in a 2020 Fitch, Covenant Review report: "In the 1920s, Charles Ponzi ran an investment scheme where he paid existing investors outsize returns with funds invested by new investors. Everyone now knows these types of schemes as "Ponzi schemes." In 2016, J. Crew hatched a scheme where it moved valuable assets out of the collateral pool and into an Unrestricted Subsidiary and issued bonds secured by those assets as part of an exchange offer. Investors now know these types of schemes as "J. Crew transactions" or "pulling a J. Crew." "[22,23]

J. Crew was taken private in 2011 by Leonard Green & Partners and TPG Capital. In May 2020, the firm filed for Chapter 11 bankruptcy, but its financial trouble started a few years earlier. The infamous debt restructuring was initiated in late December 2016, when, in view of declining sales, the company found itself in a bind to refinance debt coming due in 2017. To address this challenge, J. Crew exploited a combination of an investment deductible and a carve-out to transfer $250 million worth of the intellectual property behind J. Crew's brand name from an existing senior collateral package to an unrestricted subsidiary, and then

[22] "Return of the J. Crew Blocker," Fitch, Covenant Review, May 1, 2020.

[23] Unrestricted Subsidiary means that the subsidiary is not party to the debt covered by the credit agreement.

used this collateral to issue new debt. The proceeds of the new debt were used to restructure J. Crew's senior unsecured notes, the most junior layer of debt, representing roughly a third of its 1.5B in debt outstanding, with the rest being leveraged loans. The newly issued bonds effectively received senior secured claim over the transferred collateral, which happened to be J. Crew's most valuable assets.[24] Such actions correspond to a textbook example of what negative covenants were created to prevent: a significant claim dilution for existing creditors, and have been widely covered by the Loan Syndication and Trading Association (LSTA) and popular business news channel.[25]

Panel A of figure 4 plots the price J. Crew outstanding senior loans around the announcement of the new debt issuance using the transferred collateral. We observe a significant drop in the loan price that happens in conjunction to the announcement. The magnitude of this drop is large, in the 10 percentage point magnitude, which suggests that the dilution of collateral is acute, leading to a lower recovery rate, in a context of high bankruptcy risk.

[Insert Figure 4]

As our main test of contractual weakness resulting from carve-outs and deductibles, we conduct an event study on both loan and share price from *other* borrowers to test whether, following J. Crew's re-pledging of collateral to raise new debt, the market as a whole updates its view on the risk of the debt contracts that rank high on the use of carve-outs and deductibles. The timing of the J. Crew event is driven by its own long-term debt maturity, and not by some systemic developments. The date that we choose for the event–June 17, 2017, the initiation of the loan amendment enabling issuance of new debt using the extracted collateral –is important. Because J. Crew actions were such a significant economic event, the transfer of the collateral led to a lawsuit.[26] The lawsuit was resolved at a much later date, April 25th, 2018, and after the debt restructuring took place. The loan market prices indicate that among the various

[24] See "J. Crew Lenders Balk at Intellectual-Property Transfer," *Courthouse News Service. June 23, 2017.*

[25] See for instance "J.Crew Tries to Ease Debt Load as Sales Decline Continues," Wall Street Journal, June 12, or "J. Crew Debt Maneuver Can Be a Model for Other Troubled Retailers", New York Times, June 14, 2017.

[26] As we have learned from interviews with multiple protagonists in the J. Crew case, although it is clear who benefits from the collateral transfer, who initiates the lawsuit is a strategic matter. In general, the development of the J. Crew case is intense in institutional elements. Most of these are beyond the scope of our paper, and we constraint ourselves to present this case in the most concise manner, skipping the details that are are irrelevant to the point of the paper. But we want to warn the readers to be cautious in drawing quick conclusions from some facts that can be easily gathered from the press coverage. For example, while the majority of senior creditors will vote to allow J. Crew to issue new debt, one cannot conclude that the majority of the creditors was supportive of such amendment.

announcements, the loan amendment is the key event, consistent with it being the step that leads the majority of old senior creditors to "surrender" to J. Crew coercive actions.[27]

The price adjustment for securities of the firms in the event study, therefore, results from a market update on the value of the optionality embedded in their credit agreements. Such an update covers both the likelihood of such actions, and the impact they might have for investors.[28] More specifically, we expect a more pronounced reallocation effect from lender to shareholders for firms with credit agreements including a significant amount of weakening clauses, that is: upon updating on how carve-outs and deductibles are used, the value of senior secured claims should drop, as expected recovery rates on senior secured debt are revised down, while equity value should increase, as the number of states where the firm is in default is reduced. Our findings support these hypotheses.[29]

As an illustration of our approach, Panel B of figure 4 plots the loan price of Gymboree, a kids apparel manufacturer and retailer, whose contractual terms and economic performance had been singled out in the specialized press as directly comparable to J. Crew's. Gymboree thus ranks in the top quartile of both our measures of covenant weakness. Gymboree's loan price appears to drop significantly shortly after J. Crew's announcement, consistent with investors updating on the possible actions Gymboree might take.

[27]This date is also relevant because we want to interpret the price adjustment as lenders mispricing the risk of weak covenants ex-ante. Anchoring the event study around court decision, could introduce a "judge style" confounding factor, which could not be anticipated ex-ante. We have no problems with the conjecture that the creditors ex-ante cannot easily quantify the risk, that is in fact essential to our narrative. However, it is important that the risk emanates from the contractual features, and not from a judge's idiosyncratic preferences. Because issuance of new debt using expropriated collateral and junior debt restructuring occurred nearly one year ahead of the court ruling, it seems reasonable to assume that market reaction had little to do with the specifics of the judge. The two elements that seal the restructuring are also consistent with the recognition of contractual weakness, and not a judge's style: (i) the majority of senior creditors recognize their loss by voting on an amendment that facilitates issuance of the new debt; (ii) new creditors with the claim to the extracted collateral provide "cheap" financing. While it could still be the case that judge's style also played a role, it is unlikely that so many market participants, old and new, would act as if the restructuring is largely a done deal ahead of the court ruling without them having the same interpretation of the credit agreement language. Despite the abundance of coverage of the J. Crew restructuring, not a single document suggests that the final outcome was at the discretion of the judge. Much of the coverage began as early as February 2017, i.e., even before the new debt was issued.

[28]The lawsuit provides a peak into the investor updating process. The first point in the preliminary statement of the lawsuit filed by a group of creditors on September 7, 2017 in the State of New York reads: "Defendants in this case supposedly found a secret "trapdoor" in their senior secured debt facility. Assisted by teams of lawyers and consultants, Defendants claim to have opened this trapdoor and dropped out substantially all of the value of J. Crew Group, Inc., the parent company of the well-known apparel retailer (the "Company"). This value was then pledged to other creditors in exchange for financial accommodations. As a result, the Company's senior secured creditors, whose loans were meticulously secured by liens on a comprehensive collateral package, are now left holding what looks like an empty sack." The language that implies creditors' surprise is present throughout the complaint.

[29]Our empirical exercise is consistent with recent coverage of the leveraged loan market following the COVID-19 crisis. For instance, see: "Covenants Matter: Higher Doc Scores Have Meant (Somewhat) Higher Trading Prices in Recent Weeks, Per Data from Covenant Review and IHS Market."

We turn to the whole sample of firms for which we have daily loan prices from Markit. For transparency, we first present the raw data on loan prices: we aggregate them by quartiles of our weakness measures, and plot these time-series around the J. Crew event.[30] Figure 5 displays the results, using number of carve-outs as the measure of contractual weakness in panel A, and number of deductibles in panel B. We observe a drop in loan value price that is more pronounced for the weakest contracts, while stronger loan contract do not exhibit such adjustment. This drop is around half a percentage point. This lower magnitude compared to J. Crew and Gymboree is to be expected: the dilution effect is attenuated by the low unconditional likelihood of J. Crew-type actions.

[Insert Figure 5]

We then conduct regressions to control for observable characteristics, and assess whether previously used measures of contractual weakness would capture this price adjustment. Table 4 presents the coefficients. The dependent variable is the absolute change of the loan price, in % of the nominal, over a -15/+15 days window centered on the announcement date of the issuance of debt using as collateral the IP transferred to the non-restricted subsidiary. We regress this change in price on the quartiles of our weakness proxies: number of carve-outs for columns 1 to 4, and number of deductibles for columns 5 to 8. The coefficient of interest in column 1 is negative and statistically significant, which means that prices of loans with weaker covenants go down relative to loans with stronger ones following J. Crew actions.

We progressively introduce controls into our specification, and observe that the indicator for being a cov-lite contract, a characteristic frequently used by academics and journalists as a measure of weakness, while significant, does not affect the predictive power of our measure over the price adjustment. This result speaks to the complementarity of the measures. The number of financial covenants appears to have low predictive power. When interacting our proxy of covenant weakness with a proxy for operational distress, defined as quartiles of the inverse of return over assets in the previous exercise, we observe that the price adjustment is significantly more pronounced for firms in operational distress, consistent with the option value of weakening clause being higher in this context. We run the same specifications with the number of deductibles as a measure of weakness and find similar results.

[30] We rescale these series as per the day prior to the event.

[Insert Table 4]

To complement this analysis on the value of loans, we conduct the same event study on the share price of the same set of firms, as the majority of them is listed. The dependent variable now is the cumulative CAPM-abnormal stock returns for the same -15/+15 days window, calculated against the S&P 500. Results are displayed in table 5.

The estimates show that the J. Crew event led to a positive stock reaction for firms with loan contracts ranking high on our measures of contractual weaknesses. The result is statistically significant for our first proxy of covenant weakness, but not for the second one, although this might come from a lack of power as this proxy is less granular.

[Insert Table 5]

4.2 The Latent Share of Highly Leveraged Deals

In the event study, we control for whether deals are leveraged or highly leveraged, a DealScan market segment classification. However, as a complementary investigation, we study the incidence and size of indebtedness deductibles – i.e., the additional allowed leverage – as a function of current leverage. Given that the market and regulators find leverage in excess of 5x EBITDA attention-worthy, we investigate what fraction of the firms in the flagged sample can further extend their leverage and by how much, and what fraction of the firms that seem to comply with the conservatively high leverage levels contractually could exceed it when needed.

