

WEAK CREDIT COVENANTS

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Using novel data on 1,240 credit agreements for large corporate loans, we show that while inclusion of negative covenants that restrict new debt issuance, payments, asset sales, affiliate transactions and investments is widespread, clauses that weaken these restrictions are almost as common. We measure the deductions for the core covenants in terms of their potential impact on overall leverage and show that they are large, and concentrated in already highly levered transactions. We analyze the cross-sectional variation in contractual weaknesses introduced through deductions and exclusions to negative covenants and show that such contractual provisions are characteristic of leveraged buyouts.

Key words: Loan contracts; Debt Covenants; Creditor Governance; Leveraged Buyouts

JEL Codes:

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I. Introduction

Corporate indentures, and especially loan agreements are long and complex documents, whose scope goes well beyond defining an interest rate and maturity. As pointed out by Smith and Warner (1979), much of the contracting complexity results from the covenant structure, such as restrictions on additional debt or payment of dividends, which is designed to reduce the conflict of interests between creditors and equity holders. While, the economic principals behind the contracting framework had been well understood for nearly forty years, the empirical advances in measuring contractual strength had been limited due to the qualitative and complicated nature of the debt contracts.

In this paper, we rely on a novel data set that parses 1,240 credit agreements for large corporate transactions. We analyze the full scope of negative covenants included in a typical credit agreement and provide their first comprehensive mapping, by covering the six main categories of restrictions: on liens, on indebtedness, on affiliate transaction, on capital expenditure, on asset sales, and on payments. We show that restrictions on this set of actions is the norm, which confirms the hypothesis that credit agreements are an important part of corporate governance for large firms. Importantly, the mere existence of a restriction on a class of action does not necessarily grant full protection to the lender in that regard, as this restriction can be significantly weakened contractually. Indeed, we show that two mechanisms—deductibles (or “baskets”) and exemptions (or “carve-outs”)—are commonly used to weaken core negative covenants. We compute the impact on potential leverage of these contractual provisions.

Overall, we are able to document a much more nuanced view of the strength of contractual terms regarding the protection of lenders against borrowers’ actions. While restrictions to

prevent actions from the issuer that increases risk for the lender are widespread, clauses that *weaken* these restrictions are almost as frequent; they are large, and are concentrated on the most impactful actions: re-pledging the collateral and issuing additional debt. 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 that would put total leverage over 5x EBITDA. Over three quarters of firms with 5x EBITDA leverage at the loan origination can actually issue debt in excess of 6x EBITDA. A similar fraction of firms with objectively high 6x EBITDA leverage can actually issue debt in excess of 7x EBITDA.

While the value of this observation to the creditors might be evident, measuring financial contract strength and understanding the underlying economic mechanism is also of key interest to the regulators. The Interagency Guidance on Leveraged Lending issued on March 21, 2013 is one of the most important macro-prudential tools that was developed following the 2008 financial system collapse.¹ The goal of the Guidance is to “assist financial institutions in providing leveraged lending to creditworthy borrowers in a safe-and sound manner.” Although its practical application is still far from clear and likely to change over time, one of the red flags raised in 2015 under the Guidance was the focus on loans with Debt/EBITDA in excess of 6:1 (see Zinder, Tarr and Giorgione, 2016). While the intention of the regulation is to include the allowed baskets (albeit the methodology is not clear), our study shows concrete magnitudes, and the time varying nature of a potential mismeasurement implied in the naïve approach.

The second insight that emerges from our study is that there is substantial cross-sectional variation in the use of clauses that weaken covenants, with buyout transactions standing out as the most intensive users. This fact is consistent with private equity sponsors having a higher

¹ <https://www.federalreserve.gov/supervisionreg/srletters/sr1303a1.pdf>.

bargaining power towards lenders, especially in large transactions, as well as high level of expertise in writing contracts.

Our work relates to a set of studies that use elements of debt contracting to assess contractual strength/weakness. However, a large fraction of studies exclusively focuses on financial covenants, evaluating the slack implied in such restrictions based on borrower accounting information. Most closely, our paper relates to Demiroglu and James (2010), Bradley and Roberts (2015), and Billett, King, and Mauer (2007). These studies go beyond financial covenants and instead try to integrate multiple contractual features in a holistic measure of contractual strength by aggregating dummies indicating whether some core contractual categories are present in a given contract. This approach has three limitations which ties to the source of data used in these studies. First, it equally weights the impact of each of the identified categories on creditors. Second, it misses variation in contractual weakness for contracts with negative covenants. Third, studies looking at the credit agreements had very limited coverage of contractual provision. We are able to substantially improve on all of these dimensions. (We provide a detailed discussion of the related literature in Section V.) Consistent with our assessment, we show that while directionally correlated, measures used in the previous literature, collectively or individually capture very little as compared to our variables of contractual weakness.

The article is organized as follows. Section II provides institutional details on credit agreements. Section III introduces the dataset and assesses its representativeness. Section IV presents stylized facts from the mapping of restrictions and their corresponding weakening clauses. Section V explores cross-sectional determinants of these contractual terms. Section VI focuses on leveraged buyouts transactions. Section VII concludes.

