Bankruptcy and the COVID-19 Crisis*

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March 2021

Abstract

We examine the impact of the COVID-19 economic crisis on business and consumer bankruptcies in the United States using real-time data on the universe of filings. Historically, bankruptcies have closely tracked the business cycle and contemporaneous unemployment rates. However, this relationship reversed during the COVID-19 crisis. While aggregate filing rates were very similar to 2019 levels prior to the onset of the pandemic, filings by consumers and small businesses dropped dramatically starting in mid-March of 2020, contrary to media reports and many experts' expectations. Total bankruptcy filings declined by 31 percent between 2019 and 2020. Consumer and business Chapter 7 filings rebounded moderately starting in mid-April and stabilized around 25 percent below 2019 levels, while Chapter 13 filings stabilized around 55 percent below 2019 levels. We show that the decline in filings was especially concentrated among homeowners and that bankruptcy filings fell the most in areas with the largest declines in mortgage foreclosure rates, suggesting that loan forbearance is an important factor in the decline in bankruptcy. We also find evidence consistent with liquidity constraints preventing some debtors from filing during the pandemic.

JEL codes: G33, G51, G01, G32
Keywords: bankruptcy, financial distress, COVID-19

*We thank Ray Kluender contributing to an earlier draft of this paper. We also thank Kate Waldock, Frederick Tung, Paige Skiba, Bob Lawless, Sasha Indarte, Edie Hotchkiss, Steven Hamilton, Arpit Gupta, Paul Goldsmith-Pinkham, Pamela Foohey, and participants at Finance in the Cloud, the Stigler Center, the NBER Summer Institute Household Finance Session, the University of Texas at Austin, LSE, MIT, the Boston Fed, the NBER Corporate Finance group, and discussions in the Bankruptcy & COVID-19 Working Group and on Twitter for useful comments. Filipe Correia, Denise Han, and Calvin Jahnke have provided outstanding research assistance.

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1 Introduction

The COVID-19 pandemic disrupted normal life and triggered a massive economic slowdown in the United States, inducing dramatic drops in consumer spending and the highest levels of unemployment since the Great Depression. The crisis prompted rapid action from Congress and the Federal Reserve, including a $600 weekly increase to unemployment benefits through the Federal Pandemic Unemployment Compensation (FPUC) program, $1,200 stimulus checks, and over $1.2 trillion in lending allocated to the Paycheck Protection Program (PPP) and Main Street Lending program. Meanwhile, numerous state and local governments, federal agencies, and industry participants have instituted moratoria on evictions and foreclosures and other measures aimed at forestalling acute financial strain for households and businesses.

Historically, bankruptcy filings have closely tracked economic conditions as businesses and households seek relief from macro-economic shocks. Figure 1 plots the time-series of unemployment rates and bankruptcy filings at the national level, after adjusting the number of bankruptcy filings for a level shift that occurred after the 2005 Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA) and a general time trend.[1] The correlation between the two series is 0.42, and increases to 0.54 when dropping 2005 due to sharp changes in filing rates around the passage of BAPCPA. While other factors besides the business cycle affect bankruptcy filing rates, distress and bankruptcy generally increase as macroeconomic conditions deteriorate, and this relationship was especially strong during the 2007-2009 recession and subsequent recovery. Historical increases in unemployment and bankruptcy are largely contemporaneous at the quarterly level, suggesting that bankruptcy rates soon after the onset of the pandemic if it had been a more typical recession.

The unique features of the COVID-19 recession provide an opportunity to more fully understand what drives consumers and firms to file for bankruptcy and how this relates to macroeconomic conditions. The magnitude and speed of the economic shock from COVID-19 were unprecedented. Consumer spending, the largest component of U.S. GDP, declined by more than 30 percent between January and April (Chetty, Friedman, Hendren, Stepner et al., 2020). According to the U.S. Census

[1] Specifically, Figure 1 plots the residual number of bankruptcies after removing a post-BAPCPA dummy and separate linear time trends in the pre- and post-BAPCPA periods. The raw time series of bankruptcy filings, showing the general increase in filings over time, is included in Appendix Figure A1.

Pulse surveys, over 50 percent of households experienced income loss between March 13th and July 21st, and 74 percent of small businesses reported lost revenues between April 26th and May 2nd (U.S. Census Bureau, 2020a,b).

Based on historical data, one would have expected bankruptcies to increase dramatically with such a large and rapid disruption. In this paper, we collect real-time information on the universe of bankruptcy filings in the United States and analyze the impact of the COVID-19 crisis on filing rates. We compare filing rates between January 1st 2019 and December 31st 2020, and use regression analysis to control for seasonal trends in order to assess the timing and magnitude of changes due to COVID-19.

Although bankruptcies have historically closely tracked contemporaneous unemployment rates, this relationship has reversed during the COVID-19 crisis so far. If the historical relationship between the unemployment rate and consumer bankruptcy filings had continued, we would have expected to see over 200,000 additional consumer filings in the second quarter of 2020 alone relative to the second quarter of 2019. Instead, there were about 81,000 fewer consumer filings year-over-year in the second quarter (see Appendix Table A1). Further, the drop in bankruptcy filings has persisted through the end of 2020, falling by 31 percent relative to 2019. Both consumer Chapter 7 and 13 filings dropped dramatically starting in mid-March, before their trends diverged. While consumer Chapter 7 filings initially declined by 34 percent year-over-year from March 15th to April 30th, they began rebounding in mid-April and have stabilized around a 20 to 30 percent year-over-year decline from May through December. Consumer Chapter 13 filings did not rebound in April and have remained at 54-61 percent below 2019 levels through the end of the year.

Business bankruptcy filings also fell during the pandemic. Similar to consumer Chapter 7's, business Chapter 7's (which are dominated by small and medium-sized enterprises) have declined by 20 to 30 percent year-over-year during most of the period from mid-March to the end of December, and are down by 19 percent year-over-year. Even business Chapter 11 filings declined slightly in 2020, ending the year down 5 percentage points relative to 2019. While many media reports have focused on increases in corporate bankruptcy filings in 2020, this is only true for the largest firms. Filings with greater than $50 million in assets increased by nearly 200 percent year-over-year from January and August 2019 to the same period in 2020.

In addition to the national trends, we also show that the cross-sectional relationship between state unemployment and bankruptcy rates became negative in the early part of the COVID-19 crisis. States that had the largest increases in unemployment simultaneously had the largest declines in bankruptcy filings. While this surprising relationship became positive again for consumer Chapter 7 cases by the end of 2020, it has remained negative for consumer Chapter 13 filings.

Why have bankruptcy filings behaved so differently in the COVID-19 crisis? And what can these trends tell us about consumer and business bankruptcy more broadly? We shed some light on these issues by focusing on four possible mechanisms that could be causing the dislocation between macroeconomic conditions and bankruptcy filings. The first of these is widespread loan and rent forbearance. The Coronavirus Aid, Relief, and Economic Security (CARES) Act suspended loan payments on the majority of student loans, and provided forbearance for federally-backed mortgages. Overall, Cherry, Jiang, Matvos, Piskorski and Seru (2021) estimate that 60 million borrowers missed payments on loans in forbearance during the first year of the pandemic. Focusing on the mortgage market, we show that delinquencies have more than doubled during the pandemic but foreclosure rates have fallen to historically low levels. Mirroring the relationship between unemployment and bankruptcy, we show that states that had the largest increases in unemployment also had the largest declines in foreclosures early in the pandemic, but these same states had the largest increases in mortgage delinquency. The uncoupling of delinquency and foreclosure rates in residential mortgages suggests that forbearance policies are likely playing a role in the decline of bankruptcy as well. In further support of this, we find that bankruptcy filing rates declined considerably more for homeowners than for non-homeowners. By September 2020, the share of consumer filings that own real estate fell by 8 percentage points, or 13% relative to the pre-COVID average of 61%. The decline in homeowner filings corresponds with the start of the CARES Act moratoria. Of course, it is possible that the CARES Act and other simultaneous events had disproportionate effects on homeowner bankruptcies through other channels as well, but the evidence is consistent with loan forbearance playing a role in depressing bankruptcy rates.

Second, we examine the role played by changes to the financial liquidity of debtors. Changes in liquidity could depress bankruptcies through two separate channels. On one hand, job loss could reduce liquidity substantially for some debtors, leaving them without enough cash to pay lawyer and

court fees and preventing them from filing at all (Gross, Notowidigdo and Wang, 2014). Consistent with a significant role of liquidity constraints, both consumer and business Chapter 7 filing rates began rebounding in mid-April as stimulus payments, enhanced unemployment insurance, and PPP disbursements were rolled out.[2] Examining this further, we find significant declines in the fraction of consumer and business *pro se* filings—bankruptcy filings done without a lawyer. Typically, pro se filings are done by financially constrained and less sophisticated individuals and businesses. Specifically, a filer may choose not to use a lawyer if they cannot pay the lawyer or if their case is so simple that they do not feel they need one. Further, we find that much of the drop in pro se filings comes among filers with no assets. No-asset pro se filers are among the most liquidity contrained debtors, and the drop in filings in this category suggest that financial constraints may be keeping some filers from entering bankruptcy.

On the other hand, the pandemic may have increased liquidity for some potential bankruptcy filers, thereby delaying or preventing their bankruptcy. The massive support implemented by the CARES Act and other policies in response to the dramatic shock to economic activity provided stimulus checks and increased unemployment insurance.[3] The Paycheck Protection Program other facilities have helped to support bank and bond credit for both large and small businesses. The combination of these policies provided enough liquidity that they likely prevented some bankruptcies. However, the rise in loan delinquency discussed above suggests that increased liquidity cannot fully explain the drop in bankruptcy.

A third possible reason for the decline in bankruptcy is increased uncertainty. While we lack good empirical proxies for increases in economic uncertainty, we note that it is likely that many debtors delayed bankruptcy in the early stages of the pandemic when it was unclear how long it would last and the long-term effects of the pandemic on economic activity. This is particularly true for consumer Chapter 13 and business Chapter 11 filings, which require debtors to create

[2]Chapter 13 filings have historically been associated with housing distress and are less affected by liquidity constraints, and the widespread mortgage forbearance and foreclosure moratoria put in place during the COVID-19 crisis have likely played an important role in reducing this filing type.

[3]Taking into account the $600 increase in weekly unemployment benefits implemented by the CARES Act, potential replacement rates for lost income are above 100 percent for the median qualifying unemployed worker (Ganong, Noel and Vavra, 2020). According to the Bureau of Economic Statistics, the personal savings rate reached a high of 34 percent in April and remained well above 2019 levels through the end of 2020. Real disposable personal income was 7.6% higher from April - December of 2020 than the same period in 2019.

long-term plans of repayment which may have been hard or impossible to create with high amounts of economic uncertainty.

Finally, we examine the role played by physical distancing in possibly slowing the bankruptcy filing rate. As lawyer offices shut down and courts moved to remote hearings, this may have made it difficult for some debtors to enter bankruptcy. For example, as courts physically shut down, filers who would have filed pro se may have been unable to navigate the electronic and telephonic systems, preventing them from filing altogether. Thus, the drop in pro se filings could also reflect physical constraints. However, we do not find any difference in filing rates between 51 bankruptcy courts that physically shut down and 39 courts that did not. Given this, it is unlikely that a large share of the decline in bankruptcy filings is due to physical barriers to filing.

Our findings highlight the fact that bankruptcy plays a very different role for large corporations as compared to small businesses and consumers. While large corporations may be able to efficiently turn to bankruptcy as a source of protection, small firms and consumers often only view it as a last resort and are more likely to avoid filing in the absence of a precipitating event. Thus far, the COVID-19 crisis has coincided with an increase in filings only for the largest corporations, and this was largely driven by sectors such as retail that were already struggling prior to the pandemic. In contrast, consumer and small business filings dropped dramatically at the onset of the crisis in mid-March especially in high-unemployment areas, likely due to a combination of loan forbearance, financial barriers, and an increase in economic uncertainty. Despite the massive stimulus measures included in the CARES Act, its enactment on March 27 did not noticeably alter or reverse the downward trend in filing rates already underway at that time.

2 Background

In this section we briefly outline the main motivations that lead to individuals and businesses choosing to file for bankruptcy. This discussion will help to frame our results and the mechanisms that have caused a sharp decline in bankruptcies in the COVID pandemic.

Why would an individual or business file for bankruptcy? The most ready answer is to obtain relief from debt that the debtor cannot repay. For consumers, bankruptcy provides a fresh start that frees up cash flows and potentially protects key assets such a house or a vehicle from repossession.

Businesses can use bankruptcy for various purposes depending on the viability of the business. For a business that is no longer viable, bankruptcy is one option for liquidating the firm. Meanwhile, bankruptcy can provide a fresh start to businesses that are still viable but need a new capital structure to maintain financial health. Similar to individuals, firms can also use bankruptcy to protect assets from seizure by secured creditors.

While bankruptcy clearly has benefits, there are also costs to filing. Direct costs of bankruptcy include administrative and attorney fees. Individuals who file for bankruptcy will see their credit scores decline, which could limit credit access in the future. Also, an individual who has filed for bankruptcy loses the option to file again for a certain period of time depending on the chapter of bankruptcy. Businesses that enter bankruptcy cede some control of the firm to a trustee and judge, which can at times lead to the liquidation of the firm. These risks are extra costs that businesses must weigh before filing.

With these costs and benefits in mind, it is unsurprising that bankruptcies typically rise during economic downturns, as shown in 1. Job loss can make it impossible for individuals to service their debt without forgoing other necessary consumption, thereby increasing the benefits of debt discharge while keeping the costs relative fixed. Meanwhile, recessions can make some firms non-viable, forcing them into liquidation. Other firms may still be viable but need to restructure their assets or liabilities after falling behind on payments.

Listing the costs and benefits of bankruptcy can help to provide a framework to think about channels which will affect bankruptcies in the aftermath of COVID-19. In particular, we will focus on four main mechanisms that could explain the decline in bankruptcies seen in the pandemic.

First, the principal reason that most individuals and firms file for bankruptcy is to get protection from creditors. If creditors do not pressure debtors, it is natural to expect a decline in bankruptcies rather than an increase. Thus, leniency of creditors – either of their own accord or through government mandates – is a key mechanism that can affect bankruptcy trends.

Second, liquidity plays a fundamental role in the bankruptcy decision. Additional liquidity stemming from government stimulus could prevent bankruptcies by giving debtors enough cash to pay creditors until their normal cash flows resume. On the other hand, debtors need liquidity to pay the fees associated with bankruptcy in the first place ((Gross et al., 2014)), and so a sudden

drop in liquidity could actually lead to a decline in bankruptcy filings as debtors who would like to use bankruptcy cannot afford to.

Third, increases in uncertainty could cause declines in bankruptcy. Increases in uncertainty can make it hard to determine if a debtor even needs bankruptcy at all, or which type of bankruptcy would be the most beneficial. This increases the option value of waiting to file, thereby depressing bankruptcies initially after an uncertainty shock. Uncertainty can also make it harder for business Chapter 11 and individual Chapter 13 cases to be successful, as they need to create detailed reorganization or repayment plans. Due to the difficulties of measuring uncertainty empirically, this paper does not contain tests of its role in affecting bankruptcies in the COVID-19 recession. But we note that it could have played a significant role, particularly at the beginning of the pandemic.

