

ASSESSING THE RISE OF COVENANT-LITE  
LOANS IN THE LEVERAGED  
LENDING MARKET

by

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## ABSTRACT

Since 2008, covenant-lite loans, or loans that lack maintenance covenants, have increased as a percentage of total outstanding loans. Today, over 90% of outstanding institutional loans are considered covenant-lite (Isin et al., 2021). In the past decade covenant-lite facilities have been scrutinized by regulators, researchers, and creditors due to their potential for imposing systemic risk. The leveraged lending market has experienced increased volume of leveraged loans, elevated levels of business debt among borrowers, and a shift towards non-bank lenders (KPMG, 2022). This thesis explores (i) the characteristics of borrowers of covenant-lite loans, (ii) firm performance in the year following a covenant-lite facility, and (iii) if lenders price in the elevated risk associated with covenant-lite loans. Through various regressions, the thesis concludes that borrowers of covenant-lite loans have higher leverage and lower asset tangibility. In addition, the thesis finds that in the year following a covenant-lite facility, a firm experiences lower ROA and higher risk of bankruptcy. Finally, the thesis shows that lenders price the additional risk by increasing the loan cost for the facilities.

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## INTRODUCTION

There has been a notable decrease in lender protection within the corporate loan market since the 2008 financial crisis. This decrease has been driven largely by growth in the leveraged loan market which includes loans given to borrowers with high leverage and/or poor credit ratings. Over the last decade regulators and researchers have criticized the leveraged loan market, citing the (i) increase in leveraged loans as a percentage of total outstanding corporate loans, (ii) elevated levels of borrower leverage, and (iii) the loosening in underwriting standards and transaction constraints (KPMG, 2022). Additionally, researchers worry about the systemic risk of leveraged loans citing the highly leveraged nature of borrowers. In March 2013, the Office of the Comptroller of the Currency (OCC), the Board of Governors of the Federal Reserve (The Fed), and the Federal Deposit Insurance Corporation (FDIC) issued the Interagency Guidance on Leveraged Lending (IGLL). The guidance encouraged financial institutions to avoid lending to overleveraged or poorly rated companies to avert systematic risk due to the origination and distribution of low-quality loans (Federal Reserve, 2014).

Despite the increased regulation, the leveraged lending market has seen explosive growth. In July 2021, the U.S. leveraged loan market hit \$1.3T in size, growing nearly \$68.2B in less than four quarters (Kakouris, 2021). Scholars define leveraged loans as secured loans given to a highly levered company (Moldovan et al., 2018). Leveraged loans are inherently risky because of the increased default risk associated with highly leveraged companies (Traczynski, 2017). Lenders mitigate the additional risk associated with leveraged loans by including covenants in a loan facility. Most loan facilities include covenants, which allow lenders to monitor borrowers, ultimately increasing lender protection. Scholars emphasize the importance of covenants in loan facilities due to the reduction of information asymmetry and moral hazard

between borrowers and lenders. Covenants provide lenders greater insight into a borrower's financial health and help ensure that borrowers are maintaining specified financial ratios which reduces the opportunity for asymmetric information. Additionally, covenants that place restrictions on corporate activity discourages ex-post opportunistic behavior, effectively reducing moral hazard. Covenants motivate borrowers to avoid excess risk by reducing unnecessary investment and reducing overall expenses. (Nini et al., 2009).

Since 2001 lenders appear to have become more risk tolerant. In 2013 the Federal Reserve noted the severe reduction of lender protections in debt agreements and subsequent increase in covenant-lite loans (Federal Reserve, 2013). Covenant-lite loans are leveraged loans that lack maintenance covenants which allow lenders to constantly monitor borrower performance. These loans have significantly increased as a percentage of total outstanding leveraged debt. As of Q4 2021, about 86% of the \$1.3T outstanding leveraged loans in the United States are considered covenant-lite (S&P Global Market Intelligence, 2021).

Researchers and regulators worry about the potential impact of a highly leveraged credit market on the financial system. While regulation has tried to control the level of default risk and overall quality of leveraged loans, leveraged lending has continued to increase as a percentage of total outstanding corporate debt. This thesis will analyze the corporate credit market to identify trends in covenant-lite debt issuances. Additionally, this thesis will investigate whether company performance ex-post is negatively associated with covenant-lite loans.

## **RESEARCH QUESTIONS**

The focus of this thesis is to provide background information on covenant-lite debt issuances and to answer the following research questions:

1. What firm characteristics can explain the use of covenant-lite loans?
2. Are covenant-lite loan facilities associated with decreased firm performance in the year following the loan?
3. How do lenders address the increased risk associated with covenant-lite loans?

## LITERATURE REVIEW

### Loan Covenants

Covenants range from requiring borrowers to maintain certain financial ratios such as debt to equity, and enterprise value to EBITDA, to prohibiting corporate actions like M&A activity or taking on additional debt. Smith and Warner (1979) state that covenants are intended to reduce conflicts of interest between lenders and borrowers. Conflicts can arise from differences in preferences or access to relevant information, but covenants make sure that borrowers do not take actions that are detrimental to lenders. Lenders use covenants to monitor the actions and financial stability of borrowers in order to reduce default risk. Covenants are further categorized into maintenance covenants and incurrence covenants. Incurrence covenants allow borrowers to take a specified action such as making investments, paying dividends, etc. Maintenance covenants require borrowers to maintain a certain level of activity such as a specific debt to equity ratio or certain level of cash flow.

The two types of covenants offer varying levels of protection to lenders. For example, incurrence covenants are not tested on a regular basis, they are only tested in the event the borrower performs the specified action. Maintenance covenants are tested by lenders regularly in order to monitor a borrower's financial performance. Financial covenants are commonly referred to as "tripwires" because control rights are transferred to lenders when a covenant is violated. Without the violation "trip wire" that maintenance covenants provide, lenders could miss the opportunity to restructure the loan or require immediate payment before a borrower defaults. A study conducted by S&P's Leveraged Commentary and Data found that covenant-lite loans recover less than traditional term loans with maintenance covenants, indicating that credit risk is higher with covenant-lite loans than traditional loans (Latour, 2021).