We measure EBITDA as of the fiscal year preceding the loan date, and the total debt is measured as of the fiscal year end following the loan date. In Table 6, the first two lines correspond to the distribution of leverage at issuance for firms in the leveraged loan segment in general. We construct these using 2011-2016 data from Standard and Poor's Leveraged Commentary and Data (LCD) quarterly market reports.[31] We find that 56% of the borrowers in the leveraged loan market have leverage in excess of 5x EBITDA (about half of the borrowers on the net debt basis). We now adjust this distribution function for deductibles. In the third

[31] Original LCD reports are disaggregated by year, borrower size (above and below $50 million in EBITDA which is a cut-off for middle market), and sponsored vs. non-sponsored transactions. We take averages across these categories. We use LCD leverage distribution as a building block because the relevant EBITDA for purposes of a credit agreement might be difficult to calculate from scratch as these figures undergo several adjustments even in absence of any EBITDA carve-outs. In that sense, we would still be noisily estimating the impact of deductibles. In the multivariate regression this is mitigate through inclusion of industry controls as standard EBITDA adjustments tend to be industry specific (e.g. adjustments for maintenance capital expenditures).

line of table 6, we introduce the maximal Debt/EBITDA, which corresponds to the leverage increased by the average deductible we observe in our data for each of the leverage buckets. This adjustment makes the share of latent leverage above 5x jump to 72% (from 56%). Interestingly, the jump for the highest leverage bucket is equally sizable at 14 percentage points.

The lower panel of Table 6 works exclusively with the Street Diligence data and provides transitions from one bucket of leverage to higher buckets of leverage based on indebtedness deductibles. These numbers indicate that 76% of firms with 5x EBITDA leverage at the loan origination can actually issue debt in excess of 6x EBITDA. 73% of firms with objectively high 6x EBITDA leverage can actually issue debt in excess of 7x EBITDA.

[Insert Table 6]

Figure 4 plots the distribution of Total Debt/EBITDA in our sample before and after adjustment for indebtedness deductible, assuming firms would use the deductible to its maximum. Similar to Table 6, the central takeaway of this exercise is that the fraction of potentially highly leveraged deals is significantly higher than would be inferred from a naive observation of the leverage as of the date of the credit agreement. Whereas at the origination about half of the companies have leverage below 5x EBITDA, in reality over 70% of companies funded in the leverage loan market can issue additional debt later on, which would put total leverage over 5x EBITDA. Furthermore, the potential increase in leverage is concentrated among the transactions that are already heavily levered.[32]

[Insert Figure 4]

The shift in the distribution of potential leverage attributable to indebtedness deductibles is even more pronounced for leveraged buy-outs, as evidenced in the top-right graph of Figure 4. Leverage of sponsored transactions tends to be larger by orders of magnitude than leverage of comparable public firms, and there are several examples of financial sponsors risk-shifting behavior (Kaplan and Stein, 1993). Offering weaker contracts to buy-out firms might create additional risk, and is exactly what the regulator has been trying to monitor.

[32]The tail of the indebtedness distribution might strike as unusually large by industry standards. It is likely that the skew in our distribution is due to the use of unadjusted EBITDA. As already pointed out, EBITDA calculation for the purpose of a credit agreement involves a series of standard adjustments to the accounting item that we use as denominator. For comparison, in the bottom two graphs we report the distribution of Debt/EBITDA for two DealScan sub-samples covering the same period (2011-2016): deals over $100 million, and leveraged buyouts.

Although our sample is relatively short, for illustration purpose, we plot the quarterly average number of liens and indebtedness carve-outs during our sample period in Figure 5. Even though the first years are to be taken with a grain of salt as the sample is much smaller before 2011, the graph is consistent with a pro-cyclicality of contractual weakening.

[Insert Figure 5]

5 Understanding the Contracting Mechanism

The evidence presented so far shows that optionality commonly embedded in credit agreements through carve-outs and deductibles is economically large, that a substantial fraction of this phenomenon is concentrated in transactions that are already highly leveraged, and that recent examples of use of these elements have been acknowledged by the market as something that enhances the value of equity, at the expense of senior creditors. In this section, we explore the characteristics of contracting parties that are conducive to weaker contractual terms. This section present empirical evidence, which, when combined with the mispricing take-away from the event study, is supportive of such contractual weakness resulting from sophisticated borrowers and their sponsors catering to a reaching for yield phenomenon from institutional investors.[33]

5.1 The Special Role of Private Equity Sponsors

We start by establishing substantial and systematic differences for loan contracts backing buy-outs. In their role as intermediaries, private equity firms interact with banks and financial markets much more frequently than even the largest stand-alone firms. A CFO is responsible solely for financial decisions of their company, and this company may or may not pursue acquisition or special dividends. Financial sponsor, on the other hand, manages a portfolio of firms which are routinely acquired, levered, delevered, and sold (with potential mergers and leveraged dividend recaps along the way). Private equity firms therefore develop an expertise in debt markets, contracting, and renegotiation. This expertise may allow private equity firms to capture value by exploiting inefficiencies related to mispricing of credit terms in boom and bust cycles of credit supply. The Great Recession offered supportive evidence that debt market

[33] We define reaching-for-yield as investors accepting a below fair risk premium for a given risk.

inefficiencies are an important aspect of private equity value creation, as many private equity firms started investing in leveraged loans at that time.

To test whether borrowers backed by financial sponsors contract debt in a systematically weaker manner than more traditional borrowers, we run OLS regressions on our measures of covenant weakening, using an indicator for leveraged buyouts as an explanatory variable. We include industry and quarter fixed effect to absorb any temporal or industry composition effects. Table 7 displays the regression coefficients. The results are consistent with private equity firms relying more heavily on covenant weakening. Both carve-outs and deductibles are significantly more frequent in leveraged buy-outs, controlling for leverage. The magnitude is particularly large: the lowest coefficients on the LBO indicator variable are equal to 30 for carve-outs, to compare with an average number of 79, and 1.5 for deductibles, to compare with an average number of 8.

[Insert Table 7]

5.2 Contract Weakness: Creditors' Perspective

A private equity sponsor naturally prefers weaker contractual terms: the credit agreement – and the covenant structure specified in it – is the key governance mechanism for debt holders. However, an explanation for why creditors would be willing to accept weaker contractual terms is in order. One simple motive is that the creditors receive a monetary counterpart, meaning that the risk is (at least partly) priced. Consistent with this hypothesis, we show in Figure 8 that proxies of contract weakness are associated with a higher loan spread.[34] More specifically, we regress the all-in-drawn spread of a given facility on the proxies of contractual weakness, controlling for standard borrower and transaction characteristics, as well as the loan terms typically studied in the literature. Importantly, we include industry fixed effects, and quarter fixed effects to ensure that our results are not driven by a composition effect on industries, or a specific sub-period. We then plot the predicted issuance spread by quartiles of the weakness measures.

This analysis reveals a statistically and economically significant relationship between loan issuance prices and proxies for contractual weakness. Thus, moving from the bottom quartile

[34]Spread includes interest rates and all fees, and applies to a benchmark rate, typically a LIBOR. This is what is commonly referred to as the "all-in-drawn" spread.

to the top quartile on these measures of weakness corresponds to a more than 40 bps higher issuance spread. These magnitudes compare to an average spread of 266bps in the sample.

[Insert Figure 8]

We cannot however assess whether creditors are being compensated fairly for the risk they take, as estimating the risk ex-ante is challenging. Instead, we look at the variation in screening and monitoring incentives by the arranging bank in the cross-section of loans. Previous literature establishes that there is substantial information asymmetry about the borrower's quality between the originating banks and the rest of the lending syndicate (e.g., Sufi (2007); Ivashina (2009)). Institutional investors are likely to be less informed about the fundamentals of the borrower and the contractual terms of the transaction. In particular, according to Standard & Poor's Leveraged Commentary & Data (LCD), collateralized loan obligations (CLOs) represent between 41% (in 2011) and 62% (in 2016) of all institutional participants in the primary syndicated loan market – the single largest institutional group. Laxer screening leading to a deterioration in lending standards in the context of securitization is well documented (e.g., Keys et al. (2010)).[35] The evidence also shows that the lead share –"the skin in the game" for the lead bank – is important in aligning screening and monitoring incentives of the lead bank (also see Wang and Han (2014)).

With this in mind, we use several proxies to measure weaker screening and monitoring incentives from creditors in the cross section of loans. First, we use an indicator variable (Inst. Indicator) equal to 1 if the loan has significant institutional participation, and 0 otherwise. To construct this variable, we start with market segment information from DealScan, which has "Institutional" as one of the segments. We also count as institutional any loan package that has Term Loan B or "TLb" facility.[36] Second, we look at the institutional share directly counting term loan facilities B and above (that is, TLc, TLd, etc.) as institutional money and measuring its proportion to the total loan amount (Instit. Share) and total term-loan amount (Instit. Share (TL)). Finally, we look at the lead bank(s)' share of the total loan amount as reported in

[35] Although Benmelech et al. (2012) point out that if this issue is less severe in the syndicated loan market, it is not because of CLOs being better informed, but because of other mechanisms that are facilitating a well-functioning syndicated loan market.

[36] For example, according to Standard & Poor's (2014), "Institutional debt includes term loans specifically for institutional investors, [...]. These tranches include first- and second-lien loans, as well as prefunded letters of credit. [The latter are not in our sample] Traditionally, institutional tranches were referred as TLbs because they were bullet payments and lined up behind TLas."

DealScan (Lead Share).

The results are reported in Table 8. The number of observations is reduced due to lender data availability. All specifications control for the (log) number of lenders, as well as a leveraged buyout indicator variable, industry and quarter fixed effects.[37] Consistent with looser screening and monitoring incentives, we find that a larger institutional participation and a smaller lead share are tied to weaker contractual terms. Loans from the institutional segment exhibit on average 19 more carveouts and 1.5 more deductibles, which compares to respective averages of 19 carve-outs and 8 deductibles. These estimates are statistically significant and comparable in magnitude to the association between leveraged buyouts and weaker contractual terms, for which we control.

