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THE GROWTH OF LEVERAGED LENDING AND ITS EFFECTS ON THE STABILITY OF  
OUR ECONOMY

SANKET NARAYANA  
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Reviewed and approved\* by the following:

Qi Li  
Assistant Professor of Economics  
Thesis Supervisor

Russell Chudrewicz  
Senior Lecturer in Economics  
Honors Adviser

\* Electronic approvals are on file.

## **ABSTRACT**

This paper seeks to analyze the growth of the leveraged lending market and the effects it has on the economy. This paper examines different ways companies can raise capital with a particular emphasis on the leveraged loan and high-yield bond markets. The Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, and Office of the Comptroller of the Currency raised scrutiny of these markets and issued the “Interagency Guidance on Leveraged Lending” in 2013. However, the Trump administration decided to roll back on these restrictions in 2016 and stated the guidelines did not have the same power as a law. This paper analyzes the impact of the implementation and repeal of the leveraged lending guidelines on several financial ratios and performance metrics of publicly traded US companies. After conducting multiple regression analyses, the “Interagency Guidance on Leveraged Lending” had a significant impact on several variables. However, the various federal agencies and financial institutions have to balance the growth goals of corporations and the stability of the economy from overleveraging that can be explored with further research and policy options.

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## **Chapter 1**

### **Introduction**

Businesses use capital, which are funds held in deposit accounts or funds obtained from special financing sources, for a variety of reasons. For instance, corporations use the cash to fund their day to day operations. This is known as general corporate purposes in the financial world. Another way firms use money is to expand their current facilities, such as expanding the size of their manufacturing plant. This is known as capital expenditures. Capital is also used to research and development purposes, such as creating new medicines for disease and viruses or creating ground-breaking technology that transforms society. Lastly, businesses utilize funds to purchase or merge with other companies to create a bigger firm, which is known as mergers and acquisitions.

There are two main ways firms can raise capital: debt and equity. The essence of debt is the company will receive cash from lenders and promise to make fixed payments in the future. The payments include periodical interest payments and full principal payment at the end of maturity. The failure to make payments can lead to bankruptcy which causes firms to lose control of operations to their lenders. Corporations would like to issue debt over equity because debt is generally cheaper to finance than equity due to capital structure seniority. Additionally, interest payments are tax-deductible, so profits are higher for a corporation. Furthermore, issuing debt does not dilute current ownership of the company so the founders of the company keep their claims to the firm's end of year profits.

On the other hand, equity is when management sells partial ownership of the firm for cash but gives investors total claim on residual cash flows after lenders have been paid. Equity holders are typically entitled to the future profitability and any residual asset value in excess of the value of debt. Although financing through equity is more expensive than debt, a corporation might choose this option if they believe the market overvalues their company so they can receive a larger cash pile. In addition, the

business has no obligation to repay the money acquired through the initial public offering. Therefore, the company feels no financial burden as they are not required to make periodical payments back to their investors. The seniority and riskiness of the different asset classes in the capital structure can be seen here:



**Figure 1. Typical Corporation Capital Structure**

This paper will be primarily focusing on how corporations have utilized leveraged finance markets, which are composed of leveraged loans and high-yield bonds, in recent times. This market has been particularly under scrutiny by politicians and financial commentators as they believe companies are piling too much debt on their balance sheets. Consequently, this puts the financial system in a great amount of stress as investors are worried if firms can pay back their obligations. Additionally, more firms will go bankrupt if they cannot keep up with their interest and principal payments. Through bankruptcy, restructuring, and liquidation, firms may be required to conduct mass layoffs, significantly reduce the benefits of current employees, and destroy investor's money and wealth. As a result, this could dramatically ruin the efficiencies in the economy and create a massive dead-weight loss and negative externalities.

Through proper analysis, this paper will weigh in on the costs and benefits of the leveraged finance markets. Furthermore, the paper will look at various literature from economists to understand how public policy has changed in the past decade to address the implications of the leveraged loan and high-yield bond market. Throughout history, the United States federal government had to step in and bail out many companies and investors during recessions to make sure the consequences do not transfer across to other areas of the economy due to the systemic structure of our financial systems. For instance, the Federal Reserve and US Treasury had to bail out Long-Term Capital Management and AIG in the previous recession so the housing crisis would not create a more dramatic effect on the rest of the economy. Therefore, many critics claimed that these bailouts create a moral hazard and allow companies to continue to make extremely risky decisions. Overall, the public does not want the leveraged finance markets to be a repeat of the mortgage and housing crisis.



## Chapter 2

### Review of Literature

Leveraged lending is primarily composed of two main products: leveraged loans and high-yield bonds. These are credit products provided to companies or individuals that have considerable amounts of debt on their balance sheet or have a poor credit rating or credit history. Moody's, S&P, and Fitch are the three biggest credit agencies and they are responsible for evaluating and assessing the creditworthiness of a borrower to a particular debt or financial obligations. These institutions base their ratings on 5 fundamentals of credit: character, capacity, capital, conditions, and collateral. Character measures the lender's opinion of a borrower's general trustworthiness, credibility, and personality. Capacity determines the probability to repay debt obligations by analyzing various financial metrics and benchmarks, such as cash flow, liquidity ratios, and repayment history. Capital is the amount of money invested by the business owner or management team. Conditions observe the trends in the economy and industry and collateral measures the value of assets that are used to guarantee or secure a loan. From this criterion, these agencies publish the ratings to the public, so investors can get a better understanding of the company's credit ratings (Segal, 2020). There are several reasons why corporations pay money to Moody's, S&P, and Fitch to receive a credit rating. Mainly, credit ratings increase demand for credit products because investors decide their investments based on the ratings. Below is the rating scale of the three agencies (Connecticut's Finances, 2017):

	Moody's INVESTORS SERVICE	FitchRatings	S&P Global Ratings	Rating Grade Description
Investment Grade	Aaa	AAA	AAA	Highest credit quality, lowest level of credit risk
	Aa1	AA+	AA+	Very high credit quality with very low credit risk
	Aa2	AA	AA	
	Aa3	AA-	AA-	
	A1	A+	A+	High credit quality with low credit risk
	A2	A	A	
	A3	A-	A-	
	Baa1	BBB+	BBB+	Good credit quality with moderate credit risk
	Baa2	BBB	BBB	
	Baa3	BBB-	BBB-	
Speculative Grade	Ba1	BB+	BB+	Speculative with substantial credit risk
	Ba2	BB	BB	
	Ba3	BB-	BB-	
	B1	B+	B+	Highly speculative with high credit risk
	B2	B	B	
	B3	B-	B-	
	Caa1	CCC+	CCC+	Substantial credit risk with default as a real possibility
	Caa2	CCC	CCC	
	Caa3	CCC-	CCC-	
	Ca	CC	CC	Very high levels of credit risk with default either occurring or about to occur
	C	C	C	Default or default-like process has begun
		SD	RD	Selective Default (SD): issuers have defaulted on one or more specific issues but are expected to meet their other payment obligations. Restricted Default (RD): issuers have missed one or more payments but are not under supervision for reorganization or liquidation.
		D	D	Default: issuers are unlikely to pay their obligations and have likely entered into bankruptcy filings, administration, receivership, liquidation or other formal winding-up procedures.

