Can Small Businesses Survive Chapter 11?*

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Abstract

Subchapter V of Chapter 11 (SubV) was introduced in 2020 for eligible small businesses to streamline the bankruptcy process by reducing costs and negotiation frictions, and enabling entrepreneurs to retain their ownership. Employing regression-discontinuity and difference-in-differences designs, we provide causal evidence that SubV enables small businesses to reorganize that otherwise would have been liquidated. Further, expected creditor recoveries and post-bankruptcy survival rates are at least as high in cases using SubV. The increased ability to reorganize is not associated with a bias toward continuing unviable firms, and creditors are not harmed by the shift in bargaining power toward owners.

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1. Introduction

Researchers have long debated the optimal design of a bankruptcy system that efficiently redeploys assets of distressed firms. The difficulty arises in balancing the conflicting objectives of equity holders, who have incentives to negotiate to retain some portion of their ownership, with those of creditors, whose limited upside and coordination problems can complicate agreement on a reorganization plan. Chapter 11 of the U.S. Bankruptcy Code contains a number of features that potentially shift bargaining power toward incumbent management, aimed at enabling distressed firms to reorganize when creditors might otherwise force a liquidation, but which may lead to excessive reorganization of unviable firms. Empirical studies of large U.S. companies filing for bankruptcy show that liquidations are rare, and most firms are able to emerge from bankruptcy and continue some or all of their operations.[1]

Despite their importance to the U.S. economy, the ability of small businesses to avoid liquidation and emerge from Chapter 11 has been much more limited. In fact, 70% of small businesses entering bankruptcy from 2010 to 2019 filed directly for Chapter 7 liquidation. Even among small businesses that entered Chapter 11, only about one third successfully reorganized, with the other two thirds either being liquidated in Chapter 7 or dismissed from court altogether.[2] It may not be surprising that Chapter 11 is unfriendly to small businesses seeking to reorganize, as these firms often lack the resources to survive an expensive and time-consuming bankruptcy case (Bris, Welch, and Zhu, 2006). In addition to the significant costs of the process, following the absolute priority rule for a reorganization plan of an insolvent firm means that the pre-bankruptcy

[1] Firms survive as an ongoing business by confirming a plan of reorganization or by selling the firm as a going concern. See Altman, Hotchkiss, and Wang, 2019; Foroughi, Gilson, Hotchkiss, and Waldock, 2022; Hotchkiss, Thorburn, and Wang, 2023.

[2] Based on filing statistics from the Federal Judicial Center (FJC), for all business bankruptcy cases with less than $7.5M in total liabilities.

equity holders are unlikely to retain their ownership; however, many small businesses would cease to exist without the contribution of human capital from their pre-bankruptcy owners (Rajan, 2012).

To provide a more feasible path for small business debtors to successfully utilize the U.S. bankruptcy system, Congress passed the Small Business Reorganization Act of 2019 (SBRA) in August 2019, which became effective in February 2020. The SBRA codifies a new Subchapter V of Chapter 11 (hereafter SubV), providing qualifying small business debtors with a set of tools that reduce some of the obstacles small businesses face in traditional Chapter 11 cases. These substantial changes are designed to lower the otherwise prohibitive fixed costs of bankruptcy, expedite the process, and provide a path for the small business owner to retain equity in the reorganized firm. At the same time, SubV potentially changes the balance of negotiating power in bankruptcy, reducing the influence of creditors.

In this paper, we examine the adoption of SubV by small businesses and its impact on Chapter 11 case outcomes. Motivated by models of restructuring of distressed firms, we identify three key changes under SubV which directly affect frictions in the negotiation process: 1) the ability to confirm a plan that deviates from absolute priority by preserving pre-bankruptcy owners' equity stake, even when dissenting creditors do not receive a 100% recovery; 2) removal of costly and time-consuming requirements, such as the appointment of a creditors' committee and requiring a disclosure statement; 3) mandatory appointment of SubV Trustee to advise on and mediate the process, reducing information and coordination problems. We use this setting to examine how the introduction of SubV causally affects bankrupt firms' ability to confirm a reorganization plan, unsecured creditor recoveries, and post-bankruptcy viability as measured by survival rates.