[Insert Table 8]

5.3 Sponsor Credit Expertise

Last, in Table 9, we explore the role of private equity sponsor contractual expertise and bargaining power in driving the design of loan contracts, by using four different proxies. First, using CreditFlux global collateralized loan obligation (CLOs) database, we identify the financial sponsors that have also been active in structuring and managing CLOs (special purpose vehicles used to securitize large corporate loans). The available data from this reference database covers CLO origination between 2000 and 2013, and includes 1,229 different CLOs. The rationale of this proxy is that engagement in the CLO space is a reflection of the sponsors' ability to assess the underlying credit risk as well as the demand for securitized products in the corporate space. Both these dimensions are pivotal to leveraged loan origination and terms. As an illustration, Blackstone's GSO, Carlyle Group, Ares Management, Apollo Global Management, and CVC-private equity firms that are well known among practitioners for their sophisticated approach to credit contracting – were among the top-ten CLO managers in this fourteen year period. Since bank-affiliated private equity firms are likely to have the same (or perhaps even bigger) advantage in understanding the contractual terms and market conditions, while being excluded from the CLO space due to conflict of interests, we combine them to CLO-active sponsors to build our first measure of expertise. The results are reported in columns (1) and (5).

[37] These controls mitigate concerns over potential confounding factors such as syndicate size or macro conditions. The coefficients are comparable when we do not include these controls.

As a second measure of expertise, we introduce an indicator variable for private equity firms that have large-cap buyouts as a key investment focus. This allows us to focus on sponsors that routinely rely on the leveraged loan market to fund their transactions. Building and maintaining the necessary expertise to sort through contractual terms represents a fixed cost, and therefore sponsors require a certain scale in this space to make it a source of value. In columns 2 and 6, we use an indicator variable for stand-alone private equity firms having such profile, and in columns 3 and 7, we combine them with bank-affiliated private equity firms.

Last, in columns 4 and 8, we consider a possibility that expertise in contractual space is built through experience. To do so we look at whether a sponsor experienced a bankruptcy in its portfolio. Specifically, using bankruptcy data from Capital IQ, we construct an indicator variable (*Experience with Bankruptcy*) equal to 1 if the sponsor had at least one bankruptcy in its portfolio during the five years before the beginning of our sample (2005 to 2009). All contractual expertise variables are conditional on being a buyout, which means that the reported coefficients are equivalent to the marginal effect within this group of transactions.

Credit agreements that include a credit expert sponsor firm appear to exhibit significantly weaker covenants with both more deductibles and carve-outs than in other leveraged buy-outs, although the difference is not statistically significant for the number of deductibles. The gap in both our measures of weaknesses between LBO with expert firms and LBO with only non-expert firms represents close to a third of the magnitude of the gap between LBO and non-LBO transactions for carveouts and deductibles. The heterogeneity in contractual weakness within LBOs therefore appears to be relatively large and related to sponsor expertise, which further speaks to the role of sophistication in determining contract design.

[Insert Table 9]

6 Alternative Mechanisms

Both the event study and the cross-sectional evidence on the sophistication of contracting parties are consistent with a reaching-for-yield phenomenon, catered to by sophisticated borrowers. We consider a set of alternative mechanisms for our main results.

6.1 Avoiding Costly Renegotiations

A first alternative hypothesis to consider would be that the weakening of covenants that we observe aim at reducing frictions associated with ex post renegotiations. While such a mechanism is hard to reconcile with the event study evidence, as avoiding costly renegotiations should have a positive impact on debt, it is not mutually exclusive with the reaching-for-yield phenomenon, and both could be at work.

Despite the prominence of the concept of renegotiation cost in the theoretical literature, there is no off-the-shelf measure of renegotiation cost in the empirical literature. We therefore consider a battery of variables that proxy for contexts of high renegotiation cost, and study whether they are associated with more covenant weakening. The results are presented in Table 10, and are not supportive of the inclusion of covenant deductibles and carve-outs being primarily driven by avoiding costly renegotiations.

Renegotiation costs arguably have a fixed and a variable component. For example, the renegotiation process requires coordination/time, legal steps and paperwork that carry fixed cost. On the other hand, the banks typically charge a variable fee for renegotiation. An immediate prediction, due to the fixed component, is that renegotiation cost is relatively smaller for large loans, and therefore the contracts should be stronger. The results in columns 1 and 5 of Table 10 show that it is not the case, larger loans have more eroded covenant structure.

In columns 2 and 6, we investigate whether weakening clauses positively correlate with the number of lenders, controlling for transaction size, as a large number of parties make renegotiation more complex and costly.[38] We find the opposite sign: a larger number of lenders is associated with less covenant weakening.

In columns 3 and 7, we look at a dummy equal to one if the company has a public debt outstanding at the time of loan issuance, and zero otherwise. Having a more complex capital structure should increase a renegotiation/restructuring process. However, we find the opposite results, firms with bonds outstanding use less weakening clauses, not more.

According to Garleanu and Zwiebel (2008), covenant structure could also be a response to asymmetric information between lenders and borrowers, with stronger covenant structure mitigating the conflict. We consider intangibles as a share of assets and leverage as proxies for

[38] This is one key rationale for which bond contracts are weaker than loan contracts, as the former have an atomistic investor base.

the level of asymmetric information in columns 4 and 8. We find that the sign on the coefficient is in the opposite direction to the prediction in Garleanu and Zwiebel (2008).

[Insert Table 10]

6.2 Other Explanations

As weakening clauses are more frequent in highly leveraged transactions, an alternative (and not mutually exclusive) mechanism would be that these clauses aim at alleviating debt overhang, which is likely to be acute in this context. The stock value reaction we document in section 4 could be consistent with this view, as solving debt overhang is positive for equity holders. But solving debt overhang is also positive for creditors. Yet, we find the opposite effect when looking at loan price reaction. Moreover, the contractual nature of the weakening clauses is at odds with resolution of debt overhang as an explanation as a large fraction of these clauses are designed to allow for increased debt, not for facilitating equity issuances. Such a mechanism is also difficult to reconcile with our two cross-sectional results: the higher concentration of these clauses in buy-outs, controlling for leverage, and when creditor monitoring is more lax. Last, this mechanism would predict lower issuance spreads, not higher ones.

An alternative explanation for our cross-sectional result on buy-out firms would be that everything else equal, firms held by a sponsor firm are safer for creditors, leading them to offer higher contractual flexibility in form of deductibles and carve-outs. Private equity firms are indeed typically financed through a fund structure, which facilitates their access to equity capital. So, debt overhang problem or other financing frictions could be a lesser issue for sponsor-backed companies, allowing them to issue more flexible debt contracts. While we cannot rule out this possibility, our favored interpretation for the contracting mechanism at play relies on more targeted tests including the event study and the cross-section of creditor types. Moreover, access to additional, rescue equity capital for a buyout firm is far from inconsequential, as it evidently has an impact on the fund IRR, which is the most important indicator of fund performance and affects both explicit and implicit incentives of the fund manager. This focus on maximizing IRR has for instance led private equity firms to use subscription lines.[39] Furthermore, any capital call

[39]Subscription lines are revolving lines backed by capital commitments that are commonly used by buyout firms to improve IRRs reported to LPs. For more details see: https://www.oaktreecapital.com/docs/default-source/memos/lines-in-the-sand.pdf?sfvrsn=2

requires a written statement of its purpose to the LPs, which imposes an additional reputation cost for the sponsor firm. As a result, equity injections by private equity firms are typically used as a last resort, and there are several anecdotal examples of major buyout firms exploiting contractual weaknesses when facing financial distress to avoid an equity cure.[40]

7 Conclusion

Credit standards, particularly in the leveraged loan market, have been a point of substantial attention in the post Great Financial Crisis world. Yet, in spite of evident contractual complexity in the loan space, the actual measurement of weak credit standards has been largely building on "cov-lite" provision (that is, weak enforcement of financial covenants). The reason for frequent references to the fraction of cov-lite loans is prosaic: it is simple, and it is objective. But for the same reasons, cov-lite is unlikely to be a fruitful ground for borrowers to obtain quasi-free contractual enhancements, especially over the period when the Leveraged Loan Guidance was binding, which is coincidently the period of the sharp rise in cov-lite origination.

Technological progress should allow to back the flurry of concerns on credit standards with better measurements of what contractual weakness represents.

Precisely, taking advantage of advances in large sample contractual processing, we conduct a comprehensive analysis of 1,240 credit agreements, with an emphasis on the leveraged loan market. We first document the importance of negative covenants as a governance tool for large leveraged corporate issuers. Virtually all contracts rely on such mechanisms to protect the creditors. However, the restrictions created by these covenants are frequently weakened through two main types of contractual elements deductibles (or "baskets") and exclusions (or "carve-outs"), which are broader and different from enforcement clauses (i.e., different from cov-liteness). We propose a set of simple measures that assess contractual weakness, and show that clauses weakening the strength of the contract are concentrated in the most leveraged transactions, thereby offering room for the issuer to reach even higher levels of leverage. When exploring the cross-section of use of these clauses, we observe that leveraged buy-outs are significantly more likely to use these clauses, which is consistent with private equity sponsors having a higher bargaining power towards lenders, especially in large transactions, as well as high level of expertise in

[40] In addition to the J. Crew and PetSmart cases, see Gompers et al. (2012).

writing contracts. We are able to overcome limited default data by looking at a market-wide adjustment following a high-profile case that exploited deductibles on liens to significantly dilute lenders' claim over collateral. The redistribution of value to stockholders for contracts with similar provisions and generally weaker contracts is consistent with these features being mispriced options granted to borrowers.