Finally, COVID-19 created unique physical barriers that could have preventing some bankruptcy filings. Physical distancing and moving to online or telephonic meetings with lawyers and judges could have been particularly difficult for potential filers who lack good Internet access or technological savvy.

We will organize our evidence around these four possible mechanisms to better understand the principal drivers of bankruptcy during COVID-19.

3 Data

We collect data on the universe of bankruptcy filings in the United States from the Federal Judicial Center (FJC) databases. The FJC database provides information on all petitions filed under the Bankruptcy Code beginning in October 2007 and is updated quarterly under a working arrangement with the Administrative Office of the U.S. Courts.[4] The most recent update included data through the fourth quarter of 2020, and we use FJC data for January 2019 through December 2020 to provide benchmarks for year-over-year comparisons. We also use the FJC data to analyze the detailed characteristics of filers and compositional changes during the COVID period. In addition, the FJC data allows us to identify business bankruptcies that have separate filings for each subsidiary or

[4]The database is publicly available at https://www.fjc.gov/research/idb/bankruptcy-cases-filed-terminated-and-pending-fy-2008-present

branch of the business that entered bankruptcy. In these cases, we consolidate all associated cases so that we report only one bankruptcy filing per business and accurately measure the assets and liabilities of the full business entity.

Our analysis focuses on the three most common chapters of bankruptcy filing. Consumer Chapter 7 ("fresh start") bankruptcy allows an individual to discharge eligible debts and keep exempt assets without requiring additional repayment out of future income. Chapter 13 ("repayment plan") bankruptcy, in contrast, allows a debtor to keep all of their assets, discharge debts above what they can afford to repay, and repay the remaining debts out of their income over the next five years according to a plan approved by a bankruptcy judge. Businesses mostly file under Chapter 7 or Chapter 11. Business Chapter 7 ("liquidation") bankruptcy requires the sale of all assets of a business with proceeds used to pay creditors. Chapter 11 ("reorganization") bankruptcy allows the debtor to negotiate with lenders to create a reorganization plan so that the distressed business can continue to operate; nearly all reorganization plans involve a restructuring of the liabilities and equity of the firm, often including asset sales as part of the bankruptcy terms. While Chapter 11 is designed to allow for reorganization, historically about two-thirds of business Chapter 11 cases are either converted to Chapter 7 or dismissed from court entirely (Iverson, 2017).

4 Methods and Results

Our main empirical objective is to document the effect of the COVID-19 pandemic and economic crisis on bankruptcy filings. In our main analysis, we use 2019 filing rates as the counterfactual, and also compare these results to historical benchmarks below.

Table 1 computes simple year-over-year changes in nationwide bankruptcy filings by the type and chapter of filing for six time periods and the year to date using filings from FJC. Business filings are reported after consolidating all subsidiary filings to a single filing per business (Table A2 reports the unconsolidated results for comparison). While media reports have focused on the record number of filings among corporations with more than $1 billion in assets and spikes in filings among retail and dining firms (e.g., Mathurin et al., 2020), overall bankruptcy filings are down by 31 percent (230,820 filings) relative to 2019.[5] This decline is driven by a 31 percent year-over-year

[5]See Appendix Figure A3 for year-over-year changes in Chapter 11 filings by industry, which are consistent with

decline in consumer filings, but overall business filings are also down 17 percent year-over-year. Across all filings types, Consumer Chapter 13's are down the most, falling 45 percent relative to 2019. On the opposite extreme, business Chapter 11's are only down 5 percent year-over-year, and are up by 40 percent on an unconsolidated basis. As shown in the last two rows of the table, small business filings, defined as businesses with less than $10 million in assets, have consistently been down about 20 percent year-over-year since the pandemic began. Meanwhile, large business filings have not varied dramatically from 2019.[6] Overall, the media narrative describing a "tidal wave" of bankruptcies has not materialized to this point in the pandemic.

The large decline in consumer filings is particularly surprising when compared to the rise that would be expected based on past relationships between unemployment and bankruptcy rates. Based on the unemployment numbers through the second quarter, after adjusting for the fact that much of that unemployment was temporary, we would have expected a year-over-year increase of over 200,000 additional consumer bankruptcy filings in the second quarter alone.[7] Instead, there were more than 81,000 fewer consumer filings in Q2 (see Appendix Table A1), and nearly 139,000 fewer year-over-year between January and August.

Business filings similarly diverge from a forecast based on unemployment. Given unemployment numbers in the second quarter, we would have expected approximately 5,500 additional business filings in this time period relative to 2019. Instead, Appendix Table A1 shows there were 645 fewer business filings in the second quarter of 2020. The drop in business bankruptcies is particularly striking given reports of widespread permanent business closure. Bialik and Gole (2020) estimate that roughly 98,000 businesses on Yelp have permanently closed during the pandemic through September 2020.[8] Even through March 2021, data from (Chetty et al., 2020) show that 32 percent of small businesses remain closed in the U.S. Historically, 8.4 percent of businesses that permanently close file for bankruptcy, based on business closure statistics from the Census Bureau's Business

media reports.

[6]Consistent with media reports, filings with greater than $50 million in assets have increased by nearly 200 percent year over year. However, these large businesses make up a very small portion of total filings.

[7]See Appendix B for details on how we estimated this projection, which is based on Iverson et al. (2021).

[8]This is likely to be a lower bound as it is drawn only from businesses on Yelp. Steven Hamilton estimated that approximately 430,000 businesses may have closed permanently based on an estimate of 12.9 percent businesses that have closed in 2020 through July 10th from Womply (Chetty et al., 2020) with an estimated 55 percent of those businesses closing permanently (Gole and Shapiro, 2020).

Dynamics Statistics (U.S. Census Bureau, 2019).[9] Based on estimated business closures in Yelp alone, we would have expected at least 300 additional business filings over and above the 5,799 in the second quarter of 2019.

We estimate weekly panel regressions to pinpoint the dynamics of these changes in bankruptcy filing rates as they relate to the evolution of the pandemic and subsequent policy responses. Specifically, we first compute the number of nationwide bankruptcy filings of each type on each week of our sample period from January 1, 2019 to December 31, 2020, again consolidating business filings to remove subsidiary filings. We then partial out intra-month and seasonal variation with fixed effects for week of the month and month of the year.

Bankruptcy filings in 2019 determine the counterfactual and pin down the recurring variation in these regressions. We estimate weekly changes in bankruptcy filings in 2020 using separate week indicators for each calendar week t with the following specification:

$$y_t = \alpha + \sum_{\tau=2020\text{w}1}^{2020\text{w}52} \beta_\tau \cdot 1\{t = \tau\} + \gamma_{wom} + \gamma_{month} + \varepsilon_t, \tag{1}$$

where γ_{wom} and γ_{month} are week-of-the-month and month-of-the-year fixed effects, respectively. The dependent variable throughout is the log total number of bankruptcy filings per week, split by the chapter of the filing and whether the filing is a consumer or business case. We are interested in the $\hat{\beta}_\tau$ coefficients, which estimate differences in bankruptcy filings in 2020 relative to 2019 after partialing out recurring calendar variation.

We plot these results in Figure 2. The $\hat{\beta}_\tau$ coefficients prior to the severe onset of the pandemic in the United States allow us to assess whether 2019 is a reasonable counterfactual for the 2020 filings. For all chapters and both consumer and business filings, 2019 filing rates appear to be a reasonable counterfactual for those in 2020. As shown in the figure, there are no systematic pre-trends in either total consumer or business filings, or filings by chapter and filer type in advance of the National Emergency declared on March 13, 2020. These trends are also clearly observable in the raw data as presented in Appendix Figure A2, albeit with more seasonal and intramonth noise.

[9] Bankruptcy filing statistics from LexisNexis public records searches show that, from 2001 - 2017, 74 percent of all business Chapter 11 cases ended in the case being dismissed from court or converted to Chapter 7. We assume all of these cases end in business closure, as well as all business Chapter 7 cases. Using this as the numerator, we calculate that in an average year from 2000 - 2016 8.4 percent of all firm exits occurred via bankruptcy.

Business filings are rarer and noisier, but business Chapter 7 filings follow very similar trends as consumer Chapter 7 filings throughout the year. Business Chapter 11 filings are even less common, but show a clear decline between March and May before rebounding back to 2019 levels for the rest of the year. Given that we do not include a dummy variable for 2020, the point estimates near zero up to mid-March for all filing types show that both the level and trends of these bankruptcy filings remained consistent with 2019 prior to the onset of the COVID-19 crisis. Consistent with the lack of pre-trends, column (1) of Table 1 shows that total bankruptcies only changed by 0.1 percent (252 filings) year-over-year between January 1st and March 14th, and was 10 percent or less for all filing types except for large businesses and Chapter 11.

In contrast to the period from January to mid-March, total bankruptcies declined by 39 percent year-over-year from March 15 through April 30 following the escalation of the pandemic and economic crisis in the United States. This period included the first lockdown and social distancing measures in the U.S., with a number of bankruptcy courts either ceasing in-person hearings or substantially modifying their procedures to mitigate public health risks and comply with statewide and federal judicial orders.[10] In addition, there was presumably a sharp increase in overall uncertainty during this period that likely depressed filings. Much was unknown about the length of lockdowns, the severity of the virus, or proper protocols to mitigate its spread. The sharp decline across all bankruptcy types is likely due at least in part to increased uncertainty. However, increased uncertainty is not the whole story, as bankruptcy filings did not fully rebound, ending up down 31 percent year-over-year from January through December.

When breaking down the initial drop in filings by chapter and filer type, we find that consumer Chapters 7 and 13 and business Chapter 7 all fell by between 31 and 49 percent in the initial period between March 15th and April 30th, with consumer Chapter 13 falling the most. Both consumer and business Chapter 7 filings began rebounding in mid-April, stabilizing around 25 percent below 2019 levels by mid-May. This 25 percent decline persisted through the end of 2020 for both consumer and business Chapter 7 filings. In contrast to Chapter 7, consumer Chapter 13 filings continued to

[10]The most common changes include the suspension of all in-court hearings, postponement of Section 341 meetings, and the waiver of wet signatures on court documents. Most courts that moved to telephonic hearings did so between March 16th and March 23rd. Court orders related to COVID-19 are available at: https://www.uscourts.gov/about-federal-courts/court-website-links/court-orders-and-updates-during-covid19-pandemic

decline through late spring and stabilized between 54 and 61 percent below 2019 levels.[11] Finally, after an initial decline in the early part of the pandemic, business Chapter 11 filings returned to baseline 2019 levels for the rest of the year, ending up down 5 percent year-over-year by the end of the year.

In Figure 3 we break business bankruptcy filings by asset size instead of by chapter, where small businesses are defined as those with less than $10 million in assets at the time of bankruptcy. The figure shows that large business filings largely stayed at 2019 levels. Meanwhile, small business filings fell dramatically in the March-April time period and never fully rebounded, much like consumer Chapter 7 filings. These differences highlight how differently the bankruptcy system functions for large and small businesses. In particular, both personal and business considerations play important roles in the bankruptcy decision for small business owners since many small business owners give personal guarantees for their business debts (White (2016)). Meanwhile, larger firms view bankruptcy as a strategic option that can be used to restructure when necessary, rather than as a last resort.

Having established the basic trends in bankruptcy filings during the COVID-19 recession, we highlight three facts that can help explain the channels at play. We call attention to these facts because they can help point towards the mechanisms that are driving the overall trends. First, as is clear from Figure 2, consumer Chapter 13 bankruptcies have remained substantially more depressed than consumer Chapter 7 filings. These two filer populations differ along a variety of dimensions. Chapter 7 filers have lower income and fewer assets, and must generally pay filing fees in full at the time of filing, while Chapter 13 filers may roll their court and legal fees into their repayment plan. Chapter 13 filers are significantly more likely to have non-exempt assets (such as home equity or vehicles) that they are seeking to protect in bankruptcy. Finally, Chapter 13 filings are more complex and require more involvement both from bankruptcy attorneys and bankruptcy judges.

Second, as noted above, business bankruptcy filings and consumer Chapter 7 bankruptcies declined dramatically in the first few weeks of the pandemic, and then rebounded to stabilize

[11] There are several key differences between Chapter 7 and 13 for consumers that could be driving their divergence during the COVID-19 economic crisis. We discuss some reasons for these differences in more depth the next section.

around 25 percent below 2019 levels for the remainder of the year. The third and final fact relates to the cross-sectional relationship between changes in bankruptcies and unemployment at the state level. As described above, bankruptcy rates decreased significantly as unemployment skyrocketed starting in March, counter to the historical correlation. This negative correlation doesn't have to hold in the cross section. It could still be the case that states that experienced larger unemployment shocks saw a smaller decline in filings.

We show scatter plots of the relationship between unemployment and bankruptcy rates on a state level in Figure 4. For these plots, we compute the average monthly unemployment rate for each quarter of 2019 and 2020, and compute the year-over-year percentage point change in these average unemployment rates for each state. We conduct the same exercise for cumulative bankruptcy filings in each state to compute the year-over-year percentage change in bankruptcy rates for each filing type. Regression lines weighted by state population are also shown in each graph. In 2020Q2, it is clear that states with larger increases in unemployment experienced larger declines in both consumer Chapter 7 and Chapter 13 bankruptcies. The reversal of the historical relationship is surprising, and suggests that special circumstances in the COVID-19 crisis initially suppressed consumer bankruptcy filings in the hardest-hit areas. Meanwhile, panels (c) and (d) show that the negative relationship also applies to business Chapter 7 and 11 filings, although the slope estimates are more noisily estimated.[12] These relationships contrast strikingly with those during 2007-9 recession, which show strong positive cross-sectional correlations between unemployment and bankruptcy filings (Appendix Figure A4).

In the third and fourth quarters of 2020, a positive relationship between unemployment and bankruptcy began to re-emerge for consumer Chapter 7 cases, as can be seen in the red and green lines in Panel (a) of Figure 4. However, consumer Chapter 13 cases continued to be depressed especially in areas that saw the largest increases in unemployment through the end of 2020. Put differently, the initial large declines in consumer bankruptcies in the second quarter of 2020 were especially pronounced in areas who economies were most affected by COVID-19, and this is true across all types of bankruptcy. As the year progressed and consumer Chapter 7 cases rebounded

[12]The courts with the largest increases in Chapter 11 cases are those that are known to attract the largest corporate cases, such as Delaware, New York, Houston, and, more recently, Eastern Virginia.

somewhat, this rebound occurred in areas that continued to experience the worst unemployment.

In Table 2, we show the results of cross-sectional regressions of the relationship between ex ante state economic characteristics and the characteristics of bankruptcy filers by district in 2019 and the year-over-year change in filings from 2019 to 2020. This multi-variate framework allows us to show that proxies for the various channels we discuss seem to affect bankruptcy filings independently, and to compare the relative magnitudes of their effects on different types of bankruptcies. We use the specification below:

$$\begin{aligned}\Delta Filings_s^i = \alpha + \beta_1 unemp_{s,2019} + \beta_2 forecl_{s,2019} + \beta_3 prose_{s,2019}^i \\ + \beta_4 prop_{s,2019}^i + \beta_5 assets_{s,2019}^i + \varepsilon_t,\end{aligned} \tag{2}$$

where $\Delta Filings_s^i$ is the percentage change in bankruptcies of type i in state s between 2019 and 2020 (i.e. $(Filings_{s,2020}^i - Filings_{s,2019}^i)/Filings_{s,2019}^i \cdot 100$. The variables $unemp_{s,2019}$ and $forecl_{s,2019}$ are the monthly averages of the unemployment rate and foreclosure rate in each state from the BLS and Black Knight (1 = 1pp). The variables $prose_{s,2019}^i$, $prop_{s,2019}^i$ are the fraction of bankruptcies of type i in state s in 2019 that are pro se or have nonzero real property, and $assets_{s,2019}^i$ is the median total asset level of those bankruptcies in 2019.

