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HETEROGENITY IN THE IMPACT OF COMMON, SHOCKS ON CORPORATE DEBT ACROSS INDUSTRIES

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HETEROGENITY IN THE IMPACT OF COMMON, SHOCKS ON CORPORATE DEBT ACROSS INDUSTRIES

by

SIREEN NADAF

Presented to the Faculty of the Honors College of

The University of Texas at Arlington in Partial Fulfillment

of the Requirements

for the Degree of

HONORS BACHELOR OF BUSINESS ADMINISTRATION IN FINANCE

THE UNIVERSITY OF TEXAS AT ARLINGTON

May 2021

ACKNOWLEDGMENTS

The completion of this project would not have been possible without my mentor Dr. Choi, who helped guide and challenge me every step of the way. Thank you, Dr. Choi, for your invaluable guidance, patience, and kindness throughout this research. Dr. Choi has taught me a great deal on the methodology necessary to carry out and present research works as clearly as possible. It was a great privilege and honor to work and study under his guidance. A special thanks to Professor Anh Tuan Nguyen for granting me access to the Sam Mahrouq Financial Lab and advising me throughout my data collection. Without Professor Nguyen, I would have manually inputted every line from 10K statements. Thank you for exposing me to the Bloomberg Terminal and saving me hundreds of hours. I would also like to thank my professors, mentors, and teachers throughout my academic career: Mr. Vafai, Mr. Miller, Dr. Hubbard, Ms. Neilson, Mrs. Pugh, and Mrs. Vann. I am so fortunate to have been placed in your classes. Your lessons never left me and instead inspired me daily.

Lastly, I would like to thank my incredibly supportive friends and family. I am grateful to my Parents and siblings for the continued encouragement. To my incredible friends, thank you for the moral and emotional support throughout the entirety of this paper. I cannot express enough gratitude.

May 5, 2021

ABSTRACT

HETEROGENITY IN THE IMPACT OF COMMON,

SHOCKS ON CORPORATE DEBT

ACROSS INDUSTRIES

Sireen Nadaf, B.A. Finance and Economics

The University of Texas at Arlington, 2021

Faculty Mentor: Chi-Young Choi

Common shocks are known to affect different sectors of the economy differently. This study investigates how two recent major shocks on the U.S. economy, the Global Financial Crisis (GFC) and the COVID-19 pandemic, have impacted debt performance of firms in different industries. Six industries were considered for this purpose: automobile, entertainment, healthcare, information technology (IT), transportation, and fire, insurance, and real estate (FIRE). The debt performances of selected leading firms in these industries were evaluated on the basis of several debt indicators, such as debt to equity ratios, Altman's Z-scores, and short-term debt ratios.

By using data for the period of 2006 to 2020, this study found that the impact of common shocks varied widely not only across industries, but also within industries. The heterogeneous impacts are also found in the effect of monetary and fiscal policy actions

taken in response to the common shocks. The impacts turned out to be stronger in transportation, FIRE, and automobile industries than healthcare, entertainment, and IT industries.

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CHAPTER 1

INTRODUCTION

Corporate debts are highly affected by exogenous economic shocks that typically perturb the entire economy. This is particularly the case when the shock exerts a large and nationwide effect, such as the Global Financial Crisis (GFC) during 2007 and 2009 and the recent COVID-19 pandemic. Common economic shocks, however, are known to influence the economy differently across sectors and industries. The purpose of this thesis is to study the impact of two major common shocks in the U.S. economy on the performance of corporate debts in six selected industries: automobile, entertainment, healthcare, information technology (IT), transportation, and fire, insurance, and real estate (FIRE).

The GFC, triggered by excessive lending to unconventional subprime borrowers and regulatory absence, has led to a sharp decline in asset prices and the collapse of many firms (Rich) and a subsequent international banking crisis and global recession (Acharya 201-206). A substantial decline in the supply of credit by financial institutions aggravated the corporate debt problem. The COVID –19 pandemic also adversely affected corporate debts through a global recession as it disrupted both demand and supply sides of the economy. As the pandemic spread rapidly globally, unemployment rose to record levels (Kochhar) and the stock market underwent volatile swings. Interestingly, in contrast to the GFC, the impact of the COVID-19 appears to be different across industries. While the manufacturing industry was heavily hit by the global lockdown and the severe disruption

in global supply chain, the service industry like finance and information technology was in a much better shape.

This paper investigates the heterogeneous impacts of the common shocks on the corporate debts in different industries by focusing on the GFC and COVID-19Pandemic episodes. Diverse measures of debt performances are utilized to study how the two common shocks affected firms in different industries in different manner.

1.1 Methodology

In the current study, six industries are considered: automobile, healthcare, entertainment, transportation, information technology (IT), and finance, insurance, and real estate (FIRE). The debt structures of the top firms from each industry were measured using a variety of indicators, such as:

- Debt to equity ratios
- Short term debt
- Long term debt
- Year over year growth of both short and long-term debt
- Last price of each security
- Year over year price growth
- Volume the stock traded
- Total equity
- Altman's z-scores

These indicators are collected from diverse sources including the Bloomberg terminal and firms' 10K documents, for the period 2006 to 2020. Industry-level responses

are then calculated by the weighted average of top five firms in each industry based on the market capitalizations and compared between 2008 and 2020.

1.2 Definition of Terms

Table 1.1: Definition of Terms

Long Term Debt	Long term debt includes interest bearing financial obligations that mature in more than one year (Bloomoberg). Long term debt is beneficial to a firm because it provides financial leverage without having to repay debts in the short term. Long term debt was collected in order to calculate debt to equity ratios and total debt.
Long Term Debt Growth Year over Year (YoY)	Year over year growth of long-term debt. Calculated in order to discern the speed at which debt grew year over year.
Short Term Debt	Portion of debt due to be paid within the year. If this portion is too high, it could indicate a liquidity crisis.
Short Term Debt Growth (YoY)	Year over year growth of short-term debt helps identify years in which a firm required a rush of liquidity.
Last price of the security	Calculated in order to track the price movement of a stock as one indicator of how the market/investors feel a firm is doing.
Total Equity	Firms total assets minus total liabilities. This helps investors, suppliers, and lenders evaluate whether the firm has enough funds to cover its debts.
Total Equity Growth (YoY)	Equity growth year to year. The growth rate helps us evaluate which years were particularly hard for firms.
Total Debt to Total Equity	Helps evaluate how heavily leveraged a company is. The higher the leverage the higher the risk. D/E of 2 translates as a firm deriving two thirds of its capital financing from debt and one third from shareholders equity.
Short term debt ratio	Short term debt as a percentage of total debt. Companies with a high short-term debt ratio are more vulnerable to liquidity shocks than longer term debt financing

Altman’s Z-score’s	A credit strength test that indicates the probability of a company filing for bankruptcy within the next two years. The higher the value, the lower the probability of bankruptcy with a score below 1.8 indicating bankruptcy is imminent and a score above 3 indicating bankruptcy is unlikely. The formula used and calculated by Bloomberg: Altman's Z-Score = 1.2 * (Working Capital / Tangible Assets) + 1.4 * (Retained Earnings / Tangible Assets) + 3.3 * (EBIT / Tangible Assets) + 0.6 * (Market Value of Equity / Total Liabilities) + (Sales / Tangible Assets) (Bloomoberg 2021)