II. Topology of a Credit Agreement

A loan contract is an agreement between debt holders (typically, senior secured debt) and stockholders and it is designed to reduce the conflict of interests between them. The focus of our study is on large corporate loans, which is the most detailed and multi-dimensional contractual debt space. This contracting sophistication results from the Credit Agreement being the pivotal governance tool for creditors. This phenomenon results from (i) the type of collateral that typically backs these loans, and (ii) the weakness of non-contractual governance mechanisms available to creditors in the large cap space. By contrast, bonds have disperse and heterogeneous creditor base, which makes renegotiation in case of contractual violations highly costly (Bolton and Scharfstein, 1996). As a result, the allocation of control rights to creditors through a tight covenant structure might not be desirable. 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., banks.

Although much of the bank-originated debt is a senior secure debt, there is large variation in the nature of the collateral. This could be best understood if one thinks of a car loan: while some basic screening of borrower's income is typical, there are no negative covenants written in such contracts. If borrower defaults, the collateral (the car) is ceased and liquidated in a routine procedure. A corporate equivalent of this type of loan is an assets-backed loan ("ABL"), in which creditors primarily rely on the liquidation value of the assets backing the credit.² However, not all firms possess collateral that is large enough, or transparent enough, or has a relatively

² Examples of assets often used for ABL include credit-card payments based receivable (e.g., restaurant, retailers), real estate, patents and heavy-equipment.

liquid secondary market to be used for the ABL-type lending. Indeed, much of the syndicated loans market is “cash-flow based”, which means that despite the fact that the loan is secured, the loan value to the creditors is primarily derived by interest payments and debt amortization. Given the emphasis on the ongoing operations, the Credit Agreement and its negative covenants that aim to restrict the actions of the borrower and facilitate renegotiation, become central to strong creditor governance.

The size of the borrower—and therefore the size of the loan—is also important as there are alternative, non-contractual governance mechanisms for creditors of small firms. The intensity of contractual differences for the small cap vs. large cap loan can be illustrated with a simple page count. Gompers and Valle Broussard (2009) provide an actual example of a Credit Agreement for a small firm (EBITDA equivalent to \$27 million in 2016): the agreement is five pages long. By comparison, the main text of the Credit Agreement backing the 2007 buyout of Outback Steakhouse (EBITDA equivalent to \$450 million in 2016) is 170 pages long.³ 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).

As pointed out by Black and Scholes (1973), the value of firm’s equity (E) can be defined as a call option on its assets (V), with an exercise prices equal to the face value of its debt (F). Following notation in Myers (2003):

$$E = V - D = V - D(\text{risk-free}) + P(V, \sigma, t, F), \quad (1)$$

³ Credit Agreement Dated as of June 14, 2007, for OSI Restaurant Partners, LLC.

where σ is the standard deviation of assets and t is debt maturity. Equation (1) helps to formalize the channels of potential value transfer from creditors to shareholder. In particular:

- $dP/d\sigma > 0$: equity holders could benefit from higher volatility of cash flows at the expense of debt holders (Jensen and Meckling, 1976). It is in the lenders' interest to prevent risk shifting or asset substitution,
- $dP/dV < 0$: this points to the second type of issues with the investment decisions that lenders would like to avoid, if equity is under water, firms' management might pass on positive NPV projects, i.e., underinvest, if the benefits accrue to the debt (Myers, 1977).
- $dP/dF > 0$: it is in the lenders' interest to prevent issuance of additional debt of the same or higher priority. From the equity prospective, subordination of the existing debt would allow for cheaper financing.
- $dP/dt > 0$: it is in the lender's interest to set tight covenant provisions that would allow them gain control rights and make sure that they are receiving accurate information.

While these four economic channels underpin most of the provisions included in the credit agreement, negative covenants typically included in credit agreements can be divided into six main categories (in alphabetical order): (i) restrictions on affiliate transactions, (ii) restrictions on asset sales, (iii) restrictions on capital expenditures, (iv) restrictions on indebtedness, (v) restrictions on liens, and (vi) restrictions on payments. Restrictions on affiliate transactions prevent the borrowing entity to enter into transactions with other entities of the same group that are not necessarily covered by the credit agreement. For instance an intercompany loan may transfer cash outside of the perimeter of the security of the loan. Restrictions on asset sales prevent the borrower to sell its assets, which would reduce the collateral of the loans, and may also change the risk profile of the business. A restriction on capital expenditure follows the same

rationale and prevents the borrower to invest into a potentially risky project. Restrictions on indebtedness forbids the borrower to incur additional debt, which would potentially dilute existing debt claims, as well as increase the risk of financial distress. Restrictions on liens prevent the borrower to pledge its assets as a security for other loans, which would dilute the claim of existing lien holders. Last, restrictions on payments forbid certain types of cash outflows, typically dividend payments, to focus the cash flows towards debt repayment.

A unique feature of our study is that we can assess not whether the above provisions are included in the loan contract, but actually measure the weakness of these provisions. The two main channels for weakening a negative covenant are the introduction of “baskets” and “carve-outs” (these are not contractual terms, but terms commonly used by practitioners like “cov-lite”.) A basket on a covenant creates a form of deductible, or a threshold until which the restriction does not apply. For instance, the 2007 Credit Agreement for the Outback Steakhouse includes the following terms:

- Indebtedness: General basket of \$100 million;
- Liens: General basket of \$40 million;
- Asset Dispositions: Basket of \$35 million;
- Investments: Basket of \$100 million;
- Restricted Payments: Basket of \$50 million.⁴

A carve-out lifts the restriction without limit for a specific subset of actions. For instance, a contract can include a carve-out on the restriction on additional indebtedness for subordinated debt, which means that the restriction does not apply for this type of debt. In the case of Outback

⁴ A general basket on a restriction includes any type of actions falling under this covenant, while some baskets only cover a set of actions defined in the Credit Agreement.