The results show that all five proxies for state-level economic and filer characteristics have economically significant relationships to the change in filings between 2019 and 2020, although the low power of the cross-sectional regression generates large standard errors and low statistical significance in this specification. In column (1), the results show that a one percentage point increase in the 2019 state-level unemployment rate is associated with a 1.5% greater decrease in total bankruptcies in 2020. Similarly, a one percentage point increase in the 2019 foreclosure rate is associated with a 3.9% decrease in the bankruptcy rate.

The 2019 state-level pro se and and property owner rates are expressed as fractions, so interpreting the coefficients means that states that had a 10 percentage point higher number of pro se filers in 2019 experienced a 0.6% greater drop in bankruptcy rates in 2020. Similarly, a 10 percentage point increase in the fraction of property owners in 2019 is associated with a 2.5% greater drop in 2020 bankruptcies. Finally, the last row shows that a $10,000 increase in the median asset size of

filers in 2019 is associated with a 1.3% smaller drop in bankruptcies.

Altogether, the table shows that in a multivariate setting, states that had higher ex ante unemployment rates (that also experienced greater increases in unemployment in 2020), had bigger decline in bankruptcy in 2020. States with more property owner bankruptcies, pro se bankruptcies, and foreclosures in 2019 also experienced greater declines in bankruptcies. Finally, states with relatively wealthier filers saw smaller declines in the bankruptcy rate in 2020. These results are consistent with the role of government economic relief, particularly that aimed at homeowners in mitigating financial distress especially in states that were hardest-hit by the economic crisis and potential mortgage distress. They are also consistent with the disappearance of pro se filers and the lowest-wealth filers, which could indicate barriers to bankruptcy among the most vulnerable. The results indicate that multiple channels may be acting simultaneously, instead of being driven by a single force.

5 Mechanisms and Discussion

The dramatic drop in bankruptcy filings is surprising given the historically positive correlations between unemployment and bankruptcy rates both in the time series and cross section. Clearly, no single explanation can account for these striking trends. However, we discuss what we believe are the most likely set of explanations below. In particular, following the discussion in Section 2, we focus on the role played by creditor leniency, debtor liquidity, uncertainty, and unique physical distancing constraints imposed by COVID-19.

5.1 Creditor Leniency

The COVID-19 pandemic has seen widespread loan forbearance policies. Cherry, Jiang, Matvos, Piskorski and Seru (2021) estimate that by the end of 2021:Q1 more than 60 million borrowers will miss $70 billion on their debt payments. This leniency has come both through government mandates and private actions. The CARES Act included provisions which suspended debt payments for almost all student debt and all federally-back mortgages if the borrower has experienced financial hardship due to the pandemic. Throughout the summer of 2020, many state governors instituted eviction moratoria, and the CDC issued a nationwide eviction moratorium in September 2020 to

slow the spread of COVID-19. Even when not mandated, many lenders and landlords have chosen to forbear on debt collection given the unprecedented nature of the pandemic (Cherry et al., 2021).

An important aspect of these debt forbearance policies is that missed payments do not get reported as delinquencies on credit reports. For this reason, reports based on credit bureau data show that delinquency is down.[13] This, however, does not mean that there is a lack of financial distress in the economy. Financial distress has increased dramatically during the pandemic. In Figure 5 we display data from Black Knight/McDash Mortgage Monitor to show that mortgage delinquencies rates more than doubled immediately after the COVID-19 pandemic began, and remained at elevated levels through early 2021. Meanwhile, due to moratoria, the foreclosure rate began to decline at the same time, falling 40% by mid-2020.

Cross-sectional evidence illuminates this point further. In Panel (a) of Figure 6 we display the correlation between changes in unemployment rates and mortgage delinquencies across states. As one would expect, the correlation is significantly positive throughout 2020; states who were most affected by the pandemic saw both rising unemployment and increases in mortgage delinquency. However, in Panel (b) we show that the correlation between changes in unemployment and foreclosure rates was negative in the second and third quarters of 2020. States that saw the largest increases in unemployment actually saw the largest declines in foreclosure rates. Thus, counterintuitively, foreclosures actually fell the most in those states that had the largest increases in delinquency.

While our evidence focuses on mortgages, Cherry et al. (2021) show that forbearance was also widespread in auto debt, student loans, and credit cards. The unprecedented forbearance by creditors has likely played a major role in depressing bankruptcy filings during the pandemic. Simply put, if creditors are not pressuring debtors to repay delinquent loans there is little reason many debtors would file for bankruptcy. In support of this, Figure 7 shows that states with the largest declines in foreclosure rates also experienced the largest drops in bankruptcy filings during the COVID-19 pandemic.

While loan forbearance should decrease all bankruptcy filings, this may be especially true for

[13] For example, the New York Federal Reserve's Quarterly Report on Household Credit and Debt shows a sharp decline in delinquency starting 2020:Q2 (https://www.newyorkfed.org/medialibrary/interactives/householdcredit/data/pdf/hhdc$_2$020q4.*pdf*)

Chapter 13 filings. Individuals who file for Chapter 7 must give up any non-exempt assets to repay creditors. In Chapter 13, an individual can retain their assets and instead agree to a repayment plan that reinstates secured debts. Indeed, housing-related distress is a common trigger for Chapter 13 filings (Li, White and Zhu, 2011). For example, suppose an individual owns a home worth $500,000 with an outstanding mortgage balance of $300,000. The home equity of $200,000 owned by the individual is above the home equity exemption limit of most states, and so if the individual enters Chapter 7 bankruptcy they may have to sell their home and give up some of their equity to repay unsecured creditors. However, if the individual files for Chapter 13 they can keep their home by pledging to pay all of their disposable income for the next 3-5 years to unsecured creditors. Because of this, essentially all bankruptcy filers that have assets above exemption limits choose to file for Chapter 13.[14] Given this, to the extent that loan forbearance was especially strong among mortgage lenders it could help explain why Chapter 13 filings were significantly more depressed in 2020 than Chapter 7 filings.

Consistent with this idea, Figure 8 displays changes to the fraction of bankruptcy filings in which the debtor owns real estate such as a house or business location. These figures are estimated in regressions similar to those in Figure 2 except here the dependent variable is the share of bankruptcy filings of a given type in which the debtor owns real property, as reported by FJC. In Panel (a), we see that prior to about April 1st, the share of consumer filings by property owners was very similar to 2019 level. Then, the share of property owners dropped quickly and continued to decline through the end of 2020, ending the year down almost 8 percentage points. This decline corresponds almost exactly with passage of the CARES Act mortgage foreclosure moratoria on March 27th, 2020. Importantly, the share of real property owners did not decline between March 13th (when a national emergency was declared) and the end of March, when overall bankruptcy filings first declined. In fact, in the small window between the national emergency and the CARES Act, the share of filings that were by home owners increased to some extent. This can be seen more clearly when examining consumer Chapter 7 and Chapter 13 filings separately (Panels (c) and (d)). In both of these graphs, there is a temporary spike in the share of real property owners between the

[14] In 2019, 99.7% of Chapter 13 filers had non-exempt assets, while only 5.6% of Chapter 7 filers did, according to FJC data.

middle and end of March 2020, followed by a decline in the share afterwards.

The other notable finding from Panel (d) is that the share of Chapter 13 filings that are property owners was actually quite similar to 2019 for much of the year. Thus, the overall drop in the share of homeowner bankruptcies seen in Panel (a) is reflective of the large overall decline in Chapter 13 filings, rather than a decline in the share of homeowners conditional on choosing to file for Chapter 13. In addition, the share of homeowners in Chapter 7 was lower in 2020 (Panel (c)) and this also played a role in the overall decline.[15]

Panel (b) of Figure 8 shows the share of business bankruptcies that report owning real property. Similar to consumer filings, the share of business bankruptcies with real property appears to fall soon after the CARES Act, and remains about 5 percentage points below 2019 levels throughout 2020.

Taken together, the evidence suggests that creditor leniency – and in particular leniency from mortgage lenders – is likely playing an important role in reducing overall bankruptcy filings.

5.2 Liquidity

The enactment of the CARES Act on March 27 created immediate forbearance for student loans and mortgages, and it is at this point that we see the share of homeowner filings begins to decline. However, we find no noticeable change in the overall downward trend in filing rates already underway at that time (Figure 2). Instead, we see the rate of business and consumer Chapter 7 filings begin to rebound at the onset of stimulus payments and other forms of relief mandated by the CARES Act and other policies.

As shown in Figure 2 and Table A2, Chapter 7 filings began rebounding within a few days of the April 15 disbursement of the $1,200 stimulus checks, a rebound that leveled off around early May at 20 percentage points lower than 2019 levels. Thus, bankruptcy rates surprisingly increased in the time series as households and businesses received more aid. This pattern is consistent with the importance of binding liquidity constraints and the use of stimulus payments to pay for court fees, which disproportionately affect Chapter 7 filings since Chapter 13 filing fees can be rolled into the repayment plan (Gross, Notowidigdo and Wang, 2014).

[15] On average, about 33% of consumer Chapter 7 filings are by property owners.

Additional evidence on the importance of liquidity constraints can be gleaned by looking at the characteristics of bankruptcy filers in the FJC data. In Figure 9, we plot kernel density distributions of the log of total assets across bankruptcy types. While the distributions are broadly similar across 2019 and 2020, there are a few notable differences. Examining the left tails, we can see that during the pandemic (especially in the March-April 2020 period) there were significantly fewer low-asset bankruptcy cases. This is true across all bankruptcy types for both consumers and businesses. While this is not conclusive evidence of liquidity constraints, it points toward liquidity constraints potentially preventing those with the fewest assets from being able to file for bankruptcy.[16]

Another way to potentially isolate liquidity constrained filers is to focus on "pro se" bankruptcies– when a debtor files for bankruptcy without a lawyer. This is typically done when a filer cannot afford to pay for a lawyer. In Panels (a) and (b) Figure 10 we show how the fraction of filings that are pro se evolved for both consumer and business filings. Concurrent with the onset of the pandemic, the fraction of filings that are pro se fell by about 5 percentage points for both consumer and business filings. On average, pro se filings only constitute 8.4% and 6.7% of total consumer business filings, respectively. Thus, pro se filings have almost disappeared entirely during the pandemic. Additionally, in Panel (c) we show that those debtors who did continue filing pro se were increasingly those with non-zero assets, while this trend does not appear in among the set of filers who file with lawyers (Panel (d)). This shows that many of the pro se debtors who stopped using bankruptcy during the pandemic were those with zero assets who are potentially liquidity constrained.

We note that pro se debtors potentially differ from other filers along many dimensions other than liquidity constraints. Thus, there are other possibilities that could explain these results. For example, if these debtors received the most benefit from loan forbearance or received the most government support during the pandemic the this could explain why there was a sudden drop in pro se filings. However, the decline in pro se occurred immediately when the national emergency was declared, rather than when moratoria went into effect or when stimulus checks were distributed,

[16]Of course, an alternative explanation is that government support aided these debtors enough that they did not need bankruptcy. Given that stimulus payments were not targeted in this way, this seems unlikely. Similarly, increased unemployment insurance was not targeted to low-asset individuals but to those who lost their jobs, which are distinct groups.

making it less likely that these channels explain the time series patterns. Another possibility is that physical distancing made it difficult to file pro se, a possibility we discuss below. Because of this, we urge caution in over-interpreting these trends as being due solely to liquidity constraints.

While liquidity dried up for some debtors in the COVID-19 crisis, there is also evidence of significantly *increased* liquidity for others during the pandemic, driven by massive federal aid, other types of relief efforts and reduced discretionary spending. The CARES Act included $300 billion in stimulus checks and $260 billion in increased unemployment benefits, which were associated with a median income replacement rate of 134 percent for those able to claim this benefit (Ganong, Noel and Vavra, 2020). The personal savings rate hit a 60 year peak of 33.5 percent in April 2020 (U.S. Bureau of Economic Analysis, 2020). On the small business side, the Paycheck Protection Program (PPP) provided $518 billion in support to businesses early in the pandemic.[17] These and less-publicized relief measures enacted by localities and industry participants have no doubt helped reduce demand for bankruptcy among some households and small businesses.

However, it is unlikely that these relief efforts were large enough to reduce bankruptcy demand by 20 percent during the pandemic. This can be seen clearly from Figure 5, which shows that mortgage delinquency rose more than twofold during the pandemic. Similarly, New York Federal Reserve's Quarterly Report on Household Debt and Credit shows that credit card delinquencies rose about 25% during the pandemic.[18] If stimulus payments and declines in discretionary spending were enough to make large numbers of consumers and businesses solvent, delinquency rates would have declined during this period. The increase in delinquency rates is evidence that financial distress has increased on aggregate during the pandemic, even if some debtors have seen increased solvency during this time.

[17] Autor, Cho, Crane, Goldar, Lutz, Montes, Peterman, Ratner, Villar and Yildirmaz (2020) estimate that the PPP increased aggregate employment by 2.3 million through mid-July. Chetty, Friedman, Hendren, Stepner et al. (2020) find similar effects on employment. Granja, Makridis, Yannelis and Zwick (2020) present early evidence that PPP helped small businesses build up liquidity and meet obligations, though Bartlett and Morse (2020) finds that this benefit is limited to microbusinesses.

[18] https://www.newyorkfed.org/medialibrary/interactives/householdcredit/data/pdf/hhdc$_2$020$q4$.*pdf*

5.3 Uncertainty

An additional explanation for the initial decline in filings is that the COVID-19 shock caused a great deal of economic uncertainty for households and businesses, and some may delay filing until the severity and duration of the crisis become more clear. Households are only allowed to file for Chapter 7 bankruptcy once every eight years and Chapter 13 once every two years (Gross, Kluender, Liu, Notowidigdo and Wang, 2020), so some who might benefit from bankruptcy may nonetheless delay due to the option value of filing in the future (White, 1998). This option value may be even greater for small businesses, which are very likely to be liquidated if they file for bankruptcy (Morrison, 2007).

Unfortunately, we lack a good proxy for uncertainty that would allow us to cross-sectionally test the role it played in affecting the bankruptcy decision by individuals and businesses. While we believe that uncertainty likely explains the quick decline in filings in the initial weeks of the pandemic, it is notable that bankruptcy filings did not rise after passage of the CARES Act or around other notably events that might have resolved some of the uncertainty surrounding the length and depth of the COVID-19 recession. Instead, filings rates remained significantly depressed through the end of 2020. While uncertainty is likely a contributing factor to the decline, without lender forbearance and other government support it is unlikely that uncertainty alone would depress filings for this length of time.

5.4 Physical Barriers

A final possible reason for the initial decline in filings is state and local social distancing policies, which include shutdowns and changes in procedures within the court system. Approximately 67 of 94 United States Bankruptcy Courts moved to telephonic hearings between March 13 and April 1, 2020, with some shutting down physically and/or experiencing outbreaks.