CHAPTER 2

ANALYSIS

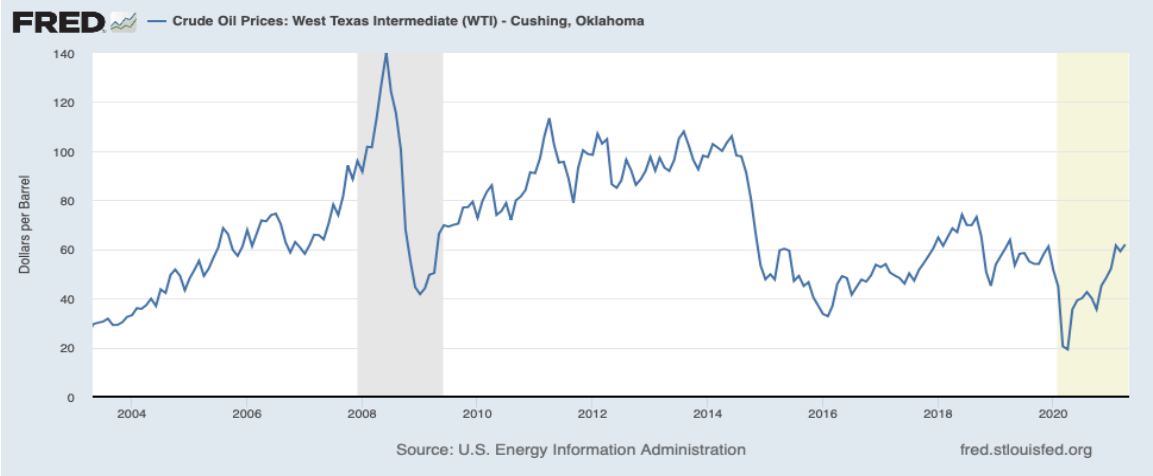
2.1 Automobile Industry

The automobile industry underwent massive shifts in the ever-changing market and is especially sensitive to market conditions given its global reliance and capital intensity. Although the financial crisis and pandemic both created supply and demand disruptions, the GFC impact affected the industry at a greater scale than the COVID-19pandemic.

During the GFC, the automobile industry accumulated massive amounts of debt, some of which still remains on balance sheets today (Howard). The industry was especially vulnerable during 2008 because of an energy crisis that began in 2003 and intensified during the GFC (Ramey et al. 335), as can be seen in Figure 2.1(FRED Graph). The energy crisis affected the price of fuel and weakened the financial stability of the auto industry. The increase in fuel prices decreased sales of bigger vehicles, a specialty of the American automobile industry; this demand disruption impacted sales and the situation worsened during the financial crisis of 2008(Ramey et al. 350). The financial crisis credit freeze made it difficult for consumers to obtain credit, leading to a deeper decline in sales. These conditions are reflected in Figure 2.2. During the GFC, debt to equity(D/E) ratios rose above 5 with short-term debt accounting for 50% of total debt. The debt-to-equity ratios signify the increased risk and leverage. However, the alarming D/E ratio combined with high levels of short-term debt restricts cash flows, does not provide a safety net for covering unexpected downturns, and in turn significantly increases bankruptcy risk.

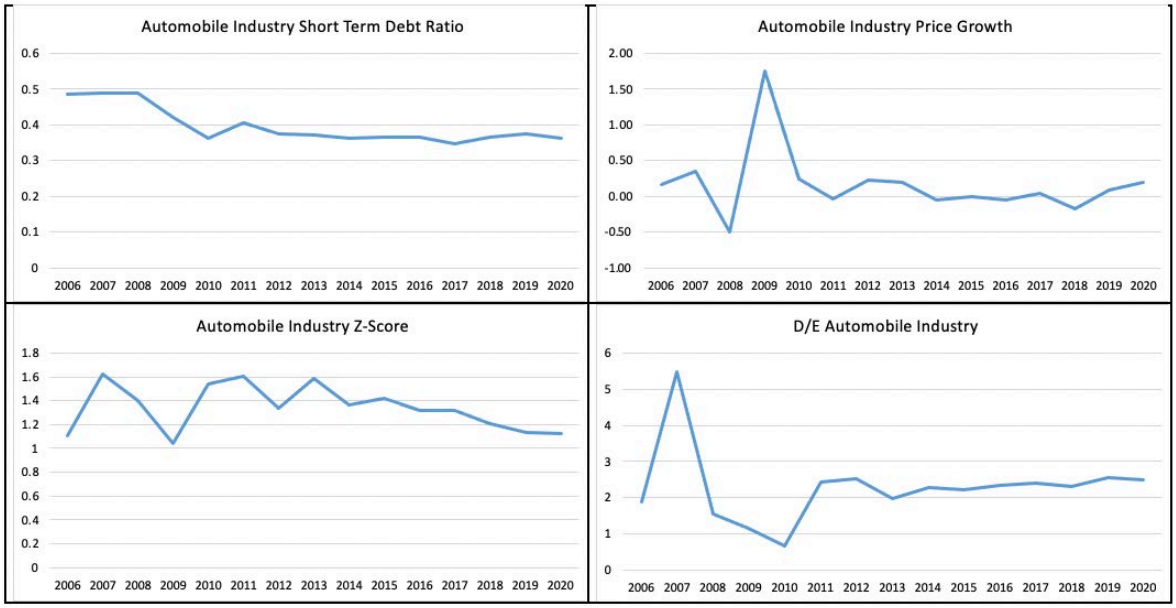
Altman's Z-scores in Figure 2.2 portray the high risk to bankruptcy as scores were very low, below the 1.8 bankruptcy indicator. These figures demonstrate the financial distress of the industry and its strain to meet loan obligations, make payments to employers, or maintain operations. In order to meet these obligations, the government passed the Troubled Asset Relief Program (TARP), a program that provided over 80 billion dollars in relief to the automobile industry and other sectors impacted by the crisis. Without TARP, the automobile industry was at the brink of collapse, consequentially affecting the broader economy. TARP allowed the industry to recover from the financial crisis, a tool seen as necessary in order to protect the economy at large. A collapse of the automobile industry would have had a significant effect on the overall economy, resulting in a substantial increase in unemployment, and a disruption in the supply chains. This signifies the detrimental affects the GFC had on the automobile industry.