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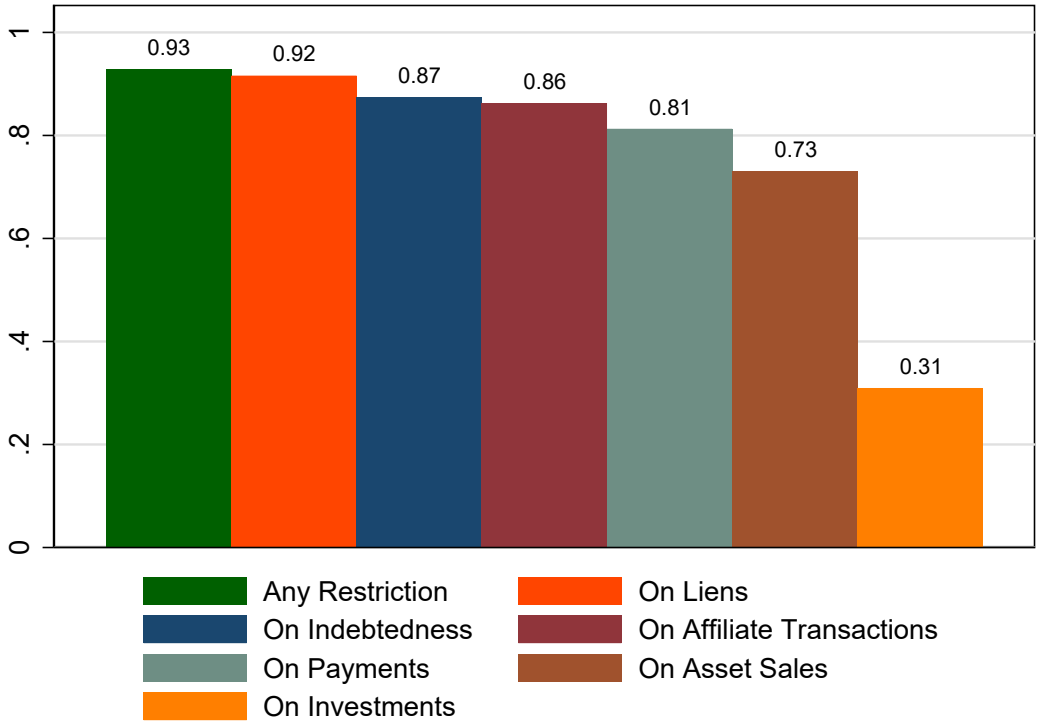
8 Figures and Tables

Panel A: Incidence of Restrictions



Panel B: Incidence of Deductibles on Restrictions

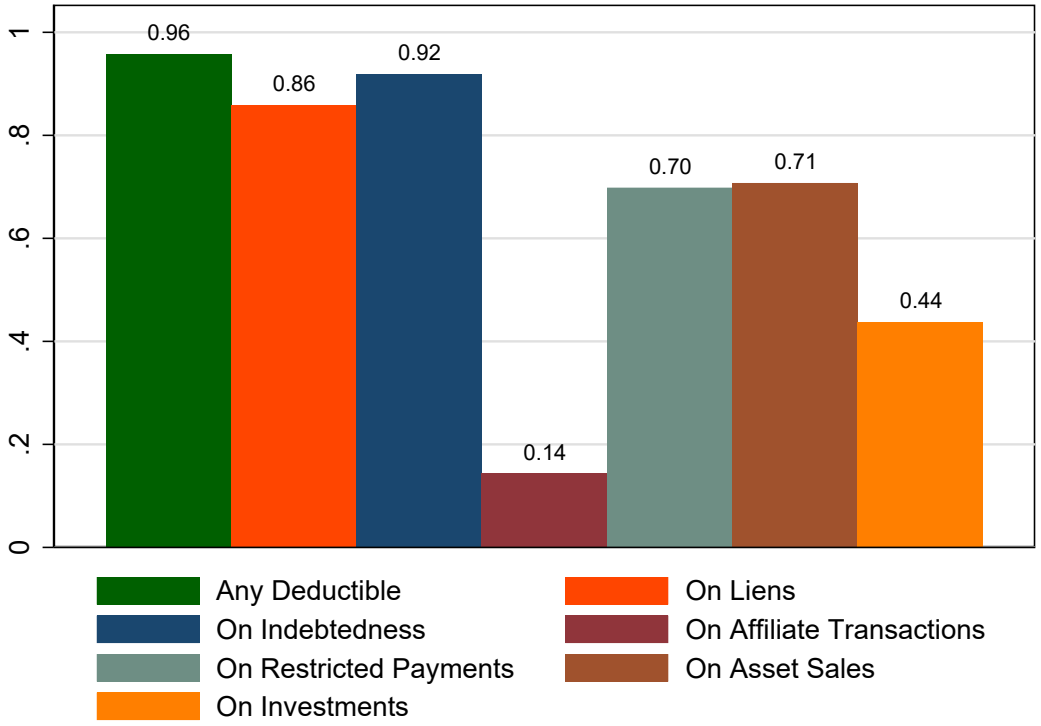
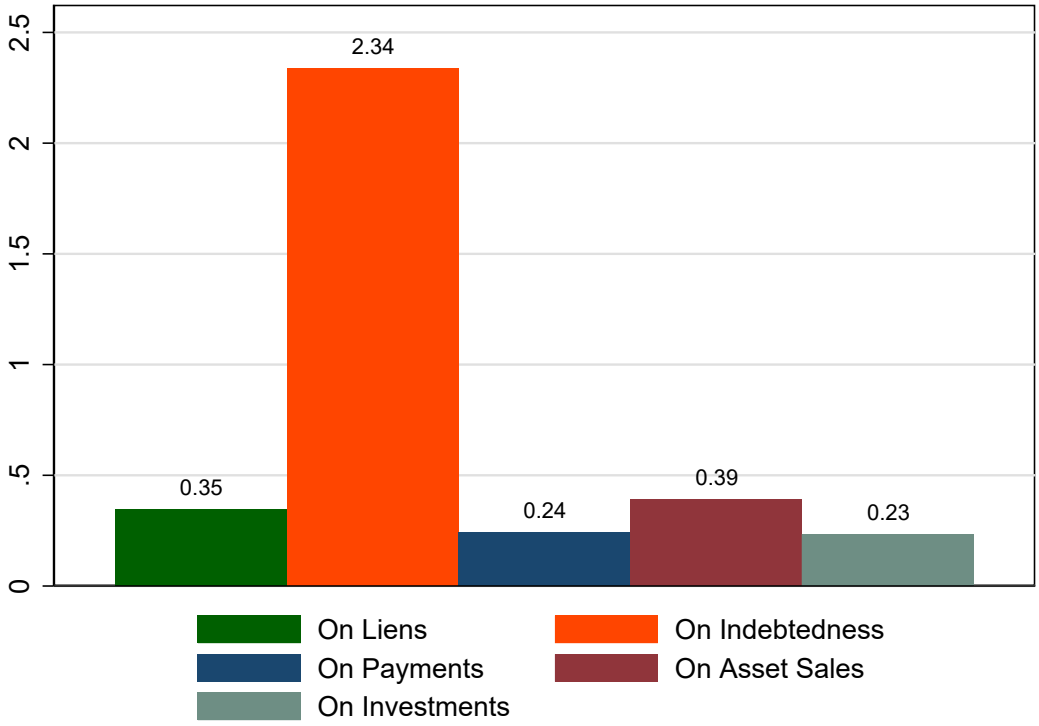


Figure 1: Incidence of Restrictions on Borrower's actions and of Deductibles on these Restrictions

Note: This figure reports the average incidence of restrictions on the issuer actions (negative covenants), and the average incidence of covenant deductibles ("baskets").

Panel A: Size of Deductibles



Panel B: Number of Deductibles

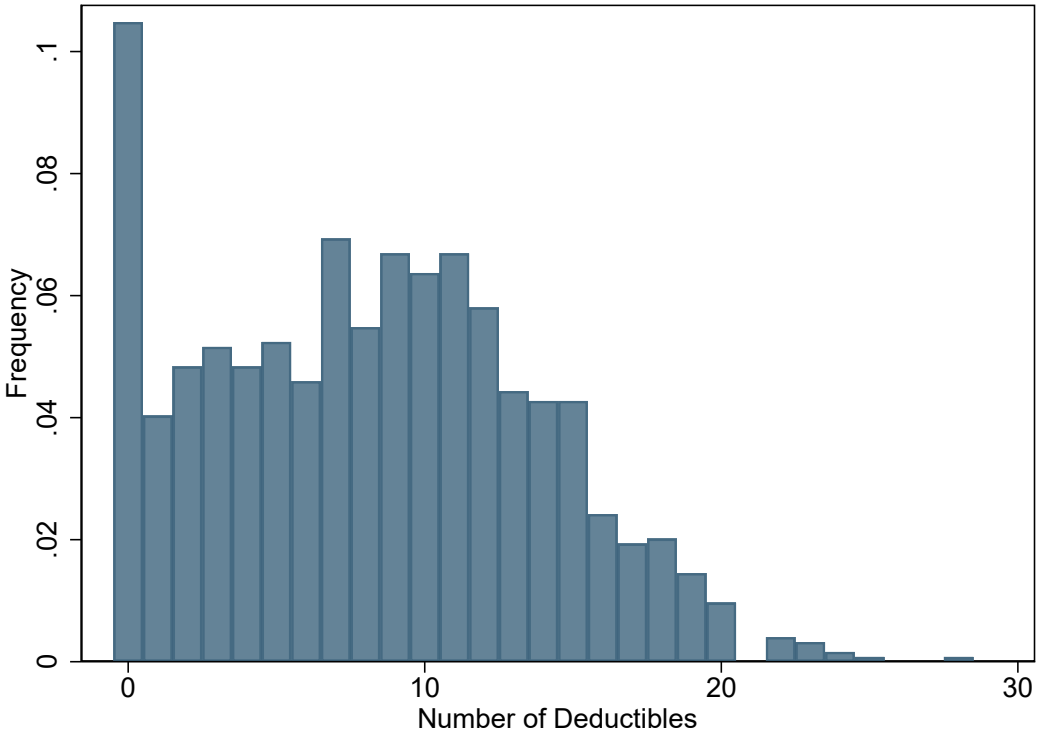
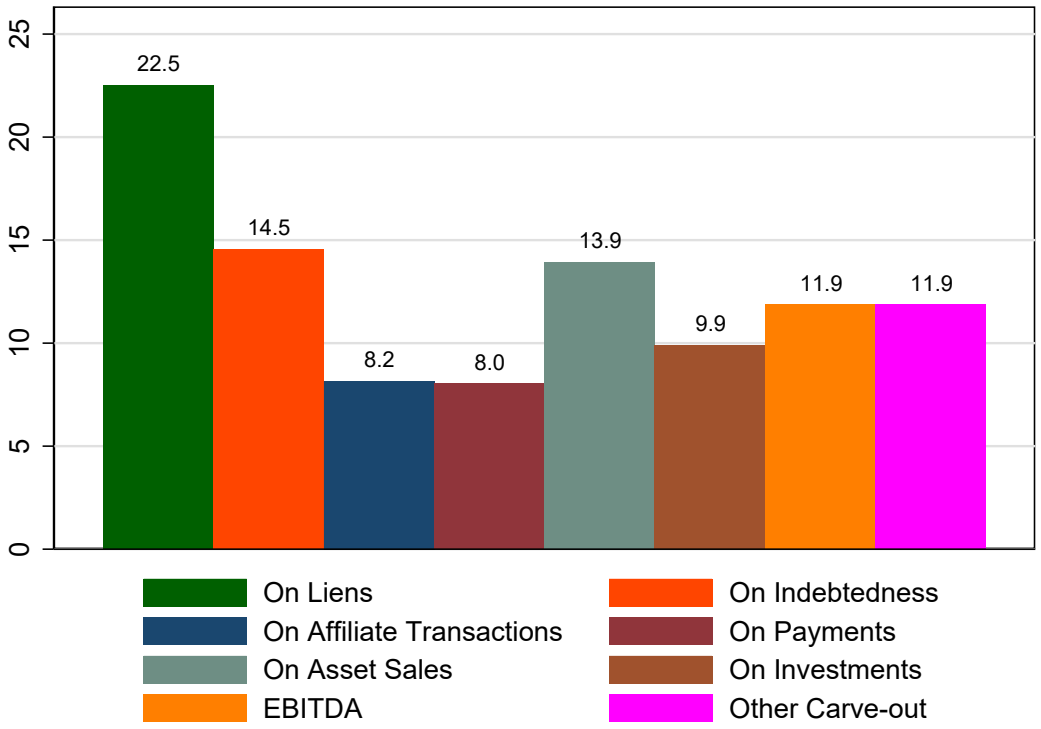


Figure 2: Deductibles on Covenants: Size and Distribution

Note: The upper panel of this figure reports the size of the deductibles as a multiple of EBITDA, where EBITDA is measured as of end of the fiscal year preceding the year of the loan issuance. Lower panel displays the distribution of the total number of deductibles.