**Figure 2. S&P Global, Moody's, and Fitch Credit Ratings Scale**

## 2.1 What are Leveraged Loans and High-Yield Bonds

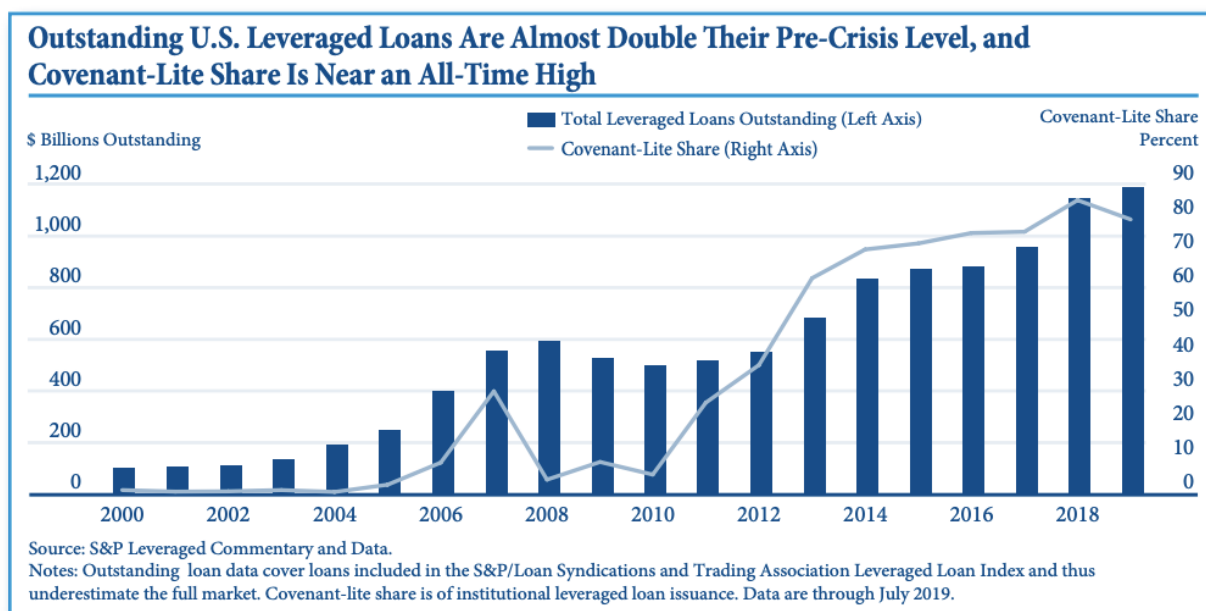
Leveraged loans are floating-rate products, so borrowers have to pay a reference rate plus a stated interest margin. Currently, the London Interbank Offered Rate (LIBOR) is the benchmark rate for the leveraged loan and it is the average of rates that global banks lend to each other. As the interest rates go higher, the borrower will have to pay higher interest payments and the debt holders get a better yield. On the other hand, a high-yield bond is a fixed rate product. Therefore, the borrower pays a consistent interest payment despite fluctuations in market interest rates. High-yield bonds are specifically bonds with a high coupon rate and low credit rating (S&P Global, 2019). Typically, these bonds have a credit rating of BB+ or below.

Corporate institutions use the capital provided from leveraged loans and high-yield bonds for a variety of reasons. For instance, the funds can be used to support M&A-related transactions. Additionally, companies can back a recapitalization of a company's balance sheet to pay dividends, repurchase stock,

or sell new equity in the company. Furthermore, companies can refinance their existing debt obligations with other debt obligations. The purpose of refinancing is to take advantage of better interest rates, which reduces monthly repayments. In addition, the borrower can get new terms of the agreement, which can reduce restrictions and grant more freedom. The last way borrowers use capital is to fund general corporate operations or for a new project.

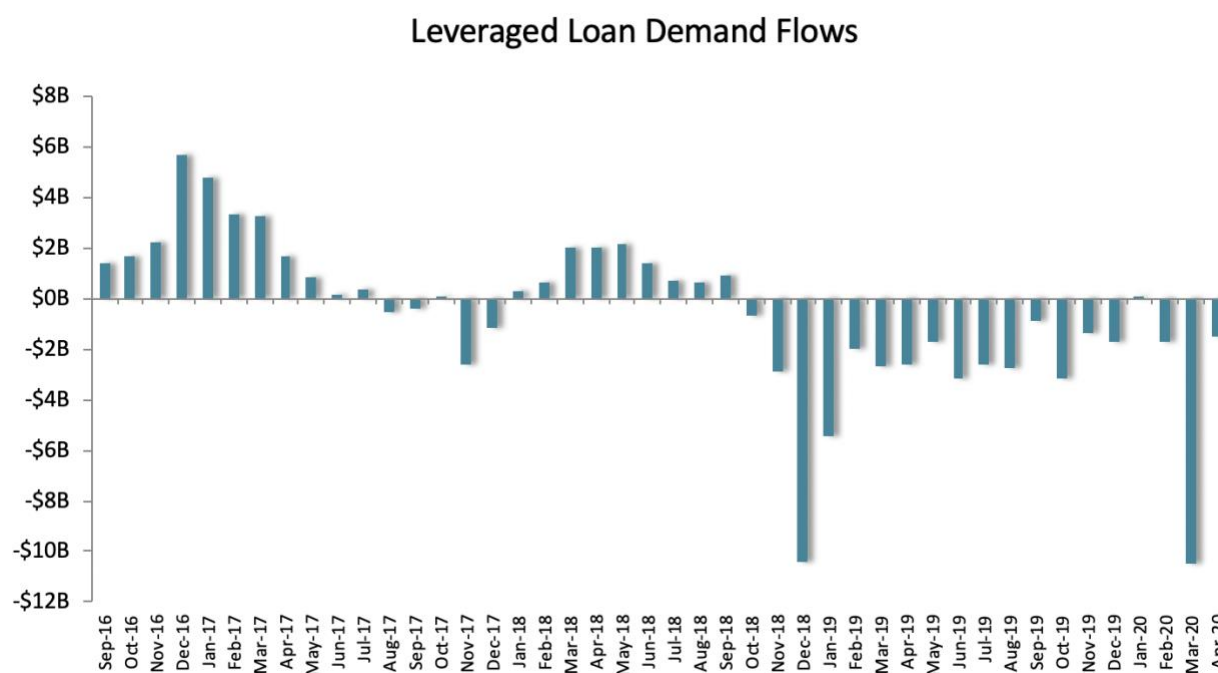
## **2.2 Trends in the Leveraged Loan Market**

The leveraged loan market has grown tremendously since it was first brought to fruition in the mid-1980s. The leveraged loan market has become the dominant way for corporate borrowers to utilize the formal banking and institutional capital provider system. Corporate institutions went to banks because loans were less expensive and more efficient to administer than traditional bilateral credit lines. Additionally, investment banks found this a very profitable product because they carry an attractive 1% to 5% arranging fee of the total loan commitment. The fee depends on the complexity of the transaction, market conditions, and if the loan is underwritten. Furthermore, banks collect interest fees when the loan is drawn. The S&P/LSTA Loan Index is widely used as a proxy for market size. At the end of 2018, the US leveraged loan market surpassed the trillion-dollar mark by having \$1.15 trillion in total loan commitments. The market continues to grow every year ever since dipping to \$497 billion in 2010. The European leveraged loan market has witnessed similar growth with €181 billion in total loan commitments (S&P Global, 2019). The graphs below depict the growth in the market:



**Figure 3. Growth in Leveraged Loan Outstandings**

Since we have touched on the supply side of leveraged loans and high-yield bonds, let's discuss the demand. Since leveraged loans are floating-rate products, interest payments increase as interest rates rise. As a result, investors can get a better yield and return on their investment. In 2017 and 2018, the Federal Reserve conducted a series of interest rate hikes, which led to investors rushing to the floating rate product. However, in 2019, the Federal Reserve decided to reverse their course of action and started preaching a more dovish outlook. Therefore, the Federal Reserve has cut rates three times this year, which leaves the current federal fund rate range of 1.50% - 1.75%. Consequently, investors decided to reallocate their portfolio money. Investors pulled money out of leveraged loans and rushed them into fixed-rate products, such as high-yield bonds. Bond prices and yields move in opposite directions, so investors could get a higher return on the capital appreciation on bond prices. The graph below depicts the cash flow movement in leveraged loans (LevFin Insights, 2020):

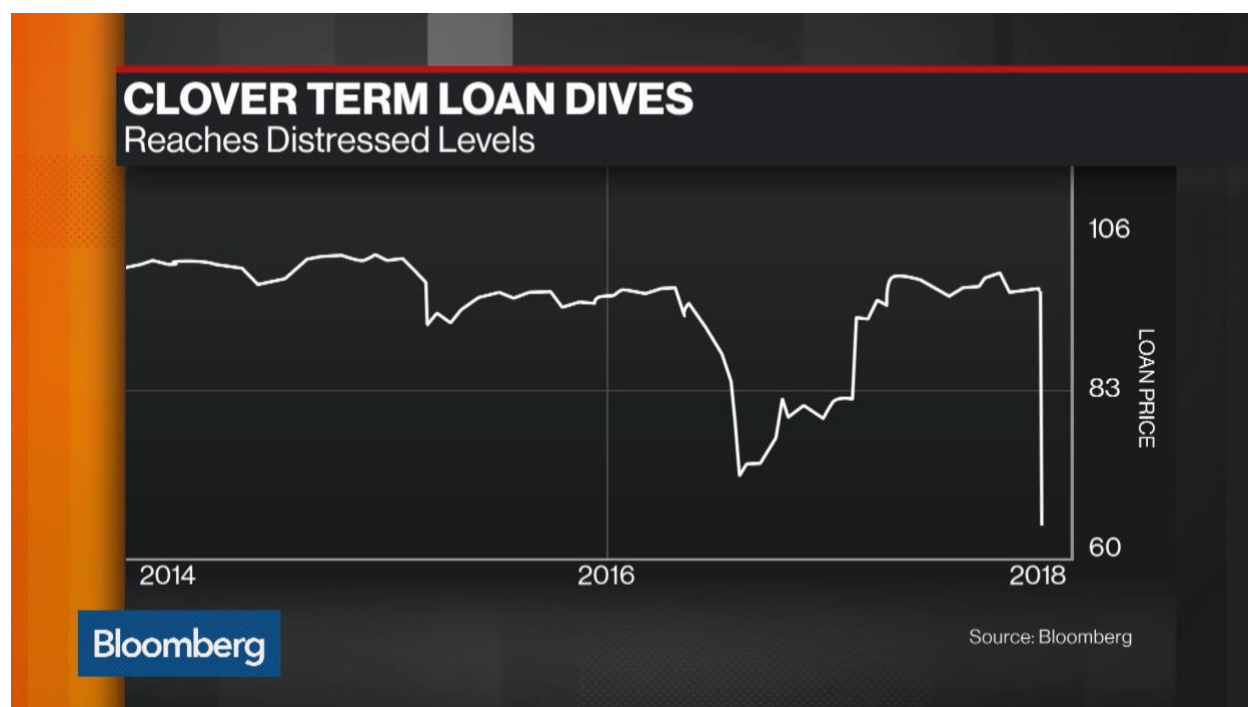


**Figure 4. Leveraged Loan Investor Demand Flows**

Due to popularity and high demand in these credit products, borrowers were able to get lower coupon rates and remove several covenants in their credit agreements. A covenant is a promise in an indenture or other formal debt agreement that permits or disallows certain activities. There are two main types of covenants: affirmative and negative covenants. Affirmative covenants are actions that the borrower is required to perform. Examples include and are not limited to maintain adequate levels of insurance, requirements to furnish audited financial statements, compliance with applicable laws, and many more. On the other hand, negative covenants are activities that borrowers should refrain from conducting. For instance, the borrower's debt should not exceed a certain threshold. Violations of any covenants can lead to severe negative consequences, such as downgrading of bond's credit rating and increases in borrowing costs. Therefore, the deterioration of covenants can increase the systematic risk in the industry (S&P Global, 2019). For additional information on covenants, please turn to Appendix A.

Without these restrictions, borrowers can take on more risks, and investors will be more uncertain about receiving their debt repaid. For example, Clover Technology was able to remove a covenant that

mandated the company to diversify its revenue exposure. However, in 2019, Clover lost two major customers, so investors rushed to unload their debt investment from their portfolio. As a result, the price of the term dropped significantly, which can be seen below (13D Research, 2019):



**Figure 5. Clover Term Loan Price Timeline**

### **2.3 Role of Private Equity Firms in Leveraged Lending**

The biggest uses of leveraged loans are private equity funds. Many PE firms conduct leveraged buyouts (LBOs), which is an acquisition of another company using a significant amount of borrowed money to meet the cost of acquisition. The assets of the acquiring and acquired companies are commonly used as collateral for the loans. In LBOs, there is an extremely high debt/equity ratio, which is commonly around 90%. LBOs are commonly considered to be a ruthless, predatory tactic as the maneuver is usually not sanctioned by the target company. There are three main reasons why private equity firms conduct an LBO. First, take a public company private. Second, spin-off a portion of the existing business by selling it. Lastly, transfer private property with a change in small business operations (Rogers, 2014).

Private equity funds attempt to maximize their internal rate of return (IRR), which is calculated by the sum of the present value of future cash flows less than the initial investment. The goal of every PE transaction is to achieve a 20-25% IRR. PE firms are able to achieve this success by focusing their energies on accelerating growth of value through the relentless pursuit of one or two key strategic initiatives and managerial discipline. Public company managers can commonly lack a clear focus on maximizing economic returns because their attention is divided between immediate quarterly financial targets and long-term missions. There are four critical management disciplines that every private equity institution encompasses. First, the management team must define a clear investment thesis that shows the firm will be more valuable in three to five years. The thesis should focus on cost reduction and growth which leads to a path of strong growth and a big return on investment (ROI) and IRR. The second part of the criteria is to not measure too many things. Financial ratios complicate management discussions and impede action. The management should be watching cash balance closely since cash is the true measure of financial performance and earnings can be manipulated. Third, PE firms should work the balance sheet by allocating capital strategically and converting fixed assets into sources of financing. Lastly, the corporate staff should view themselves as active shareholders in the business (Rogers, 2014). Therefore, management should feel obligated to make investment decisions with a complete lack of sentimentality. For example, the company should lay off works in order to cut costs and maximize synergies.