We begin by describing the adoption of SubV by small businesses. Using data from the FJC database to track all business bankruptcies for firms with less than $15 million in total liabilities

from 2017 to 2023, we find that the total quarterly number of filings drops with the onset of the COVID-19 pandemic in 2020Q2, consistent with evidence from Wang, Yang, Iverson, and Jiang (2021). The decline in total filings is similar for businesses eligible for SubV—those with less than $7.5 million in liabilities[3]—and those above this threshold. Thus, it does not appear that SubV attracted large numbers of firms into the bankruptcy system in its first years of existence. However, the data suggest that SubV may have induced some eligible firms to use Chapter 11 that otherwise would not have. Among firms with less than $7.5 million in liabilities, the share of firms filing for Chapter 11 rises from about 18% to 24% after the introduction of SubV, and 75% of small businesses entering Chapter 11 elect to use SubV instead of a traditional Chapter 11. Meanwhile, among firms just above the eligibility threshold (those with $7.5 to $15 million in liabilities) we do not see a change in the share of firms using Chapter 11 after 2020Q2 (see Figure 1). While SubV does not appear to have changed the overall number of firms entering bankruptcy, it seems to have shifted some bankrupt firms away from Chapter 7 liquidation and into Chapter 11 instead.

We employ three empirical strategies to establish the effect of SubV on bankruptcy outcomes: a baseline OLS comparison of SubV cases to non-SubV cases; a regression discontinuity approach that utilizes the fact that only firms with less than $7.5 million in total noncontingent liabilities can use SubV; and a difference-in-differences approach comparing cases with greater than $7.5 million in liabilities (the "never treated" group) to those below the threshold which have the option to elect treatment under SubV after March 2020.

[3] Firms with more than $7.5 million in total noncontingent liabilities cannot use SubV. Originally, this threshold was set to $2.725 million, but the threshold was increased to $7.5 million on March 27, 2020, one month after SubV was introduced, as part of the Coronavirus Aid, Relief, and Economic Security (CARES) Act. Because reported data do not distinguish contingent and noncontingent liabilities, we hereafter refer to reported total liabilities for brevity as "liabilities" and refer to the SubV eligibility threshold as "total noncontingent liabilities."

We first estimate OLS regressions where the dependent variable is an indicator for whether the debtor reaches confirmation of a plan. Debtors that did not confirm a plan are either converted to Chapter 7 liquidation or dismissed from court, in which case they likely go out of business since they do not get debt relief (Morrison, 2007; Iverson, 2018). Using all Chapter 11 bankruptcies from 2020-2023 with total liabilities less than $15 million, we show that SubV cases are 21 percentage points more likely to have a plan confirmed, after controlling for other observables. This is a significant economic difference, as the baseline probability of confirming a plan is only 32.9%. We also find that, conditional on confirming a plan, SubV cases reach plan confirmation about 24 % faster than similar firms that use a traditional Chapter 11, which should significantly reduce the overall costs of bankruptcy (Dou, Taylor, Wang, and Wang, 2021).

While these baseline results are helpful to establish that there are differences in outcomes between SubV and traditional Chapter 11, it is possible that unobserved differences between SubV and non-SubV firms drive these differences. We therefore employ a regression-discontinuity design (RDD) that utilizes the $7.5 million eligibility threshold to create variation in who uses SubV. Firms just below this threshold should be quite similar to those just above along many dimensions except that those below the threshold can choose to use SubV.[4] For this analysis, we limit the sample to firms with $4 million to $11 million in liabilities to keep a narrower bandwidth around the threshold.

Using this technique, we find that, if anything, the effect of SubV on the probability of confirming a plan is even larger. SubV increases the likelihood of reorganization for this sample

[4] The true eligibility threshold is based on *non-contingent* liabilities, rather than *total* liabilities. Contingent liabilities are those which a company might owe, depending on the outcome of future, uncertain events, such as a lawsuit. Non-contingent liabilities are unobserved in our data. Because of this, we implement a fuzzy RDD by instrumenting for SubV using the observable debt size cutoff of $\leqslant$ $7.5 million in *total* liabilities. We discuss this issue in detail in Section 4.3.

by about 36 percentage points, relative to firms just above the threshold who successfully reorganize only 19 percent of the time. Thus, SubV more than doubles the probability of reorganization for firms near the $7.5 million threshold. Further, in this analysis we find that SubV cases reach confirmation 38% faster than non-SubV cases. Our first stage estimation for the use of SubV also provides weak evidence that firms with more complex capital structures, i.e. those where coordination problems among creditors might make agreement on a restructuring more difficult, are more likely to utilize SubV.