Figure 2.1: Crude Oil Prices



Source: Fred, U.S. Energy Information Administration Graph

Figure 2.2: Evolution of the Four Debt Indicators for the Automobile Industry



The industry is challenged by the COVID-19 pandemic as well, but this time the initial shock largely arose from a supply side disruption, as many manufacturers were located in countries heavily impacted by the pandemic such as China, Japan, and South Korea (Telang and Sorenson). The industry's dependence on a global supply chain worsened their position as the pandemic affected many countries around the world. Domestically, vaccinations and policy rollouts encourage positive outlooks for the U.S. to return to pre-recession levels soon; however, these predictions cannot be made for every country in the supply chain. One of the main challenges with globally synchronized recessions is the time it takes for all countries to recover, because disparities between countries put them on various trajectories to recovery. This poses many challenges to the automobile industry and other supply chains dependent on global manufacturers. After the initial supply disruption, an adverse demand also followed as manifested in the sharp decline in sales (del Rio-Chanona et al. 14). Nevertheless, the impact on debt levels were not as severe as the conditions during the GFC (Figure 2.2). As illustrated in Figure 2.2,

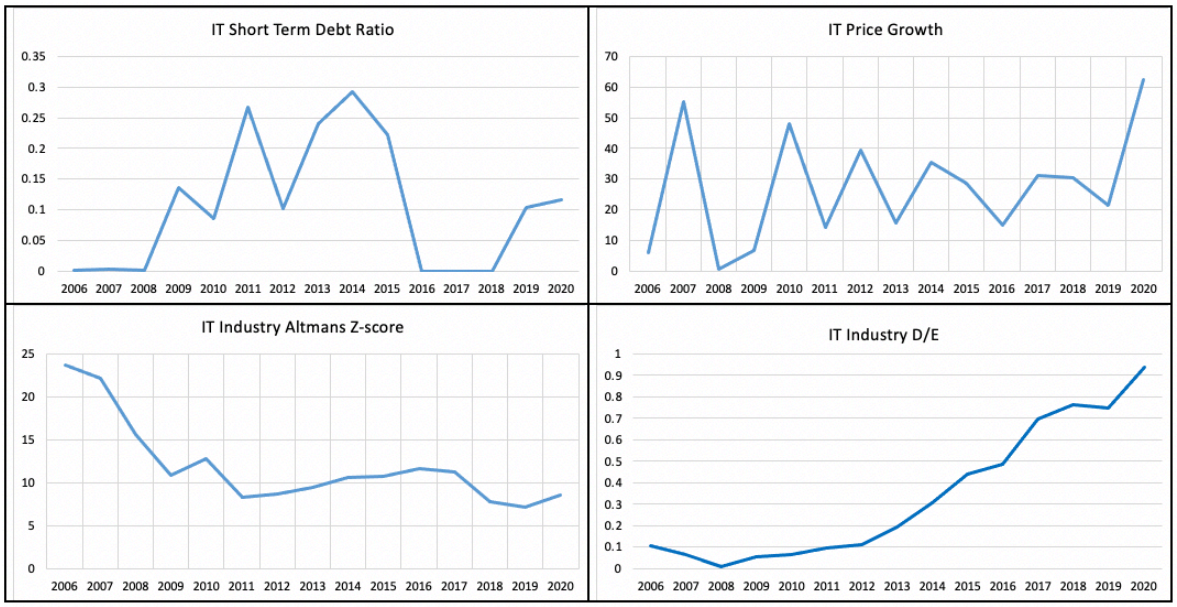
short-term debt ratio has remained between 30 – 40% of total debt, declining from almost 50% in 2006-2008. The debt-to-equity ratio remained at 2, significantly lower than the levels reached during GFC. However, Altman Z-scores have yet to recover from the GFC, ranging between 1 – 1.2. In fact, since 2006 the maximum range value the industry Z-score reached was 1.6, remaining within the high risk of bankruptcy range. These figures signify the affect the pandemic has had on the industry; however, when comparing the current state of debt to the debt achieved during financial crisis it is evident the effect of the financial crisis on the industry was larger.

In an interview with the Wall Street Journal, Mark Wakefield, a co-leader of the automobile and industrial practice at AlixPartners, highlighted the difference in debt accumulation between this downturn and the previous ones by stating "This downturn has been unusual because markets were open and liquid. That lowers bankruptcy risk but has implications later on" (Wilmot). The implications Wakefield is referring to is the wide range of debt accumulation. The financial crisis leading to a greater downturn in the industry reflects the crucial role the financial sector plays in providing credit to both firms and consumers. The automobile industry's heavy reliance on a global supply chain, capital intensity, and high leverage makes the industry especially sensitive to recessions as can be seen during both 2008 and 2020. However, the industry's even greater dependence on access to credit is what led to a steeper downturn during the GFC.

2.2 IT Industry

As displayed in Figure 2.3, the IT industry was adversely affected by the GFC judging from a rise in the short-term debt ratio as well as a decline in both stock price growth and the Altman's Z-score. After the GFC, however, the industry has experienced a steady recovery.

Figure 2.3: Evolution of the Four Debt Indicators for the IT Industry



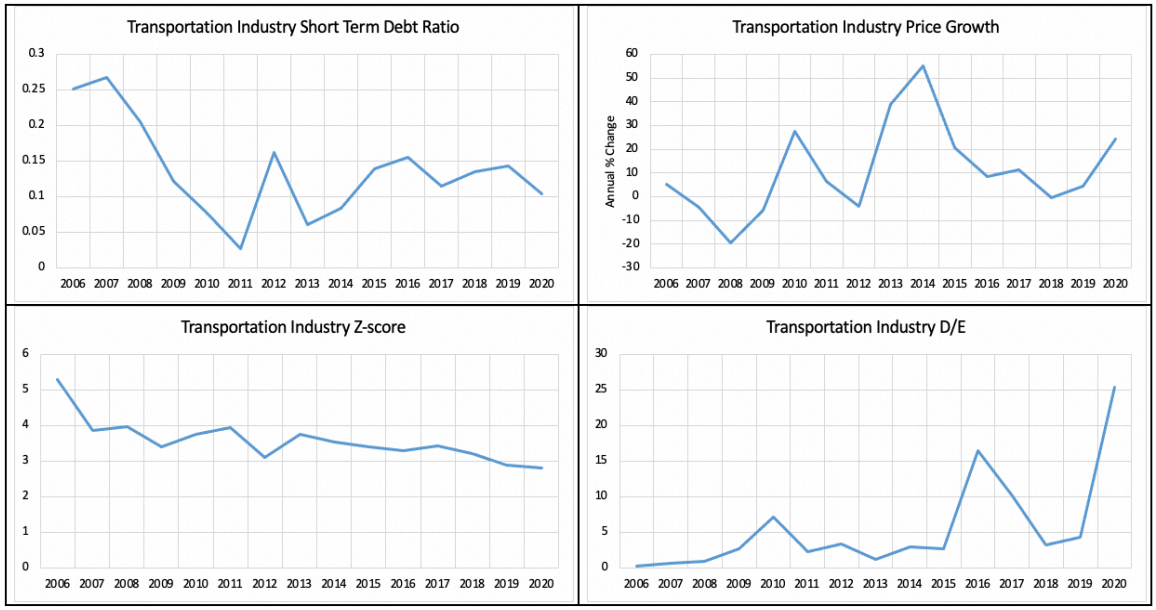
Unlike the economy as a whole, the impact of the COVID-19 pandemic on the industry was not necessarily negative. Since the outbreak of the pandemic, the short-term debt of the industry has decreased considerably to around 10% while stock price growth increased. The Z-score has declined since 2006, but it remains well above 3, indicating a solid financial positioning. Debt to equity has increased, but they still remain in a healthy range. Due to the nature of capital-intensive operations, tech firms typically have a higher debt loads than other industries, nonetheless, the industry has a low debt to equity ratio as exhibited in the Figure 2.3 IT Debt to Equity graph. The relative positive performances of the IT industry are due in large part to the increased demand for online platforms during

the pandemics (del Rio-Chanona et al. 14). However, the dependence on the global supply chain affected the industry negatively during the period as the production in some supplying countries were disrupted (del Rio-Chanona et al. 14). Overall, the IT industry shows a better relative performance.