Credit Agreement, principal accreted under paid-in-kind debt is excluded (i.e., “carved-out”) for purposes of calculating Total Leverage Ratio.

III. Data and Sample Representativeness

Our work introduces a unique dataset developed by a private firm specialized in contract covenant visualization, Street Diligence. This data is targeted towards credit investors, private equity firms and investment banks to improve the speed and accuracy of their benchmarking and due diligence, and covers a large sample of loans. Our data provider builds its database from SEC filings and contributions from its clients. For each credit agreement, Street Diligence breaks down and aggregates the key covenant terms in an objective, 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, this data provides the first comprehensive coverage of the loan contractual terms, as the whole credit agreement is parsed out through their proprietary methodology that mixes algorithmic and manual actions.

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, and issuer financial data from Compustat. The resulting dataset covers 1,240 packages and 1,857 facilities, spanning the period from 2011 to 2016. Table I shows summary statistics for our data sample and compares them to two benchmark groups: all loan packages over \$100 million in DealScan issued after 2011, and all “leveraged” loan packages issued after 2011, as defined by DealScan.

[TABLE I]

IV. Aggregate Stylized Facts

We first document the extent to which credit agreements restrict the actions detrimental to the lender as outlined in Section II. Figure 1 displays the frequency of having some form of restrictions for each of these categories of actions in our sample. Credit agreements appear to more frequently restrict actions that circumvent or dilute the priority of debt holders: 92 percent of loan contracts have restrictions on liens and 88 percent on incurring additional debt. On the other hand, credit agreement less frequently restrict actions that potentially increase operational risk: 73 percent of credit agreements has restrictions on asset sales and only 31 percent of contracts on capital expenditures. The overall high frequency of these restrictions is consistent with credit agreements being a widespread tool to address conflicts between lenders and borrowers.

[FIGURE 1]

The mere existence of a restriction on a class of action does not necessarily grant full protection to the lender in that regard, as this restriction can be significantly weakened contractually. The natural next step of our analysis is therefore to study which restrictions are getting weakened through these channels, and to which extent.

Figure 2 indicates the frequency and the average size of baskets to the restrictions on the main covenants. Baskets are frequent: 96 percent of credit agreements include at least one kind of basket. 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 baskets. When exploring the average size of the baskets, which we scale by EBITDA, Figure 2, Panel (b)

reveals the large economic significance of these contractual terms. While the average basket represents 0.43 EBITDA multiple, the restriction on indebtedness exhibits much larger baskets, representing more than 2.3 EBITDA multiples on average.

[FIGURE 2]

In Figure 3, we turn our attention to carve-outs. As with the baskets, the use of carve-outs is the prevalent practice. Indeed, virtually all credit agreements (99%) with restrictions exhibit at least one carve-out. Indeed, as shown in Figure 3, the average credit agreement includes on average 60 distinct carve-outs. Similar to baskets, carve-outs are the most numerous for the restrictions on liens (22 on average) and indebtedness (15 on average). The high number of distinct carve-outs makes it difficult to compute their aggregate economic impact on the credit contract, as it would require to aggregate across them. Furthermore, by nature of carve-outs, the size of the 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 payment in kind carve-out. So, instead, we use the number of carve-out per given covenant as a proxy for contractual easing on that dimension.

[FIGURE 3]

V. Cross-Sectional Determinants of Contractual Provisions

A. Understanding Hidden Risk

Figure 4 plots the distribution of Total Debt/EBITDA. EBITDA is measured 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. The focus is on the leverage before and after adjustment for indebtedness basket. The central takeaway is that the fraction of potentially highly levered deals is much higher than would be inferred from a naïve 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 that would put total leverage over 5x EBITDA. Furthermore, the potential increase in leverage is concentrated among the transactions that are already heavily levered. For over 70% of the companies with Debt/EBITDA at loan origination above 4x EBITDA, the actual allowed leverage is at least 1x EBITDA higher. The shift in the distribution of leverage attributable to indebtedness basket is even more pronounced for leveraged buy-outs, as evidenced in the top-right graph of Figure 4. 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.⁵

[FIGURE 4]

Table II emphasizes the risk resulting from this type of contractual adjustments: the potential increase in leverage is concentrated in already highly levered companies. 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.

[TABLE II]

B. Other Measures of Contractual Weakness

⁵ 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. However, EBITDA is another term that is carefully defined in a large loan and involves a series of adjustments to the accounting item that we use. For example, in the 2007 Outback Credit Agreement, the definition of “Consolidated EBITDA” takes 1,731 words. When using it in the regressions, we will control for industry factors.

Several existing studies use elements of debt contracting to assess contractual strength/weakness. In the loan space, such studies primarily rely on covenant data as summarized 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. Moreover, 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.

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 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, 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 (2009) complement 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.

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, Ishii and Metrick (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,⁶ (iv) asset sales sweep; (v) debt issuance sweep, or (vi) equity issuance sweep.⁷ The resulting index is discrete and ranges from 0 through 6. Billett, King, and Mauer (2007) instead use FISD bond data 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. Table III emphasizes the conceptual differences in our paper and these previous works.