## **2.4 Transformation of Financial Regulation**

After the financial crisis, the financial industry was under scrutiny on its corporate lending policy. As a result, the Office of the Comptroller of the Currency, Federal Reserve Board of Governors, and Federal Deposit Insurance Corporation jointly issued the “Interagency Guidance on Leveraged Lending” in 2013. The report listed several restrictions on banks’ lending to corporations. For instance, banks were not allowed to underwrite loans that cause the company’s total leverage, Total Debt/ EBITDA, exceeding

6.0x. Additionally, banks were recommended not to underwrite loans to borrowers who cannot fully repay senior secured debt or 50% of total debt within 5 to 7 years with their free cash flow (Board of Governors, 2013).

Despite these strict restrictions, almost half of leveraged loan issuances were over 6.0x total leverage in 2014. Therefore, the Federal Reserve scolded the leveraged loan market for having weak transactions and started questioning the credibility of banks' internal projects and risk management. Most importantly, the Federal Reserve is worried that excessive debt caused by flexible underwriting standards leaves banks with risky balance sheets and companies with overwhelming debt burdens. As a result, the entire economy becomes financially distressed and can lead to unwarranted negative consequences. Furthermore, the Federal Reserve and other regulatory agencies started threatening punishment on banks for not justifying their lending practices that exceeded the 6.0x leverage limit (Berlin, 2018). Credit Suisse Group AG was the only bank fined by the Federal Reserve for an amount of \$197 million for not satisfying the guidance.

However, legislation started to relax as Donald Trump became president and the Republican Party took control of Congress. In 2018, five federal agencies - the Office of the Comptroller of the Currency, Federal Reserve Board, Federal Deposit Insurance Corporations, the National Credit Union Administration, and the Bureau of Consumer Financial Protection - issued a joint statement that the original supervisory guidance "does not have the force and effect of law (Ireland, 2018)." Therefore, regulated banks are not required to follow supervisory guidance. The purpose of the 2013 statement was to outline the agencies' priorities, articulate the agencies' general view regarding appropriate practices, and provide examples of practices that are consistent with safety-and-soundness standards. Additionally, Joseph Otting, 31st Comptroller of the Currency, supported banks transgressing guidelines as long as they have enough capital and excess reserves to support the excessive lending of risky loans on their balance sheets (Ireland, 2018).



Correspondingly, the Republican Administration relaxed the guidelines aimed at reducing risk and leveling the playing field between regulated banks and unregulated lenders. During the supervisory guideline period, non-regulated banks and lenders were able to pick up the slack and grab significant market share in the leveraged lending space. Examples of non-regulated banks are Jefferies and Macquarie, while unregulated lenders are Kohlberg Kravis Roberts and Blackstone private equity institutions (Berlin, 2018). With this intention, regulated banks are capitalizing on the opportunity to win back lost ground as the political environment continues to undermine enforcement, especially in highly risky leveraged buyouts. For instance, SRS Distributions, a roofing distribution firm, and Renaissance Learning, education software company, were both pitched debt packages with leverage of 7.5x and 7.75x respectively. Despite both companies being highly levered, investors were extremely eager to lend money to these leveraged buyout prospects. A senior leveraged finance investment banker commented, “both were home runs for private equity guys and debt investors. The deal has been a race to the bottom in terms of leverage, pricing, and (credit) terms (Berlin, 2018).”

## Chapter 3

### Hypothesis

Leveraged financing is a large source of funding for companies and is the supply of financing for key pieces of acquisitions to seasonal working capital management. Even as we recognize it's far vital, we do not know whether barriers to the leveraged lending market might have an effect on debtors (Sekar, 2018). Although, regulatory agencies identified leveraged finance as a critical supply of financing, but do borrowers have alternative methods of acquiring capital when banks are unable to provide funding? Therefore, do corporations have to turn to inefficient means of capital that does not present the most productive results or greatest return on investment? However, has the restriction on debt helped companies become more stable and perform better? To address these various questions in this section, I will assess the impact of "Interagency Guidance on Leveraged Lending" from 2013 to 2017 and the repeal of the supervisory guidelines from 2018 to the present on various variables of corporate valuations and operating metrics. Listed below are the following financial ratios that would be tested (Corporate Finance Institute, 2015):

- **Leverage Ratio (Total Debt/ EBITDA):** Amount of income generated and available to pay down debt before covering interest, taxes, depreciation, and amortization expenses. High ratios indicate a company has more debt than it can handle.
- **Total Debt/ Assets:** Indicates to investors the percentage of a company's total assets that were financed by creditors. Generally, the higher the rate, the greater the leverage ratio, and the greater the risk.
- **Market-to-Book Ratio:** Market value is the current stock price of all outstanding shares, while book value is the amount that would be left over if the company liquidated all assets and repaid all of its liabilities. A low ratio indicates the company is undervalued or something is materially wrong, vice versa.

- Current Ratio: Liquidity ratio that measures a company's ability to pay short-term obligations with their current assets. The ratio that is in line with industry averages or slightly higher is generally considered acceptable. A low ratio indicates a high risk of distress or default.
- Sales/ Average Assets: Measures a company's revenues relative to the value of its assets. This ratio indicates how efficiently companies are using their assets to generate revenues. A higher ratio means the company is efficiently using its assets.

Below is my formal hypothesis that I will be testing for my thesis:

- H<sub>10</sub>: "Interagency Guidance on Leveraged Lending" did not impact the operating and market-related performance metrics on firms
- H<sub>1A</sub>: "Interagency Guidance on Leveraged Lending" impacted the operating and market-related performance metrics on firms
- H<sub>20</sub>: The repeal of "Interagency Guidance on Leveraged Lending" did not impact the operating and market-related performance metrics on firms
- H<sub>2A</sub>: The repeal of "Interagency Guidance on Leveraged Lending" impacted the operating and market-related performance metrics on firms

## Chapter 4

### Data Consolidation and Methodology

From utilizing Bloomberg terminals, I searched all non-financial United States public firms from 2013 to 2017 and 2018 to 2019. Next, I inquired about the leverage, total debt/assets, market-to-book, current, and sales/average assets ratios for each company and downloaded the data into a Microsoft Excel workbook. This will allow us to analyze important market related and operating metrics related to the issuance of “Interagency Guidance on Leveraged Lending.”

From consolidating the data between the two time periods, I will plot the annual mean for each financial ratio. This allows us to understand how market-related performance and operating metrics changed over the time period. Additionally, we can quickly identify significant changes in the financial ratio when the federal agencies published the “Interagency Guidance on Leveraged Lending” and the repeal of the document.