2.3 Transportation Industry

The transportation industry has withstood massive disruptions during respective downturns. In the course of the GFC the rising fuel prices, due to the 2003 energy crisis that lasted to 2009, hurt both the airline and shipping companies included within the transportation industry (JP Morgan 2018). In Figure 2.4, The GFC led to a decrease in volumes shipped and left earnings low for consecutive quarters for shipping companies (Kalgora and Christian 41). The airline sector in the industry is especially vulnerable to economic downturns as the industry relies largely on disposable income to fuel travel demand. As discretionary spending decreased, the airline sector contracted. This combination led to a deep downturn for the transportation industry. The impact of the GFC can be seen in the high short term debt ratio and sharp increase in debt to equity in 2009 and 2010(Figure 2.4). The short-term debt ratio was at its highest in 2007 at 25% of total debt. A sharp increase in short term debt restricts cash flows and could be indicative of a liquidity crisis. The shipping industry was able to decrease expenses and evade bankruptcy; however, airlines resulted to a series of mergers that cut the domestic airline sector in half.

Figure 2.4: Evolution of the Four Debt Indicators for the Transportation Industry



COVID-19has also had a significant impact on the industry: decreasing air travel, increasing the movement of goods, and increasing the costs of doing business in all sectors. The ratios will therefore reflect the positive uptick COVID-19has had on shipping companies, considering the large reliance on remote purchasing of goods, but will also reflect the sharp decline in air travel. In order to understand the industry's varying responses to COVID-19the analysis is divided between shipping and the airline sector.

2.3.1 Shipping Sector Responses to COVID-19

The transportation of goods such as FedEx and UPS underwent a drastic positive demand as nations relied on remote shopping for all needs (del Rio-Chanona et al. 14). Meeting consumer needs during a drastic volume surge, while maintaining a safe workplace environment, without spreading COVID–19, is a difficult task that resulted in increased costs. This contributed to the increased 2020 debt to equity ratios presented in Figure 2.4.

2.3.2 Airline Sector Response to COVID-19

However, according to the Airline Passenger Experience Association, the financial impact of COVID-19 will be three times greater than the great recession. The airline industry has suffered a tremendous amount during the pandemic due to the stark decrease in air travel and country wide lockdowns. The overnight negative demand disruption that occurred when China canceled over 50,000 flights later resulted in rollout of cancelations worldwide as COVID-19spread throughout the globe. Debt to equity ratios have reached alarming rates, the highest in the industry's history (Bowman). The airline industry has at present received over 25 billion in federal aid and may require more. The World Economic Forum does not expect travel to return to pre-COVID levels before 2023(Ritcher). Vaccine rollouts have begun, but for international travel to return to pre-COVID levels requires all countries to stop the spread of COVID – 19. As stated above, countries are on various trajectories in stopping the spread of COVID – 19. This prolonged demand disruption is concerning for the airline industry.

2.4 Healthcare Industry

The Healthcare industry shows a better relative performance during recessions, unlike the economy as a whole. According to the Monthly labor Review, during the GFC the Healthcare industry was one of the few industries that experienced positive job growth (Dolfman et al.). The industry was seen as comparatively recession resistant. However, Figure 2.5 conveys a stark increase in short term debt and debt to equity ratios, but present in the statistics is an outlier that skewed the results. The outlier was 700-1700% greater than average values in the sample. When removed, as can be seen in Figure 2.6, the stability

of the healthcare industry can be better seen. Throughout the financial crisis the highest the ratio reached was 1.4, remaining in a healthy range.

Figure 2.5: Evolution of the Four Debt Indicators for the Healthcare Industry

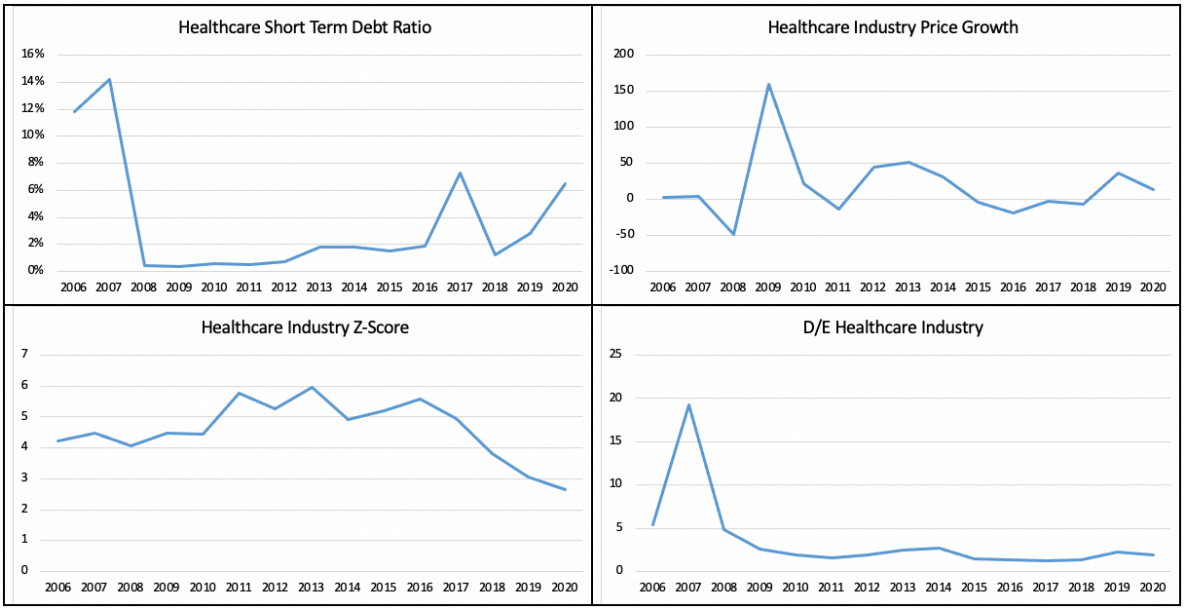
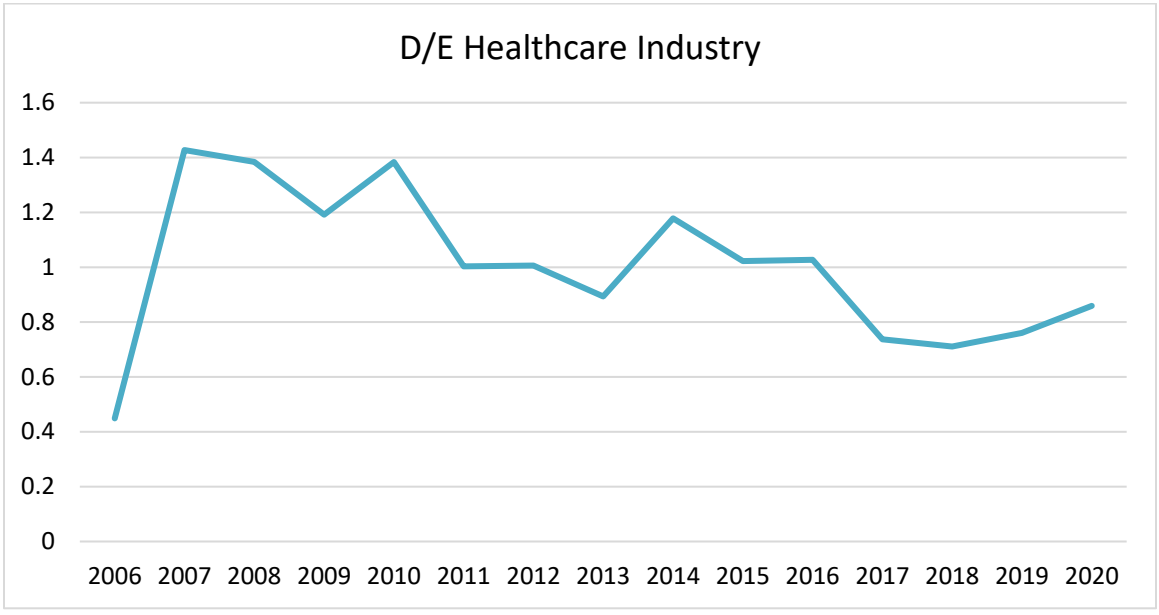