⁶ 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.

⁷ 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. Note that sweeps can be partial.

Table III
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	- Debt issuance sweep	
<ul style="list-style-type: none"> • Baskets • Carve-outs 		
Restrictions on indebtedness		Restrictions on:
<ul style="list-style-type: none"> • Baskets • Carve-outs 		<ul style="list-style-type: none"> - Funded debt - Subordinated debt - Senior debt - Secured debt - Total leverage test
Restrictions on affiliate transactions		
<ul style="list-style-type: none"> • Baskets • Carve-outs 		
Restrictions on payments	Restrictions on:	Restrictions on:
<ul style="list-style-type: none"> • Baskets • Carve-outs 	<ul style="list-style-type: none"> - Dividends 	<ul style="list-style-type: none"> - Dividends - Share repurchases
Restrictions on asset sales	- Asset sales sweep	<ul style="list-style-type: none"> - Sale and leaseback - Asset sale clause
<ul style="list-style-type: none"> • Baskets • Carve-outs 		
Restrictions on capital expenditures		- Investment policy restriction
<ul style="list-style-type: none"> • Baskets • Carve-outs 		
(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

Finally, recent work by Becker and Ivashina (2016), and Berlin, Nini and Yu (2017) focuses on the incidence of “covenant-liteness” in loan contract, that is, on the strength of the enforcement of the financial covenant, where covenant lite contracts do not have an automatic periodic verification of financial covenants.

Street Diligence data allows us to depart from a simple dummy count by directly measuring the contractual elements that weaken the core provisions, and ultimately computing the potential impact on leverage. In Table IV we evaluate the relation between the size of the baskets and the number of carve-outs allowed under the restrictions on indebtedness and restrictions on liens (by far the most prominent contractual categories), and measures previously used in the literature. The focus is on the *R*-square in the OLS regressions: the relation is very weak. When looking at coefficients in details, larger baskets and more numerous carve-outs appear in general correlated with contract weakness as measured by the literature. Cov-lite transactions, and contracts with few financial covenants exhibit larger baskets and more carve-outs. However, we can observe some counterintuitive relations, for instance covenant intensity displays a positive correlation with the size of indebtedness basket and the number of indebtedness carve-outs.

[TABLE IV]

VI. The Special Role of Private Equity Sponsors

In this section we establish substantial and systematic differences for loan contracts backing buyouts. The Great Recession offered compelling evidence that debt market inefficiencies are an important aspect of private equity value creation. PE portfolio companies weathered the downturn with relative success, while many similarly leveraged investment vehicles failed during this period. Anecdotally, there is evidence that prior to the financial crisis, PE sponsored leveraged loans were typically structured with longer maturities, laxer covenants, and options to defer interest payments, buying valuable time for an economic recovery to materialize. Although our sample is relatively short, we observe important time-series evolution in contracting for the 2011-2016 sample. 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 contract easing.

[FIGURE 5]

Repeated bank relationships, reputation, and scale can lead to improved financing terms. This is true for all kinds of firms, including those that are not backed by PE; however, in their role as intermediaries, private equity firms interact with banks and financial markets much more frequently than even the largest stand-alone firms. Thus, private equity firms, and especially larger private equity firms, have more opportunities to develop beneficial reputations, and their business model is better understood by lenders (Ivashina and Kovner, 2011). Moreover, in their role as intermediaries, private equity firms also develop an expertise in debt markets, contracting and renegotiation. This allows private equity firms to create value by exploiting inefficiencies related to mispricing of credit terms in boom and bust cycles of credit supply. There are multiple examples of credit terms mispricing: Ivashina and Sun (2011) document an easing in credit terms in the leveraged loan market following large inflows of institutional capital in the syndicated loan market. Greenwood and Hanson (2013) show that the credit quality of corporate debt issuers deteriorates during credit booms and that this deterioration forecasts low excess returns to corporate bondholders. In a related set of findings, Kaplan and Stein (1993) show that during the credit boom of the 1980s, non-price terms of bond issues (such as non-cash, “pay-in-kind” or PIK interest) became more lax, and that the market did not properly price these features.

To test whether private equity firms contract debt in a systematically different manner from more traditional borrowers, we run OLS regressions on our measures of contract easing, using an indicator for leverage buyouts as an explanatory variable. We include industry and quarter fixed effect to absorb any temporal or industry composition effects. Table V displays the regression

coefficients. The results are consistent with private equity firms relying more heavily on contract easing. The size of indebtedness baskets is significantly larger for leveraged buyouts, by 0.5 multiple of EBITDA, which is particularly large for transactions already highly levered. Private equity firms also appear to use carve-outs abundantly, as credit agreements of leverage buyouts include on average five more indebtedness carve-outs, and seven liens carve-outs.

[TABLE V]

VII. Conclusion

By conducting a comprehensive analysis of 1,240 credit agreements, we document the importance of negative covenants as a governance tool for large 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 mechanisms: deductibles (or “baskets”), and exclusions (or “carve-outs”). These clauses weakening the strength of the contract are concentrated in the most levered 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 writing contracts. The next step of our analysis will aim at measuring the potential increase in risk that this contractual design creates.