Covenants are included in loan facilities to limit the ability of borrowers to create additional risk. Even though these terms are written into agreements to protect lenders, they can also benefit borrowers by reducing their business risk. Covenants can prohibit management from taking on risky investments and limit excess leverage, which in theory improves financial stability. Nevertheless, there is debate on the actual impacts of covenants on borrower's ex-post. Nini et al. (2009) find that companies constrained by loan covenants experience relatively quick turnarounds and improvements to operating efficiency following a performance decline. Alternatively, Falato et al. (2021) cite data showing covenants can reduce employment and amplify the effect of economic downturns on borrower performance.

### **Covenant Violation**

A covenant violation occurs when a borrower violates a certain financial ratio or takes on a prohibited action. A covenant violation constitutes an event of default and lenders retain the right to recall all outstanding debt, end lending commitments, and foreclose on collateral. Typically, lenders do not capitalize on default rights when a covenant is violated. Lenders may prefer to restructure the loan facility or influence managerial decision making. For example, Ferreira et al. (2008) show that the majority of new independent directors added after a covenant violation are hired by creditors. Becher et al. (2007) find additional evidence that creditors tighten their restriction on acquisitions post violation.

Consequently, the high costs associated with covenant violation may motivate borrowers to adjust earnings to avoid default. Demerjian et al. (2020) show that covenant default plays a role in positive accounting theory; the debt covenant hypothesis states that borrowers who are nearing financial covenant levels will be more inclined to use accounting decisions that increase income to avoid default.

## **Trends in Leveraged Lending**

Before the early 2000s, covenant-lite leveraged loans were not as common in the leveraged loan market because financial institutions reserved these loans to attract strong borrowers by providing them better flexibility in their facility structure. Furthermore, due to the absence of major restrictions, covenant-lite loans are commonly called “borrower friendly loans” and can be beneficial to strong borrowers over the long term. Silva & Hutchinson (2011) noted that in the early 2000s it was rare for lenders to give up covenants for “weak” borrowers, as covenant-lite loans were intended to aid healthy borrowers to weather short-term financial difficulties without defaulting on their loans.

However, in recent years there has been an increase in leveraged lending as a percentage of total outstanding corporate debt. Lenders have been or more willing to finance highly leveraged companies. Roberts and Sufi (2008) show that over 95% of loan agreements hold at least one covenant, but Becker and Ivashina (2016) show that over 70% of outstanding leveraged loans are covenant-lite, indicating that most loan agreements hold incurrence covenants, not maintenance covenants. Prior research suggests that increased competition in the lending environment has contributed to the relaxation of lending requirements and the subsequent growth of covenant-lite loans.

## **Movement Towards Non-Bank Lenders**

Researchers argue that the increase of covenant-lite loans or “borrower-friendly loans” is caused by the imbalance of supply and demand in the lending market as well as the influx of investment specifically within the middle-market (Leveraged Commentary and Data, 2017). Over the last decade, private debt assets under management (AUM) have risen 13.5% annually to

an estimated \$1.21T and are expected to rise to \$2.6T in 2022 (Tyson, 2022). Non-bank institutions, such as collateralized loan obligations (CLOs), mutual funds, and insurance companies have injected a significant amount of capital into the leveraged lending market.

CLOs hold the majority of leveraged loan facilities and are special purpose vehicles designed to invest in, hold, and manage pools of leveraged loans (LCD News, 2022). In 2021, the Federal Reserve estimated that CLOs hold about 50% of all outstanding institutional leveraged loans while the other 50% is held by banks and non-bank institutions (Aramonte et al., 2019). The growth of non-bank lenders in the leveraged lending market is largely caused by the imbalance of reporting requirements between banks and non-banks. Non-banks do not face the same capital or risk retention requirements as traditional financial institutions which raises questions on the exposure of the overall financial system to leveraged lending.

In 2018, The U.S. Court of Appeals for the District of Columbia ruled that CLOs should be exempt from the Dodd-Frank Act, which requires investment firms to hold some percentage of their fund's risk (Brown, 2018). Commonly called the "skin-in-the-game" provision, by requiring a fund to retain an amount of risk, the interest of financial managers become better aligned with that of investors. Essentially, by removing the requirement that CLOs must keep some portion of loans on their books, there is less of an incentive to make "good" loans. An absence of "skin-in-the-game" combined with poor reporting requirements creates the potential for significant systemic risk in the banking system.

A major concern among regulators, lawmakers, and researchers is the lack of available data within the private debt market. There is not much information on the total size of the market, who holds the loans, or the economic exposure of the financial system. As the lending market continues to move away from traditional lenders towards non-banking lenders it will

become even more difficult to quantify the potential systemic risk. The two charts below show the CLO exposure of major banks and insurance firms in the United States. Due to a lack of available data, this is not a comprehensive list.

As of March 2021, the top 10 banks held ~\$117B in CLO exposure. Insurance firms held over \$192B in CLO exposure, with firms who have AUM of over \$10B holding nearly 78% of total exposure or \$151B. Under a National Association of Insurance Commissioners (NAIC) stress scenario where BBB bonds take a 25% principal and interest loss, Athene (one of the largest insurance holders of CLOs) would experience a \$1.2B loss. A severe recession could lead to losses of about \$3.7B based on the regulatory body's analysis (Johnson et al., 2020).

Top 10 Largest CLO <sup>1</sup> Holdings by Bank (in \$mm)				
Company	Available for sale (fair value)	Held to maturity (cost basis)	Total Amount	Change since Q4 2020
Wells Fargo	\$12,407.0	\$21,329.0	\$33,736.0	\$8,772.0
JPMorgan Chase & Co	6,083.0	27,324.0	33,407.0	(200.0)
Citigroup Inc.	-	26,108.0	26,108.0	4,379.0
State Street Corp.	5,607.0	-	5,607.0	2,813.0
Bank of New York Mellon Corp	5,139.0	-	5,139.0	707.0
TD Group US Holdings	4,994.2	-	4,994.2	1,808.0
Stifel Financial Corp.	118.4	4,828.8	4,947.2	586.6
MUFG Americas Holdings Corp.	-	1,153.8	1,153.8	(205.4)
BankUnited Inc.	982.3	-	982.3	(146.5)
Western Alliance Bancorp.	937.1	-	937.1	937.1
<b>Total</b>	<b>\$36,268.0</b>	<b>\$80,743.6</b>	<b>\$117,011.6</b>	<b>\$19,450.8</b>