An alternative to RDD is to use difference-in-differences for identification. For this analysis, we use the same $4-11 million sample as for the RDD analysis, but we include a pre-period from January 2017 – February 2020 when SubV was unavailable to any firms. After February 2020, only those with less than $7.5 million in liabilities have SubV available as an option. Thus, *treated* firms are those with less than $7.5 million in liabilities, and *post* identifies cases filed after SubV became available. Because not all firms below the threshold choose to use SubV, the diff-in-diff interaction *treated X post* produces an "intent to treat" estimate—not all "treated" firms are actually treated because some do not use SubV, either because they choose not to or they are not aware it exists.[5] This pushes the estimated impact of SubV down somewhat, but we still find that firms with less than $7.5 million in liabilities are 17.8 percentage points more likely to have their cases confirmed after February 2020 than control firms. This is a 70% increase from the mean confirmation rate of 25.3% in the control group. We also confirm the RDD findings that SubV increases the speed at which confirmation occurs.

The RDD and difference-in-differences estimates are intended to capture the causal effect of SubV on bankruptcy case outcomes. However, these estimates could be biased if the introduction

[5] Bernstein, Colonnelli, Hoffman, and Iverson (2023) show that knowledge of bankruptcy, and SubV in particular, is very low among small business owners.

of the SubV option induces firms to enter bankruptcy when they otherwise would not have filed. As shown in Figure 1 and discussed above, it does not appear that SubV induced a large number of firms to enter bankruptcy. Further, in examining the firms that opt into SubV, we find that, if anything, firms that file for SubV are more highly-distressed than firms in regular Chapter 11, making it harder to successfully reorganize. Thus, we argue that any observable selection effects make it likely our estimates provide a lower bound for the increased likelihood and shorter time to reach a reorganization plan under SubV.

While these results causally show that SubV has achieved its goal of enabling more small businesses to reorganize, at the same time they raise the concern as to whether the balance has tipped too far, increasing the bargaining power of small business debtors at the expense of unsecured creditors. We therefore examine expected recovery rates for unsecured creditors for SubV versus non-SubV Chapter 11 cases. Using court documents (plans of reorganization and disclosure statements), we collect projected recovery rates for all cases filed between March 2020 and September 2023 with total liabilities between $4 million and $11 million which confirm a plan of reorganization. Because we only observe expected recovery rates for cases with confirmed plans, we run a series of regressions in which we assume various recovery rates ranging from 0% to 50% for all cases which are liquidated or dismissed from court. Using the same RDD framework as above, we estimate that unsecured creditors are not made worse off by SubV even if we make the extreme assumption that recovery rates in all non-reorganization cases reach 50%--an unlikely outcome given the average unsecured recovery rate of Chapter 11 cases with a confirmed reorganization plan is lower than 50%. Rather than a redistribution of value away from creditors, these results are consistent with bargaining outcomes in which the gains from avoiding liquidation and lower costs of the process are shared between creditors and pre-bankruptcy owners.

While SubV dramatically increases the likelihood of reorganization, the marginal firms that are able to reorganize using SubV may not be economically viable, and hence could be forced to shut down soon after bankruptcy. If this is the case, SubV may simply prolong the existence of "zombie" firms when liquidation would be a better option. This further implies that creditors' ultimate recoveries might not reach those projected at the time of reorganization. To study this, we test how SubV affects post-bankruptcy failure rates using our RDD analysis. For firms with cases filed between March 2020 and September 2023 with liabilities between 4 million and 11 million (either in SubV or standard Ch. 11), we manually collect the firm's most recent operating status based on state-level business registry records from OpenCorporate and LexisNexis. We find that SubV causally *increases* firm survival by an estimated 22 percentage points for cases with liabilities between 4 million and 11 million. We also find a positive but statistically insignificant coefficient for the narrower bandwidth of 6 to 9 million.

To summarize, our analyses show that the SubV option dramatically increases the likelihood of reorganization for small businesses without harming expected unsecured creditor recovery rates. We also show that SubV likely leads to higher chances of long-run survival for small businesses, suggesting that many of the smaller firms that are liquidated in traditional Chapter 11 cases could survive if the costs of bankruptcy were lower or if owners were able to retain their equity.

Our work helps to fill an important gap in our understanding of the efficiency of mechanisms for resolving financial distress of viable, small firms. For large public companies emerging from bankruptcy, researchers have interpreted evidence of poor post-bankruptcy performance as consistent with excessive reorganization of unviable firms (Hotchkiss, 1995). More recently, Hotchkiss, Thorburn, and Wang (2023) discuss a shift in the balance of negotiating

power in bankruptcy to senior creditors, increasing a potential bias toward liquidation. Researchers have recently used structural modeling to produce counterfactuals quantifying the value lost from potential inefficiencies in Chapter 11, also producing mixed evidence (Dou, Taylor, Wang, and Wang, 2021; Antill, 2022). The introduction of SubV studied in this paper provides an opportunity to understand the causal effect of a more pro-debtor system for resolving distress of small firms.