The changes in court operations may have made it particularly difficult for vulnerable populations such as the recently-furloughed and poorer and rural filers to access the bankruptcy system, since updated filing rules often made it more difficult to file without an attorney and/or internet access, and wet signatures on printed documents were more difficult to obtain during the pandemic

(Skiba, Jiménez, Miller, Foohey and Greene, 2020). Foot traffic to bankruptcy attorney offices has also likely declined, and may disproportionately decrease "supply-driven" Chapter 13 filings relative to "demand-driven" Chapter 7 filings (Lawless, 2013). These physical distancing requirements may have played a role in the distinct drop in pro se filings shown in Figure 10 and described in Section 5.2 above.

However, other tests suggest that physical barriers were not the main driver of the decline in bankruptcy filings. We test this by identifying 51 courts that shut down all in-person meetings (the "treated" sample) and comparing them to 39 courts that never shut down. In Figure 11 we display regression coefficients similar to those in Figure 2 but separately for each of these samples. As can be seen, there is essentially no difference in filing rates between treated and control bankruptcy courts. Further, in unreported results, we find no difference in the fraction of pro se filers across these two sets of courts.

While it is surely true that physical barriers played some role in reducing bankruptcy filings, results from this analysis suggest that other mechanisms were more important.

6 Conclusion

Our research contributes to an understading of what causes consumer and corporations to file for bankruptcy, and also to the growing body of work studying the impacts of the COVID-19 crisis on the U.S. economy. We document large and persistent declines in bankruptcy rates for both households and small businesses after the onset of the crisis in mid-March, in a surprising reversal of the close historical relationship between bankruptcy and unemployment rates in both the time series and cross section. While some of this decline is likely to be attributable to the substantial aid offered by federal, we argue that much of the decline is due to widespread loan forbearance. This highlights that most debtors do not view bankruptcy as a strategic option (as opposed to large corporations), but rather as an option only to be used as a last resort.

We also find evidence consistent with liquidity constraints preventing some debtors from accessing the bankruptcy system. On the other hand, it does not appear to physical barriers played a large role in reducing bankruptcy rates.

A unique feature of our study in understanding not only the bankruptcy system but the econ-

omy as a whole is that we observe a consistent time series of the universe of all bankruptcy filings. Although the bankruptcy system reflects the many forces affecting the economy during the COVID-19 crisis in complex ways, our work has the advantages of granular real-time analysis while being free from the sample selection bias that is present in other studies using private-sector or other unrepresentative sources. Future versions of this paper will continue to update these results and leverage cross-sectional variation in exposure to the various forces described above to further disentangle the mechanisms behind the trends in bankruptcy filings and the implications for the overall U.S. economy.

References

Autor, David, David Cho, Leland D Crane, Mita Goldar, Byron Lutz, Joshua Montes, William B Peterman, David Ratner, Daniel Villar, and Ahu Yildirmaz, "An Evaluation of the Paycheck Protection Program Using Administrative Payroll Microdata," *MIT Working Paper*, 2020.

Bartlett, Robert P. and Adair Morse, "Small Business Survival Capabilities and Policy Effectiveness: Evidence from Oakland," *Working Paper*, 2020.

Bialik, Carl and Daniel Gole, "Yelp: Local Economic Impact Report," Technical Report, Yelp 2020.

Cherry, Susan F, Erica Xuewei Jiang, Gregor Matvos, Tomasz Piskorski, and Amit Seru, "Government and private household debt relief during covid-19," 2021.

Chetty, Raj, John N Friedman, Nathaniel Hendren, Michael Stepner et al., "How Did COVID-19 and Stabilization Policies Affect Spending and Employment? A New Real-Time Economic Tracker Based on Private Sector Data," *National Bureau of Economic Research Working Paper #27431*, 2020.

Ganong, Peter, Pascal J Noel, and Joseph S Vavra, "US Unemployment Insurance Replacement Rates During the Pandemic," *National Bureau of Economic Research Working Paper #27216*, 2020.

Gole, Daniel and Amy Shapiro, "Increased Consumer Interest in May Correlates with COVID-19 Hot Spots in June, According to the Yelp Economic Average," Technical Report, Yelp 2020.

Granja, João, Christos Makridis, Constantine Yannelis, and Eric Zwick, "Did the Paycheck Protection Program Hit the Target?," Working Paper 27095, National Bureau of Economic Research May 2020.

Gross, Tal, Matthew J Notowidigdo, and Jialan Wang, "Liquidity Constraints and Consumer Bankruptcy: Evidence from Tax Rebates," *Review of Economics and Statistics*, 2014, *96* (3), 431–443.

_ , Raymond Kluender, Feng Liu, Matthew J Notowidigdo, and Jialan Wang, "The Economic Consequences of Bankruptcy Reform," *National Bureau of Economic Research Working Paper #26254*, 2020.

Iverson, Benjamin, "Get in Line: Chapter 11 Restructuring in Crowded Bankruptcy Courts," *Management Science*, 2017, *64* (11), 5370–5394.

Iverson, Benjamin Charles, Jared A Ellias, and Mark J Roe, "Estimating the Need for Additional Bankruptcy Judges in Light of the COVID-19 Pandemic," *Harvard Business Law Review*, 2021, *11* (1).

Katz, Lawrence F and Bruce D Meyer, "The impact of the potential duration of unemployment benefits on the duration of unemployment," *Journal of public economics*, 1990, *41* (1), 45–72.

Lawless, Robert M, "Does Chapter 13 Prop Up Bankruptcy Filing Rates?," *Credit Slips: A Discussion on Credit, Finance, and Bankruptcy*, 2013.

Li, Wenli, Michelle J White, and Ning Zhu, "Did Bankruptcy Reform Cause Mortgage Defaults to Rise?," *American Economic Journal: Economic Policy*, 2011, *3* (4), 123–47.

Mathurin, Patrick, Ortenca Aliaj, and James Fontanella-Kahn, "Pandemic triggers wave of billion-dollar US bankruptcies," *Financial Times*, August 2020.

Morrison, Edward R, "Bankruptcy decision making: an empirical study of continuation bias in small-business bankruptcies," *The Journal of Law and Economics*, 2007, *50* (2), 381–419.

Skiba, Paige Martin, Dalié Jiménez, Michelle McKinnon Miller, Pamela Foohey, and Sara Sternberg Greene, "Bankruptcy Courts Ill-Prepared for Tsunami of People Going Broke from Coronavirus Shutdown," *The Conversation*, May 2020.

U.S. Bureau of Economic Analysis, "Personal Saving Rate [PSAVERT], retrieved from FRED, Federal Reserve Bank of St. Louis," Technical Report August 2020. Available at https://fred.stlouisfed.org/series/PSAVERT.

U.S. Bureau of Labor Statistics, "Table A-11. Unemployed persons by reason for unemployment," Technical Report, U.S. Bureau of Labor Statistics August 2020. Available at https://www.bls.gov/news.release/empsit.t11.htm.

U.S. Census Bureau, "Business Dynamics Statistics (BDS)," Technical Report, U.S. Census Bureau 2019. Available at https://www.census.gov/programs-surveys/bds.html.

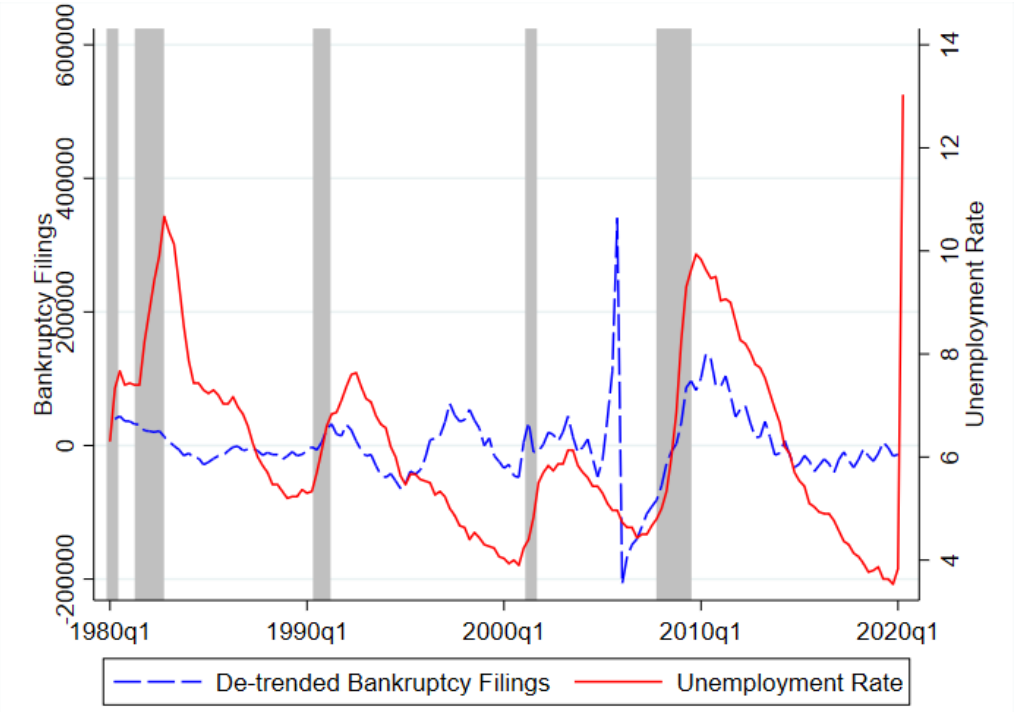
_ , "Household Pulse Survey," Technical Report, U.S Census Bureau 2020. Available at https://www.census.gov/data-tools/demo/hhp/#/.

_ , "Small Business Pulse Survey Data," Technical Report, U.S Census Bureau 2020. Available at https://portal.census.gov/pulse/data/.

White, Michelle J, "Why Don't More Households File for Bankruptcy?," *Journal of Law, Economics, & Organization*, 1998, pp. 205–231.

_ , "Small business bankruptcy," *Annual Review of Financial Economics*, 2016, *8*, 317–336.

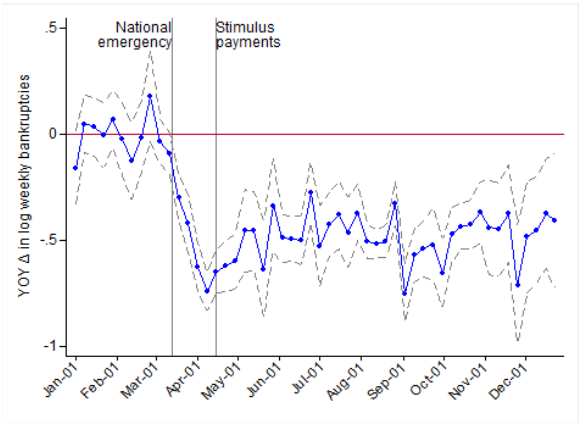
Figure 1. De-Trended Bankruptcy Filings and Unemployment Rates



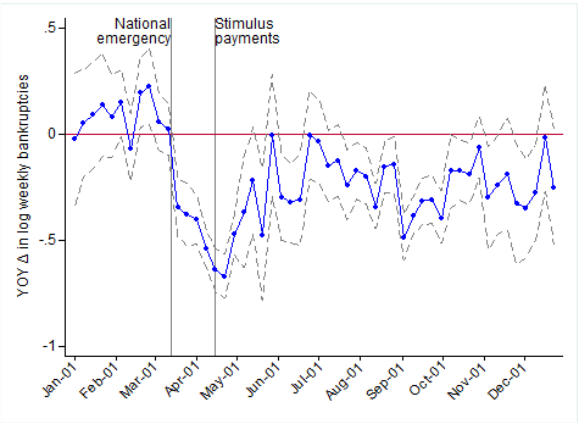
Notes: The figure presents the time-series of quarterly U.S. bankruptcy filings and the unemployment rate. Bankruptcy filings have been adjusted for a level shift in the number of filings after the 2005 bankruptcy reform as well as a time trend. Shading reflects NBER recessions. Source: U.S. Courts Filing Statistics; BLS.

Figure 2. Year-over-Year Change in Weekly Bankruptcy Filings (2019-2020)

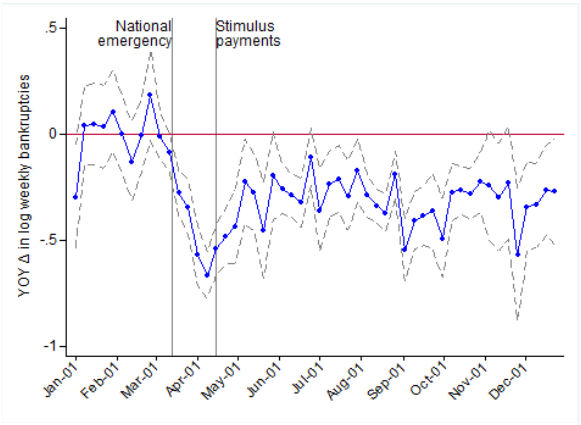
(a) Consumer



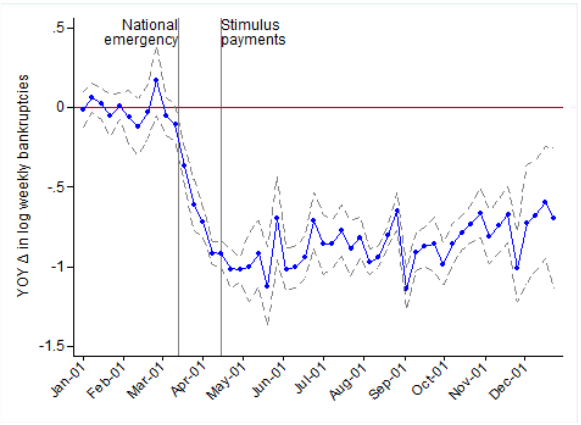
(b) Business



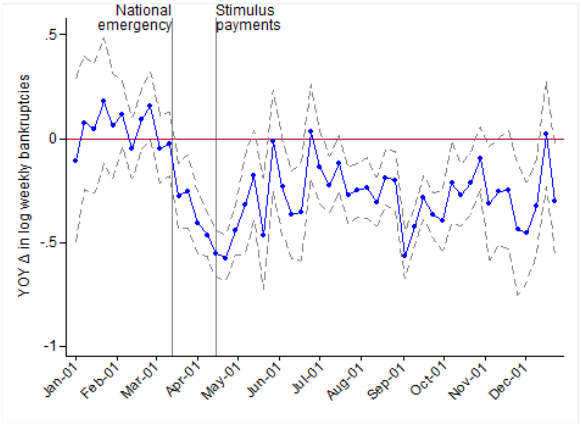
(c) Consumer Chapter 7



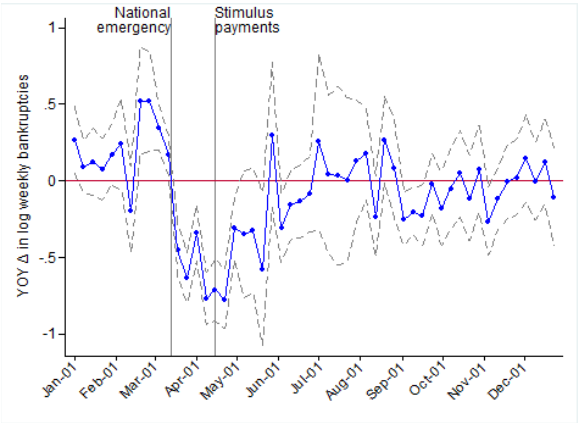
(d) Consumer Chapter 13



(e) Business Chapter 7



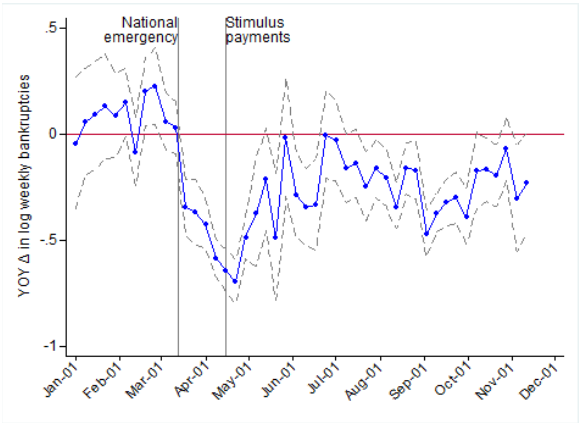
(f) Business Chapter 11



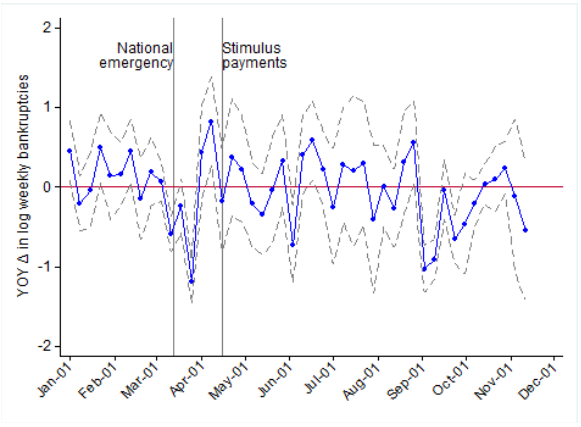
Notes: The sample consists of bankruptcy filings reported by the FJC database. The points represent estimates of the β_τ coefficients in equation (1). The dashed lines provide the 95-percent confidence interval for each point estimate. The dependent variable in each panel is log weekly bankruptcy filings for the specified type of filing. The vertical lines represent the dates of the declaration of a national emergency (March 13) and the date most of the CARES Act stimulus payments were deposited (April 15).