<sup>1</sup> As of March 2021

CLO Exposure by Assets Under Management <sup>2</sup>								
Industry Type	Less than \$250mm	Between \$250mm and \$500mm	Between \$500mm and \$1.0B	Between \$1.0B and \$2.5B	Between \$2.5B and \$5.0B	Between \$5.0B and \$10.0B	Greater than \$10B	Total
Life	\$320,313.9	\$464,713.7	\$1,933,081.6	\$4,050,786.2	\$3,142,173.9	\$6,079,950.5	\$134,512,521.1	\$150,503,540.9
P/C	1,202,957.0	1,445,349.1	1,435,611.6	5,314,846.8	5,495,881.4	5,823,776.3	14,475,006.6	35,193,428.8
Health	292,278.6	508,517.1	701,589.1	1,463,253.4	1,185,673.5	504,218.0	662,775.0	5,318,304.7
Fraternal	9,190.2	7,438.9	-	296,837.1	51,101.9	-	1,530,127.0	1,894,695.1
Title	179.4	-	-	-	-	-	-	179.4
<b>Total</b>	<b>\$ 1,824,919.1</b>	<b>\$2,426,018.8</b>	<b>\$4,070,282.3</b>	<b>\$ 11,125,723.5</b>	<b>\$ 9,874,830.7</b>	<b>\$ 12,407,944.8</b>	<b>\$ 151,180,429.7</b>	<b>\$ 192,910,148.9</b>
% of Total	0.9%	1.3%	2.1%	5.8%	5.1%	6.4%	78.4%	100.0%

<sup>2</sup> As of Q4 2020

Stress testing done by Elkamhi et al. (2020) find that the current exposure of the financial system to CLOs can have serious implications in the event of an economic downturn. To meet their diversification requirements, CLO investments have become increasingly similar as multiple CLOs are exposed to the same population of borrowers. Their holdings have become so similar that according to the study, idiosyncratic default of the top ten borrowers in the sample leads to nearly half of CLOs violating their overcollateralization ratio (OC Ratio). Furthermore, Elkamhi notes that this fraction of CLOs violating their constraints (10 out of 2000) is comparable to the fraction observed during the 2008 financial crisis.

### **Leveraged Lending by Sector**

Another explanation for the rise of covenant-lite loans could be attributed to the type of borrowers entering the leveraged lending space. Fitch's Institutional Leveraged Lending Market Profile (2021) shown on the next page breaks down the percentage of outstanding leveraged loans by sector. This data is primarily from public data sources and does not include privately issued loan data. As of 2021, 37% of outstanding leveraged loans were held by borrowers in technology, healthcare & pharmaceutical, and services.

The industries with the highest percentage of covenant-lite loans are chemicals, telecommunications, building & materials, and technology. These industries also have higher leverage ratios on average at 2.07x, 2.01x, 1.46x, and 2.80x respectively. Goodison et al. (2019) document that covenant-lite provisions are most common in cash flow financings and certain asset-based lending (ABL) transactions. Cash flow financings are loans made to borrowers that are backed by expected cash flows, and typically are best for companies who generate significant amounts of cash from sales but do not have significant asset tangibility. ABL are loan facilities secured by collateral and typically given to borrowers with high asset tangibility.

Institutional Leveraged Loan Market Profile by Industry <sup>3</sup>						
Industry	Amount Outstanding (\$B)	% of Total	Average Issue Size (\$mm)	% of Industry		
				First Lien	Second Lien	Covenant-Lite
Automotive	\$45.7	3.0%	\$507.5	95.0%	5.0%	82.0%
Banking and Finance	67.4	5.0	443.3	95.0	5.0	72.0
Broadcasting and Media	66.4	4.0	657.6	97.0	3.0	87.0
Building and Materials	42.4	3.0	451.2	97.0	3.0	92.0
Cable	33.0	2.0	1321.4	100.0	-	65.0
Chemicals	56.4	4.0	469.6	95.0	5.0	95.0
Consumer Products	41.1	3.0	489.2	95.0	5.0	88.0
Energy	42.2	3.0	463.5	95.0	5.0	35.0
Food, Beverage, and Tobacco	37.0	3.0	430.6	98.0	2.0	81.0
Gaming, Lodging, and Restaurants	64.2	4.0	675.3	98.0	2.0	84.0
Healthcare and Pharmaceutical	168.7	11.0	497.8	94.0	6.0	81.0
Industrial and Manufacturing	55.6	4.0	360.9	94.0	6.0	90.0
Insurance	50.5	3.0	732.5	95.0	5.0	90.0
Leisure and Entertainment	47.5	3.0	558.4	98.0	2.0	87.0
Metals and Mining	9.5	1.0	396.1	98.0	2.0	73.0
Paper and Containers	31.5	2.0	500.0	97.0	3.0	89.0
Real Estate	18.0	1.0	563.8	96.0	4.0	75.0
Retail	40.6	3.0	513.6	98.0	2.0	79.0
Services and Miscellaneous	157.2	11.0	363.0	93.0	7.0	82.0
Supermarkets and Drug Stores	8.3	1.0	435.7	89.0	11.0	81.0
Technology	225.0	15.0	556.9	92.0	8.0	91.0
Telecommunications	72.6	5.0	824.7	98.0	2.0	94.0
Transportation	64.9	4.0	564.8	98.0	2.0	63.0
Utilities, Power, and Gas	34.1	2.0	541.4	99.0	1.0	55.0
<b>Total/Average</b>	<b>\$1,479.8</b>	<b>100.0%</b>	<b>\$555.0</b>	<b>96.0%</b>	<b>4.0%</b>	<b>79.6%</b>

<sup>3</sup> Fitch Institutional Leveraged Lending Profile, 2021

The 2022 S&P Market Intelligence Leveraged Loan Primer shows that total loan volume by industry varies year to year as industries change in desirability. Loans in defensive sectors such as consumer products tend to be more common during an economic downturn, whereas loans to firms in cyclical industries such as chemicals and automotive tend to be more common during an economic upswing. I would expect lenders in the leveraged lending market to reflect the same (if not more conservative) investment behaviors due to the higher risk associated with leveraged borrowers. But looking at the graph below, about 35% of outstanding leveraged loans are held by cyclical industries including technology, services, finance, transportation, and gaming & leisure. Cyclical industries tend to be more exposed to changes in the overall

economy, indicating even higher levels of risk for lenders of leveraged loans.