Our work is also related to a large theoretical and empirical literature that focuses on the relationship of creditor protection to restructuring outcomes or to pre-distress investment and credit. For example, Davydenko and Franks (2008) examine defaulted small-to-medium size firms in France, Germany, and the United Kingdom and find differences across bankruptcy codes to be an important determinant of banks' requirements for collateral as well as loan recoveries. Several studies focus on single country changes to bankruptcy law, and find mixed evidence for the ex-ante effects on credit in those countries.[6] Related work also shows the importance of understanding the effects of bankruptcy law on bargaining and potential restructuring that may take place out of court.[7] While we do not directly study out-of-court restructuring or ex-ante effects on credit access, this literature suggests that the impact of SubV on bankruptcy outcomes will likely have significant general equilibrium effects for small businesses even if they do not use bankruptcy.

SubV has the potential to have a large impact on small businesses and even the U.S. economy overall. Based on bankruptcy filings from 2015-2023, 88% percent of all corporate filings have liabilities below $7.5 million, so most business bankruptcies are eligible to use SubV.

[6] Vig (2013) shows that firms use less secured debt in response to the implementation of laws in India that strengthen lenders' ability to seize and liquidate collateral of distressed firms. Schoenherr and Starmans (2022) study a change to bankruptcy law in South Korea, enabling managers of mid-sized firms to avoid automatic replacement by a court-appointed receiver, and show that a more debtor-friendly management stay system can be optimal in a country in which owners' personal costs of bankruptcy are high.

[7] Studies explaining the incidence of formal bankruptcy versus out-of-court restructurings include, among others: Mooradian, 2004; Sautner and Vladimirov, 2018; and Giambona, Lopez-de Silanes, and Matta, 2022). Notably, Donaldson, Morrison, Piacentino, and Yu (2022) show that policies that make bankruptcy attractive to equity owners can at the same time facilitate less costly private workouts.

Small businesses have relatively high failure rates[8], and prior to the introduction of SubV, roughly 90% of all small businesses that closed their doors did so outside of bankruptcy entirely (Greenwood, Iverson, and Thesmar, 2020). Presumably, some of those businesses closed their doors because Chapter 11 was too costly and complicated to pursue. In theory, small business liquidation need not be costly for an economy if the liquidated assets are easily redeployed to other uses. However, Bernstein, Colonnelli, and Iverson (2019) show that in many cases small business liquidation leads to an inefficient reallocation of assets when their geographic location offers few alternative users for those assets. With SubV as an option, some of those firms will likely utilize the bankruptcy system as a path to restructure their business rather than simply shutting down.

2. Economic Framework and Institutional Background of Subchapter V

In this section, we briefly discuss some of the economic frictions affecting small businesses that attempt to use Chapter 11 to reorganize. Following that, we lay out the main changes that Subchapter V (SubV) makes to Chapter 11 and how these changes alleviate specific frictions relevant to small businesses' ability to reorganize.[9]

2.1 Economic Framework

Small businesses attempting to restructure under Chapter 11 face several significant hurdles. The most obvious is that bankruptcy itself has direct costs, including lawyer and court fees. Additionally, sufficient working capital is needed to run the business while the bankruptcy is ongoing. Larger firms can more likely access liquidity needed to cover these costs, since the fixed costs of bankruptcy are smaller in comparison to their assets. Meanwhile, fixed bankruptcy costs

[8] The average annual firm death rate from 2017 to 2021 is 8.1% based on Business Dynamics Statistics data from the U.S. Census.

[9] A review of the process is provided in the American Bankruptcy Institute (ABI) Subchapter V Task Force report released in April 2024 and available at https://subvtaskforce.abi.org.

can loom large for small businesses (Bris, Welch, and Zhu, 2006) and accessing liquidity (e.g. through debtor-in-possession financing) is likely not an option for these businesses.