Figure 3. Year-over-Year Change in Weekly Bankruptcy Filings (2019-2020) - Small and Large Businesses

(a) Small Businesses



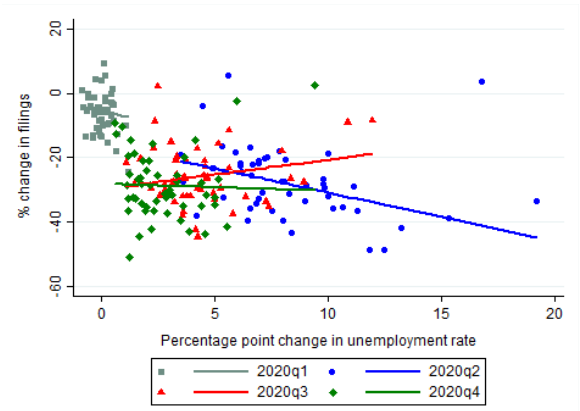
(b) Large Business



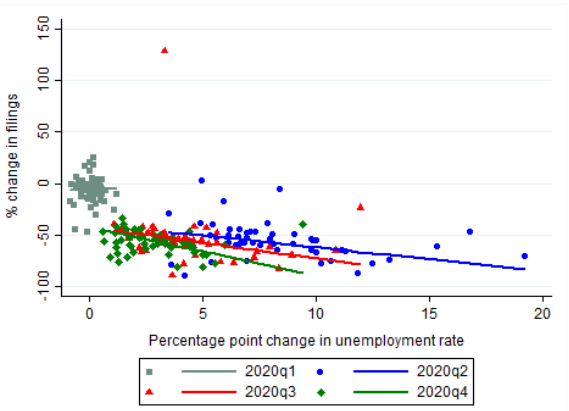
Notes: The sample consists of business bankruptcy filings reported by the FJC. The points represent estimates of the β_τ coefficients in event study coefficients comparing 2019 and 2020 as shown in equation (1). The last six weeks are excluded from the sample as some filers don't report sufficient information on their financial condition in initial petitions and provide their financial information during bankruptcy process. The dashed lines provide the 95-percent confidence interval for each point estimate. The dependent variable in each panel is log weekly bankruptcy filings for small businesses (Panel A) and large businesses (Panel B), where small businesses are those with less than $10 million in assets at the time of filing. All business filings are consolidated at the lead case level to remove subsidiary filings.

Figure 4. State-level Unemployment and Bankruptcy Filings

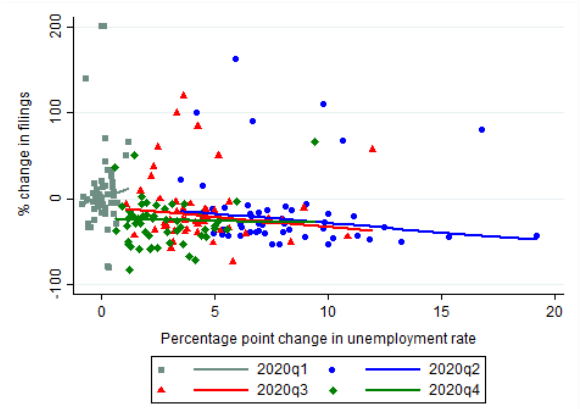
(a) Consumer Chapter 7



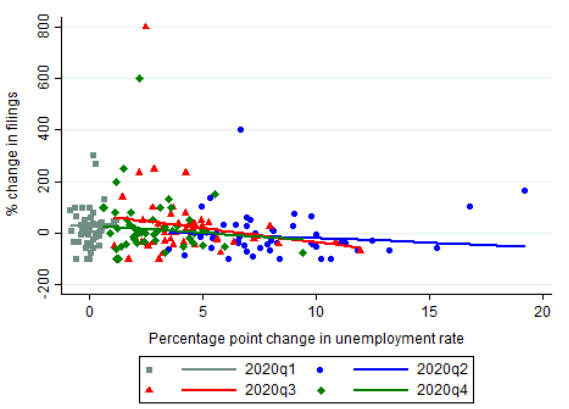
(b) Consumer Chapter 13



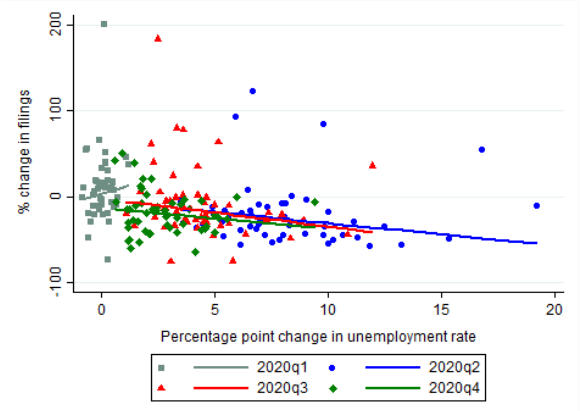
(c) Business Chapter 7



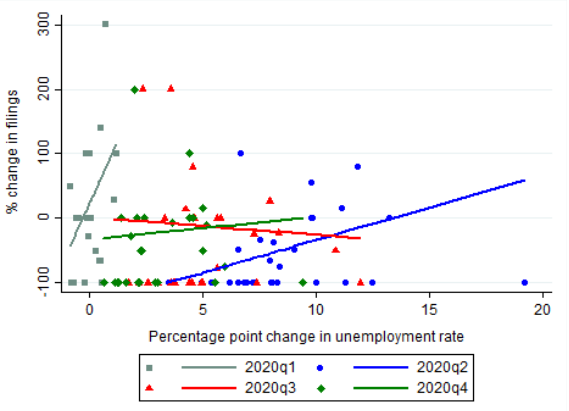
(d) Business Chapter 11



(e) Small Business

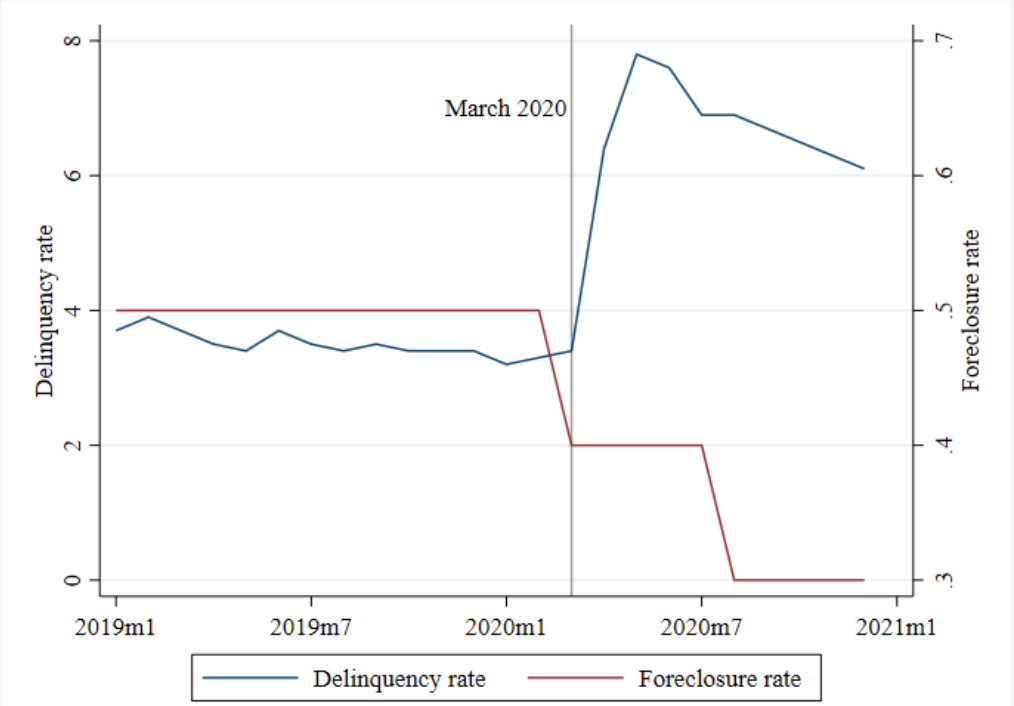


(f) Large Business



Notes: The figure shows year-over-year changes in bankruptcy filing rates and unemployment levels between 2019 and 2020. To calculate unemployment rate changes, monthly unemployment rates in each quarter are averaged for each state. Then, quarterly percentage point differences in state unemployment rates between 2019 and 2020 are used to obtain year-over-year changes. Year-over-year changes in bankruptcy rates are calculated for each state and quarter. Small business is a firm with total assets less than $10 million. Fitted lines are weighted by state population. Bankruptcy data come from FJC. Unemployment data come from BLS.

Figure 5. Time Series of Mortgage Delinquency and Foreclosure Rates

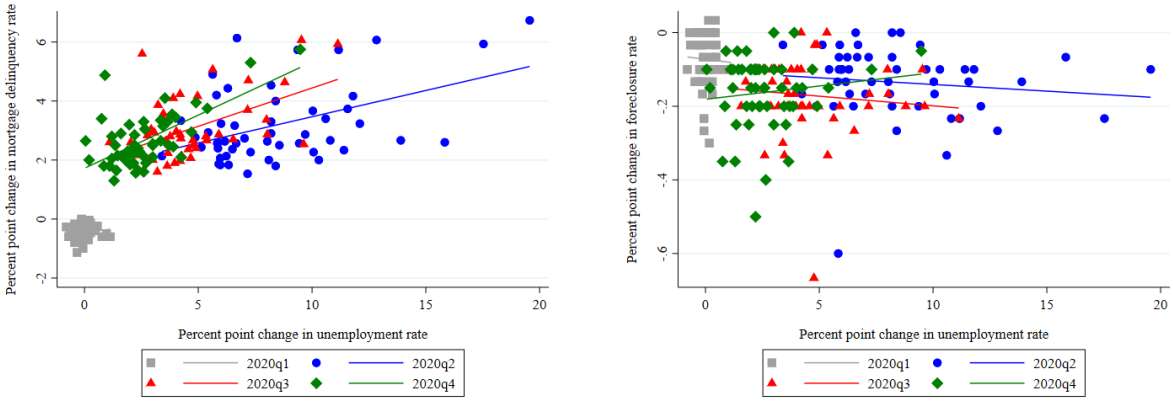


Notes: The figure presents the time-series of mortgage delinquency and foreclosure rates in the U.S. Source: Black Knight/McDash monthly Mortgage Monitor reports.

Figure 6. State-level Mortgage Performance and Unemployment

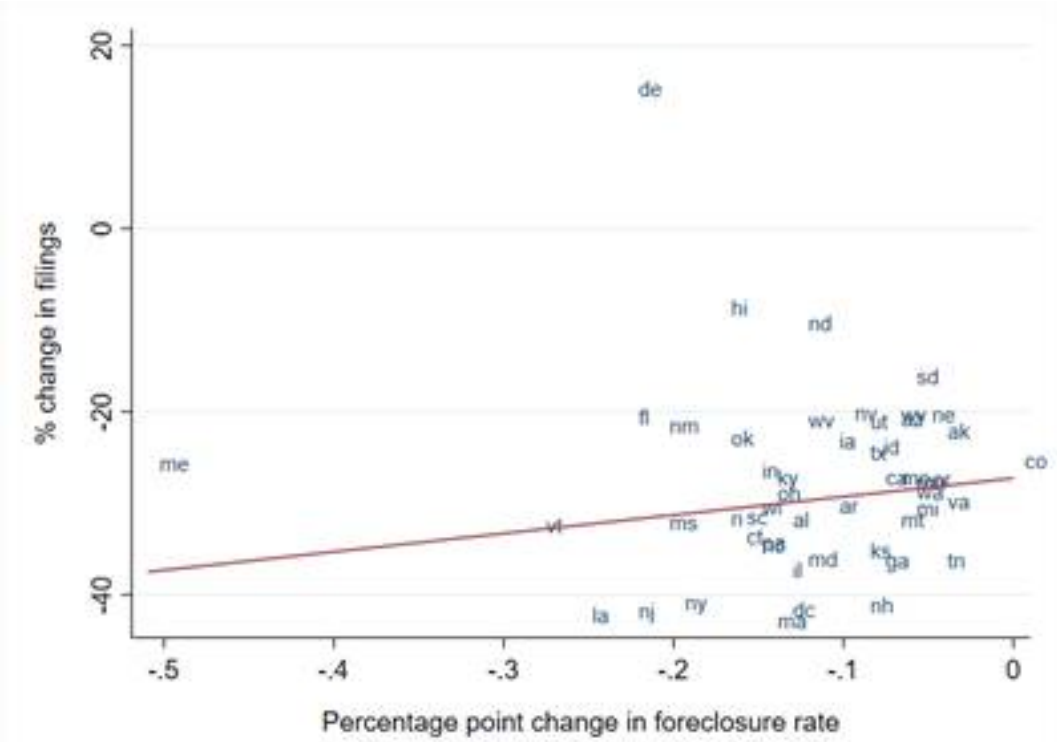
(a) Mortgage Delinquencies

(b) Mortgage Foreclosures



Notes: This figure shows correlations between year-over-year changes in unemployment rates and mortgage performance during 2020. In Panel (a), the y-axis plots year-over-year percentage point changes in state-level mortgage delinquency rates. Panel (b) displays year-over-year percentage point changes in state-level mortgage foreclosure rates. Unemployment rate changes are displayed on the x-axis. We calculate unemployment rate changes by first averaging monthly unemployment rates in each state within a quarter, and then taking the difference from 2019 and 2020. Mortgage data come from Black Knight Mortgage Monitor reports available at https://www.blackknightinc.com/data-reports/. Unemployment data come from BLS.