### **Borrower Friendly Lending Environment**

Most loan facilities are presented in a competitive bidding process where lenders submit their proposed loan amount, pricing, covenant levels, etc. In a bidding environment, lenders face pressure to decide whether to be more borrower friendly through relaxed covenant restrictions or accept tighter margins and less deal flow. It is important to note that the increase in available capital gives borrowers greater incentives to search for a facility with the most favorable (and often most relaxed) borrowing conditions. Because borrowers are likely to continue to search out the most “borrower friendly” facility, lenders may not be able to mitigate moral hazard ex-ante, increasing the potential for default. Billett et al. (2015) show that increased risk in the leveraged lending market is caused by the incentive for borrowers to choose an “optimal contract” or those without covenant restrictions and greater flexibility. Borrowers are likely to choose less restrictive contracts which gives them more flexibility in choosing their facility structure, and better control over managerial decision making.

Furthermore, it is important to consider the issue of information asymmetry that arises with covenant-lite loans specifically through adjusted earnings before interest, taxes, depreciation, and amortization (adjusted EBITDA). Adjusted EBITDA is calculated by adding or subtracting expenses from EBITDA to provide a more accurate picture of a company’s profitability. For example, if a target company in an M&A transaction experienced abnormally high revenue during the COVID-19 pandemic that they did not expect to continue in the future, the buyer would ask that EBITDA be adjusted downward to reduce the implied purchase price. Additionally, borrowers may ask to subtract abnormal events from EBITDA to ensure covenant

levels are set based on accurate financial performance, decreasing the likelihood of covenant violation.

Restrictions on non-GAAP adjustments to EBITDA are commonplace in traditional loan agreements and intend to create an accurate representation of a company's value. Covenant-lite facilities often accept more relaxed adjusted EBITDA definitions, which creates the opportunity for borrowers to inflate projected earnings and total enterprise value, weakening leverage constraints and lender control as a result. Ho (2019) finds that in some leveraged loan facilities, adjustments to EBITDA are inflating earnings by over 50%. For instance, the 2017 Bain Capital buyout of Diversey included adjustments to EBITDA which boosted earnings by almost 63% which led to firm leverage of 5.8x compared to pre-adjustment figures of 9.5x. The use of addbacks to adjust earnings can hide actual leverage levels which can lead to high-risk borrowers holding unsustainable levels of debt.

Inflated valuations create information asymmetry between lender and borrower as lenders possess different financial information than borrowers. Tung (2021) finds that upward adjustments to earnings reduce a firm's reported leverage and creates an "excessively rosy picture". Larger valuations and positive financial projections can cause lenders to be more comfortable with loose loan terms such as lower interest rates and lower leverage restrictions. If a borrower is projecting financial performance based on adjusted earnings, they increase the likelihood that they will not meet their stated financial targets. A 2019 study by S&P Global Ratings sampled borrowers of leveraged loan facilities originated in 2016. None of the companies in the sample achieved or exceeded their stated EBITDA target by the end of the first year, and only 6% met their target in the second year.



Additionally, information asymmetry increases the risk of default when lenders monitor financial ratios calculated off adjusted earnings. For example, interest coverage is a common covenant included in loan facilities that helps lenders understand if a borrower's cash flows are sufficient to pay off remaining interest on the loan. An adjusted EBITDA may still show lenders a favorable interest coverage ratio ( $\text{EBITDA}/\text{Interest Expense}$ ) even if a company's cash flows are not actually sufficient to pay off remaining interest on the loan.

## **METHODOLOGY**

### **Data Collection**

To address my research questions, I utilized historical loan data on public companies. The data is obtained from Thomson Reuters Loan Pricing Corporation's (LPC) DealScan database as well as the Center for Research in Security Prices (CRSP) and Standard and Poor's Compustat. Ideally, I would have liked to use data from S&P Global Market Intelligence's Leveraged Commentary & Data (LCD) which includes data that is timelier than DealScan, but access to LCD is only available by subscription. I obtained firm level data from the CRSP/Compustat merged database which provides financial data from the market indices (S&P 500 and NASDAQ). The generated sample was then linked to the DealScan database using each borrower's unique identifier from Compustat to generate loan contract data on sole-lender and syndicated loans.

### **Sample Selection and Summary Statistics**

The merged data from DealScan and Compustat resulted in 40,280 firm-year observations which is facility level loan data aggregated at the firm level each year. The data includes loan facilities from about 68 different industries listed on DealScan. Within the sample of observations, there are 1,141 observations that are indicated to be covenant-lite. The sample of covenant-lite observations includes firms with multiple loan facilities that may also include non-covenant lite provisions. The sample was then further broken down into 532 observations where all loan facilities are exclusively covenant-lite or not bundled with non-covenant lite loans. I find that covenant-lite loans constitute 71% of loans for a firm facility in a given year. These findings show that covenant-lite loans make up a larger percentage of loan facilities.

## **Data Limitations**

Berlin et al. (2016) show there are inconsistencies with covenant data extracted from DealScan. In a sample where 98% of loans include at least one financial covenant, only 74% of these loans show data in DealScan. In a small percentage of facilities with both a revolving loan and a term loan, DealScan includes data on revolving loans with the term loan. The facilities that include covenants, are shown to be accurate on covenant types and levels, but it is important to note there is missing data. Covenant data is exported from DealScan in two files titled “financialcovenant” and “networthcovenant”). This data is provided in the package level rather at the facility level. A single loan facility can include multiple packages which are caused by additional lending or restructuring of the facility. In addition to the covenant files, DealScan exports a file titled “marketsegment” which denotes covenant-lite loans at the facility level.