A more subtle friction for small businesses is that the business is often inextricably tied to the owner. In most Chapter 11 cases, if absolute priority is followed the original equity owners are wiped out and creditors become the new equity owners of the reorganized firm. This means it is up to the new owners to hire management and run the firm after it exits bankruptcy. While this may not be an issue for larger firms, with a small business, if the original entrepreneur loses her equity the business may be unable to continue to exist without her knowledge or contacts with suppliers and customers (Gotberg, 2021). New equity owners of the small business could in theory re-hire the original entrepreneur to continue running the company, but asymmetric information about the entrepreneur's quality likely makes this difficult. More practically, creditors of small businesses (typically trade creditors and regional banks) may not want to—and may be statutorily unable to—own the equity of those businesses. Thus, if absolute priority is largely followed and the pre-bankruptcy equity ownership is eliminated, it is more likely that the small firm will be shut down because it lacks a dedicated owner/manager to run it.

Finally, coordination problems and conflicts of interest introduce bargaining frictions which may leave a small business unable to reach a consensual plan to reorganize. In general, higher priority senior and secured creditors have less incentive to agree to a reorganization, and may push the business to liquidate. Further, differing incentives across creditors can lead to inefficient liquidations, particularly for firms with more complex debt structures. While this is also true for larger businesses, the problem is likely more severe when the debtor is small. The time and effort of working through a restructuring process may not be worthwhile for senior creditors – for example, a secured bank lender - when it would not sufficiently increase their recoveries,

especially when their claim is relatively small. Instead, these creditors may push to recover their collateral through a liquidation to resolve the case more quickly, even if maintaining the going concern business would be more valuable.

2.2 Institutional Background on Subchapter V

Subchapter V of Chapter 11 (SubV) directly addresses the frictions discussed in Section 2.1 by reducing bankruptcy costs, enabling owners to fully retain their equity without the agreement of impaired creditors, and by requiring a "SubV trustee" who acts as an advisor and mediator throughout the bankruptcy process. Enacted under the Small Business Reorganization Act of 2019, effective as of February 19, 2020 and modified by the CARES Act, SubV defines eligible debtors as those with "aggregate noncontingent liquidated secured and unsecured debts as of the date of filing of the petition or the date of the order for relief in an amount not more than $7,500,000." The key provisions of Chapter 11 that are directly modified in SubV are as follows:

1. Removal of several costly or time consuming requirements of Chapter 11. SubV expedites the process by requiring the court to hold a status conference within the first 60 days of the case. When reorganization is determined to be feasible, a plan must be filed within 90 days of the filing date, or the case risks being dismissed. A disclosure statement, which typically provides significant detail regarding the company and a proposed plan to claimants entitled to vote on the plan, is not required in a SubV case. A committee of unsecured creditors is also not required, reducing costs otherwise borne by the debtor, but also potentially reducing creditors' bargaining power. These changes are expected to avoid costly delays, reducing the time in bankruptcy and the direct and indirect costs to the debtor (Dou, Taylor, Wang, and Wang, 2021).

2. Modified confirmation requirements. A reorganization plan in SubV can be confirmed over the objections of some or all creditors, without necessarily eliminating equity's ownership interests.

This means that the small business owner not only stays in possession of the business during bankruptcy, but can continue to own and control the reorganized firm through a violation of absolute priority. When a confirmed plan is "non-consensual" (i.e., without sufficient agreement from creditors), the company is required to pay all of its projected disposable income to creditors over a 3-to-5-year period.[10] The ability of the pre-bankruptcy owners to retain their stake can be important to preserving the going concern value of the firm, but also makes bankruptcy under SubV more attractive to incumbent owners and managers than a traditional Chapter 11.

3. Appointment of a SubV Trustee. Although the debtor remains in possession of the bankruptcy estate, a SubV trustee is appointed in almost all cases. In contrast to a trustee used outside of SubV, who replaces the incumbent management and often oversees a liquidation, the SubV trustee works in cooperation with the debtor toward the goal of resolving the case, while still providing oversight to make sure the company is reorganized only if it is in the best interests of creditors as well.[11] SubV trustees are typically individuals with experience in small business bankruptcy cases who can help debtors and creditors resolve conflicts to reach consensus on a plan, particularly for firms with more numerous claimants.

The above changes under SubV are intended to reduce the costs of a prolonged stay in bankruptcy for a small business and allow the small business owner to retain equity in the firm, even if it violates absolute priority. While we cannot independently observe the impact of individual provisions, each of these changes is expected to increase the probability of

[10] The idea that the pre-bankruptcy owner can buy back the firm from its creditors using its future cash flows can produce an outcome that is economically similar to that observed for bankruptcy auctions of Swedish firms (Strömberg, 2000). Because the owner-manager in general lacks sufficient funds of her own, the sale-back necessitates agreement from the bank to renegotiate its loan to finance the acquisition. In SubV, this can be accomplished without an auction process under a non-consensual plan, i.e. lacking the bank's consent.