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Figure 1. Incidence of Negative Covenants

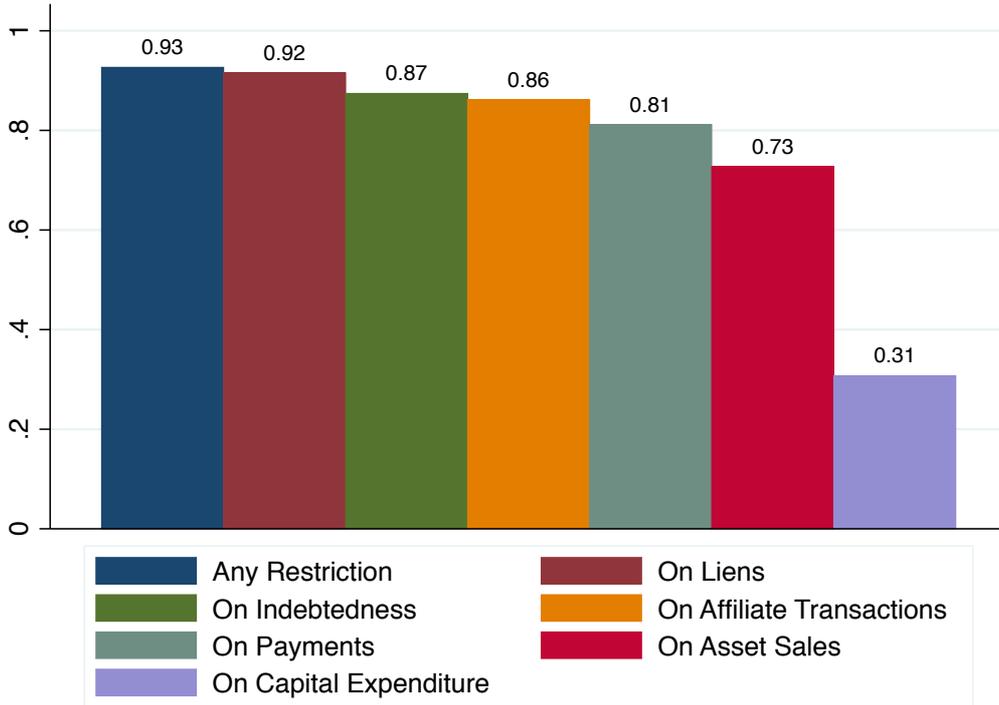


Figure 2. Incidence and Size of Covenant Baskets by Covenant Type

Upper panel reports average incidence covenant basket, and lower panel assess the average aggregate economic size of the allowed baskets as a multiple of EBITDA, where EBITDA is measured as of the fiscal year preceding the year of the loan issuance.