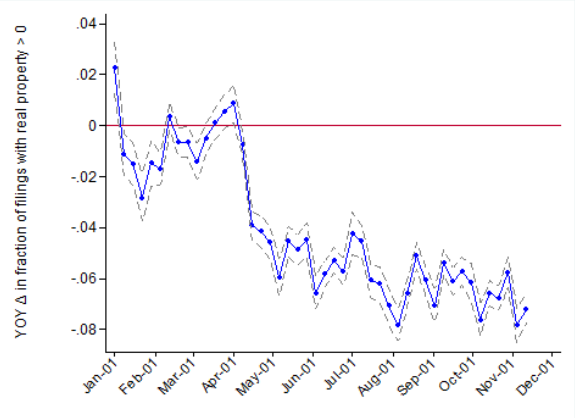
Figure 7. State-level Foreclosures and Bankruptcy Filings



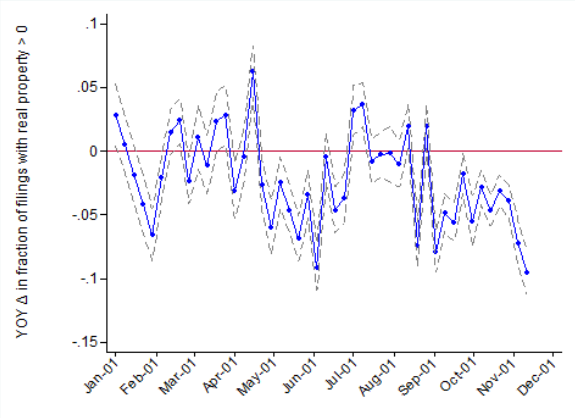
Notes: The figure shows year-over-year changes in mortgage foreclosure rates and bankruptcy filings between 2019 and 2020. Source: Black Knight/McDash monthly Mortgage Monitor reports (foreclosure rate) and FJC (bankruptcy filings).

Figure 8. Bankruptcy Filings by Property Owners

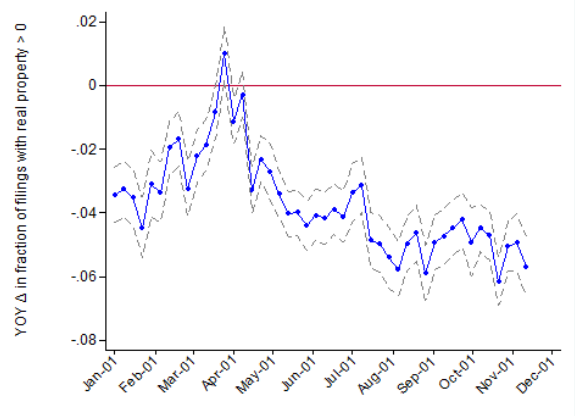
(a) Consumer



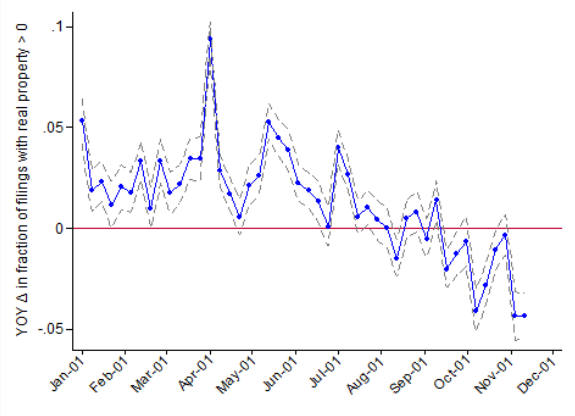
(b) Business



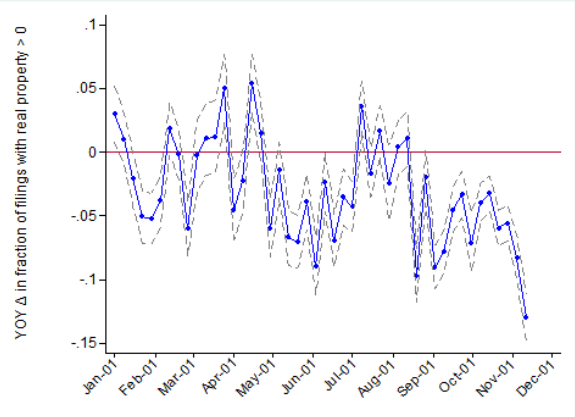
(c) Consumer Chapter 7



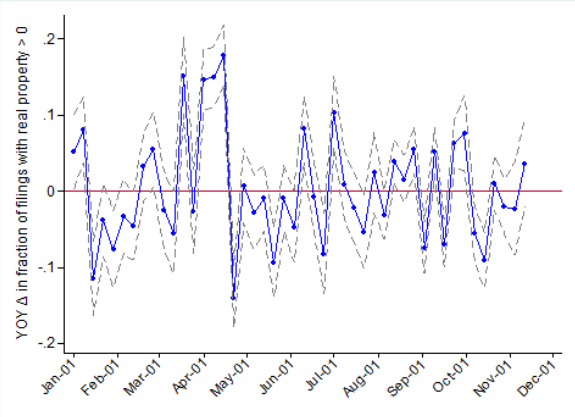
(d) Consumer Chapter 13



(e) Business Chapter 7



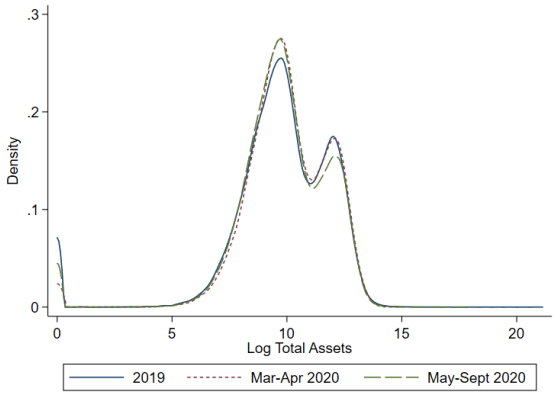
(f) Business Chapter 11



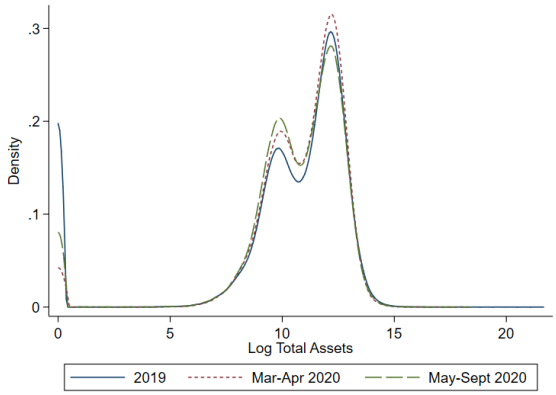
Notes: The figure shows regression coefficients for changes in the fraction of bankruptcy filings by property owners between 2019 and 2020. Property ownership is classified based on those who report real property greater than zero. The last six weeks are excluded from the sample as some filers don't report sufficient information on their financial condition in initial petitions and provide financial information during bankruptcy process. Data are from the FJC database.

Figure 9. Changes in Filer Wealth (2019-2020)

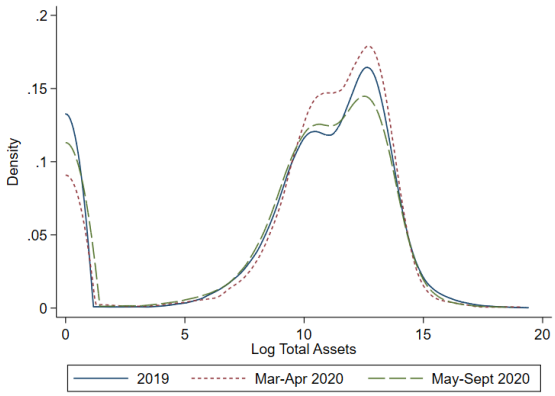
(a) Consumer Chapter 7



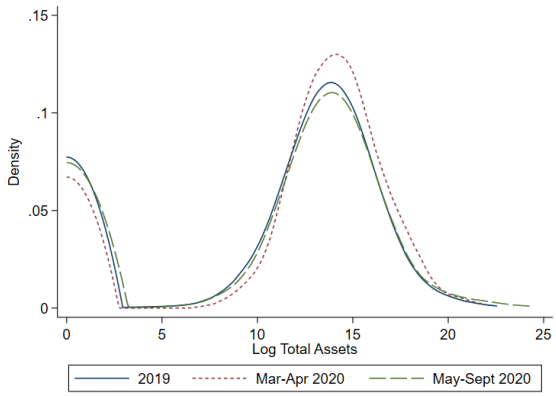
(b) Consumer Chapter 13



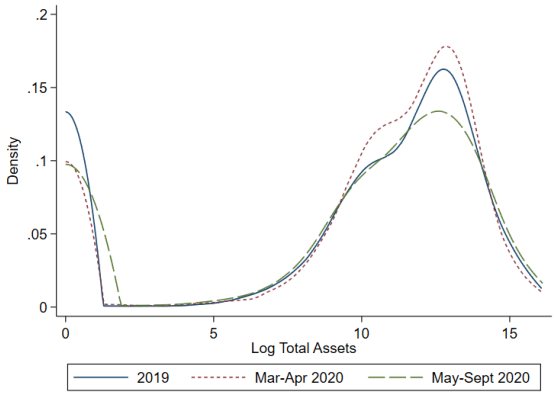
(c) Business Chapter 7



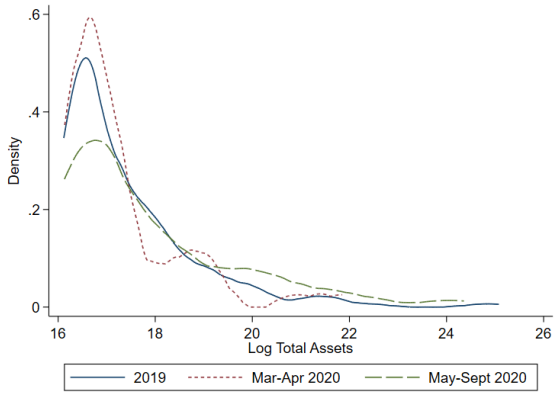
(d) Business Chapter 11



(e) Small Business



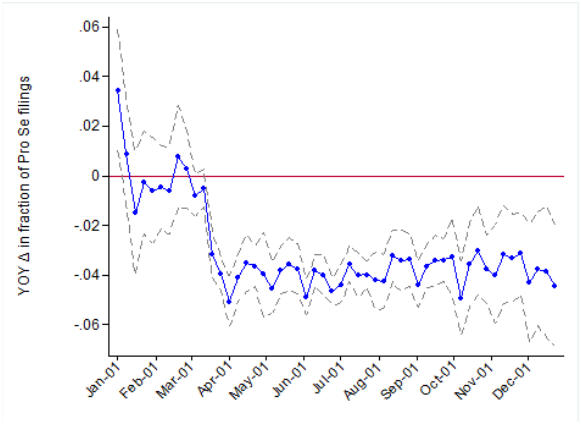
(f) Large Business



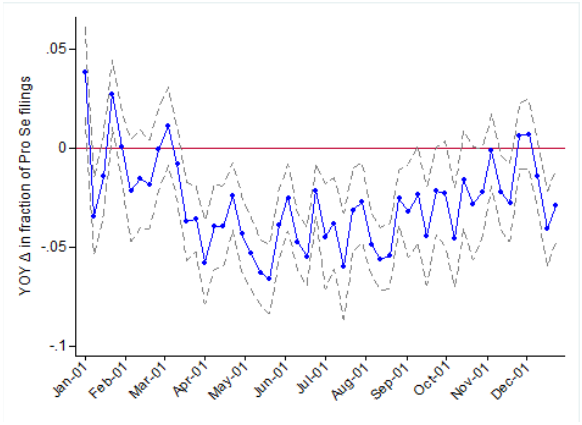
Notes: The figure shows the distributions of log total assets of bankruptcy filers for those filings in 2019, March-April in 2020, and May-September in 2020. Small business is a firm with total assets less than $10 million. Data come from the FJC database.

Figure 10. Changes in Pro Se Filings

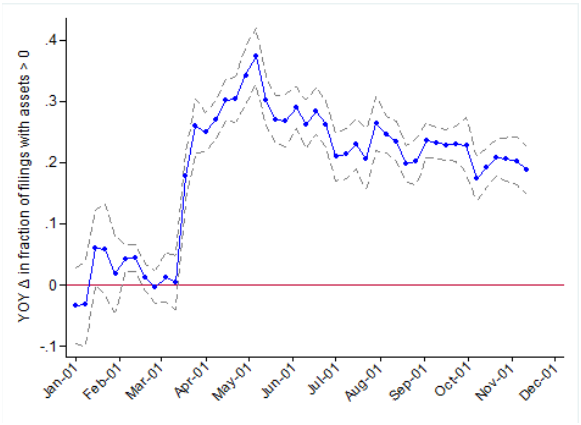
(a) Fraction Pro Se - Consumer



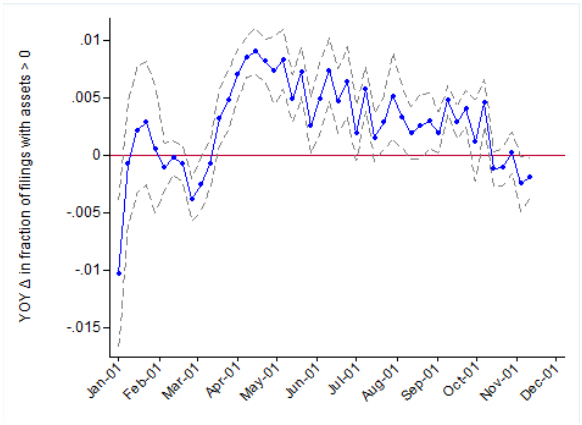
(b) Fraction Pro Se - Business



(c) Fraction with Non-Zero Assets - Pro Se



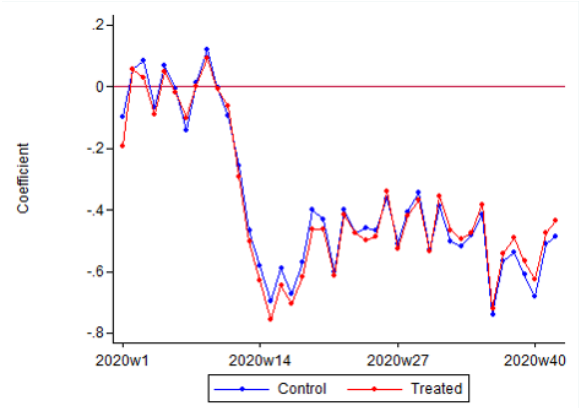
(d) Fraction with Non-Zero Assets - Non Pro Se



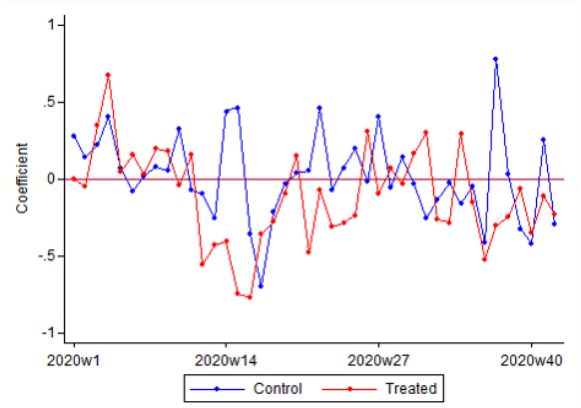
Notes: The figure shows regression coefficients for changes in the fraction and composition of pro se filings between January and December of 2019 and 2020. Panels (a) and (b) present changes in the fraction of pro se filings among all filings between 2019 and 2020, for consumer and business bankruptcies. Panel (c) and (d) present changes in the fraction of filings with non-zero assets conditional on filing pro se or filing non-pro se, including all types of bankruptcy filings. In Panel (c) and (d), the last six weeks are excluded from the sample as some filers don't report sufficient information on their financial condition in initial petitions and provide financial information during bankruptcy process. Data are from the FJC database.