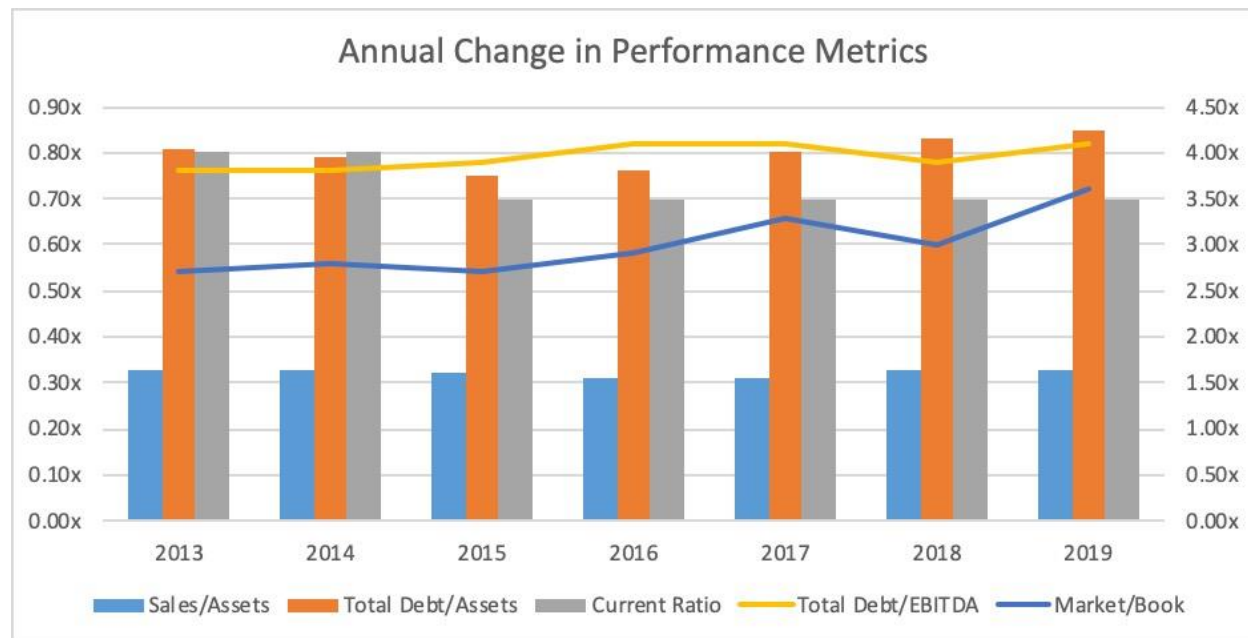
Next, we will conduct a regression analysis to witness the statistical significance of the impact of “Interagency Guidance on Leveraged Lending” on the operating and market-related performance ratios. For each financial metric, the equation tested will be:

$$Y_{t+1} - Y_t = \beta * \text{Expectation}_{i,t} + \gamma * \text{Industry}_{i,t} + \delta * \text{Controls}_{i,t} + \epsilon_{i,t}$$

$Y_t$  measures the outcome of the measured metric, while  $Y_{t+1}$  measures the outcome of the measured metric after one annual year. The Expectation variable is an indicator that equals 1 after the federal agencies implemented “Interagency Guidance on Leveraged Lending.” While the Industry variable is industry-wide dummy variables since each sector is faced with its own obstacles and challenges. Lastly, the Control variable takes into account all variables that can have an effect on the measured financial ratio. The main challenge with this test is to separate the leveraged lending guidance effect from other variables on the measured outcomes.

## Chapter 5

### Results



**Figure 6. Performance Metrics. Total Debt/EBITDA and Market/Book on Right-Hand Axis. Sales/Assets, Total Debt/Assets, and Current Ratio on Left-Hand Axis**

From Bloomberg, I was able to get the average of the performance metrics I am measuring from 2013 to 2019. This data can be seen in the graph above. On the y-axis on the left-hand side, it is the scale for the sales/assets, total debt/assets, and current ratios. On the other hand, the y-axis on the right-hand side is the scale for the total debt/EBITDA and market/book ratios. The sales/assets ratio, which is also known as the asset turnover ratio, has stayed pretty constant in the past seven years. The value of the ratio has stayed pretty constant around the values of 0.30x to 0.33x. Without running our regressions, we can be confident that the “Interagency Guidance on Leveraged Lending” and the repeal of the guidance had very little effect on how companies efficiently use their assets to generate their revenues. The total debt/assets ratio had visually more movement than the sales/asset ratio. From 2013 to 2016, the ratio fell from 0.81x to 0.76x. As the different government agencies decided to remove the leveraged lending guidance, the total debt /assets ratio increased from 0.76x to 0.85x from 2016 to 2019. The guidance

definitely had an effect on how much companies financed their assets through loans, bonds, and other forms of debt. Our regressions will tell us how significant our total debt/asset ratio has changed. Our next ratio, the current ratio, has fallen from 0.80x in 2013 and 2014 to 0.70x from 2015 to 2019. Although the change looks minor, this is a crucial metric in determining the liquidity of a firm and its ability to pay short-term liabilities with its current assets. The regression will tell us how significant the change is. The total debt/EBITDA ratio, also known as total leverage, is the biggest performance metric we are measuring. The data shows that leverage has remained low from 2013 to 2015 around the values of 3.80x and 3.90x but popped up after the repeal of the leveraged lending guidance to above 4.00x from 2016 to 2019. The regression will notify us of how much the effect the guidance has made on the amount of debt companies carried compared to their operational income. Lastly, the market price/book value ratio fell when the interagency report was released from 2013 to 2015. After the repeal, the market/book ratio rose drastically, which could indicate the market sentiment has improved. Overall, we will measure the significance of the change in our performance metrics with the regression analysis.

Variable	Coefficient	R <sup>2</sup>	p-value
Asset Turnover	0.0023	0.03	0.00135
Total Debt to Assets	-0.0058	0.05	0.00332
Current Ratio	-0.0713	0.07	0.00016
Leverage Ratio	-1.8291	0.08	0.00856
Market Price to Book Value	-0.0932	0.02	0.00043

**Figure 7. Regression Analysis of “Interagency Guidance on Leveraged Lending”**

The table above displays the regression analysis after the Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency issued the restrictions on leveraged lending on regulated investment banks. The p-value for all the financial ratios was calculated at a 5% level of significance. It is evident that many of our performance metrics were significantly affected by this guidance. For instance, the leverage ratio was negatively impacted. There are few reasons that can explain this phenomenon, such as corporations were limited with the amount of financing they could get through the origination and syndication process of regulated investment banks. The constraints on raising capital may have influenced other financial ratios. For instance, this has significantly impacted firms' current ratios. Therefore, firms were not as liquid in meeting their short-term obligations, so they could possibly face a credit crunch. The lack of available financing may have prevented innovation and growth for many companies. This could be illustrated through the asset turnover ratio, which did not see major increases during this time period.

However, we cannot fully confirm this option because we did not look at other financial metrics, such as capital expenditures and R&D spending. Due to the lack of financing through fixed income markets, the total debt to asset ratio remained pretty constant. Overall, this has drastically influenced the market price to book value ratio. The equity markets must have believed the guidance would have hindered corporate growth and current operations through the lack of liquidity. Therefore, "The Interagency Guidance on Leveraged Lending" has created a perception of downward risk that firms would not be able to operate at full capacity or reach maximum potential. All in all, this how the leveraged lending guidance affected our measured performance metrics from 2013 to 2016. Next, we will conduct the regression analysis on the repeal of "The Interagency Guidance on Leveraged Lending."

Variable	Coefficient	R <sup>2</sup>	p-value
Asset Turnover	0.0027	0.01	0.00223
Total Debt to Assets	0.0093	0.01	0.00427
Current Ratio	0.0348	0.04	0.00024
Leverage Ratio	2.0113	0.07	0.00978
Market Price to Book Value	0.2110	0.03	0.00304

**Figure 8. Regression Analysis on the Repeal of “Interagency Guidance on Leveraged Lending”**

The table above displays the regression analysis after the five interagency organizations stated the guidance had no effect as an actual law. As you can see from the regression table above, the repeal of the leveraged lending guidelines has a significant impact on a few of our measured performance metrics. Since corporations were not restricted to access to capital and banks were not fined anymore for taking on risky loans, the total debt/EBITDA ratio saw an increase. Corporations’ ability to access new credit lines in the fixed income markets allowed them to resume their typical financing and capital raising behavior before the leveraged lending guidance. Therefore, firms were able to finance more assets with debt facilities, which is why the total debt to assets ratio rose. However, we did not witness a major increase in firms efficiently converting their assets into revenue. This may be explained by the short timeline of three years or no major technological breakthrough has been created. On the other hand, the current ratio slightly grew, which means firms had more liquidity on their balance sheet. This will prevent companies to face a credit crunch and pay off their short-term obligations with their current assets. Most importantly, the market value to book value ratio significantly surged up. The market must have seen an optimistic



perception of the federal agencies repealing the leveraged lending guidelines that restricted firms' access to capital. The equity markets have clearly seen an uptick in prices, and it may have been attributed from the repeal of the "Interagency Guidance on Leveraged Lending."