Figure 2.6: Debt to Equity Ratio with Outlier Removed



Contrarily, deviating from past cycles, the COVID-19 pandemic directly impacted and disrupted the healthcare industry. Measures were taken to minimize impact such as banning non-emergency procedures. This aided the healthcare industry because when seeking access to care was at a standstill, premiums were still rolling in. This provided a unique period of time for healthcare insurance companies to continue receiving payments without having to credit medical care to recipients (Stuart). However, once the country is comfortable seeking care again it is projected to lead to a rapid rise in medical care. Unemployment is also rising decreasing those insured and affecting total premiums collected. These effects are not yet reflected on balance sheet.

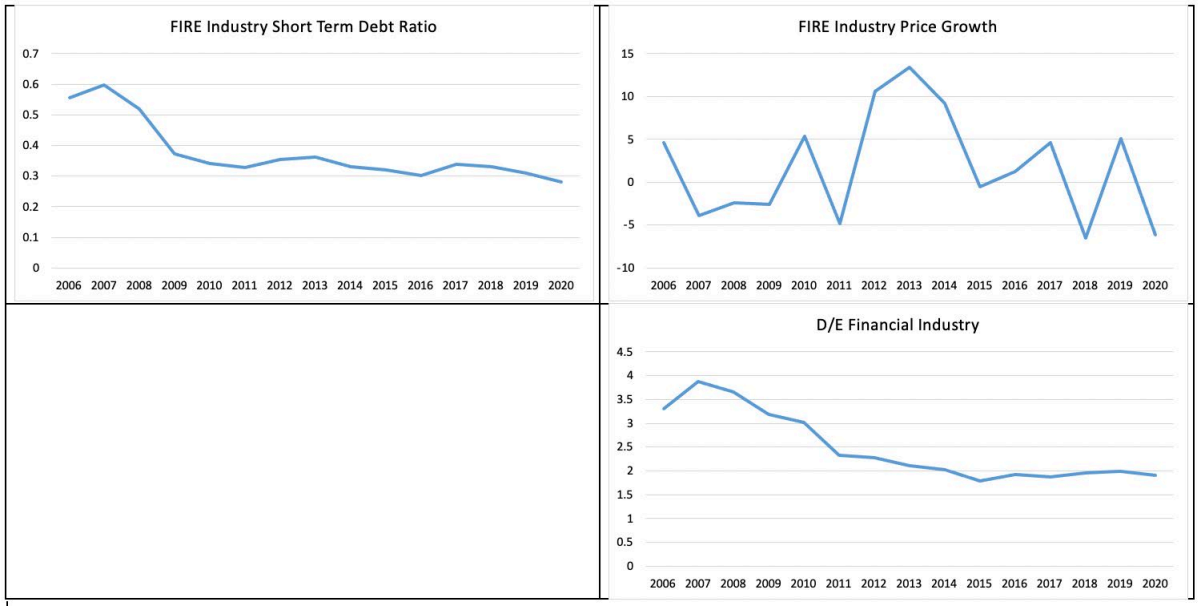
The costs COVID-19will have on the healthcare industry is predicted to have a reaction in regard to profitability. There is still great variability as to the amount the industries will cover for COVID-19claims and the Federal Aid that will be provided to the industry. Until then the average distress ratios show that debt to equity remained under 1.4 from 2009 to 2020. However, from 2020 to current 2021 data, 4 out of the 5 companies have had their debt to equity increase to close to 5. This can indicate that companies in the healthcare industry are beginning to show signs of financial distress.

2.5 FIRE Industry

The FIRE sector was the main contributor to the GFC. This time period exemplified the vital role credit plays in the global economy. The excessive lending to subprime borrowers and regulatory absence allowed for an alarming, industry wide, high amounts of leverage, as can be seen in the debt to equity ratio in Figure 2.7. The subsequent sharp decline in asset prices, the burst of the housing, and the collapse of many firms, led to a string of defaults, and an international banking crisis (Acharya 201-206). The decrease in

mortgage banking and collapse of interbank lending led to an illiquid market, causing the failure of many firms and the global economy. Figure 2.7 shows the significant distress the FIRE industry underwent during the GFC as shown in the rise in short term to 60% of total debt and debt to equity of 4. Mergers and government bailouts were necessary in preventing a system wide collapse. In an attempt to prevent another financial crisis from occurring, several measures were taken in order to strengthen regulatory requirements. The Dodd-Frank Wall Street Reform and Consumer Protection act was passed. The bill was intended to set buffers for liquidity and capital requirements by necessitating higher levels of liquidity and capital in order to prevent banks from returning to levels of risk achieved during the financial crisis.

Figure 2.7: Evolution of the Four Debt Indicators for the FIRE Industry



**Altman Z-scores are missing because the model is not meant to be used for financial companies.*

The COVID-19pandemic resulted in an expectation for banks to absorb part of the economic shock to increase credit, liquidity, and borrower assistance programs. The FIRE industry was in a much better condition to perform this task and help stimulate the economy

comparted to the GFC conditions (Koulouridi et al. 4). However, a concern that could have potentially been accelerated due to covid 19 is consumer loan defaults. Beyond the scope of this paper is a loan issue that could potentially be the cause of the next crisis. According to Experian: Mortgage loans, auto loans, student loans, credit card debt, home equity lines of credit, personal loans, and retail credit card debt is all at a record high (see Table 2.1). Banks have begun to recognize a concern of defaults, especially considering the financial strain the pandemic caused on borrowers. A majority of banks have already begun setting aside cash to cover for foreseeable loan losses. According to Wall Street Journal JPMorgan, Wells Fargo, and Citigroup have already set aside collectively over 28 billion to prepare for default rates that are set to rise (Benoit). Big banks have credited themselves since the financial crisis in the safety guards they have put in place in terms of diversity, capital, and risk. Setting aside cash to cover for the loan losses to come can be seen as good preventative measures. However, other views are more pessimistic in their appraisal of the situation. Nevertheless, the risk on the balance sheet as it currently stands is not near the financial crisis and it is too soon to predict the adverse outcomes the pandemic will have on the industry (Benoit).