Figure 11. Court Closures and Bankruptcy Filings

(a) Consumer



(b) Businesses



Notes: This figure shows regression coefficients similar to those in Figure 2 for consumer (Panel (a)) and business (Panel (b)) bankruptcies. In these specifications, we estimate the specifications separately for filings in 51 bankruptcy courts that shut down ("treated" courts) and 39 courts that never shut down ("control"). Treated and control courts are identified from court closure orders. Filing rates are from FJC.

Table 1. Year-over-Year Change in Bankruptcy Filings (2019-2020)

	(1) Jan 1 - Mar 14	(2) Mar 15 - Apr 30	(3) May 1 - Jun 30	(4) Jul 1 - Aug 31	(5) Sep 1 - Oct 31	(6) Nov 1 - Dec 31	(7) YTD
Total	252	-43,680	-48,110	-49,050	-49,522	-40,710	-230,820
	(0%)	(-39%)	(-37%)	(-38%)	(-38%)	(-37%)	(-31%)
Consumer	-102	-42,728	-47,386	-48,395	-48,822	-39,987	-227,420
	(-0%)	(-39%)	(-37%)	(-38%)	(-39%)	(-38%)	(-31%)
Business	354	-952	-724	-655	-700	-723	-3,400
	(9%)	(-36%)	(-22%)	(-20%)	(-21%)	(-23%)	(-17%)
Consumer Ch7	222	-25,400	-19,853	-20,711	-22,029	-17,907	-105,678
	(0%)	(-34%)	(-24%)	(-26%)	(-28%)	(-28%)	(-23%)
Consumer Ch13	-284	-17,262	-27,470	-27,625	-26,730	-22,013	-121,384
	(-1%)	(-49%)	(-61%)	(-59%)	(-56%)	(-54%)	(-45%)
Business Ch7	137	-603	-494	-534	-565	-600	-2,659
	(5%)	(-31%)	(-21%)	(-23%)	(-23%)	(-26%)	(-19%)
Business Ch11	173	-177	-92	-8	-34	-23	-161
	(26%)	(-41%)	(-16%)	(-1%)	(-6%)	(-4%)	(-5%)
Small Business	301	-789	-587	-542	-585	-596	-2,798
	(9%)	(-34%)	(-21%)	(-19%)	(-20%)	(-21%)	(-16%)
Large Business	9	9	1	0	-14	-27	-22
	(12%)	(25%)	(1%)	(0%)	(-18%)	(-47%)	(-6%)

Notes: The table presents year-over-year changes in nationwide bankruptcy filings between 2019 and 2020. Small business is defined as a firm with total assets less than $10 million. Bankruptcy data come from the FJC database .

Table 2. Cross-sectional Regressions on YOY Changes in Bankruptcy Filings

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Consumer		Business	
	All	Consumer	Business	Ch 7	Ch 13	Ch 7	Ch 11
Unemployment	- 1.52	- 1.24	- 10.22	- 1.68	- 2.57	- 4.62	- 19.81
	(2.10)	(2.09)	(5.44)	(1.77)	(1.73)	(4.17)	(15.29)
	[0.47]	[0.56]	[0.07]	[0.35]	[0.14]	[0.27]	[0.20]
Foreclosure rate	- 3.9	- 5.1	- 1.7	- 3.3	- 6.4	5.6	- 55.4
	(4.2)	(4.3)	(6.9)	(3.6)	(5.2)	(8.1)	(34.1)
	[0.36]	[0.24]	[0.81]	[0.36]	[0.23]	[0.49]	[0.11]
Fraction pro se	- 6.0	- 9.2	- 110.8	19.5	- 35.7	- 65.5	75.6
	(25.1)	(24.8)	(88.2)	(22.4)	(13.4)	(42.0)	(130.1)
	[0.81]	[0.71]	[0.22]	[0.39]	[0.01]	[0.13]	[0.56]
Fraction property	- 25.3	- 10.0	- 140.7	- 3.6	13.8	- 103.6	- 47.4
owners	(25.8)	(25.1)	(61.2)	(20.8)	(13.1)	(29.0)	(116.2)
	[0.33]	[0.69]	[0.03]	[0.86]	[0.30]	[0.00]	[0.69]
Median assets (000s)	0.13	0.02	0.20	0.20	- 0.03	0.26	0.00
	(0.10)	(0.09)	(0.08)	(0.15)	(0.02)	(0.06)	(0.00)
	[0.19]	[0.83]	[0.02]	[0.20]	[0.28]	[0.00]	[0.64]

Notes: Table shows cross-sectional regressions of 2019 levels of economic indicators and filer characteristics on the YOY change in each type of bankruptcy from 2019 to 2020. Each column represents a single regression across the fifty states and the District of Columbia. Unemployment is the average monthly unemployment rate in 2019 for each state. The foreclosure rate is the average monthly foreclosure rate in 2019 for each state based on data from Black Knight. Fraction pro se, fraction property owners, and median assets are measured across all bankruptcies in 2019 in each state for each bankruptcy type.

Table 3. Changes in Bankruptcy Filer Characteristics (2019-2020)

	Consumer Chapter 7			Consumer Chapter 13			Business Chapter 7			Business Chapter 11		
	Diff	2019	2020	Diff	2019	2020	Diff	2019	2020	Diff	2019	2020
Filing characteristics:												
Asset case	-2%	3%	1%	0%	99%	99%	-2%	10%	8%	-2%	99%	97%
Small Business	0%	0%	0%	0%	0%	0%	-11%	20%	9%	-1%	26%	25%
Pro se	-3%	8%	5%	-7%	9%	3%	-4%	7%	3%	-5%	6%	1%
Fee Fully Paid	4%	80%	84%	4%	72%	76%	0%	95%	95%	2%	96%	98%
Total assets	-$1,353	$61,834	$60,481	$229	$108,743	$108,972	-$5,393	$112,313	$106,920	-$46,855	$146,719	$99,864
Has assets	1%	97%	98%	6%	90%	96%	-1%	80%	79%	-21%	63%	42%
Real property	-$2,451	$41,177	$38,726	-$7,432	$89,958	$82,527	-$5,908	$79,653	$73,745	-$11,462	$104,310	$92,848
Has real	-2%	32%	30%	-1%	56%	55%	-2%	35%	33%	-13%	32%	19%
Personal property	$469	$19,166	$19,635	$929	$24,657	$25,586	$238	$33,906	$34,144	$2,678	$41,930	$44,608
Has personal	1%	98%	99%	5%	91%	96%	0%	83%	83%	-23%	69%	46%
Total liability	-$39	$105,766	$105,727	$2,314	$137,779	$140,093	-$5,805	$228,494	$222,689	-$72,469	$215,617	$143,148
Has total liabilities	1%	97%	98%	6%	90%	96%	0%	83%	83%	-23%	68%	45%
Secured claims	-$2,534	$47,663	$45,129	-$8,686	$95,919	$87,232	-$8,531	$106,114	$97,583	$3,417	$179,917	$183,334
Has secured	-1%	66%	65%	4%	83%	87%	-3%	58%	55%	-19%	57%	38%
Unsecured priority	-$31	$774	$744	$24	$1,684	$1,708	-$273	$2,439	$2,166	-$541	$2,698	$2,158
Unsecured non-priority	$1,490	$53,084	$54,573	$4,482	$43,937	$48,419	$905	$112,331	$113,236	$1,013	$91,963	$92,976
Current monthly income	-$36	$3,269	$3,234	-$26	$4,447	$4,420	-$316	$1,189	$873	-$943	$2,804	$1,862
Has current income	0%	90%	90%	4%	86%	90%	-2%	9%	7%	-4%	6%	3%

Notes: The table presents mean statistics for bankruptcy filings between March 15th through September 30th of 2019 and 2020. Data are from FJC.

A Data

We collect data on bankruptcy filings from Public Access to Court Records (PACER), the Federal Judicial Center (FJC) Integrated Database, and New Generation Research (NGR). We additionally collect business filings from the electronic case management system of each bankruptcy court. PACER and FJC databases are administered by the Administrative Office of the United States Courts (AOUSC), which also publishes aggregate bankruptcy filings quarterly for each chapter of filing and additionally split by business and consumer filings. To identify large business Chapter 11 filings, we incorporate data from NGR, which includes all business filings except those by sole proprietorships, with information about the asset size and industry classification of corporate debtors.

While all data sources are derived from the same underlying records, there are subtle differences in the way each data source compiles and filters the filings. To assess the extent of these variations, we compared the number of FJC filings to the official AOUSC statistics for all districts and quarters from 2019Q1 to 2019Q3. Among 267 district-quarters, 265 district-quarters had a less than 5 percent difference between the FJC and AOUSC statistics, and the number of filings for all 267 district-quarters differed by less than 10 percent across the data sources. We perform a similar exercise for the PACER filings from 2019Q4 through 2020Q1. In 178 district-quarters, the number of filings for 167 district-quarter differed by less than 5 percent. The total number of filings for all districts differed by less than 1.5 percent in both 2019Q4 and 2020Q1. Appendix Table A1 shows a comparison between the published AOUSC statistics and the combined FJC and PACER dataset we use for our main analysis, and shows that the total counts are very similar in aggregate and for each subcategory.

B Benchmarking methodology

We estimate two counterfactuals which recognize that the economic conditions induced by the pandemic would, in normal times, translate to a considerable increase in the number of bankruptcy filings. We perform a simple forecasting exercise that estimates the number of consumer and business bankruptcy filings we would have expected to see during the pandemic based on historical relationships between the unemployment rate and bankruptcy filings, following Iverson et al. (2021). Using quarterly data for each bankruptcy court district separately, we calculate the correlation between local unemployment rates and bankruptcy filings from 2001 to 2019. We then take the average national unemployment rate in the second quarter of 2020 of 13.03 percent[19], and estimate the number of bankruptcy filings we would expect in each court if the court experienced a 13 percent unemployment rate.

From this baseline number, we make two adjustments. First, we adjust the local unemployment rate based on the labor share in COVID-19 affected industries in each bankruptcy district. Second, we adjust the unemployment rate to recognize that much of the unemployment in the second quarter of 2020 was due to temporary layoffs. This adjustment is made based on the share of unemployed workers who report being only temporarily laid off (U.S. Bureau of Labor Statistics, 2020). From 2001 through 2019, an average 58.0 percent of unemployed workers report permanent job loss. Meanwhile, in the second quarter of 2020, only 35.2 percent of unemployed workers permanently lost their jobs.[20] Under the assumption that excess temporary layoffs will not result in higher

[19] 13.03 percent is the average of April, May, and June unemployment rates from U.S. Bureau of Labor Statistics (2020).

[20] These figures require a modification to the BLS figures. For example, in June 2020, 10,565 workers reported temporary unemployment, and 2,883 reported permanent unemployment. Katz and Meyer (1990) estimate that 28

bankruptcies, we multiply the estimated number of bankruptcies by (35.2%/58.0%)=60.7%.[21]

percent of "temporary" job losses are actually permanent, and 13 percent of "permanent" job losses are actually temporary. Using these figures, we estimate that 7,607 unemployed respondents were experiencing temporary unemployment, and 5,466 are permanent, such that 38.3 percent of all unemployment is permanent. Following this same procedure, we estimate that on average in April, May, and June 35.2 percent of unemployment is permanent, while from 2001-2019 it has average 58.0 percent.

[21] See Iverson et al. (2021) for a more detailed description of this forecasting exercise.

C Appendix Tables

Table A1. Total Bankruptcy Filings by Quarter

Panel A: AOUSC Statistics

	(1) 2019	(2) 2020	(3) 2020 Q1	(4) 2020 Q2	(5) 2020 Q3	(6) 2020 Q4
Total	774,837	544,099	181,098	124,395	126,243	112,363
Consumer	752,117	522,508	175,146	119,241	120,722	107,399
Business	22,720	21,591	5,952	5,154	5,521	4,964
Consumer Ch7	465,971	366,786	109,180	90,993	89,749	76,864
Consumer Ch13	285,177	155,171	65,757	28,145	30,837	30,432
Business Ch7	14,174	11,884	3,491	2,700	2,902	2,791
Business Ch11	6,045	7,777	1,865	2,047	2,110	1,755

Panel B: FJC Data

	(1) 2019	(2) 2020	(3) 2020 Q1	(4) 2020 Q2	(5) 2020 Q3	(6) 2020 Q4
Total	757,524	529,048	177,298	120,869	121,947	108,934
Consumer	735,973	508,543	171,566	115,977	116,776	104,224
Business	21,551	20,505	5,732	4,892	5,171	4,710
Consumer Ch7	463,965	358,287	107,939	88,810	86,960	74,578
Consumer Ch13	271,314	149,927	63,467	27,126	29,748	29,586
Business Ch7	14,161	11,599	3,486	2,684	2,773	2,656
Business Ch11	5,210	7,295	1,707	1,909	1,998	1,681

Notes: Panel A comes from published statistics from the Administrative Office of the U.S. Courts. Panel B is computed using our analysis dataset using data from FJC.

Table A2. Year-over-Year Change in Bankruptcy Filings, Unconsolidated Filings (2019-2020)

	(1) Jan 1 - Mar 14	(2) Mar 15 - Apr 30	(3) May 1 - Jun 30	(4) Jul 1 - Aug 31	(5) Sep 1 - Oct 31	(6) Nov 1 - Dec 31	(7) YTD
Total	472	-43,350	-47,493	-48,625	-49,049	-40,431	-228,476
	(0%)	(-38%)	(-37%)	(-37%)	(-38%)	(-37%)	(-30%)
Consumer	-100	-42,728	-47,390	-48,396	-48,827	-39,989	-227,430
	(-0%)	(-39%)	(-37%)	(-38%)	(-39%)	(-38%)	(-31%)
Business	572	-622	-103	-229	-222	-442	-1,046
	(13%)	(-22%)	(-3%)	(-6%)	(-6%)	(-13%)	(-5%)
Consumer Ch7	223	-25,401	-19,853	-20,711	-22,029	-17,907	-105,678
	(0%)	(-34%)	(-24%)	(-26%)	(-28%)	(-28%)	(-23%)
Consumer Ch13	-282	-17,261	-27,470	-27,625	-26,734	-22,015	-121,387
	(-1%)	(-49%)	(-61%)	(-59%)	(-56%)	(-54%)	(-45%)
Business Ch7	198	-600	-441	-537	-566	-616	-2,562
	(7%)	(-31%)	(-19%)	(-23%)	(-23%)	(-26%)	(-18%)
Business Ch11	326	151	472	417	444	275	2,085
	(27%)	(25%)	(54%)	(51%)	(49%)	(33%)	(40%)
Small Business	474	-463	2	-195	-120	-301	-603
	(12%)	(-19%)	(0%)	(-6%)	(-4%)	(-10%)	(-3%)
Large Business	50	14	29	75	-2	-40	126
	(53%)	(25%)	(26%)	(109%)	(-2%)	(-54%)	(23%)

Notes: The table presents year-over-year changes in nationwide bankruptcy filings between 2019 and 2020. Business filings contain both filings from parent companies and those from their affiliates or branches. Small business is defined as a firm with total assets less than $10 million. The sample consists of bankruptcy filings reported by the FJC database.