Panel A: Average Number of Carve-Outs



Panel B: Distribution of Carve-Outs

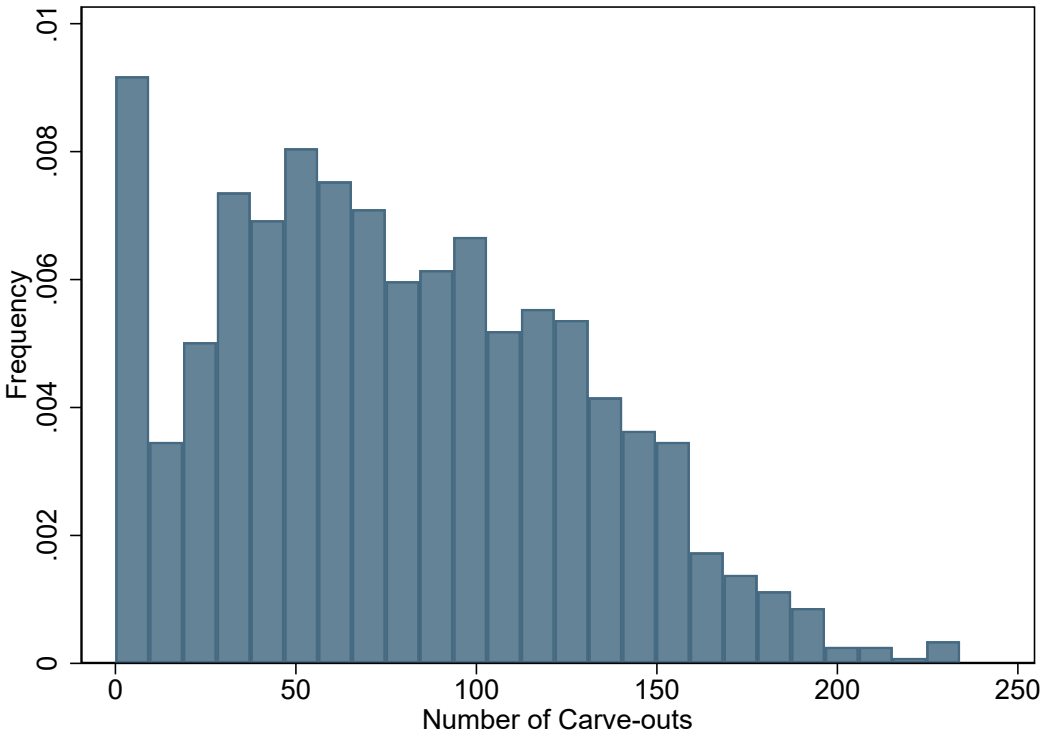


Figure 3: Carve-outs: Average Number by Covenant Type and Distribution

The upper panel fo this figure reports the average number of carve-outs per credit agreement, and broken down by negative covenants. The lower panel displays the distribution of the total number of carve-outs.

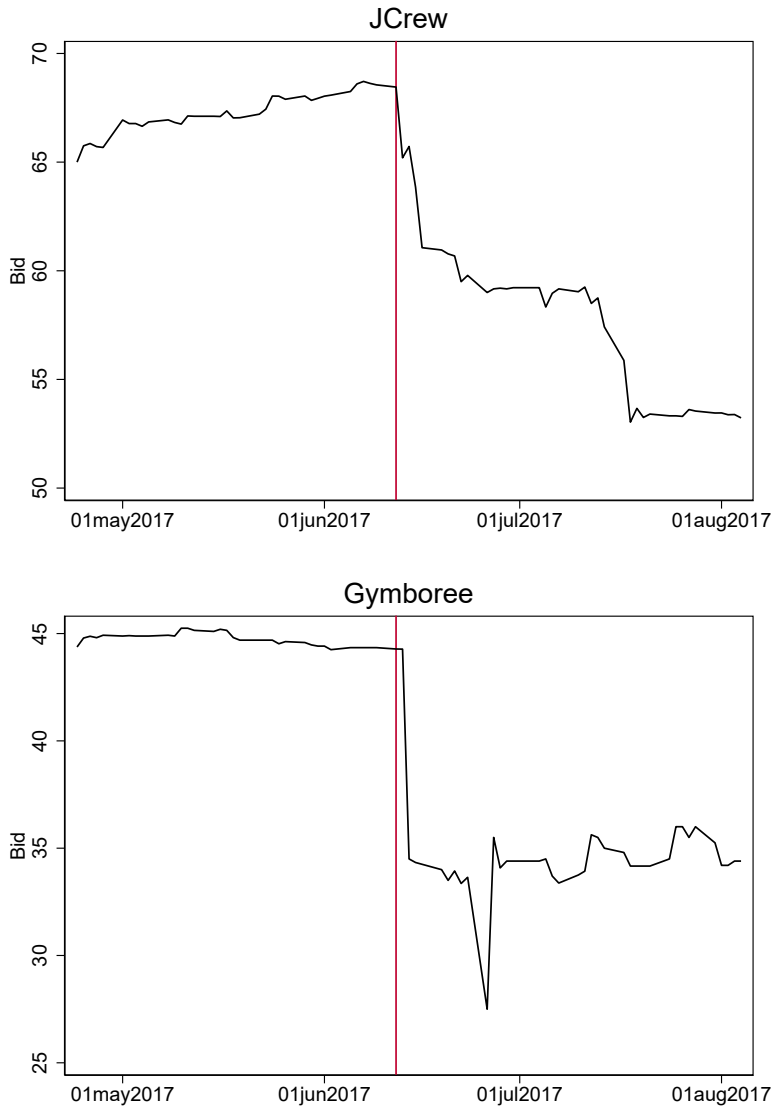


Figure 4: Loan Prices Around J. Crew Announcement: J. Crew and Gymboree

This figures plots the senior secured loan daily prices of J. Crew (Panel A) and Gymboree (Panel B) over a -50days/+50days event window around the June 12th, 2017 J. Crew announcement date.

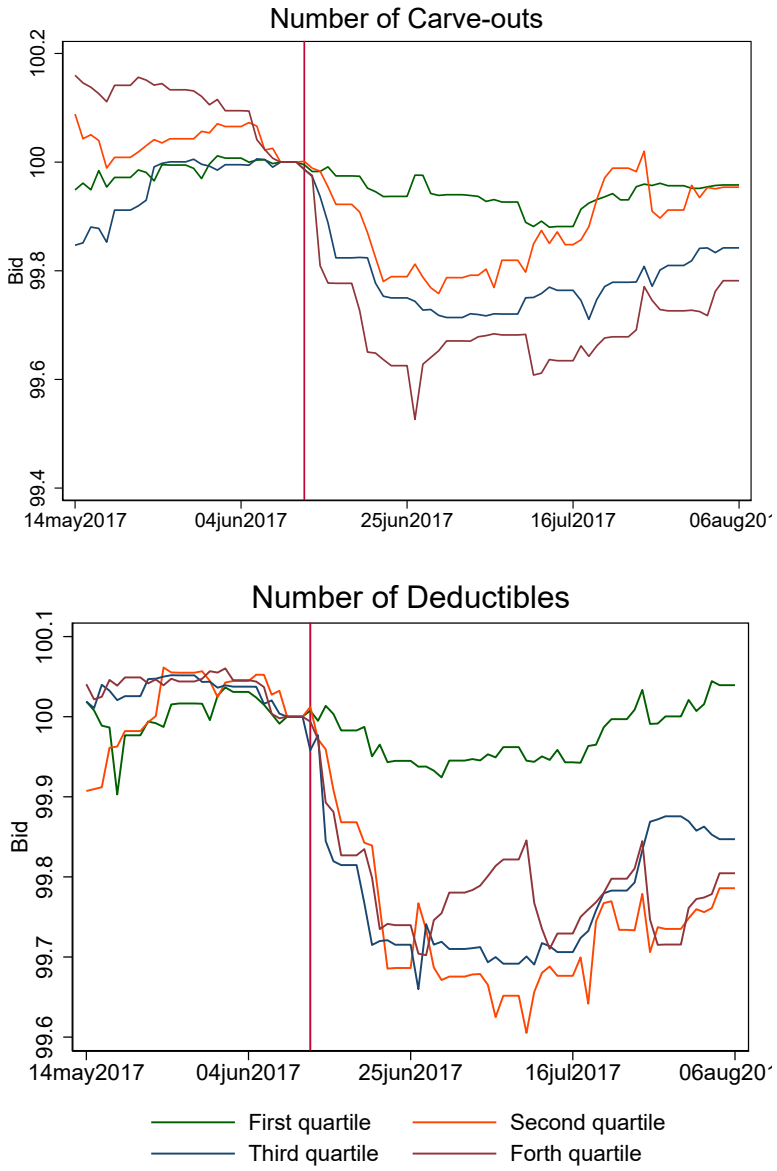


Figure 5: Loan Prices Around J. Crew Announcement: Full Sample

This figures plots the senior secured loan prices of all leveraged loans in the sample over a -30days/+50days event window around the June 12th, 2017 J. Crew announcement date. The top figure (Panel A) presents the price reaction for loans aggregated by quartiles of number of carve-outs, and the bottom figure (Panel B) presents the price reaction for loans aggregated by quartiles of number of deductibles.