Table 2.1: Consumer Debt Levels

Mortgage loans	Record high of $9.6 trillion
Auto loans	Record high of $1.3 trillion
Student loans	Record high of $1.4 trillion
Credit card debt	Record high of $829 billion
Homes equity lines of credit	Totals $1.3 trillion
Personal Loans	Totals $1.4 trillion
Retail credit card debt	Record high of $90 billion

Source: Experian

2.6 Entertainment Industry

The entertainment industry encompasses a diverse range of firms that each have various reactions due to their significant differences. During the GFC, casinos were amongst the hardest hit industries, while amusement parks and theatres did not see drastic drops in visitors, nor was corporate debt drastically affected (Surowiecki). This variation is reflected in Figure 2.8, as the short-term debt ratio and Altman Z- scores remained in healthy ranges. A theory that explains why the entertainment industry remains in good condition is it, "offers escapism for a relatively small price" (Surowiecki). Therefore, although disposable income decreases during recessions, the opportunity cost of visiting a theatre or park overrides a decrease in disposable income, especially considering the relatively low price. This sector is still impacted in terms of investments in future projects. Considering the lending freeze, securing financing for future projects becomes more difficult, affecting the long term trajectory for firms. Similarly, Figure 2.8 shows a decrease in stock price growth, which could be attributable to consumers' expectations for the

industry' future. If long term financing is more difficult to achieve and the firms are unable to invest, the value of the firm decreases.

Figure 2.8: Evolution of the Four Debt Indicators for the Entertainment Industry

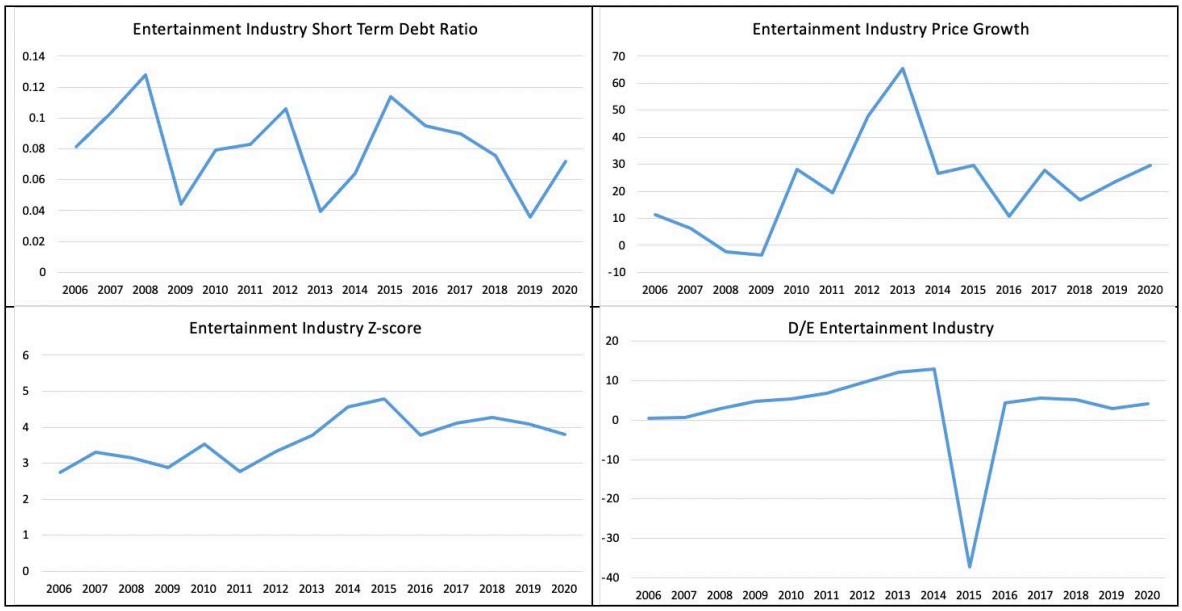


Figure 2.8 also displays the short-term debt ratio remaining in a healthy range, although still increasing. This can be due to a variety of reasons, one being a decrease in tourism, a factor heavily affected during recessions. This decrease affects revenues and requires firms to increase short term debt to cover finances. Therefore, although domestic parks and theatre visitors continue to visit, those relying on global consumers are affected. Some firms in the entertainment industry, such as cable companies, are also indirectly impacted by the GFC. One of the primary sources of revenue for cable companies derives from advertising fees (Simons), as firms underwent cost cutting measures advertising was one of the main budget cuts (Lotz 1). For instance, the automobile industry was the leading advertiser for many cable companies. As the industry underwent significant struggles during the GFC, as mentioned in section 2.1, advertising was cut, directly impacting balance sheets for cable companies (Lotz 1). This is displayed in the increasing debt to

equity ratio beginning in 2007. The increasing ratio is also indicative of the structural change the industry underwent as streaming services began to commence, requiring investments, consequently increasing debt. Overall, the entertainment debt measures reached during the GFC, comparatively show a better relative performance although not immune from GFC impacts.

The entertainment industry was in the midst of adapting to consumer streaming service preferences before COVID-19spread across the nation. During this transitional period, mergers occurred and in the following years multiple streaming services were released. This transition aided the industry during the COVID-19pandemic and allowed for further growth with streaming up 85 percent in comparison to the same week in 2019(Im). This positive growth is reflected in the price growth graph in Figure 2.8. However, the pandemic still affected the industry considerably as can be seen in Figure 2.8 with debt to equity ratios standing at 4. This measure reflects a high level of leverage, as parks and filming were shut down for months due to COVID-19capacity restrictions, the industry was bound to be affected (Im). However, depending on the speed of vaccination rollouts and state to state capacity restrictions the industry is expected to return to pre-COVID-19levels quickly (Im). Although debt has increased, Altman Z-scores are higher than the 1.8 bankruptcy is imminent indicator and instead average between 2 to 3. The entertainment industry had distinct reactions to the COVID-19pandemic with streaming services experiencing positive growth while other sects experienced adverse reactions.

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CHAPTER 3

THE IMPACTS OF FISCAL AND MONETARY POLICY

3.1 Policy Terms

3.1.1 Relief versus Stimulus

Depending on whether aggregate demand or aggregate supply is affected, fiscal policies geared towards economic relief or stimulus are introduced.

Relief is provided when aggregate supply is affected. This aid is intended to assist during the temporary period to hold off consumers and businesses until the crisis is over. Examples include suspending mortgage payments, bill exemptions, and unemployment benefits.

An economic stimulus is provided when aggregate demand is affected. This is intended to incentivize consumers to spend and businesses to invest in hopes of increasing aggregate demand. This can be done with injecting money into the economy, tax cuts, and decreasing interest rates.

3.1.2 Fiscal versus Monetary

Fiscal policy is the actions and spending conducted by the Federal Government. Monetary policy refers to the central bank objectives to achieve full employment, price stability, and economic growth. Both, however, are dependent on each other. The mix of fiscal and monetary policy ensures the efficiency of policy.

3.1.3 Limitations

Before enacting fiscal policy there are multiple avenues to consider that can severely limit the efficiency of the policy.

3.1.3.1 Recognition, Decision, Implementation, and Impact Lags

Action by the government undergoes recognition, decision, implementation, and impact lags. The recognition lag is the time it takes for the government to see an economic problem and realize action is required. Economic indicators such as interest rates, real GDP, the consumer price index, and unemployment rates take time to reflect economic downturns. Once recognition hits, time lags, both to decide on a course of action and to implement the policy, occur. Furthermore, once a decision is reached and a policy is carried through, the impact lag transpires. The impact lag is the time it takes for policy action to trigger the multiplier effect by changing consumer and producer behavior. Policy action changes are not instantaneous and instead take time to materialize in the economy, a limitation on fiscal and monetary policy.