## **Data Collection Methods**

The data was analyzed utilizing linear and logistic regression analysis to answer my three research questions: 1. What firm characteristics can explain the use of covenant-lite loans? 2. Are covenant-lite loans associated with poor performance in the year following the loan facility? 3. How do lenders address the increased risk associated with covenant-lite loans? The regressions were run using STATA software. Each regression controls for industry using fixed effects to ensure that differences in industry financials do not drive results. The regression also controls for time using year fixed effects. Lastly, to remove the effect of outliers, all variables were winsorized at the 5<sup>th</sup> and 95<sup>th</sup> percentiles. The two regression methodologies are further described below:

- 1. Simple Linear Regression** – The purpose of a simple linear regression is to show the relationship between the independent and dependent variables used. In Table 1 the regression models the relationship between covenant-lite and non-covenant-lite loans and varying firm characteristics. In a simple linear regression holding all other variables constant a unit increase or decrease in a independent variable indicates a unit increase or decrease in the corresponding dependent variable. For example, Figure 1 shows that covenant-lite loans have a statistically significant relationship with higher levels of book leverage, property plant and equipment, and rated debt.
- 2. Logistic Regression** – A logistic regression was performed in Tables 2-4. Simple linear regressions show relationships between tested variables, but do not model the probability of the relationship between the tested variables. Logistic regressions model the likelihood than an independent variable affects the dependent variable. For example, in Table 2, we see that there is a negative relationship between covenant-lite loans and *NETPPE* indicating that firms with covenant lite loans are more likely given to borrowers with lower levels of *NETPPE* than borrowers of non-covenant-lite loans. Additionally, the logistic regressions model dependent variables with and without controls for time and industry. (1) indicates no controls for time and industry and (2) indicates that the regression includes fixed effects for year and industry.

First, I examine the firm level determinants of covenant-lite loans. The sample data was modified to analyze each firm's loan activity each year from 2005-2015. If a firm received at least one loan indicated as covenant-lite in a year, the variable was coded as 1 and if the firm did

not receive a loan indicated as covenant-lite it was coded as 0. 1,0 indicators were used as the dependent variables and firm characteristics were included independent variables. As shown in Table 1, independent variables include *LOGSALES*, *MTB*, *MODZQ*, *RDS*, *NETPPE*, *RATED*, *BOOKLEV*, *VOLRET*, *ROAFIRM\_PLUS1*, and *MODZQ\_PLUS1*. These variables are defined formally in the appendix.

Second, I run a logistic regression to model the probability of a loan being covenant-lite. Third, I examine whether a covenant-lite provision predicts the following year performance of a firm. To be specific, the analysis seeks to determine if a lack of monitoring ability, or lack of maintenance covenants, is associated with poor or positive performance in the following year. The analysis used firm financials in the year prior to the facility start date to remove the effect of the loan on the firms' financials, essentially lagging the variables. The increased risk in the year following the loan facility is measured by *ROAFIRM* and *MODZQ*. Lastly, I examine whether lenders are pricing the additional risk into covenant-lite loan facilities. This regression models *LOANCOST* against *COVLITE* in addition to the other variables utilized in the previous two regressions.

## RESULTS

My first research question asks which firm characteristics predict the use of covenant-lite loan facilities. The sample set was analyzed using a linear regression which modeled covenant-lite and non-covenant lite loans to various firm characteristics (see Table 1). Control variables utilized in the regression include firm size (*LOGSALES*), market to book value (*MTB*), return on assets (*ROA*), bankruptcy risk (*MODZQ*), research expenditures to sales (*RDS*), asset tangibility (*NETPPE*), publicly rated debt (*RATED*), total leverage (*BOOKLEV*), volatility of annualized stock returns (*VOLRET*), return on assets in the following year (*ROAFIRM\_PLUS1*), and bankruptcy risk in the following year (*MODZQ\_PLUS1*).

The regression showed that in covenant-lite facilities, variables *LOGSALES*, *ROAFIRM*, *NETPPE*, *RATED*, *BOOKLEV*, and *MODZQ\_PLUS1* were significant at the one percent level, variables *MODZQ*, *RDS*, and *ROAFIRM\_PLUS1* were significant at the five percent level, and that *MTB* and *VOLRET* were not statistically significant. As mentioned above, linear regressions do not model the probability between the two variables just the relationship, so this regression indicates that firm size, profitability, asset tangibility, rated debt, leverage, bankruptcy risk, and research and development expenditures were statistically significant in explaining covenant-lite loans.

Table 2 shows the results from the logistic regression using the same controls from the linear regression. *BOOKLEV* with controls for time and industry shows significance at the one percent level and has a coefficient of 3.14826 and t-statistic of 9.58. *BOOKLEV* without controls shows significance at the one percent level and has a coefficient of 3.06822 and a t-statistic of 7.59. This indicates that after controlling for time and industry, borrowers with covenant-lite loans have higher leverage ratios.

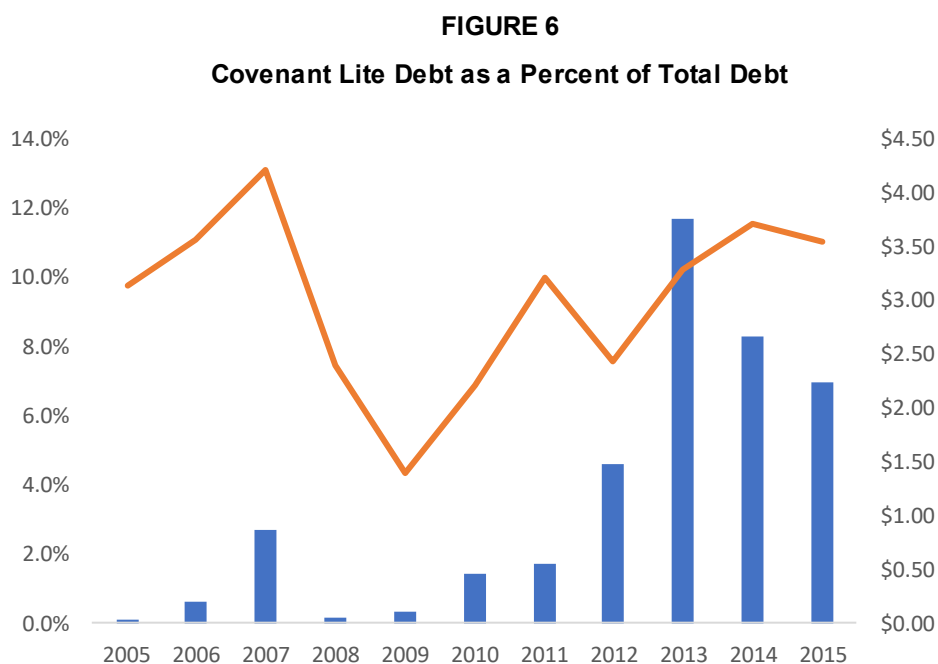
Regardless of controls for time and industry, *NETPPE* is lower for covenant-lite loan facilities and is significant at the once percent level. The coefficient on COVENANT-LITE is -1.66464 with a t-statistic of -1.29. This indicates that covenant-lite loans are associated with borrowers with lower asset tangibility and lower levels of collateral as a result. Lower levels of collateral raise additional questions on the recovery levels of covenant-lite loans in the event of default. It is possible that the entrance of non-bank lenders who tend to hold higher tolerance for risk has changed the characteristics of covenant-lite loans in the sample.