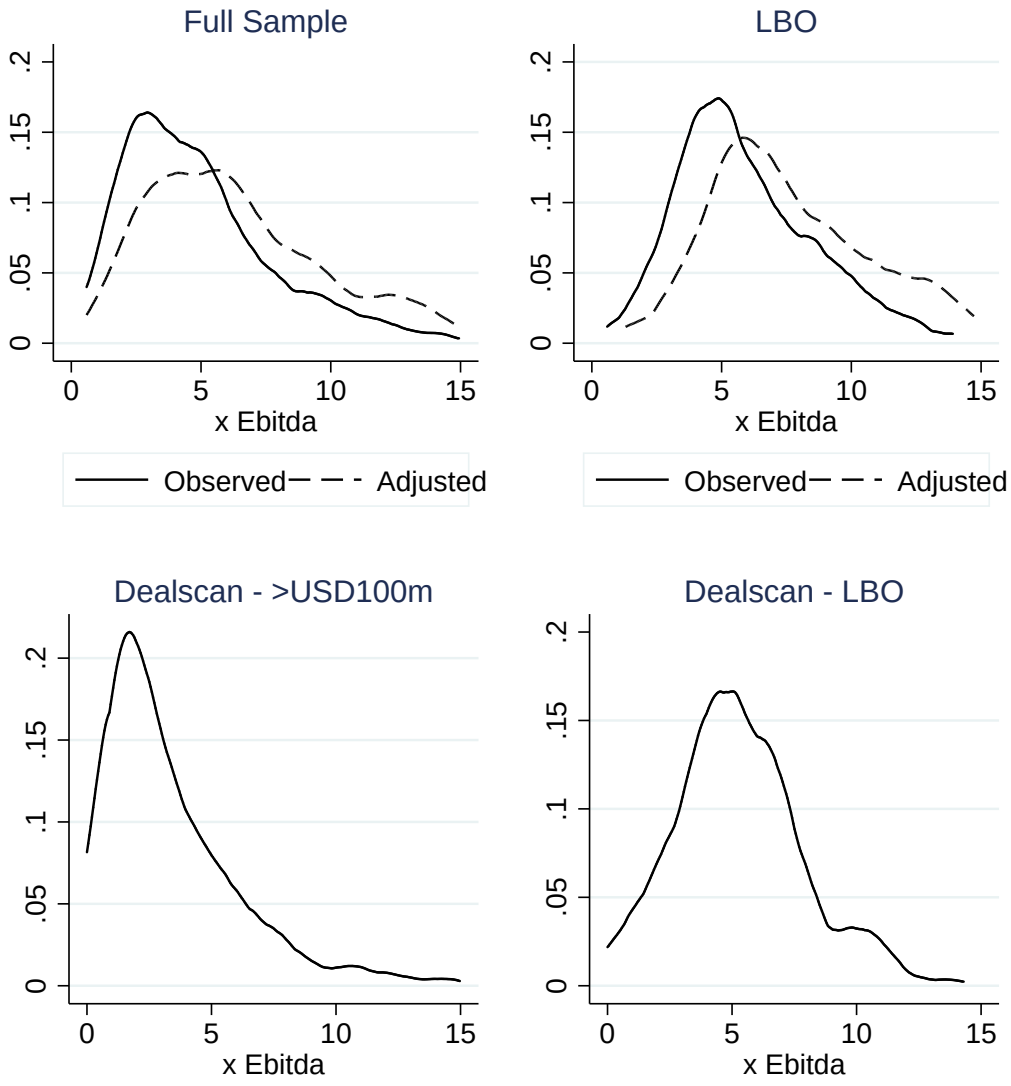


Figure 6: Distribution of Leverage with and without Adjusting for Indebtedness Deductibles

Note: This figure plots the distribution of leverage, calculated as Total Debt / EBITDA. The top left graph displays the distribution of leverage with and without adjusting for the deductible on the indebtedness covenant for the whole Street Diligence dataset. The top right graph conducts the same exercise, while restricting the sample to leverage buyouts. The bottom two graphs plot the unadjusted distribution of leverage for two corresponding benchmark samples from Dealscan: the transactions over USD100m since 2011, and the leverage buyouts since 2011.

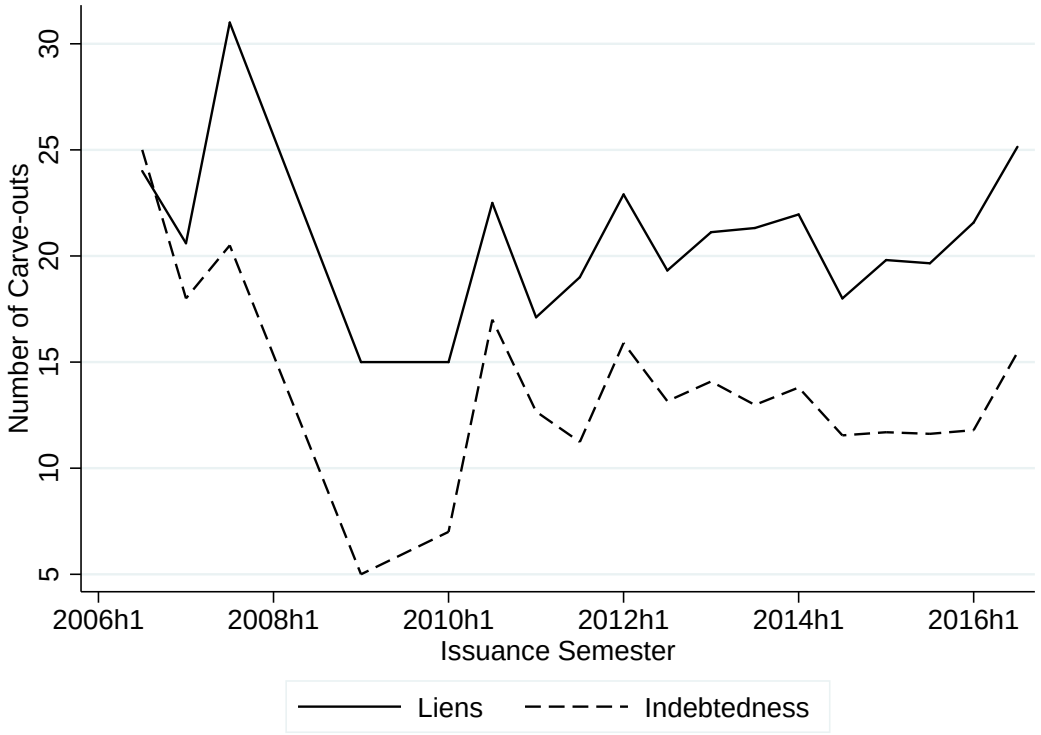


Figure 7: Evolution of Number of Carve-Outs on Liens and Indebtedness Restrictions

Note: This figure plots the average number of carve-outs on the Indebtedness and Liens covenants at semi-annual frequency.

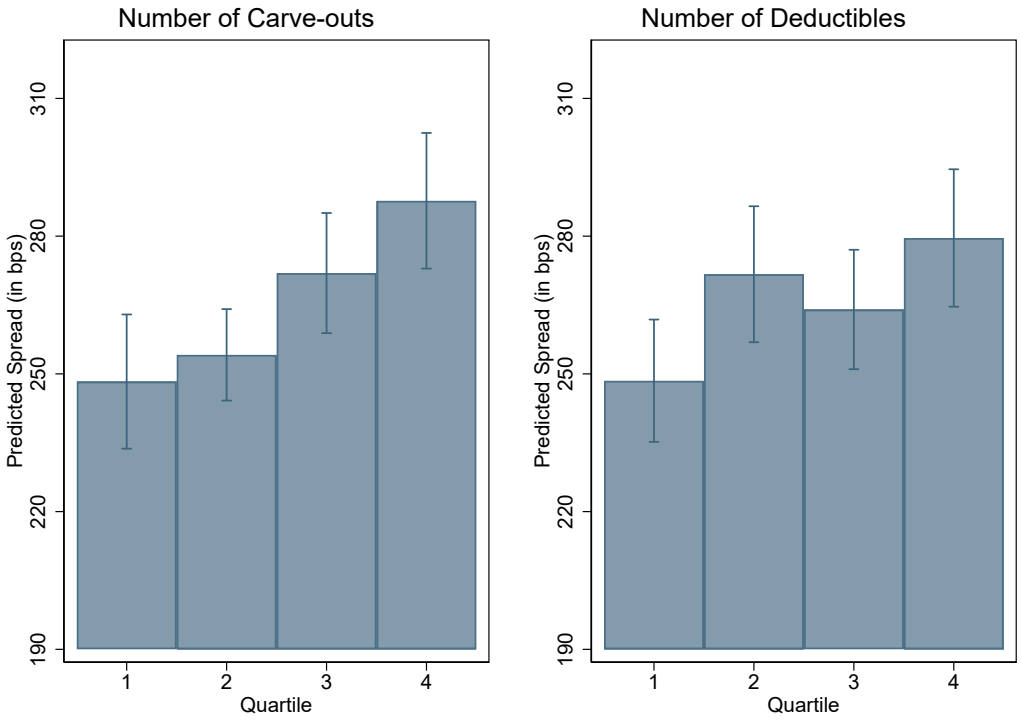


Figure 8: Contractual Weakness and Issuance Spreads

Note: This figure displays predicted issuance spreads by quartile of weakness measures. The predicted values are estimated from regressions where the dependent variable is the "all-in-drawn" spread at the loan issuance and the explanatory variables are the weakness measures as well as controls for issuance and issuer characteristics, including the level of leverage, an indicator variable for buyouts, an indicator variable for cov-lite issuance, the number of financial covenants, and maturity, number of negative covenants, industry, and quarter of issuance fixed effects. The spread includes interest rates and all fees and applies to a benchmark rate, typically the LIBOR.