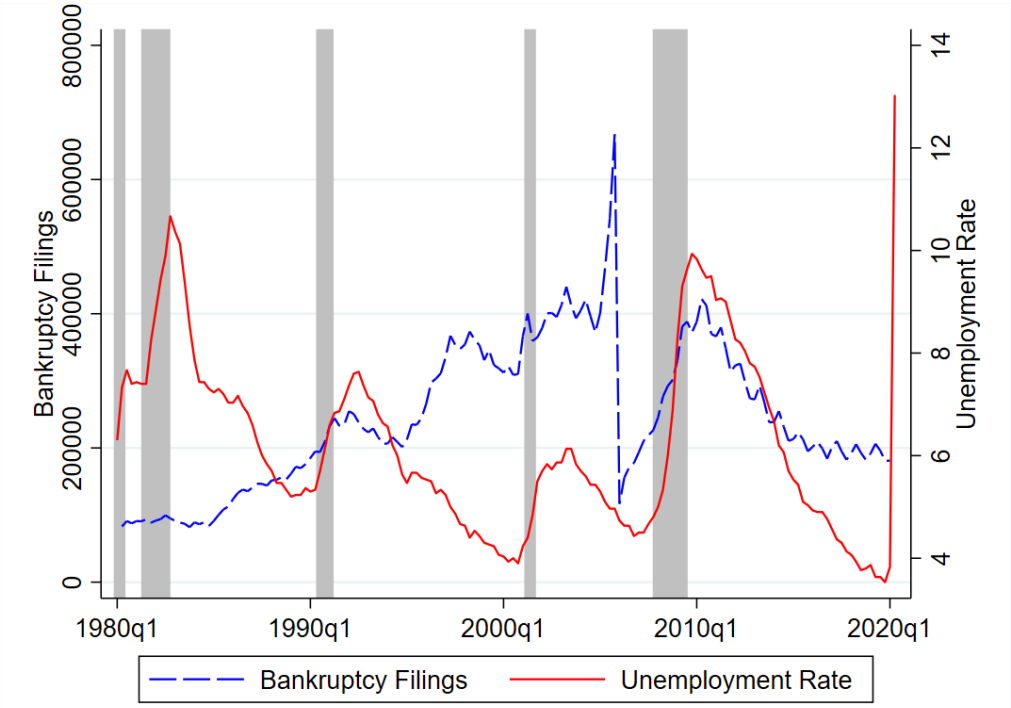
D Appendix Figures

Table A3. State-Level Unemployment and Bankruptcy Filings

	(1) 2020 Q1	(2) 2020 Q2	(3) 2020 Q3	(4) 2020 Q4	(5) YTD
Total	0.0171	-1.077	0.079	0.397	-0.916
	(2.557)	(0.519)	(0.894)	(1.108)	(0.935)
	[0.995]	[0.043]	[0.93]	[0.722]	[0.332]
Consumer	-1.374	-1.134	0.138	0.345	-0.922
	(1.926)	(0.541)	(0.944)	(1.049)	(0.965)
	[0.479]	[0.0413]	[0.884]	[0.743]	[0.344]
Business	16.43	-0.26	-2.276	1.695	-2.412
	(14.84)	(1.465)	(1.899)	(3.245)	(1.532)
	[0.274]	[0.86]	[0.236]	[0.604]	[0.122]
Consumer Ch7	-2.108	-1.406	0.574	1.624	-0.625
	(2.331)	(0.478)	(0.629)	(0.949)	(0.768)
	[0.37]	[0.0050]	[0.367]	[0.0934]	[0.42]
Consumer Ch13	-0.514	-1.919	-2.979	-3.538	-3.619
	(2.879)	(0.576)	(0.84)	(1.414)	(0.895)
	[0.859]	[0.0017]	[0.0009]	[0.0157]	[0.0002]
Business Ch7	-3.3	-1.128	-1.506	-0.0068	-2.381
	(16.47)	(1.502)	(1.24)	(1.86)	(1.411)
	[0.842]	[0.457]	[0.23]	[0.997]	[0.0979]
Business Ch11	82.82	1.259	-10.79	8.474	-3.828
	(32.95)	(6.195)	(6.38)	(9.299)	(4.995)
	[0.0155]	[0.84]	[0.0975]	[0.367]	[0.447]

Notes: The table presents the coefficients from cross-sectional regressions of the year-over-year percentage point change in state bankruptcy filings on changes in state unemployment rates. Monthly state-level unemployment rates are averaged to compute quarterly unemployment rates, and the regressions are weighted by state population. The coefficients in this table correspond to the slopes in Figure 4. Standard errors are in parentheses and p-values are in square brackets. The sample consists of bankruptcy filings reported by the FJC (January - September 2019) and PACER (October 2019 - December 2020). Unemployment rates are from BLS.

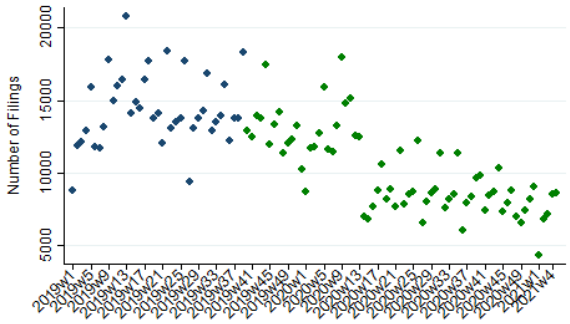
Figure A1. Time-Series of Bankruptcy Filings and Unemployment Rate



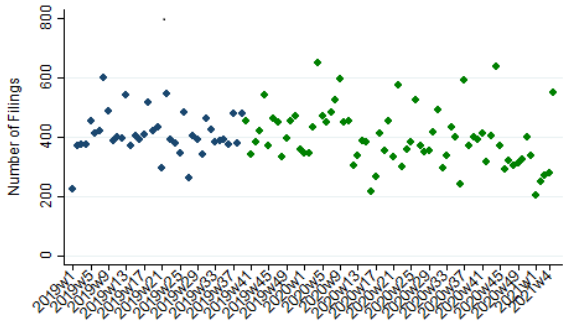
Notes: The figure presents the time-series of total quarterly U.S. bankruptcy filings and the unemployment rate. Shading reflects NBER recessions. Source: U.S. Courts Filings Statistics; BLS.

Figure A2. Weekly Bankruptcy Filings (January 2019 - January 2021)

(a) Total Consumer

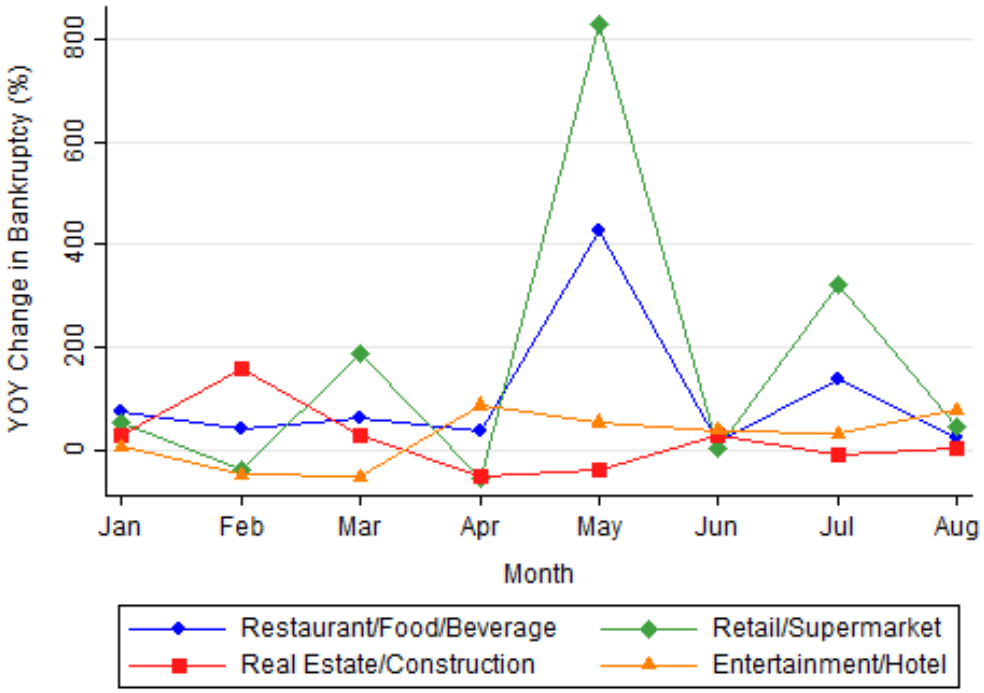


(b) Total Business



Notes: The figures show weekly nationwide bankruptcies for consumers and businesses. The sample consists of bankruptcy filings reported by the FJC (January - September 2019) and PACER (October 2019 - January 2021).

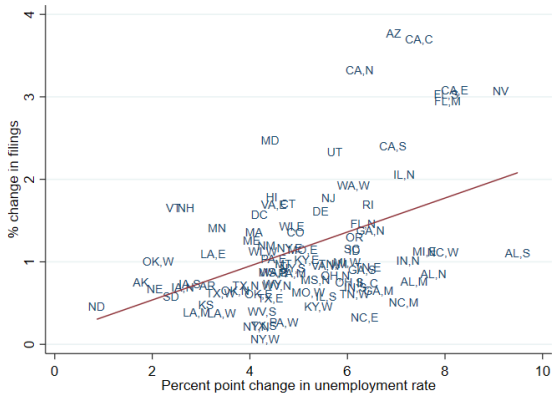
Figure A3. Large Business Bankruptcies by Industry



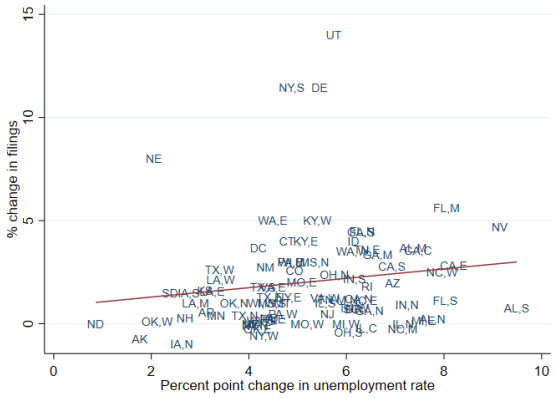
Notes: The figure presents year-over-year percentage changes in business Chapter 11 bankruptcies for selected industries between 2019 and 2020. The data come from NGR, which excludes bankruptcies filed by sole proprietorships.

Figure A4. Unemployment Rates and Bankruptcy Filings from 2007-2010

(a) Chapter 7



(b) Chapter 11

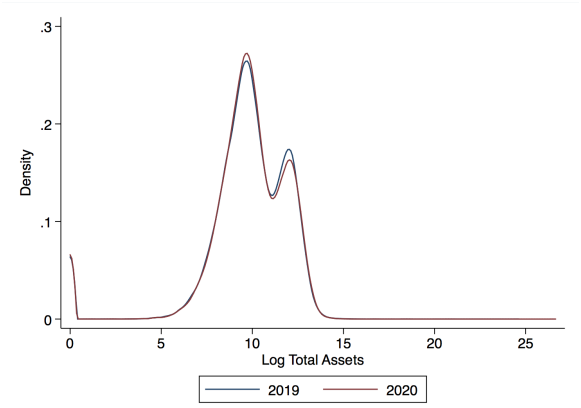


(c) Chapter 13

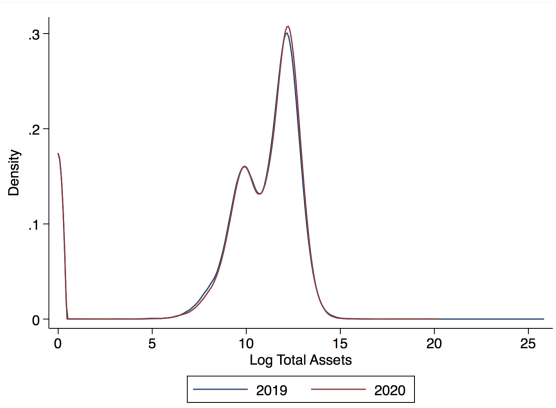
Notes: These figures show the cross-sectional relationship between increases in unemployment and bankruptcy filings during the 2007-9 financial crisis. The sample periods are from January to March 2007 and January to March 2010. The percent change in the number of filings is derived by comparing the number of bankruptcy filings in the first quarter of 2010 with the first quarter of 2007. To calculate unemployment rate changes, monthly unemployment rates in the same period are averaged for each bankruptcy district. Then, percent point differences in state unemployment rates between 2007 and 2010 are used to obtain year-over-year level changes. Source: AOUSC; BLS

Figure A5. Pre-Pandemic Changes in Filer Wealth (2019-2020)

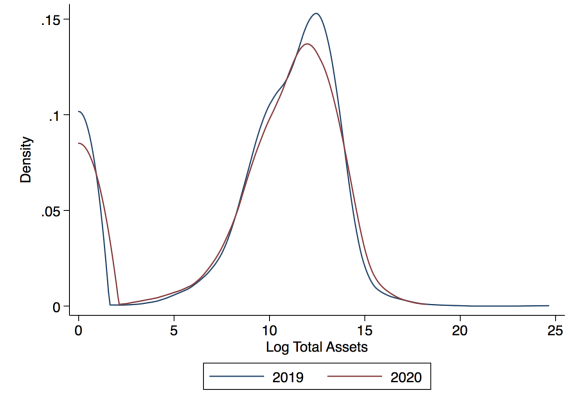
(a) Consumer Chapter 7



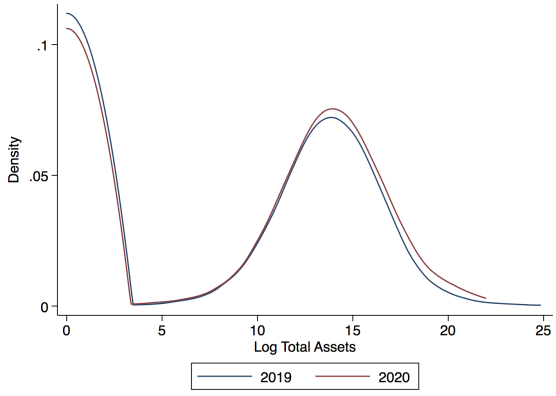
(b) Consumer Chapter 13



(c) Business Chapter 7



(d) Business Chapter 11



Notes: The figure shows the distributions of log total assets of bankruptcy filers for those filing between January 1st and March 14th of 2019 and 2020. Data come from the FJC database.