When controlling for time and industry, *VOLRET* shows significance at the five percent level with a coefficient of 0.80402 and t-statistic of 2.14. Similar to *BOOKLEV*, these findings are consistent with prior literature that shows that borrowers of covenant-lite loans are generally riskier. Lastly, without controlling for year and industry, *LOGSALES* holds significance at the ten percent level with a coefficient of 0.08081 and t-statistic of 1.81 suggesting that firms who hold covenant-lite loans are slightly larger than firms that do not have covenant-lite loan facilities.

Additionally, Table 3 shows that covenant-lite facilities have higher costs (measured by all-in spreads over LIBOR). We see that the average loan cost from non-covenant-lite to covenant-lite varies by about 163 basis points or 1.63%. Lastly, the average maturity for covenant-lite is about 20 months more than non-covenant-lite. These findings are consistent with findings from Tung (2021) who shows that institutional term loans (Term B Loans or TLB) are made by investors who have a goal of maximizing long term total returns in comparison to senior term loans (Term A Loans or TLA) which tend to have shorter maturities. Additionally, he states that covenant-lite leveraged loans on average are larger than non-covenant-lite leveraged loans. Another explanation for the larger facility size could be the higher concentration of LBOs and

M&A in leverage lending which represent much larger facilities than those used for debt refinancing or general corporate purposes (Latour, 2021).

Figure 6 shows the changes in covenant-lite debt as a percentage of total debt outstanding. I wanted to analyze if differences in firm and facility characteristics contributed to sensitivity to changes in the credit cycle. The orange trendline shows the total outstanding debt in trillions year over year. There is evidence that covenant-lite loan issuances rise and fall with changes in the credit cycle as observed in the sharp dip from 2007 to 2008 during the financial recession. Additionally, covenant-lite loans seem to follow investor sentiment regarding regulatory changes. The dip shown in 2014 followed an announcement that regulation in covenant-lite lending would increase. Total outstanding debt did not decline during the same period.





My second research question asks if covenant-lite loans lead to decreased performance in the year following the facility. The sample was analyzed using a logistic regression which modeled *ROAFIRM* and *MODZQ* against various controls including *COVLITE*, *LOGSALES*, *MTB*, *ROAFIRM*, *MODZQ*, *RDS*, *NETPPE*, *RATED*, *BOOKLEV*, and *VOLRET*. Similar to the previous analysis, *ROAFIRM* and *MODZQ* are assigned a (1) indicating the data is not controlled for industry and time or (2) indicating the data is controlled for industry and time. Table 4 shows that without controlling for industry or time in *ROAFIRM\_PLUS1*, *COVLITE* is statistically significant at the five percent level with a coefficient of -0.01511 and t-statistic of -2.08. The negative coefficient shows that in the year following a covenant-lite facility, a firm's return on assets is 151 basis points or 1.51% lower than a firm with a non-covenant-lite facility. Additionally, when controlling for industry and time, *COVLITE* shows statistical significance with *MODZQ\_PLUS1* at the one percent level. The control has a coefficient of -0.12011 and t-statistic of -3.54 which indicates the risk of bankruptcy increases by .12 on the Altman Z-Score scale.

This data contradicts findings from Nini et al. (2009) who finds that performance in the years following a loan facility improves as companies constrained by loan covenants experience relatively quick turnarounds and improvements. Alternatively, these findings are consistent with Demerjian et al. (2020) find that covenant-lite loans are more likely to default than non-covenant lite loans, proving covenant-lite borrowers have worse future performance in comparison to other borrowers. I hypothesize that decreased performance in the following year is likely caused by the lack of control rights and opportunity for managerial moral hazard ex-post.

My third research question asks if lenders are pricing increased risk in covenant-lite loan facilities. The sample is controlled for variables such as *COVLITE*, *LOGSALES*, *MTB*,

*ROAFIRM*, *MODZQ*, *RDS*, *NETPPE*, *RATED*, *BOOKLEV*, and *VOLRET* with *COVLITE* being the most important variable. Similar to the other analyses, (1) *LOANCOST* represents the all-in spread without controls for industry and time. (2) *LOANCOST* represents the all-in spread with controls for industry and time. In Table 5 we see that (1) *LOANCOST* has a coefficient of 0.1478 significant at the one percent level and t-statistic of 13.93. (2) *LOANCOST* has a coefficient of 0.01282 significant at the one percent level and t-statistic of 11.78.

These results mean that when controlling for industry and time, covenant-loans are priced 147 basis points or 1.47% higher than non-covenant lite loans. Data controlled for industry and time shows that covenant-lite loans are priced 128 basis points higher or 1.28%. The high t-stats show that there is a significant difference in pricing between covenant-lite and non-covenant-lite. The higher interest rate spread is consistent with findings from Demerijian et al., (2020) who note that covenant-lite loans typically higher spreads to compensate lenders for excess risk. These results prove that lenders are increasing interest rates on covenant-lite facilities. It is important to note that most covenant-lite loans are priced at a floating rate, typically LIBOR + an interest rate. For example, a loan could be priced at LIBOR + 300 basis points or LIBOR + 3.00%. This is to protect lenders from interest rate risk by setting a rate floor. Consequently, during periods of high interest rates, the effect of an economic shock is amplified as highly leveraged companies may struggle to make interest payments, further increasing the risk of default.