[11] Trustees are infrequently used in U.S. Chapter 11 cases, other than to replace management in cases of mismanagement or fraud. In Chapter 7 cases, a trustee's sole function is to oversee the liquidation (Antill, 2022). SubV trustee fees are paid by the debtor.

reorganization and reduce the time in bankruptcy for eligible debtors. These changes also reduce the bargaining power of creditors, potentially increasing payouts to equity owners at creditors' expense. At the same time, potential harm to creditors' recoveries may be offset by their ability to share in the gains from reducing costs and/or avoiding a liquidation.

3. Data and sample

3.1. Regression sample selection

We start with the universe of all Chapter 11 cases (42,242 cases) filed between 2017Q1 and 2023Q3 from the FJC database of bankruptcy filings.[12] The database provides detailed information on each case, including the case number, filing date, bankruptcy court, and total assets and liabilities at filing. We exclude non-lead cases, cases transferred to another court, non-business cases, cases filed by tax-exempt entities, single asset real estate cases, and cases filed in 2023 with pending status. We also drop 1 case filed before 2020 as a non-SubV case but later converted to SubV. Given the $7.5 million debt limit for eligibility for SubV, we create three different samples of cases with total liabilities centered at $7.5 million: (1) Our baseline analyses use 5,094 cases filed between 2020Q1 and 2023Q3, with total liabilities below $15 million; (2) Our regression discontinuity design uses 952 cases filed between March 2020 and September 2023, with total liabilities between $4 million and $11 million; (3) Our difference-in-difference analyses use 1,943 cases filed between 2017Q1 and 2023Q3, with total liabilities between $4 million and $11 million. We use bankruptcy court documents obtained from the Public Access to Court Electronic Records

[12] The FJC database keeps records of all bankruptcy filings in the United States since 2008 and is updated quarterly (through September 2023). Data are publicly available at https://www.fjc.gov/research/idb/bankruptcy-cases-filed-terminated-and-pending-fy-2008-present.

(PACER) to obtain total liabilities from schedules filed with the bankruptcy petition and subsequent amendments.[13]

3.2. Identifying Subchapter V cases

For firms in the liability size ranges indicated above, we start with a list of SubV cases identified from PACER.[14] In addition, the FJC database begins to indicate Chapter 11 filings electing SubV in 2023. We also use LexisNexis and PACER case summaries to verify which cases are administered under SubV.[15] This provides a sample of 2,896 SubV cases from the total of 5,094 Chapter 11 cases filed between 2020Q1 and 2023Q3 with total liabilities below $15 million. Small businesses choosing to use SubV come from a broad range of industries. Filings are not concentrated in particular industries: the five most common - business services, health services, hotels and lodging, and retail trade - comprise only 33% of all SubV cases.

4. Subchapter V case outcomes and duration

4.1. Adoption of Subchapter V

As discussed in the introduction, the usage of corporate bankruptcy fell with the onset of the pandemic (Wang, Yang, Iverson, and Jiang, 2021). This overall decline makes it difficult to determine the extent to which SubV attracted firms into the bankruptcy system that would not have used it otherwise. However, in Figure 1, Panel A, we find that among firms that file for bankruptcy, a higher share use Chapter 11 rather than Chapter 7 after the introduction of SubV (Figure 1, Panel

[13] As noted above, the $7.5 million debt threshold for SubV eligibility excludes contingent liabilities. Thus, some firms with reported total liabilities over $7.5 million still file under SubV, with eligibility determined in court. An example is cases where a large judgement resulting from a lawsuit is unpaid at the time the firm files for Chapter 11.
[14] We thank Ed Flynn of the American Bankruptcy Institute (ABI) for providing this listing of SubV cases.
[15] Shortly after the enactment of the SBRA, a small number of cases already in Chapter 11 were changed to elect SubV. Additionally, early in the use of SubV, a small number of cases were determined as ineligible for SubV based on the court's assessment of non-contingent liabilities.

A), largely due to a drop in Chapter 7 cases.[16] Importantly, Panels B and C show that the percentage increase in Chapter 11s comes exclusively from firms with less than $7.5 million in liabilities, and that for these firms, SubV significantly displaces traditional Chapter 11 filings.[17]

Concurrent with the enactment of the SBRA, the onset of the pandemic may have decreased the viability of some small businesses which experienced a severe negative cash flow shock, increasing liquidations both in and out of court. At the same time, the cash flow shock was temporary for many firms and pandemic-related government support combined with creditor leniency or access to available credit lines and strong refinancing opportunities (Hotchkiss, Nini, and Smith, 2022) made it possible for many firms to avoid bankruptcy. These effects make it difficult to determine if SubV enticed some firms to use the bankruptcy system rather than liquidate out of court.