Table 1: LSTA Credit Agreements

	LSTA Credit Agreements		Street Diligence		Other Data
	Section	Basic Descripiton	Coverage	Category	
7.1	Some General Principles	Introduction	N/A		
7.2	Scope of Covenant Coverage	Definitions of relevant of contract reach within organizational structure	N/A		
7.3	Covenant Definitions	Key financial definitions including EBITDA, and Debt	Yes	Baskets and carve-outs to financial items typically appear in definitions (e.g., EBITDA add-backs); the data combines relevant information in the definitions and in the covenant sections of the agreement	
7.4	Financial Covenants		Yes	Any additional carve-outs that appear in the covenant section are consolidated with those that appear in covenants definitions	DealScan
7.5	Affirmative Covenants	Includes disclosure, inspection rights, insurance (including interest rate protection), use of proceeds	Yes	For the most part, these items appearing in this section do not interact with baskets and carve-outs; however, to the degree that use of proceeds carries a basket of carve-out it is counted in the respective category (e.g., restrictions on CAPEX)	
7.6	Negative Covenants				
7.6.1	Lien Covenant	Protects collateral by restricting borrower from granting liens on its assets	Yes	Restrictions on liens	
7.6.2	Equal and Ratable Sharing Clause		N/A	Not typical for a credit agreement; used in bond indentures and private placements	
7.6.3	Negative Pledge or Burdensome Agreements	Amplifies the effect of lien covenants, by prohibits lien restrictions with third party	Yes	No negative pledges	
7.6.4	Debt	Restrict incurrence of debt	Yes	Restrictions on indebtedness	
7.6.5	Disqualified Stock	Limits issuance of stock with debt-like provisions	Yes	Restrictions on indebtedness	

Table 1 (continued)

LSTA Credit Agreements

	LSTA Credit Agreements		Street Diligence		Other Data
	Section	Basic Descripiton	Coverage	Category	
7.6.6	Fundamental Changes, Asset Sales, and Acquisitions		Yes	Restrictions on indebtedness	
7.6.7	Sale-Leasebacks	Limits transactions where the borrower sells an asset and then immediately leases it back	Yes	Restrictions on asset sales	
7.6.8	Investments		Yes	Permitted investments	
7.6.9	Lines of Business		Yes	Permitted investments	
7.6.10	Derivatives	Specific to business with hedging practices (e.g., commodities related); limits hedging activity			
7.6.11	Guarantees or Contingent Liabilities	Controls indirect indebtedness	Yes	Restrictions on indebtedness	
7.6.12	Dividends and Equity Repurchases		Yes	Restricted payments	
7.6.13	Tax-sharing Payments and Permitted Tax Distributions		Yes	Affiliate transactions	
7.6.14	Restrictions on Subsidiary Distributions		Yes	Affiliate transactions	
7.6.15	Modification and Prepayment of Other Debt	Controls indirect indebtedness	Yes	Restricted payments	
7.6.16	Affiliate Transactions		Yes	Affiliate Transactions	
7.6.17	Amendments to Organic Documents and Other Agreements	Restricts borrowers ability to modify charter, bylaws, or other essential documents	No	Standard and autonomous part of the contract	
7.6.18	Fiscal Periods and Accounting Changes		No	Standard and autonomous part of the contract	
7.6.19	Passive Holding Company		No	Standard and autonomous part of the contract	
7.7	Incorporation by preference		No	Standard and autonomous part of the contract	
7.8	Covenant Lite				LCD

Note: The table presents the full content of "Chapter 7: Covenants" in the LSTA's Complete Credit Agreement (2017) and illustrates how it maps into the data sources used in our study.

Table 2: Summary Statistics

Year	2011	2012	2013	2014	2015	2016	Total
	Our sample (Source: Street Diligence)						
Number of Credit Agreements/Loans	53	74	222	353	350	188	1,240
Number of Facilities	71	117	336	534	514	285	1,857
Share Leveraged Deal	84.3%	80.8%	87.0%	73.6%	73.1%	77.3%	77.3%
Share LBO Deal	37.7%	37.8%	37.8%	37.8%	16.0%	19.7%	22.3%
Average Loan Size ($m)	1,675	800	1,203	1,122	990	1,224	1,119
Average Maturity (years)	7.2	6.4	5.9	5.6	5.2	5.0	5.6
Average Issuer Assets	4,815	6,441	6,970	7,861	7,341	9,953	7,704
Average Issuer EBITDA	571	830	658	820	726	758	747
Average Leverage (x EBITDA)	5.2	4.8	7.1	5.9	6.6	5.3	6.2
	Benchmark (Source: DealScan)						
All syndicated loans >$100m							
Average Loan Size ($m)	909	867	1,090	1,132	1,241	1,346	1,080
Average Maturity (years)	4.7	4.6	4.7	4.7	4.6	4.7	4.7
Average Issuer Assets	10,838	12,168	11,605	12,496	13,842	15,260	12,509
Average Issuer EBITDA	1,191	1,416	1,424	1,543	1,691	1,866	1,491
Average Leverage (x EBITDA)	3.5	3.9	4.2	4.0	4.2	3.8	3.9
Leveraged loans							
Average Loan Size ($m)	646	679	836	789	899	956	798
Average Maturity (years)	5.1	4.9	5.0	5.3	5.1	5.2	5.1
Average Issuer Assets	2,918	3,916	4,362	4,128	4,057	4,789	4,032
Average Issuer EBITDA	357	528	497	498	459	552	480
Average Leverage (x EBITDA)	4.9	5.3	5.0	5.0	5.5	4.4	5.0

Note: The table presents summary statistics for our sample and benchmarks it against: (i) a subset of loans reported in DeaScan that are larger than $100 million; (ii) a subset of loans identified in DealScan as leveraged. All accounting variables are from Compustat. Assets and EBITDA are measured as of the fiscal year end preceding the year of the loan issuance. Total debt is measured as of the fiscal year end.

Table 3: Alternative Measures of Covenant Weakness

	(1)	(2)	(3)	(4)	(5)	(6)
All Covenants	Number of Carve-outs			Number of Deductibles		
Covenant Intensity	0.446			0.496***		
	(0.52)			(4.91)		
Cov-lite (dummy)	31.309***			2.272***		
	(11.12)			(7.85)		
Number of financial covenants	-4.078***			-0.608***		
	(-3.17)			(-4.12)		
Slack Debt/EBITDA		0.795**			0.141***	
		(2.40)			(3.59)	
Normalized Slack Debt/EBITDA			0.030			0.004*
			(0.99)			(1.83)
Observations	1,240	377	369	1,240	377	369
R^2	0.503	0.358	0.345	0.456	0.353	0.339
Indebtedness Covenant	Number of Carve-outs			Deductible Size (x EBITDA)		
Covenant Intensity	0.275*			0.155**		
	(1.73)			(2.37)		
Cov-lite (dummy)	4.767***			0.573**		
	(10.08)			(2.57)		
Number of financial covenants	-1.043***			-0.331***		
	(-4.27)			(-3.17)		
Slack Debt/EBITDA		0.212***			-0.060	
		(3.66)			(-1.41)	
Normalized Slack Debt/EBITDA			0.002			0.001
			(1.01)			(0.85)
Observations	1,240	377	369	1,055	377	369
R^2	0.427	0.276	0.258	0.103	0.075	0.072
Liens Covenant	Number of Carve-outs			Deductible Size (x EBITDA)		
Covenant Intensity	-0.105			-0.027**		
	(-0.45)			(-2.08)		
Cov-lite (dummy)	6.255***			-0.011		
	(9.16)			(-0.31)		
Number of financial covenants	-0.575			0.007		
	(-1.61)			(0.35)		
Slack Debt/EBITDA		0.185**			-0.004	
		(2.51)			(-0.50)	
Normalized Slack Debt/EBITDA			0.004			-0.000**
			(0.78)			(-1.99)
Observations	1,240	377	369	1,055	377	369
R^2	0.378	0.276	0.264	0.049	0.073	0.083

Note: This table presents OLS regression coefficients, where the dependent variable is the number of carve-outs (column 1 to 3) and the total number of deductibles (column 4 to 6) in panel a, and the number of carve-outs for the given covenant for columns 1 to 3, and the size of the deductible on the given covenant (scaled by EBITDA) for columns 4 to 6 in panel b and c. Explanatory variables are as follows: Covenant intensity is a measure used Demiroglu and James (2010) and Bradley and Roberts (2015). It is a discrete variable that takes value between 0 and 6. Cov-lite is a dummy variable equal to 1 is the loan has only incurrence (vs. maintenance) financial tests. The data on covenant lightness is from S&P LCD. t-statistics are reported in parenthesis. Slack corresponds to the distance from the actual covenant variable (as observed in Compustat) to the trigger level. Normalized scale corresponds to the slack divided by the standard deviation of the covenant variable over the last 12 quarters. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively. Standard errors are clustered at the issuance month level.

Table 4: Event Study: Loan Reaction to J. Crew Announcement

	Cumulative Abnormal Return, -15/+15 days							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Number of Carve-outs	-0.003*	-0.003*	-0.002*	-0.000				
	(-2.03)	(-2.19)	(-2.05)	(-0.52)				
Number of Deductibles					-0.035**	-0.033**	-0.030*	-0.001
					(-2.77)	(-2.48)	(-1.99)	(-0.14)
Remaining Maturity (in years)		0.049	0.067			0.030	0.056	
		(1.19)	(1.58)			(0.69)	(1.27)	
Number Financial Covenants			0.126				0.133	
			(1.74)				(1.68)	
Cov-lite Deal			-0.295*				-0.304*	
			(-2.18)				(-2.04)	
Operating Distress Proxy				0.156**				0.247**
				(3.10)				(2.40)
Operating Distress Proxy				-0.002*				
× Number of Carve-outs				(-1.86)				
Operating Distress Proxy								-0.023**
× Number of Deductibles								(-2.67)
Leveraged		-0.147*	-0.032			-0.128	0.013	
		(-2.02)	(-0.35)			(-1.72)	(0.17)	
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Sector	Sector	Sector	Sector	Sector	Sector	Sector	Sector
Observations	404	403	403	352	404	403	403	352
R^2	0.068	0.072	0.091	0.079	0.075	0.077	0.099	0.095

Note: This table presents OLS regression coefficients, where the dependent variable is the change in loan price over a -15days/+15days window around the June 12th amendment proposal by J. Crew. Main explanatory variables are the number of carve-outs, and number of deductibles. Operational distress proxy is calculated as the quartile of the inverse of returns over assets from the previous exercise. T-statistics are reported in parenthesis. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 5: Event Study: Stock Reaction to J. Crew Announcement