3.1.3.2 Crowding Out Effect

Initially, expansionary fiscal policy is intended to increase economic growth, decrease unemployment, increase aggregate demand, and overall avoid a recession. However, these policies can initiate a crowding out effect, in which increased interest rates in turn reduce investment because of the high cost of debt, retracting the initial increase in investment.

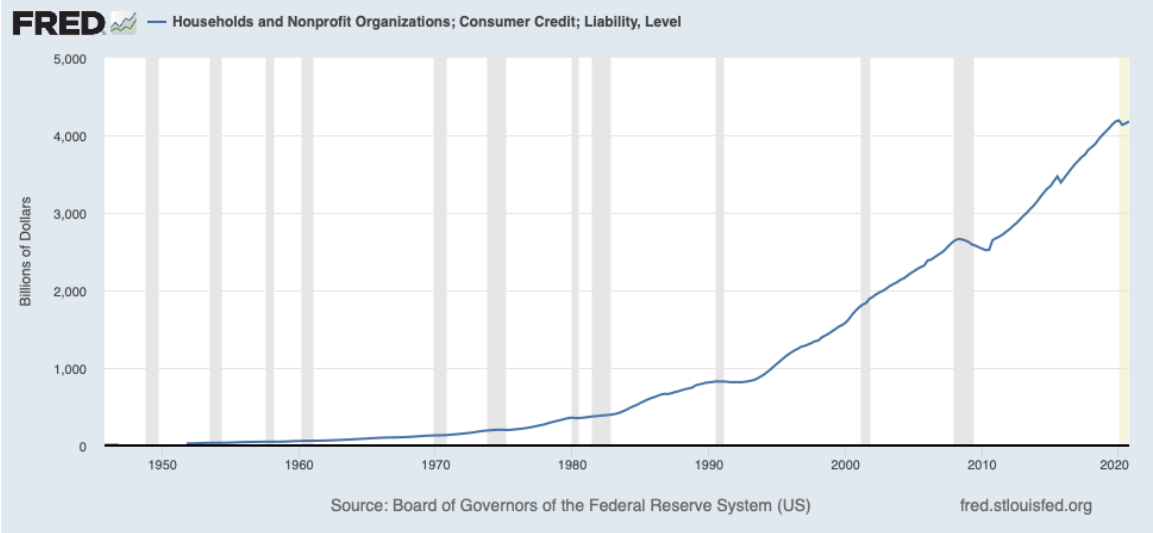
3.1.3.3 Trajectory of Fiscal and Monetary Policies

The level of rigor and direction of both monetary and fiscal policy must be on the same path in order to receive maximum efficiency.

3.1.3.4 Public Debt

High public debt is another vital factor to consider as the efficiency of fiscal policy decreases when levels of public debt increase. Considering the increasing levels of public debt, as shown in Figure 3.1, this is an important factor to consider.

Figure 3.1: Consumer Credit Liability FRED Graph



3.2 Fiscal Policy: GFC & COVID-19 Pandemic

Table's 3.1 and 3.2 outline the fiscal and monetary policy implemented during both the GFC and the COVID-19Pandemic.

3.2.1 Impact of Fiscal Policy on the GFC

The U.S Bureau of statistics conducted a study measuring the fiscal impact of fiscal policy on economic growth during the GFC and found that as the recession turned into a recovery the economic contraction was immense, citing reduced fiscal spending as the culprit. After the initial round of fiscal stimulus, the government received criticism because of concerns regarding national debt. In response, the fiscal stimulants were halted. As mentioned in 3.1.3.4, efficiency of public policy decreases when public debt increases; however, this is not to say fiscal policy should be halted. When comparing the total fiscal

policy implemented during the GFC and COVID – 19(See Table 3.1), it is evident how small the overall package during the GFC was. Gary Burtless, an American Economist at the Brookings Institution in Washington, refers to this halt as the "single worst error in macroeconomic policymaking following the financial crisis in 2008." (Kalamazoo 1) The insignificant fiscal response did not compliment the aggressive monetary response and in turn prolonged the economic downturn (Kalamazoo 1). Insufficient relief and stimulus were provided to increase economic growth to pre-recession levels, rather the negligible package delayed the monetary policy as well.

3.2.2 Impact of Fiscal Policy on the COVID-19 Pandemic

The total fiscal package in response to COVID-19 has been significantly larger than the response to the GFC, as cited in Table 3.1. In regard to impact, the Federal Reserve Bank of St. Louis cites the rise in personal income during the second quarter of 2020, as a positive indicator of the larger fiscal response conducted (Bullard). A forward-looking evaluation conducted by the Brookings Institution estimated the combined fiscal policy will increase economic activity in terms of gross domestic product (GDP) at the end of 2021 by about 4 percent and 2 percent in 2022, however without the fiscal support give, GDP would have been 3 percent below the pre-pandemic loss (Elderberg et al.11). These forecasts cannot predict all of the uncertain outcomes that can occur, therefore, the complete impact of the COVID-19pandemic fiscal policy cannot be fully defined in the present. However, as it stands there are signs that it has stimulated the economy and increased the possibility of a faster recovery.

Table 3.1: Fiscal Policy Implemented During GFC and COVID-19 Pandemic

		GFC	COVID-19 Pandemic
Duration		2008-2013	2020 – Present
Fiscal Policy			
	Stimulus Legislation	2/13/2008) Economic Stimulus Act of 2008 - $113 billion in tax rebates - Tax rebates of $300-$1200	Coronavirus Preparedness and Response Supplemental Appropriations Act - 8.3 billion - Virus testing, Medicaid funding, food assistance, sick leave, loan subsidies, loan suspensions and international assistance e
		Housing and Economic Recovery Act - $300 billion - Federal Housing Administration can guarantee up to $300 billion in new 30-year fixed rate mortgages for subprime borrowers	Coronavirus Aid, Relief and Economy Security Act (CARES Act) - 2.3 trillion - Tax rebates, expand unemployment, food assistance, loans, hospital assistance, international assistance
		American Recovery and Reinvestment Act of 2009 - $100 billion - Cut personal tax rates	Paycheck Protection Program and Health Care Enhancement Act - 483 billion - Loan forgiveness, grants and loans, hospitals, virus testing
		09/17/2008 Supplementary Financing Program that provided cash for use in federal reserve initiatives	President Trump Executive Order addressing expiration of coronavirus relief from previous legislation - 44 billion - Unemployment benefits, loan relief, tax deferments
		09/19/2008 Guaranty program for investments in money market mutual funds - 50 billion	Coronavirus relief and funding bill - 868 Billion - Unemployment benefits, 600 stimulus payments, loans, vaccines, testing and education funding
		Emergency Economic Stabilization Act of 2008 - $700 billion for Troubled Asset Relief Program (TARP).	American Rescue Plan - 1.9 Trillion - Unemployment benefits, $1,400 stimulus, government aid to states, vaccinations, education funding

Timeline Source GFC: "Federal Reserve Bank of St. Louis' Financial Crisis Timeline." FRASER.
Timeline Source COVID – 19: Timeline of Events Related to the COVID-19 Pandemic FRED

3.3 Monetary Policy: GFC & COVID-19 Pandemic

3.3.1 Impact of Monetary Policy on the GFC

The aggressive monetary policy used during the great recession prevented further catastrophes. Many studies conducted after the financial crisis cited that without the unconventional policies introduced during the Great Recession, the recession would have lasted longer with an even weaker recovery. Lending a greater amount of money, lowering interest rates, and forward guidance, combined were effective in increasing economic growth. According to a National Bureau of Economic Research review and assessment paper, if unconventional policy was not used, the natural rate of unemployment would not have returned until an entire additional year (Eberly et al. 2). However, the impact monetary policy had on the economy would also have been greater had the fiscal policy complimented it and if the interest and inflation rates pre-recession were higher (Kalamazoo).