In Figure 2, we plot the annual Census Business Dynamic statistics for establishment deaths based on firm size groups. Noting that the year 2021 measures deaths from March 2020 to March 2021, which includes the start of the pandemic, establishment closures are surprisingly flat. We observe an increase in closures only for firms with less than 10 employees, and within that group only from just over 10% to over 11%. This is consistent with results of Crane, Decker, Flaaen, Hamins-Puertolas, and Kurz (2022) who find that business exit rates appeared lower than the widespread expectations from early in the pandemic, and attribute the lack of a spike in closures to government policy support at the time. In addition, we note that the majority of the firms in our analysis have between 10 and 99 employees (corresponding to the green line in Figure 2), where

[16] This finding is consistent with Kumar (2021), who uses the FJC data to examine the early months after the enactment of the SBRA and shows using a RDD approach an increase in the likelihood of firms choosing to file for Chapter 11 rather than Chapter 7.

[17] In order to choose to use SubV, small businesses would need to be aware of the new law and also overcome stigma surrounding the usage of bankruptcy. Bernstein, Colonnelli, Hoffman, and Iverson (2023) show that awareness of SubV by small business owners was very limited in 2020, and stigma against bankruptcy was high. Any limiting effect on SubV uptake appears short-lived in Figure 1B.

we see no change in business exit rates in the Census data. We interpret these statistics to indicate that the trends in filing rates we observe are not confounded by a significant change in the number of companies choosing to close down out of court. In Section 6 below, we further examine whether changes in the characteristics of firms that do enter bankruptcy impact our empirical strategy and results.

4.2. Baseline specification and results

We now turn to our main analysis with baseline OLS regressions to examine outcomes and durations of cases filed under SubV as follows:

$$y_i = \alpha + \beta Sub\ V_i + X_{i,t} + \partial_j + \delta_c + \gamma_t + \epsilon_{i,j,c,t}, \qquad (1)$$

where i refers to case and *t* refers to year. The dependent variable y_i in Equation (1) is either an indicator of the case outcome ($Confirmed_i$) or the number of days for case i to reach the outcome (*Ln(# Days to Confirmation)*). $Confirmed_i$ is a dummy variable that equals one if a plan is confirmed for case i and zero otherwise. $Sub\ V_i$ is a dummy variable that equals one if case i is filed under Subchapter V of Chapter 11 and zero otherwise. $X_{i,t}$ is a vector of control variables for case i, which includes $Total\ Asset_{i,t}$ (the debtors' total assets reported at the time of bankruptcy) and three proxies for the potential complexity of negotiations: $Jointly\ Filed\ Case_{i,t}$ is a dummy variable that equals one if case i is the lead case of several jointly administered cases and zero if case i is not jointly administered with other cases; $Secured\ Debt/Total\ Liability_{i,t}$ is the ratio of secured over the total debt; and $Above\ 50\ Creditors_{i,t}$ is a dummy variable that equals one if case i has 50 or more creditors as reported in the voluntary petition and zero otherwise. ∂_j, δ_k, and γ_t indicate industry (1-digit SIC), court, and filing year fixed effects.

For our baseline analyses, we use the 5,094 Chapter 11 cases filed between 2020Q1 and 2023Q3, with total liabilities below $15 million. Table 1 reports summary statistics for this sample.

32.9% of cases have plans confirmed, which we consider a positive outcome, with an average duration of 298 days. For other (negative) outcomes, 39.9% of cases are dismissed, and 9.8% of cases are converted to Chapter 7.[18] The remaining 17.4% of cases have not been resolved but have been pending more than nine months, which we view as a negative outcome given the median case duration of fewer than nine months for our baseline sample. The average debtor has total liabilities of $2.5 million and a secured debt ratio of 46.6%. More than half of cases (56.9%) are administered under SubV. These small business cases also contrast with the large, complex cases typically examined in prior literature: only 6.8% of cases are jointly administered with other non-lead cases, and less than 15% of cases have more than 50 creditors.

Table 2 Panel A reports the OLS regression results for case outcome. The coefficient estimates for *SubV* are positive and statistically significant across all four columns with different controls and fixed effects, suggesting small business debtors who file their petitions under Subchapter V of Chapter 11 are more likely to have a plan confirmed. Economically, electing SubV is associated with a 21% increase in the probability of confirming a plan. Larger and more complex cases also appear more likely to have a plan confirmed.