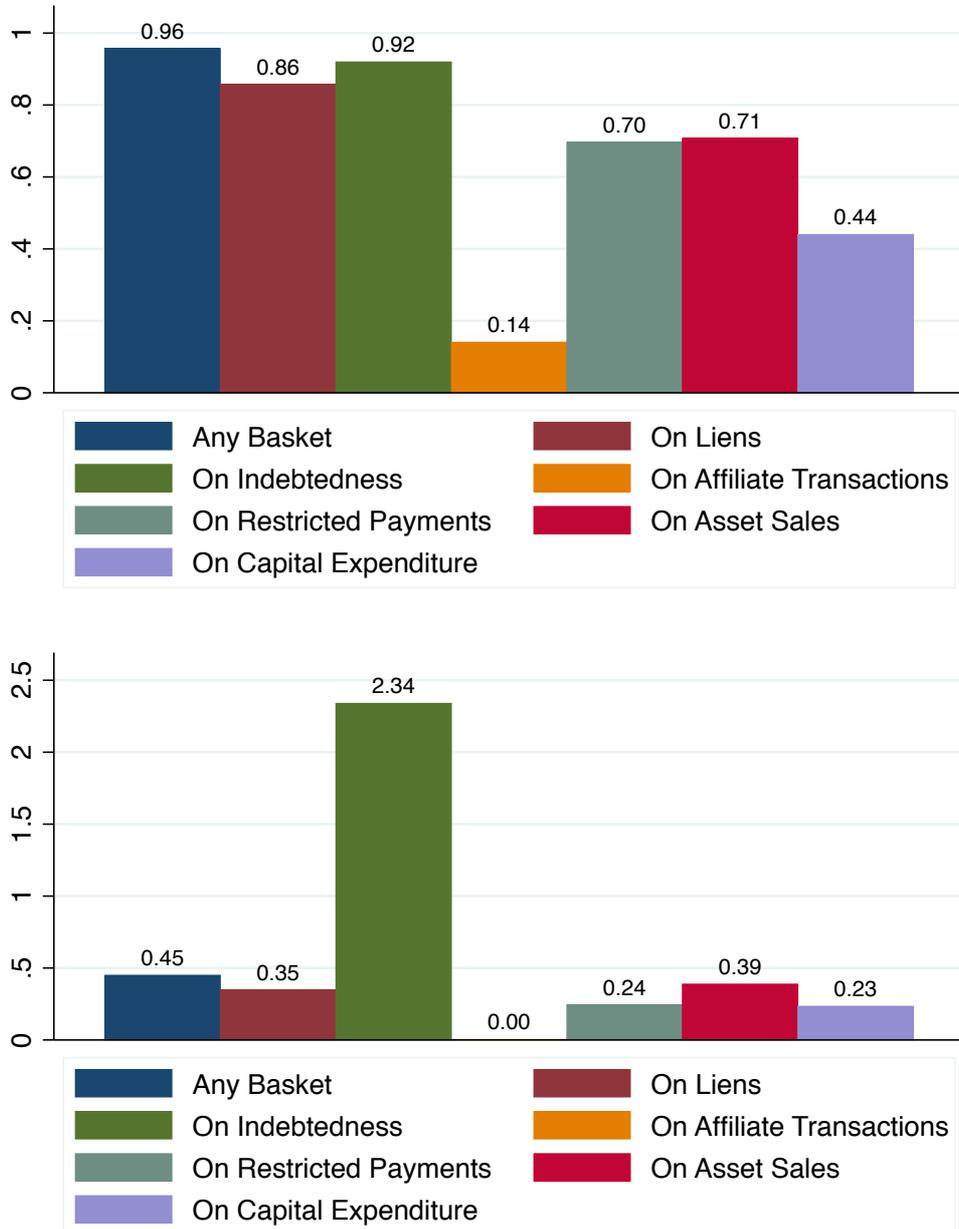
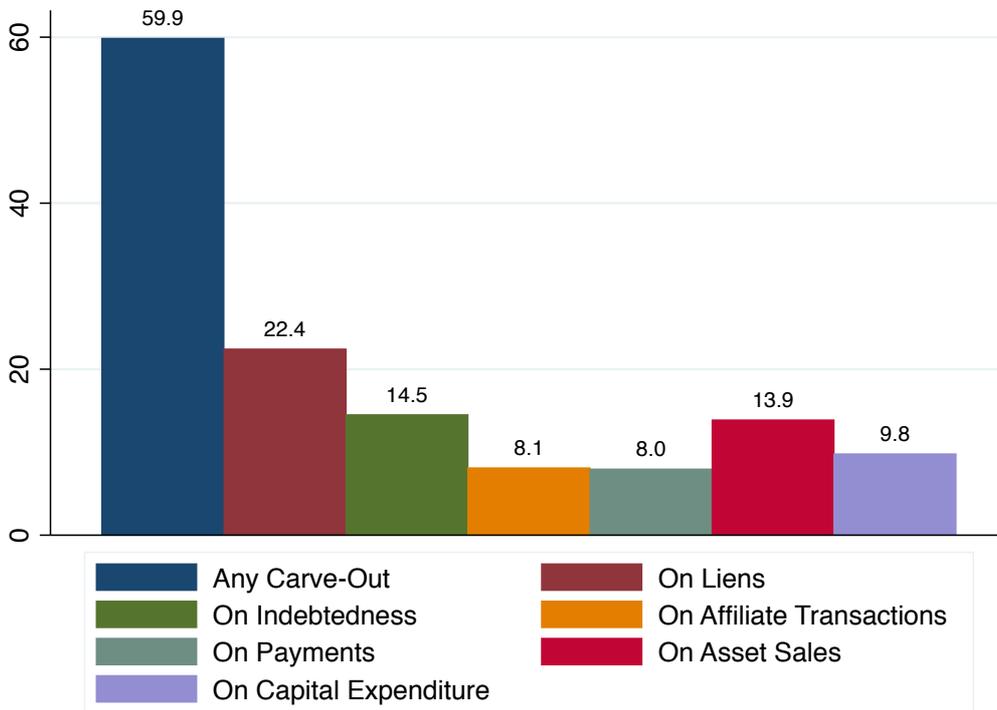
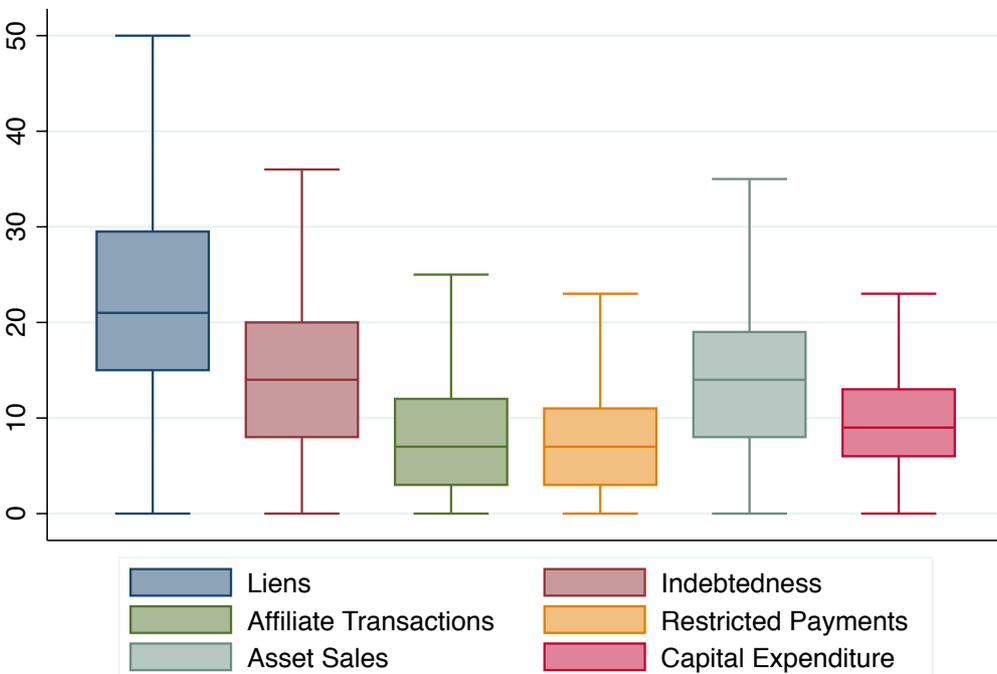


Figure 3. Number of Carve-Outs by Covenant Type

a. Average



b. Median



excludes outside values

Figure 4. Distribution of Leverage with and without Adjusting for Indebtedness Basket

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 indebtedness basket 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.