While the coefficients show that all-in spread on covenant-lite loans are significant at the one percent level, it is worth analyzing the economic significance of these findings. To assess the significance of the coefficients, I compare the all-in spreads of 147 basis points and 128 basis points to the average spread of the sample which is about 233 basis points. This shows that on

average, the presence of a covenant-lite provision in a loan facility increases the all-in spread between 55% - 63% depending on controls for industry and time. I argue that this is a significant increase in pricing, and therefore economically significant. When considering the thought process behind interest rates on facilities, this implies that lenders are pricing in the increased risk associated with these loans and charging borrowers more for covenant-lite loans.

## CONCLUSION

Today, nearly 86% of the \$1.3T outstanding U.S. leveraged loans are considered covenant-lite. The observed trend towards leveraged loans becoming almost exclusively covenant-lite, raises questions on the higher risk of default associated with these loans. There is extensive academic research on covenant-lite loans, but there is not a consensus among researchers on the effect on borrowers or the systematic risk these facilities pose on the overall economy. This thesis attempts to provide further insight into the leveraged lending market.

Most academics agree that covenant-lite loans are defined as loans given to borrowers with high leverage and/or low debt ratings. To determine if there are other firm characteristics that are associated with covenant-lite loans, this thesis performed two regressions with 10 different firm variable controls. Given the high statistical significance associated with *BOOKLEV*, *VOLRET*, and *NETPPE*, we can see that the borrowers of covenant-lite facilities tend to have much higher leverage, lower asset tangibility, and higher volatility of returns than borrowers of non-covenant-lite facilities. As a result, this thesis concludes that covenant-lite borrowers hold higher levels of default risk. This is due to higher debt loads, lower likelihood of recovery due to low asset tangibility, and less stability in stock returns.

To determine if covenant-lite loans are associated with worse firm performance in the year following the facility, this thesis performed a logistic regression using lagged firm level financials. *ROAFIRM\_PLUS1* and *MODZQ\_PLUS1* were shown to have high levels of statistical significance with *COVLITE*. *COVLITE* shows negative coefficients for both variables, indicating that profitability and risk of default are higher in the year following the loan facility. We can conclude that a covenant-lite facility is a good predictor of poor firm future performance.

Lastly, this thesis analyzed if lenders were pricing in the excess risk associated with these facilities. Using a logistic regression, the results indicate that lenders on average are increasing the all-in spread by about 1.48%. The thesis concludes that lenders are aware of the increased risk and are utilizing higher interest rates to protect their investments. Overall, this thesis shows that compared to non-covenant lite borrowers (i) borrowers of covenant-lite facilities are higher risk, (ii) perform worse in the year following a facility, (iii) and incur higher interest rates.

## CONTINUED RESEARCH

There are a variety of areas where this thesis could expand into. If I was to continue research on this topic I would focus on these areas:

- This thesis does not analyze data associated with EBITDA add-backs or upward adjustments to earnings. Further analysis could be done in this space to determine (i) the change in add-backs and upward adjustments to earnings since the 2008 financial crisis, (ii) the extent to which borrowers are overstating their earnings and adjusted EBITDA, (iii) what percentage of total outstanding leveraged loans contain addbacks.
- Additional analysis could be done on firm performance in the years following a covenant-lite facility. The thesis only analyzed financials in the year following a loan facility. It would be interesting to see additional analysis to maturity and identify trends in firm financials between the facility start and end dates.
- Much of the data analyzed in this thesis is incomplete due to the nature of lenders in the leveraged lending space. Research shows that banks hold less than 10% of the total leveraged lending market, CLOs hold ~50%, and the other 40% is split between private lenders and non-banks. CLOS, non-banks, and private lenders do not have the same reporting requirements as financial institutions, so it is unclear who most of the lenders in the space are.
- More research could be done into the use of funds in leveraged loan facilities. Typical use of funds in leveraged facilities include M&A, LBOs, general corporate purposes, and refinancing debt. The thesis could utilize a logistic regression to analyze uses of funds over the sample period against firm characteristics and firm performance.

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## APPENDIX II: DEFINITIONS

*AISD- DealScan variable noted as the annual spread over LIBOR for each dollar drawn down from the loan*

*BOOKLEV- Compustat item (DLC) Debt in Current Liabilities plus (DLTT) long term debt divided by (AT) Assets*

*CONS- Consolidated information*

*COVLITE-*

*MODZQ- Compustat Quartile rank:  $(3.3 + \text{EBIT} + \text{SALE (Sales/Turnover)} + 1.4 + \text{Compustat item RE (Retained Earnings)}) / (\text{Compustat item AT (Assets - Total)}) + (1.2 + (\text{Compustat item ACT} - \text{Compustat item LCT (Current Liabilities)} - \text{Compustat item CHE (Cash and Short-Term Investments)})) / (\text{Compustat item AT (Assets)})$*

*LOANCOST-*

*LOGSALES-  $\log(\text{Compustat item SALE (Sales/Turnover)})$*

*MTB-  $(\text{Compustat item AT (Assets)} - \text{Compustat item CEQ (Common Equity)} + (\text{Compustat item CSHO (Common Shares Outstanding)} + \text{Compustat item PRCCF (Close Price of Company Stock for the fiscal year)}) / \text{Compustat item AT (Assets)})$*

*NETPPE-  $\text{Compustat item PPENT (Net Property, Plant, and Equipment)} / \text{Compustat item AT (Assets)}$*

*RATED- Equals 1 if Compustat item SPLTCRM (SS&P Domestic Long Term Issuer Credit Rating) is not missing, and 0 if missing*

*RDS- Compustat item XRD (Ratio of R&D expenses)/ Compustat item SALE (Sales/Turnover): 0 if XRD if missing*

*ROAFIRM- Compustat item IB (Income Before Extraordinary Items)/Compustat item AT (Assets)*