	Cumulative Abnormal Return, -15/+15 days					
	(1)	(2)	(3)	(4)	(5)	(6)
Number of Carve-outs	0.035**	0.038*	0.036*			
	(2.34)	(2.04)	(1.99)			
Number of Deductibles				0.247	0.241	0.229
				(1.48)	(1.42)	(1.45)
Remaining Maturity (in days)		-0.002	-0.003		-0.002	-0.002
		(-0.61)	(-0.64)		(-0.43)	(-0.52)
Number of Financial Covenants			-0.298			-0.466
			(-0.44)			(-0.70)
Cov-lite Deal			0.764			1.115
			(0.33)			(0.48)
Leveraged		0.135	-0.119		0.464	0.033
		(0.15)	(-0.17)		(0.41)	(0.04)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Sector	Sector	Sector	Sector	Sector	Sector
Observations	224	224	224	224	224	224
R^2	0.275	0.278	0.279	0.270	0.272	0.274

Note: This table presents OLS regression coefficients, where the dependent variable is the stock cumulative abnormal returns over a -15days/+15days window around the June 12th announcement by J. Crew. The abnormal returns are calculated against the S&P500 index. Explanatory variables are as per the previous table. t-statistics are reported in parenthesis. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Table 6: Additional Leverage Room

	Multiple of EBITDA			
	>4x	>5x	>6x	>7x
Leverage at loan issuance:				
Debt/EBITDA	67%	56%	47%	41%
Net Debt/EBITDA	62%	51%	43%	39%
Max Potential Debt/EBITDA	80%	72%	63%	55%
Transition probabilities:				
<4.00x	39%	25%	14%	9%
4.00x-4.99x	100%	71%	47%	24%
5.00x-5.99x	–	100%	76%	44%
6.00x-6.99x	–	–	100%	73%

Note: Data on average Debt/EBITDA in S&P is disaggregated by (i) year, (ii) size (above and below $50 million in EBITDA), and (iii) whether the transaction is an LBO. The numbers reported here are weighted by the number of observations in each category in our sample.

Table 7: Inclusion of Deductibles and Carve-outs in Buyouts

	(1)	(2)	(3)	(4)	(5)	(6)
All Covenants	Number of Carve-outs			Number of Deductibles		
Buyout	31.763***	30.197***	30.685***	1.961***	1.700***	1.589***
	(9.51)	(8.31)	(7.80)	(6.08)	(5.90)	(5.03)
Leveraged	10.273**	6.436**	7.338**	1.760***	1.293***	1.355***
	(3.00)	(2.49)	(2.32)	(6.87)	(6.27)	(6.17)
Highly Leveraged	9.248***	8.261***	7.378**	1.000***	1.088***	0.998**
	(3.65)	(3.16)	(2.63)	(3.11)	(3.36)	(2.69)
Number of Covenants FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	Yes	No	Yes	Yes
Quarter FE	No	No	Yes	No	No	Yes
Observations	1213	1210	1206	1213	1210	1206
R^2	0.513	0.590	0.604	0.460	0.547	0.557

Note: This table presents OLS regression coefficients, where the dependent variable is the number of carve-outs (column 1 to 3) and the total number of deductibles (column 4 to 6). Industry is defined as a 2-digit SIC code. t-statistics are reported in parenthesis. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively. Standard errors are clustered at the issuance month level.

Table 8: Contractual Weakness and Bank Skin in the Game

All Covenants	Number of Carve-outs				Number of Deductibles			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Institutional	19.525***				1.470***			
	(9.34)				(9.56)			
Instit. Share		21.126***				2.097***		
		(5.11)				(8.58)		
Instit. Share (TL)			19.611***				1.756***	
			(6.64)				(9.90)	
Lead Share				-6.556**				-1.644**
				(-2.40)				(-3.09)
Log (# of Lenders)	3.190**	4.441**	4.040**	3.617**	0.379**	0.532**	0.484**	0.500**
	(3.02)	(3.07)	(2.87)	(2.45)	(2.22)	(3.00)	(2.69)	(2.57)
Buyout	27.013***	26.399***	26.611***	29.011***	1.242***	1.073**	1.120**	1.299***
	(6.54)	(6.30)	(6.13)	(6.94)	(3.26)	(2.92)	(2.99)	(3.37)
Leveraged	5.600	8.416**	7.875**	9.654**	1.177***	1.423***	1.390***	1.491***
	(1.56)	(2.41)	(2.22)	(2.86)	(4.85)	(5.37)	(5.14)	(4.88)
Highly Leveraged	0.682	0.237	0.645	8.600**	0.694	0.497	0.618*	1.269***
	(0.24)	(0.08)	(0.20)	(2.23)	(1.74)	(1.50)	(1.84)	(3.56)
Log (Assets)	3.107***	2.738*	2.837**	3.752**	0.256**	0.156	0.176	0.240**
	(3.27)	(2.12)	(2.23)	(2.81)	(2.33)	(1.55)	(1.68)	(2.29)
Number of Covenants FE								
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE								
Cluster								
Observations	1,087	972	972	972	1,087	972	972	972
R^2	0.637	0.645	0.647	0.630	0.574	0.591	0.590	0.583

Note: This table presents OLS regression coefficients, where the dependent variable is the total number of carve-outs (columns 1 to 5) and the total number of deductibles (column 6 to 10). *Instit. Indicator* is equal to 1 if the loan has significant institutional participation and 0 otherwise. *Instit. Share* is the institutional share directly counting term loan facilities B and above (that is, TLc, TLd, etc.) as institutional money and measuring its proportion to the total loan amount, while *Instit. Share (TL)* does so regarding the total term loan amount. t-statistics are reported in parenthesis. *Lead Share* is the lead bank(s)' share of the total loan amount as reported in DealScan. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively. Standard errors are clustered at the issuance month level.

Table 9: Credit Expertise

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
All Covenants	Number of Carve-outs				Number of Deductibles			
Credit Expertise	9.563*	10.419**	11.123**		0.668	0.683	0.758	
	(1.98)	(2.27)	(2.50)		(1.27)	(1.33)	(1.49)	
Bankruptcy Experience				19.488***				1.166
				(3.42)				(1.69)
Buyout	24.759***	24.251***	23.866***	20.742***	1.083*	1.067*	1.029*	0.884*
	(4.86)	(4.80)	(4.81)	(5.13)	(2.13)	(2.05)	(1.98)	(1.85)
Leveraged	8.038**	8.040**	8.023**	7.898**	1.360***	1.360***	1.359***	1.351***
	(2.44)	(2.44)	(2.44)	(2.46)	(5.58)	(5.57)	(5.58)	(5.45)
Highly Leveraged	7.451**	7.392**	7.397**	7.181**	1.129***	1.127***	1.126***	1.116**
	(2.56)	(2.51)	(2.50)	(2.31)	(3.22)	(3.19)	(3.19)	(3.07)
Log (Assets)	4.386***	4.390***	4.367***	4.171***	0.377***	0.378***	0.376***	0.367***
	(4.75)	(4.81)	(4.81)	(4.57)	(3.50)	(3.50)	(3.50)	(3.33)
Number of Covenants FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1089	1089	1089	1089	1089	1089	1089	1089
R^2	0.614	0.615	0.615	0.619	0.560	0.560	0.560	0.561

Note: This table presents OLS regression coefficients, where the dependent variable is the total number of carve-outs (column 1 to 4) and the total number of deductibles (column 5 to 8). Each column corresponds to an alternative definition of contractual expertise. The proxies for credit expertise are described in section 5.3. Industry is defined as a 2-digit SIC code. t-statistics are reported in parenthesis. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively. Standard errors are clustered at the issuance month level.

Table 10: Renegotiation Costs

All Covenants	Number of Carve-outs				Number of Deductibles			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Loan Amount	8.164***	8.738***	8.395***	7.367***	0.513***	0.453***	0.531***	0.476***
	(7.71)	(6.01)	(7.48)	(6.68)	(4.16)	(3.40)	(4.10)	(4.13)
Log(# of lenders)		-1.500				0.164		
		(-0.84)				(0.90)		
Bond Dummy			-4.496**				-0.351	
			(-2.45)				(-1.00)	
Intangible Assets Total Assets				39.717***				2.904***
				(5.53)				(3.68)
Leveraged	11.776***	11.638***	11.666***	9.138**	1.602***	1.597***	1.593***	1.386***
	(3.88)	(3.83)	(3.85)	(3.09)	(6.59)	(6.66)	(6.38)	(5.23)
Highly Leveraged	12.959***	12.340***	12.603***	12.482***	1.296***	1.395***	1.268***	1.336***
	(4.25)	(3.92)	(4.21)	(5.02)	(3.61)	(3.52)	(3.46)	(4.28)
Number of Covenants FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1206	1204	1206	1074	1206	1204	1206	1074
R^2	0.580	0.582	0.582	0.603	0.554	0.558	0.555	0.560

Note: This table presents OLS regression coefficients, where the dependent variable is the total number of carve-outs (columns 1 to 4) and the total number of deductibles (column 5 to 8). *Bond Dummy* is an indicator variable for the issuer having at least one bond issuance outstanding. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively. Standard errors are clustered at the issuance month level.

APPENDIX

Table A1: Elements of Debt Contracting

This paper	Demiroglu and James (2010) Bradley and Roberts (2015)	Billett, King, and Mauer (2007)
Loans, senior secured	Loans	Bonds
Restrictions on liens • Deductibles • Carve-outs	- Debt issuance sweep	
Restrictions on indebtedness • Deductibles • Carve-outs		Restrictions on: - Funded debt - Subordinated debt - Senior debt - Secured debt - Total leverage test
Restrictions on affiliate transactions • Deductibles • Carve-outs		
Restrictions on payments • Deductibles • Carve-outs	Restrictions on: - Dividends	Restrictions on: - Dividends - Share repurchases
Restrictions on asset sales • Deductibles • Carve-outs	Restrictions on: - Asset sales sweep	Restrictions on: - Sale and leaseback - Asset sale clause
Restrictions on capital expenditures • Deductibles • Carve-outs	Restrictions on:	Restrictions on: - Investment policy restriction
(standard)	- Secured	
	- Other financial covenants	- Financial covenants: Net worth and rating
	- Equity issuance sweep	- Restrictions on stock issue
(standard)	(standard)	- Poison put/Change of control - Merger restrictions
(standard)	(standard)	- Cross-default provisions