As we start to make conclusions from the results and regression analyses, we must note there were several limitations to the data. First, we were only allowed to analyze publicly traded companies in the United States. Therefore, we were unable to observe the financial ratios of many privately-owned companies. Private equity firms own or control significant portions of these private companies, so we were not able to examine a giant player in the leveraged loan and high-yield bond markets. Furthermore, foreign companies sometimes enter the US market to raise capital. Frequently, the leveraged loan market is commonly tapped by these international corporations. The outcome of our regression analysis could possibly lead us to different outcomes and policy implications. Additionally, we analyzed the entire US market without filtering companies into categories. As an illustration, we could segment companies based on market capitalization size, credit rating, or many other ways. Thus, the results could have produced a different outcome based on the implementation and dismantling of the leveraged lending guidelines on various categories we lump companies into. Moreover, there are other financial ratios that could have been examined, such as capital expenditures, research and development investments, and stock buybacks. These performance metrics might have given us a better viewpoint on the limitations of expansion and growth companies faced during the leveraged lending guidelines era. Lastly, it was very difficult to determine the effects of leveraged lending guidance from other effects on the economy. For instance, the current state of the economy, international conflict, and other factors could have influenced the outcomes of the regression analysis. Overall, these were a few limitations encountered during the thesis.

## Chapter 6

### Discussion and Policy Changes

From our results, it is evident that the “Interagency Guidance on Leveraged Lending” and the repeal of the guidelines had significantly impacted how companies operated since their access to capital was restricted. Corporations need access to capital in order to fund their current operations and invest in new strategies that propel growth. However, the Federal Reserve, US Treasury, and other government agencies want to prevent companies from over-leveraging their balance sheets. There are many different avenues public policies can go to address this issue but have to make sure companies can go grow with less concerns with their growing debt balances in their capital structure. Regardless of further regulations, it will always create controversy because it disrupts the status quo. The timelines of both test periods were done during the longest bull market in the United States history, so the true outcomes of the “Interagency Guidance on Leveraged Lending” would never be calculated unless during a bear market and the economy is not as strong.

Many economists and financial analysts have been pointing out many structural issues and flaws with this current financial system and economic environment. With many world political institutions embracing Keynesian economic policies, such as federal governments increasing fiscal stimulus and central banks injecting liquidity into the markets to counteract any loss demand created by consumer households and businesses. This solution has allowed recessions to be shorter and the economy to be revived. As a result, investors and creditors believed that the government can curtail economic downturns with large stimulus plans and easy money. However, this is leading to a slippery slope of households and businesses loading large amounts of debt on their accounts with minimal cash reserves. Therefore, the US economy has been accumulating debt with accommodative fiscal and monetary solutions and having national debt levels reach new records with continuous federal deficits. Scott Miner, Global Chief Investment Officer of Guggenheim Partners, mentioned, “devil persuades a bankrupt emperor to print and spend vast quantities of paper money as a short-term fix for his country’s fiscal problems... governments

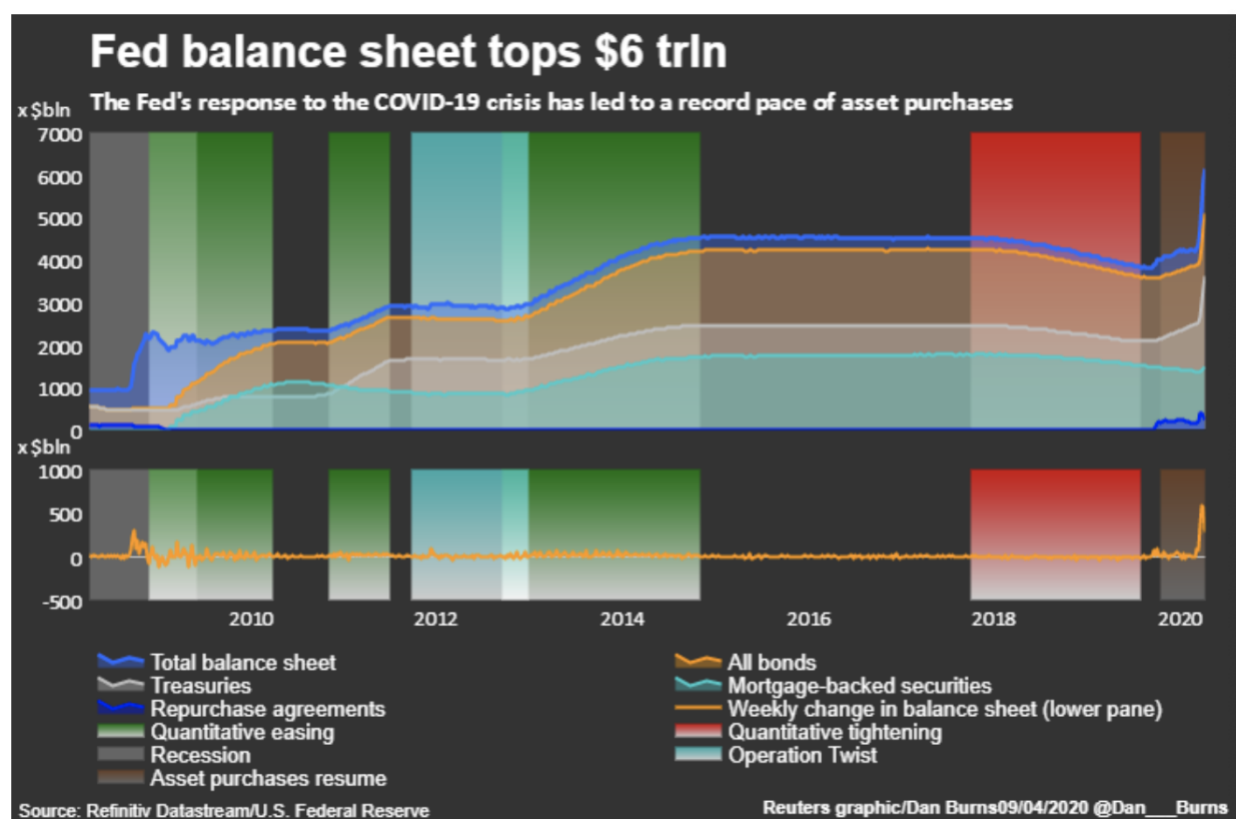
have relied upon quantitative easing instead of undertaking necessary structural reforms have arguably entered the grandest Faustian bargain in financial history (Minerd, 2020).”

This situation has led to severe consequences in our economy. For instance, banks were allowing households to purchase houses even with poor credit history and terrible credit history, which formed a housing bubble. Eventually, many families defaulted on their mortgage payments and created the biggest housing crisis in United States history. This tremendously destabilized the financial systems with large banks shutting down, such as Lehman Brothers, and the federal government bailing out other financial institutions, such as Long-Term Capital Management and AIG. Other national governments enforced unorthodox measures, such as nationalizing struggling industries in their countries.