*VOLRET- Total annualized stock return volatility*

## APPENDIX III: RESULTS

TABLE 1  
Firm Level Descriptive Statistics

Variable	Non Covenant-Lite					Covenant-Lite					T-Stats
	N	Mean	Median	25th Pct.	75th Pct.	N	Mean	Median	25th Pct.	75th Pct.	
LOGSALES	12759	7.3877	7.3307	6.1809	8.6446	387	7.6990	7.5890	6.7266	8.6085	4.22***
MTB	12782	1.6924	1.3881	1.1151	1.8987	387	1.6730	1.4744	1.1731	1.9201	0.47
ROAFIRM	12799	0.0323	0.0379	0.0099	0.0723	388	0.0140	0.0194	-0.0091	0.0558	3.06***
MODZQ	12807	1.8557	2.0000	1.0000	3.0000	389	1.7326	2.0000	1.0000	2.0000	2.54**
RDS	12766	0.0276	0.0000	0.0000	0.0085	387	0.0205	0.0000	0.0000	0.0142	2.03**
NETPPE	12017	0.3129	0.2245	0.0817	0.5209	386	0.2698	0.1880	0.0679	0.4215	3.47***
RATED	12808	0.5555	1.0000	0.0000	1.0000	389	0.6915	1.0000	0.0000	1.0000	5.70***
BOOKLEV	12807	0.2871	0.2630	0.1314	0.4109	389	0.4223	0.3995	0.2525	0.5943	11.12***
VOLRET	12859	0.3442	0.2867	0.2001	0.4191	388	0.3501	0.3086	0.2165	0.4467	0.59
ROAFIRM_PLUS1	11907	0.0208	0.0342	0.0062	0.0673	334	0.0072	0.0201	-0.0081	0.0492	2.09**
MODZQ_PLUS1	11906	1.8553	2.0000	1.0000	3.0000	334	1.7186	2.0000	1.0000	2.0000	2.65***

TABLE 2

## Analysis of Firm Characteristics and Covenant Lite Loans

	(1)	(2)
	COVENANT-LITE	COVENANT-LITE
<i>LOGSALES</i>	0.08081* (1.81)	0.0067 (0.12)
<i>MTB</i>	0.0128 (0.21)	-0.08923 (-1.00)
<i>ROAFIRM</i>	-0.76100* (-1.83)	-0.32473 (-0.50)
<i>MODZQ</i>	0.01763 (0.24)	-0.18555* (-1.96)
<i>RDS</i>	-0.25326 (-1.27)	-1.31437 (-1.29)
<i>NETPPE</i>	-1.11251*** (-4.36)	-1.66964*** (-4.20)
<i>RATED</i>	0.21686 (1.21)	0.24217 (1.27)
<i>BOOKLEV</i>	3.14826*** (9.58)	3.06822*** (7.59)
<i>VOLRET</i>	-0.25003 (-1.04)	0.80402** (2.14)
<i>CONS</i>	-4.90189*** (-13.28)	-6.09827*** (-4.19)
Observations	12308	10285
Adjusted R-squared	0.065	0.244

**TABLE 3**  
**Loan Level Summary**

Variable	Non Covenant-Lite					Covenant-Lite				
	N	Mean	Median	25th Pct.	75th Pct.	Mean	Median	25th Pct.	75th Pct.	N
Loan cost	46145	0.0226713	0.019	0.01	0.03	0.0389574	0.035	0.03	0.045	1906
Loan amount	80539	392535181	100000000	10000000	350000000	638630108	350000000	160000000	790000000	2009
Maturity	77795	52.602892	60	36	60	72.2926337	73	60	84	1982

TABLE 4

## Analysis of Covenant-Lite Firm Performance in the Following Year

	(1)	(2)	(3)	(4)
	ROAFIRM_PLUS1	ROAFIRM_PLUS1	MODZQ_PLUS1	MODZQ_PLUS1
COVLITE	-0.01511** (-2.08)	-0.00026 (-0.03)	-0.05427 (-1.61)	-0.12011*** (-3.54)
LOGSALES	0.00860*** (9.55)	0.00897*** (9.39)	0.01991*** (4.82)	0.01474*** (3.29)
MTB	0.01538*** (6.41)	0.01807*** (6.86)	0.02364*** (3.58)	0.02046*** (2.84)
ROAFIRM	0.25513*** (7.81)	0.24053*** (7.01)	-0.05994 (-0.85)	0.15889** (2.18)
MODZQ	0.01508*** (8.34)	0.01739*** (7.23)	0.81545*** (113.29)	0.72528*** (75.58)
RDS	-0.05795*** (-3.07)	-0.05723*** (-3.01)	-0.05673*** (-4.84)	-0.08320*** (-5.16)
NETPPE	-0.02353*** (-4.28)	-0.00169 (-0.24)	-0.11620*** (-5.29)	-0.07646** (-2.19)
RATED	-0.0018 (-0.63)	-0.00369 (-1.28)	-0.00348 (-0.25)	0.01107 (0.77)
BOOKLEV	0.02913*** (4.10)	0.01914** (2.38)	-0.02119 (-0.68)	-0.07934** (-2.27)
VOLRET	-0.01187* (-1.79)	-0.02906*** (-3.65)	-0.00739 (-0.28)	-0.03724 (-1.25)
Observations	10897	10897	10896	10896
Adjusted R-squared	0.166	0.208	0.698	0.717

**TABLE 5**  
**Analysis of Covenant-Lite All-In Spread**

	(1)	(2)
	LOANCOST	LOANCOST
<i>COVLITE</i>	0.01478*** (13.93)	0.01282*** (11.78)
<i>LOGSALES</i>	-0.00139*** (-8.75)	-0.00163*** (-10.41)
<i>MTB</i>	-0.00069*** (-2.89)	-0.00064*** (-2.65)
<i>ROAFIRM</i>	-0.02061*** (-7.93)	-0.01814*** (-7.26)
<i>MODZQ</i>	-0.00009 (-0.36)	-0.00123*** (-4.67)
<i>RDS</i>	0.00094 (0.72)	0.00047 (0.39)
<i>NETPPE</i>	-0.00263*** (-3.48)	-0.00541*** (-5.04)
<i>RATED</i>	-0.00099** (-2.08)	-0.00066 (-1.44)
<i>BOOKLEV</i>	0.01031*** (10.00)	0.00901*** (9.20)
<i>VOLRET</i>	0.01612*** (18.80)	0.00980*** (10.67)
<i>CONS</i>	0.02610*** (21.89)	0.03399*** (9.25)
Observations	19055	19055
Adjusted R-squared	0.222	0.304



**FIGURE 6**  
**Covenant Lite Debt as a Percent of Total Debt**