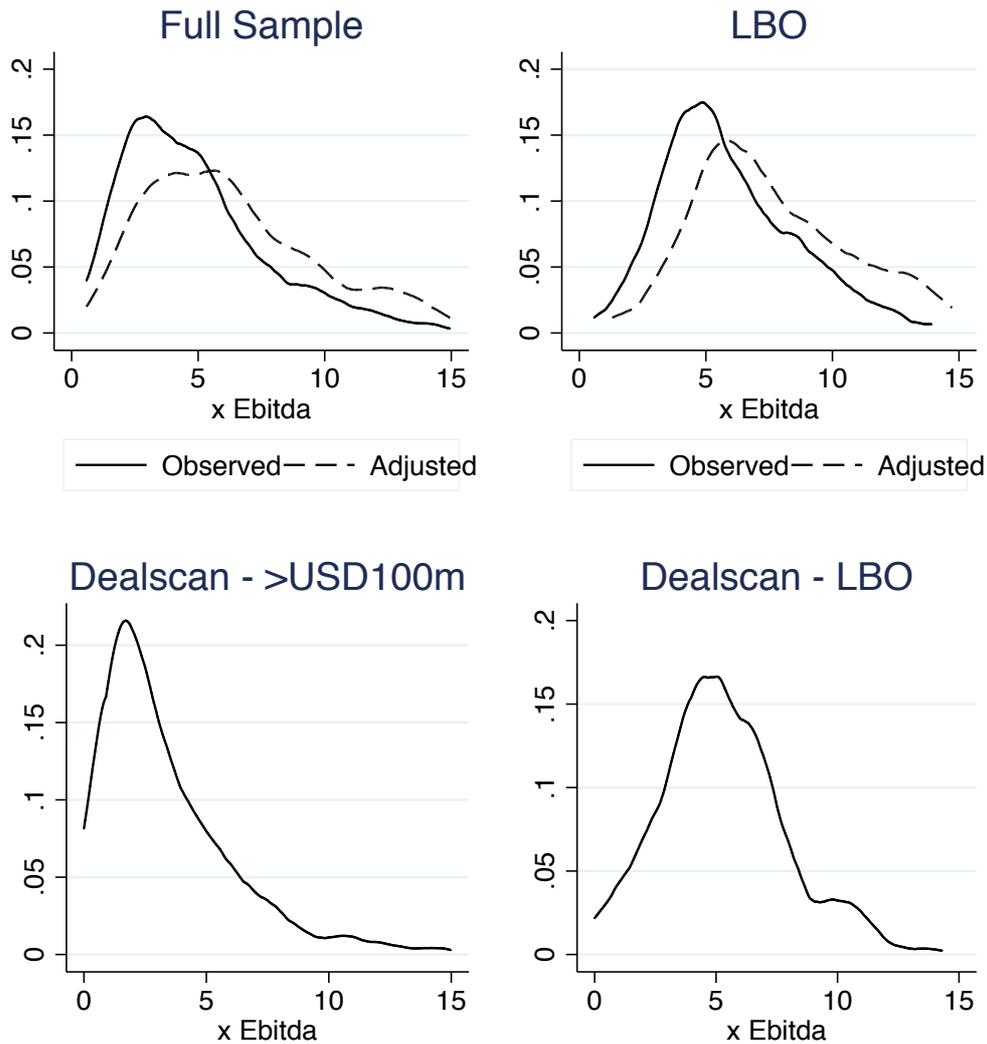


Figure 5. Evolution of Number of Carve-Outs on Liens and Indebtedness Restrictions