Correspondingly, many financial commentators are bringing up moral hazard, which is the lack of incentive to guard against risk where one is protected from its consequences. This concern has been commonly raised during the COVID-19 pandemic. The entire world placed drastic measures that prevented the spread of the novel coronavirus, which has the potential to suppress the respiratory systems of infected humans. Therefore, many restaurants and public places are closed with local municipalities enforcing stay-at-home orders. As a result, numerous employees were furloughed, small businesses struggling to make monthly payments, and families risk not making ends meet as they are living paycheck to paycheck. The pandemic has clearly identified that households and businesses have low cash balances and do not save enough for emergency situations.

Like in the past, the federal government stepped into to soften the blow caused by the economic halt. The legislative and executive branches both agreed to over \$2 trillion stimulus relief package, which includes \$377 billion in federally guaranteed loans to small businesses, \$500 billion government lending program, expanded unemployment payments, direct cash payments, and aid for the healthcare system (Brewster, 2020). Additionally, the Federal Reserve continued to provide accommodative monetary policies by injecting over \$1.5 trillion of liquidity into the market. Furthermore, the Federal Reserve also agreed to cut its trademark federal funds rate by over 100 basis points to the range of 0 to 25 basis points.

These drastic measures are to ensure the liquidity does not dry up during desperate times. However, easy money has led to massive growth in the Federal Reserve's balance sheet, which has topped over \$6 trillion dollars (Saphir, 2020).



**Figure 9. Growth in Federal Reserve Balance Sheet**

I hope my research will help expose certain flaws in the financial system as major improvements are necessary to reduce the risks of moral hazards. There are many different avenues further research can go to tackle and learn different issues with the structural foundations of the economy. For instance, we could analyze how unregulated banks and financial institutions changed their lending practices during the leveraged lending guidelines era and what are the impacts of this change. Additionally, we could also research why US companies did not go overseas if their access to capital was restricted. Also, we could examine the Federal Reserve bank stress testing system on large corporate and investment banks. There could be amendments made to make sure banks could survive a severe recession. Nevertheless, the

information we derive from the above questions, my research has found many important factors during and after the “Interagency Report on Leveraged Lending.” As we continue through time, we will eventually find out if a massive overhaul is needed with the global financial system.

## Appendix A

### Further Information on Covenants

#### Credit Agreements & Covenants

##### Covenants – What are They and Why do We Need Them?

##### What are Covenants?

- Covenants limit the actions of the borrower to assure investors that the creditworthiness of the borrower will remain satisfactory
  - Ensures that lenders get paid back
- Every covenant package must be tailored to reflect the specific needs of the borrower/issuer and the specific risks perceived by the debtholders

##### Why do we need Covenants?

- Lenders need protections from equity holders who may have objectives that are inconsistent with the risk profile that lenders are willing to accept. For e.g., equity holders may want to
  - Add additional debt to fund internal growth or future acquisitions
  - Pay dividends
  - Make investments in joint ventures they do not control
  - Pay themselves consulting or management fees
- Covenants protect lenders against a diminution in value of their investment through
  - Credit deterioration
  - Loss of “equity cushion”:
  - Loss of control over assets
  - Loss of seniority position
  - Covenants potentially bring the borrower and lenders/bondholders “to the table” to restructure or refinance a troubled situation before it’s too late (i.e. bankruptcy)
  - Covenants increase the chance of capital gains for bondholders because they force the Company to
    - Deleverage (or, more accurately, limit the Company’s ability to releverage)
    - Reinvest earnings (the typical restricted payments covenant requires the Company to retain 50% of net income in the business and allows 50% to be dividended out to stockholders)

## Credit Agreements & Covenants

### Covenants – Types of Covenants

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#### There are 3 Types of Covenants in Credit Agreements and Bond Indentures

- **Affirmative Covenants** – These covenants require that the obligor of the debt must do certain specific things. Examples of affirmative covenants are:
    - (i) Financial reporting requirements
    - (ii) Maintenance of corporate existence
    - (iii) Payment of taxes
    - (iv) Maintenance of properties and insurance
    - (v) Compliance with laws
  - **Negative Covenants** – These covenants require that the obligor of the debt must refrain from doing certain specific things. Examples of negative covenants are:
    - (i) Limitations on indebtedness
    - (ii) Restrictions on lines
    - (iii) Payment restrictions affecting the borrower and its subsidiaries
    - (iv) Restrictions on the sale of assets
    - (v) Restrictions on mergers and consolidations
  - **Financial Covenants** – There are two types of financial covenants – maintenance and incurrence, maintenance financial covenants are included in bank credit agreements and incurrence financial covenants are included in bond indentures. Examples of financial covenants are:
    - (i) Maximum senior and total leverage
    - (ii) Minimum interest coverage
    - (iii) Minimum fixed charge coverage
    - (iv) Minimum net worth
-

## Credit Agreements & Covenants

### Maintenance vs. Incurrence Covenants

	Maintenance Covenants	Incurrence Covenants
<b>What are they?</b>	<ul style="list-style-type: none"> <li>Financial ratios that the Borrower needs to maintain, tested on a quarterly basis</li> <li>May also include a limitation on capital expenditures</li> </ul>	<ul style="list-style-type: none"> <li>Covenants that limit the incurrence of debt and liens by the Borrower</li> <li>Covenants that limit cash flows outside the ordinary course, such as major investments, dividends, and transactions with affiliates</li> </ul>
<b>What purpose?</b>	<ul style="list-style-type: none"> <li>Provides a "circuit breaker"</li> <li>Designed to provide lenders with rights and remedies if a credit deteriorates – without waiting for an actual payment default</li> </ul>	<ul style="list-style-type: none"> <li>Limit the amount of additional debt (and also specifically secured debt) that a Borrower can incur</li> <li>Control the amount of cash or assets that "leave the system" – i.e. is transferred outside the credit group consisting of the Borrowers and Guarantors</li> </ul>
<b>Where do they appear?</b>	<ul style="list-style-type: none"> <li>Almost all credit facilities               <ul style="list-style-type: none"> <li>"Covenant Lite" refers to a credit facility without maintenance covenants – these are currently in favors for TLBs</li> </ul> </li> <li>Almost never in High Yield bonds</li> </ul>	<ul style="list-style-type: none"> <li>Both credit facilities and High Yield bonds</li> <li>However, the exceptions to the covenants (often known as "baskets") can be very different               <ul style="list-style-type: none"> <li>High Yield covenants will often provide much greater flexibility than bank covenants</li> </ul> </li> </ul>
<b>Examples:</b>	<ul style="list-style-type: none"> <li>Maximum Senior Secured Leverage</li> <li>Maximum Total Leverage</li> <li>Minimum Interest Coverage / Fixed Charge Coverage</li> <li>Maximum Capital Expenditures</li> </ul>	<ul style="list-style-type: none"> <li>Limitation on Incurrence of Debt</li> <li>Limitation on Liens</li> <li>Limitation on Dividends / Distributions</li> <li>Limitation on Subordinated Debt Repayments</li> <li>Limitation on Investments (including Acquisitions)</li> <li>Limitation on Transactions with Affiliates</li> <li>Limitation on Asset Sales</li> <li>Limitation on Fundamental Changes / Mergers</li> </ul>