3.3.2 Impact of Monetary Policy on the COVID-19 Pandemic

The Federal Reserve used many mechanisms, as they did during the great recession, to take measures against a deeper recession. At the beginning of the pandemic unemployment was at an all-time high and lending decreased substantially to households and businesses. However, as reported currently by the June 2020 Monetary Policy Report, a report submitted to congress due to the Federal Reserve Act, unemployment is higher, lending to household and businesses has increased, although not yet at pre pandemic levels. Unlike the great recession, during COVID-19aggressive monetary policy was met with equally aggressive fiscal policy in which together shifted conditions. However, the full affect cannot be fully predicted as of yet.

Table 3.2: Monetary Policy Implemented During GFC and COVID-19 Pandemic

		GFC	**Pandemic**
Monetary Policy			
	Federal Funds Rate	Reduced Federal Funds Rate to 1	Cut Federal Funds rate to a range of 0% to 0.25%
	Forward Guidance	Guaranteed low interest rates	Guaranteed low interest rates
	Securities Purchases (QE)	Purchased $30 billion in treasury securities $600 billion in mortgage-backed securities	Purchased $500 billion in treasury securities $200 billion in government backed mortgage-backed securities Committed to $80 billion a month in treasuries $40 billion in residential and commercial mortgage-backed securities
		Q2: November 2010 $600 billion of Treasury Securities	
		Q3: September 2012 $40 to $85 billion per month open ended bond purchasing program of agency mortgage-backed securities	
	Securities held before & After	Before Financial Crisis: $600 – $700 billion After Financial Crisis: $4.5 Trillion	Before COVID 19 = $3.9 trillion After COVID 19 = $6.6 trillion
	Lending to securities	Primary Dealer Credit Facility (PDCF): extended credit to primary dealers at the primary credit rate against a broad range of investment grade securities. 04/11/2008 Term Securities Lending Facility - Lend up to 200 billion for 28-day terms - Temporary program to purchase GSEE MBS	Primary Dealer Credit Facility offered low interest rate (0.25%) loans up to 90 days to 24 large financial institutions (primary dealer)
	Money Market	Creates the Asset-Backed Commercial Paper Money	Re launched the Money Market Mutual Fund Liquidity Facility

	Mutual Funds	Market Mutual Fund Liquidity Facility (AMLF) - extend non-recourse loans at the primary credit rate to U.S. depository institutions and bank holding companies.	
	Repo Operations	Cumulated $100 billion - conducted as 28-day term repurchase agreements with primary dealers.	Offering $1 trillion in daily overnight repo, $500 billion in one-month repo, and $500 billion in three-month repo Offering a limit of $80 billion per day of overnight repo per borrower, up from the previous limit of $30 billion per day for each borrower.
	Direct Lending to Banks	Reduced discount rate from to 5.75	Lowered discount window from 2.25% to 0.25% Typically, overnight but extended to 90 days
	Commercial Paper Funding Facility	09/19/2008 Asset Backed Commercial Paper Money Market Mutual Fund Liquidity Facility	Re introduced the Commercial Paper Funding Facility (CPFF)
		10/7/2008 Commercial Paper Funding Facility (CPFF)	
	Loans	12/12/2007 Term Auction Facility Swap lines	Pumped 75 billion into: Main Street Lending Program Payback Protection Program New loans facility, expanded loans facility, priority loans facility
	Households and consumers	11/25/2008 creation of the Term Asset-Backed Securities Lending Facility (TALF), 2007 Hope Now Initiative to help distressed homeowners	Re introduced Term Asset Backed Securities Loan Facility supported household loans such as student loans, auto loans, credit card loans, and etc.

Timeline Source GFC: "Federal Reserve Bank of St. Louis' Financial Crisis Timeline." FRASER.
Timeline Source COVID – 19: Timeline of Events Related to the COVID-19 Pandemic FRED

CHAPTER 4

CONCLUSION

This study examined how common economic shocks have affected corporate debts in different industries. Several findings were obtained from comparing the impacts of the Global Financial Crisis and the ongoing COVID-19 pandemic in six selected industries.

First, recessions due to financial crises cause deeper and longer downturns and exerted nontrivial impact on the debt accumulation of corporations by substantially reducing access to credit. The close link between the state of the economy and the health of the financial system can be seen by the differences in financial statements between the GFC and the COVID-19pandemic. Although lending decreased during the pandemic, it was not as drastic as during the financial crisis. Industries that require high amounts of leverage encounter strenuous times during recessions without access to credit as manifested in the automobile and FIRE industries. However, industries that were more heavily impacted during the pandemic than the GFC are all expected to return to pre-recession numbers sooner than the longer downturn that occurred during the GFC, such as the entertainment, healthcare and transportation industries. Recovery from the COVID-19is expected to be faster than that from the GFC, largely thanks to the healthy private demand.

Second, the globalism through global supply chains and global financial systems has increased the heterogenous effects of economic shocks on industries, as well as policy responses. While the entertainment and transportation industries rely on global tourists, automobile and IT industries rely on global manufacturers, and the finance on global

markets, healthcare industry is less influenced by the global factors. Given the disparate speeds of vaccination and the consequent economic recovery across countries, this heterogenous effect of globalization across industries will further in the near future.

Last but not least, fiscal and monetary policies play a vital role in the recovery from common economic shocks. Aggressive monetary and fiscal policy were implemented in both the GFC and the COVID-19pandemic, but policy actions conducted during the GFC are viewed as less effective than those conducted for the COVID – 19. These different policy impacts between the two economic shocks are also reflected in their heterogeneous impacts across industries.

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Sireen Nadaf is graduating in May of 2021 with an Honors Bachelor of Business Administration in Finance and Economics degree from the University of Texas at Arlington.

During her time at UTA she has held various leadership positions, including President of the Goolsby Leadership Academy, Chair of the Legislative Relations Committee, Legislative Ambassador for UTA Capital Day, and a Peer Academic Leader, while simultaneously maintaining a 4.0 GPA. Sireen is the recipient of the Dr. Wayne Duke Outstanding Student Leader award and the Matt Russel Award for Outstanding Student Government Committee Chair. During her undergraduate career she interned abroad for WASEL, an NGO, and has recently interned for Hinckley Cook, an accounting firm.

Sireen is her happiest when spending time with family, watching The Office, and reading psychological thrillers. She hopes to soon continue her education and earn a J.D. to pursue a career in corporate law.