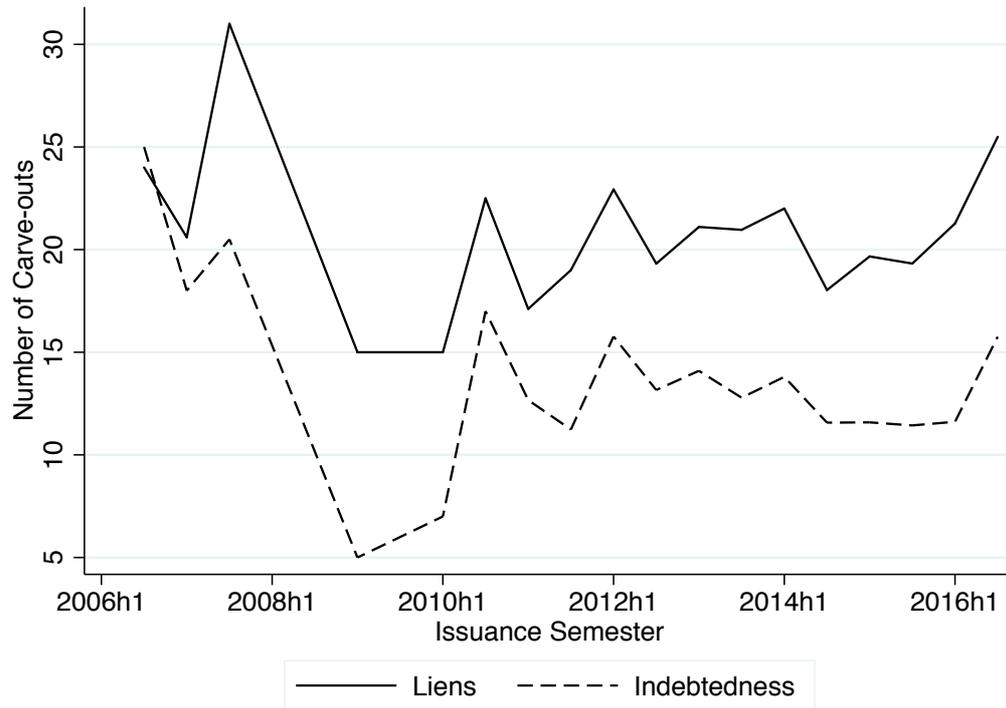


Table I
Summary Statistics

The table presents summary statistics for our sample and benchmarks it against: (i) subset of loans reported in DeaScan that are larger than \$100 million; (ii) 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.

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)						
<i>All syndicated loans > \$100m</i>							
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
<i>Leveraged loans</i>							
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

Table II
Additional Leverage Room

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.

	Multiple of EBITDA			
	>4x	>5x	>6x	>7x
Leverage at loan issuance:				
Debt/EBITDA	67%	56%	47%	41%
Net Debt/EBITDA	62%	51%	43%	39%
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%

Table IV
Alternative Measures of Covenant Weakness

This table presents OLS regression coefficients, where the dependent variable is the size of the basket (scaled by EBITDA) for columns 1 to 3, and the number of carve-outs for columns 4 to 6. Explanatory variables are as follows: *Covenant intensity* is a measure used Demiroglu and James (2010) and Bradley and Roberts (2015) and summarized in Table III. It is a discrete variable that takes value between 0 and 6. *Cov-lite* is a dummy variable equal to 1 if 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 robust to heteroskedasticity.

	Size of Basket (x EBITDA)			Number of Carve-outs		
	(1)	(2)	(3)	(4)	(5)	(6)
a. Restrictions on indebtedness						
Covenant intensity	0.256*** (4.99)	--	--	0.944*** (6.65)	--	--
Cov-lite (dummy)	0.699*** (3.93)	--	--	5.250*** (11.48)	--	--
Number of financial covenants	-0.482*** (-5.70)	--	--	-1.812*** (-7.71)	--	--
Slack Debt/EBITDA	--	-0.049 (-1.17)	--	--	0.254*** (4.16)	--
Normalized Slack Debt/EBITDA	--	--	0.000 (-0.008)	--	--	0.006 (1.52)
Constant	1.879*** (14.51)	1.959*** (17.21)	1.873*** (17.97)	11.885*** (34.67)	12.683*** (37.23)	12.746*** (36.49)
Observations	1,595	608	595	1,857	608	595
R-squared	0.042	0.004	0.000	0.137	0.011	0.002
b. Restrictions on liens						
Covenant intensity	-0.031*** (-3.03)	--	--	0.500** (2.40)	--	--
Cov-lite (dummy)	0.000 (0.01)	--	--	6.984*** (10.42)	--	--
Number of financial covenants	0.012 (0.72)	--	--	-1.366*** (-3.99)	--	--
Slack Debt/EBITDA	--	-0.002 (-0.26)	--	--	0.224*** (2.75)	--
Slack Debt/EBITDA	--	--	-0.0003*** (-2.70)	--	--	0.011 (1.49)
Constant	0.376*** (14.70)	0.324*** (14.43)	0.312*** (15.50)	19.847*** (41.92)	20.505*** (44.13)	20.415*** (42.51)
Observations	1,595	608	595	1,857	608	595
R-squared	0.007	0.000	0.001	0.091	0.000	0.004

Table V
Inclusion of Baskets and Liens in Buyouts

This table presents OLS regression coefficients, where the dependent variable is the size of the basket (scaled by EBITDA) for columns 1 to 3, and the number of carve-outs for columns 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 robust to heteroskedasticity.

	Size of Basket (x EBITDA)			Number of Carve-outs		
	(1)	(2)	(3)	(4)	(5)	(6)
a. Restrictions on indebtedness						
Buyout	0.537*** (3.02)	0.529*** (2.89)	0.401** (2.23)	6.938*** (14.71)	5.433*** (10.50)	5.302*** (10.16)
Fixed effects:						
Industry	No	Yes	Yes	No	Yes	Yes
Quarter	No	No	Yes	No	No	Yes
b. Restrictions on liens						
Buyout	-0.066** (-2.42)	-0.030 (-1.07)	-0.030 (-0.99)	8.148*** (12.21)	7.495*** (10.43)	7.576*** (10.37)
Fixed effects:						
Industry	No	Yes	Yes	No	Yes	Yes
Quarter	No	No	Yes	No	No	Yes
Observations	1,595	1,595	1,595	1,857	1,703	1,703