In a typical bond indenture, these are grouped together as a "Limitation in Restricted Payments"

Credit Facilities and Bond Indentures also Include Various Other Affirmative Covenants (such as Reporting Covenants) and Negative Covenants



## Appendix B

### Fixed Income Terminology

Term	Definition
<b>Coupon</b>	The interest rate a bond's issuer promises to pay the bondholder until maturity <ul style="list-style-type: none"> <li>• Straight, Fixed-Rate: Pays an absolute coupon rate</li> <li>• Floating Rate: Pays a rate that varies in relation to an underlying benchmark</li> <li>• Inverse Floater: Pays a rate that varies inversely to an underlying benchmark</li> <li>• Zero-Coupon on Accrual Bonds: No coupon</li> </ul>
<b>Par Value (Face Value)</b>	The stated value of an investment at maturity <ul style="list-style-type: none"> <li>• Typically \$1,000 for corporate bonds</li> </ul>
<b>Maturity</b>	The date on which the principal amount is due and payable by the issuer
<b>Payment Schedule</b>	The frequency with which a fixed-income security pays interest/coupon
<b>Term</b>	How long a security position is held or planned on being held <ul style="list-style-type: none"> <li>• Over one year = long ; shorter than one year = short</li> </ul>
<b>Basis Point</b>	One one-hundredth of one percent, typically expresses the yield
<b>Pricing Data</b>	For a new issue fixed-income security, the date on which the price was set
<b>Credit Rating</b>	Measurement of the risk of default of a fixed-income product or the issuer itself

Term	Definition
<b>Default</b>	If a bond issuer fails to make either a coupon payment or principal payment
<b>Yield</b>	The rate of return an investor can expect to receive if an investment is held to maturity
<b>Yield to Maturity</b>	The rate of return an investor can expect to receive if an investment is held until the call date
<b>Yield to Worst</b>	Lowest potential yield that an investor can expect to receive on a bond without the issuer defaulting
<b>Discount Bond</b>	A bond trading <i>below</i> the stated par value when a fixed-income security is bought or sold
<b>Premium Bond</b>	A bond trading <i>above</i> the stated par value when a fixed-income security is bought or sold
<b>Par Bond</b>	A bond trading at a price <i>equal</i> to the stated par value when a fixed-income security is bought or sold
<b>Call and Put Features</b>	<p>A feature of a bond or other security that determines the terms under which it can be redeemed by the issuer or security holder before the scheduled maturity date</p> <ul style="list-style-type: none"> <li>• Call Option: Issuer can redeem prior to maturity</li> <li>• Put Option: Security holder can redeem prior to maturity</li> </ul>
<b>Convertible Bond</b>	Bond that contains a provision allowing the holder to exchange the bond for a specified number of shares of a different security issued by the same issuer (typically converted to common stock)

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# ACADEMIC VITA

## Sanket Narayana

### EDUCATION

**The Pennsylvania State University, Schreyer Honors College**

*Bachelor of Science in Finance, Smeal College of Business*

*Bachelor of Science in Economics, College of Liberal Arts*

**University Park, PA**

*Class of May 2020*

*Paterno Fellows Program Graduate*

### RELEVANT EXPERIENCE

**Guggenheim Partners**

*Incoming Investment Analyst / Total Return Portfolio Management Team*

**Santa Monica, CA**

*June 2020 - Present*

**PNC Financial Services**

*Investment Banking Summer Analyst / Asset Backed Finance*

**Philadelphia, PA**

*May 2019 - August 2019*

- Engaged in the origination cycle of \$700mm receivables securitization for a healthcare company by pitching and building a model factoring in concentration reserves, dilution ratios and default triggers to maximize the client's borrowing base
- Created an opportunity memorandum and RFA for a \$300mm account receivables securitization for a retail company including updated facility pricing, commitment terms, PNC balance sheet exposure and overall cross-group relationship revenue
- Constructed a potential \$115mm account receivables securitization facility for an industrial machinery prospect of PNC, which provided benefits of \$2.5mm in interest expense savings and reduction in total debt leverage
- Assembled transaction memorandum, legal documentation and contributed capital analysis for \$250mm Partner Loan Program
- Presented a mock portfolio project to senior management on LIBOR replacement rates and effects on securitization

**Leveraged Lion Capital**

*Director of Fixed Income Research*

**University Park, PA**

*December 2018 - May 2019*

- Interviewed and selected out of ~160 undergraduate students to manage the nation's first student-run leveraged loan and high yield-bond paper portfolio, partnering with Bank of America Merrill Lynch and Loan Syndication & Trading Association
- Published and presented weekly leveraged loan and high-yield bond updates for the organization to understand the trends

*Lead Analyst / Media & Communications Sector*

*December 2018 - May 2019*

- Researched and selected the \$20.50mm Media & Communications sector of the \$125mm portfolio, which outperformed the S&P/LSTA Leveraged Loan Index by approximately 1.85%
- Developed an understanding of the structuring and origination of leveraged loans and high yield bonds by performing qualitative and quantitative credit analysis, including covenant analysis, financial modeling and comparable ratios
- Utilized Loan Commentary and Data, S&P Global Market Intelligence, Loan Syndication and Trading Association data, LevFin Insights articles, Bloomberg Terminals, FactSet, and research reports to find and pitch investment opportunities

**Coinigy Financial Services**

*Summer Financial Analyst*

**Milwaukee, WI**

*May 2018 - August 2018*

- Developed detailed forecast models against budgets based on resource utilization, average purchase value and net profit margin, which increased accuracy of short- and long-term earnings estimates and facilitating executive-level decision-making
- Effectively acquired and managed long-term relationships with various financial institutions, such as Coinbase, Citadel, and Sequoia Capital, which boosted yearly revenues by 12%
- Designed series of qualitative research projects that investigated venture capital funding, connectivity of the decentralized infrastructures, and ICO vs IPO capital raising in the cryptocurrency industry for Coinigy Insights, the firm's research arm

### LEADERSHIP EXPERIENCE

**East Halls Residence Association (EHRA)**

*President*

**University Park, PA**

*August 2016 - May 2017*

- Collaborated with other executive board members to allocate \$7,000 budget for community engagement activities to strengthen community relations and quality of life in East Halls Residence Area
- Represented EHRA on panel for the Association of Residence Hall Students on initiatives such as advocating for a smoke-free campus, and the allocation of ~\$300,000 for major events such as Movin' On and Hub Late Nite

**Students Consulting for Nonprofit Organizations**

*Consultant / Centre Wildlife Care*

**University Park, PA**

*September 2016 - May 2018*

- Developed composting and recycling solution and implemented into process map to certify Centre Wildlife Care as a zero-waste organization with only \$100/month budget
- Designed statement of work and final deliverable presentation to outline and convince stakeholders on the value proposition

### SKILLS AND INTERESTS

- **Activities:** Phi Kappa Theta Fraternity Brother, National Residence Hall Honorary Inducted Member, Sigma Alpha Pi National Society, Wall Street Boot Camp I and II Graduate, Undergraduate Macroeconomics Teaching Assistant (4 semesters)
- **Skills:** Certified in Microsoft Excel and Bloomberg Market Concepts, Proficient in Microsoft PowerPoint and Word
- **Interests:** Competitive tennis, weightlifting, NFL/NBA/Premier League Soccer, THON, traveling, watching HBO GO/Netflix