Table 2 Panels B and C report OLS regression results for the time to reach the case outcome. The dependent variable in Panel B is *Ln(# Days to Confirmation)*, the natural logarithm of the number of days for a plan to be confirmed. The coefficient of *SubV* is negative and statistically significant in all four columns in Panel B, suggesting that among small business cases that successfully confirm a plan, those that file under SubV complete the process much faster.

[18] We note that confirmed plans in our baseline regressions include both Chapter 11 plans of reorganization and Chapter 11 plans of liquidation. Chapter 7 is used for liquidation under the supervision of a trustee rather than the debtor in possession. Iverson (2018) shows that dismissals largely lead to liquidations for small businesses.

Economically, SubV cases reach confirmation by 24% faster.[19] Table 2 Panel C reports results where the dependent variable is *Ln(# Days to negative outcome)*. Interestingly, the coefficient estimates of *SubV* become positive and significant, suggesting that it takes a significantly longer time for a SubV case to reach a negative outcome.

While these baseline results are suggestive of SubV's impact on case outcomes, we are careful to note that they measure only correlations. Firms that choose to use SubV may be different along several dimensions, which could lead to the differences we observe in this analysis. To better understand the causal impact of SubV on case outcomes, we next use regression discontinuity and difference-in-differences specifications.

4.3. Regression discontinuity design (RDD)

Because filing under SubV is a choice of the small business debtor, we turn to a regression discontinuity design as one means to address possible endogeneity. Debtors eligible to utilize SubV must have non-contingent liabilities below $7.5 million.[20] By definition, we should observe a discrete jump to a zero probability of a Sub V case above this eligibility threshold. However, the eligibility threshold is based on total *non-contingent* liabilities, which is not systematically reported. Because of this, we use *total* liabilities as the forcing variable for a fuzzy RDD, since we do not precisely observe the threshold for all cases.

We implement our fuzzy regression discontinuity design (RDD) by instrumenting a SubV case with the debt size cutoff, *BelowCutoff*, which equals one if a small business firm's debt is below $7.5 million and zero otherwise. That is, $BelowCutoff_i$ for firm i is defined as follows:

[19] Since these are log-linear models with the independent variable of interest, $SubV_i$, being a dummy variable, the estimated impact of moving to SubV on time to confirmation is $100[\exp(\beta) - 1]$.

[20] The original threshold was $2.75 million, but it was unexpectedly increased to $7.5 million in March 2020 as part of the CARES Act. We note that both our RDD and diff-in-diff estimates include year fixed effects and thus hold the overall effects of the COVID-19 disruption constant, and instead compare bankruptcy firms to each other in the same time period. Also, our results are largely unchanged if we eliminate 2020 from our sample entirely to avoid any effect of COVID-19 on our estimates.

$$BelowCutoff_i = \begin{cases} 1, & Total\ liability_i \leq \$7.5\ million, \\ 0, & Total\ liability_i > \$7.5\ million, \end{cases}$$

where *Total liability* is the running variable, measured in millions of USD.

Our identification is based on the assumption that firms around the debt size cutoff are comparable so that the case outcomes would be continuous around the debt size cutoff in the absence of the SBRA. Because the true eligibility threshold is unobserved, we employ a two-stage least squares (2SLS) regression as follows:

$$First\ stage: Sub\ V_i = \alpha + BelowCutoff_i + f(Total\ liability - \$7.5\ million) + BelowCutoff_i \times f(Total\ liability - \$7.5\ million) + X_{i,t} + \delta_c + \gamma_t + \beta + \epsilon_{i,j,c,t},$$

$$Second\ stage: y_i = \alpha + \beta \widehat{Sub\ V_i} + X_{i,t} + \partial_j + \delta_c + \gamma_t + \epsilon_{i,j,c,t},$$

where y_i is either an indicator of the case outcome ($Confirmed_i$) or the time to reach the outcome for case i. $Sub\ V_i$ equals one if case i is filed under Subchapter V of Chapter 11 and zero otherwise. $\widehat{Sub\ V_i}$ is the fitted value of $Sub\ V_i$ from the first stage regression. f is a polynomial function of $Total\ liability - \$7.5\ million$. We start with a linear probability model and use higher-order polynomial functions as a robustness check (Imbens and Lemieux, 2008). $X_{i,t}$ includes the following control variables: $Total\ Asset_{i,t}$, $Secured\ Debt/Total\ Liability_{i,t}$, $Jointly\ Filed\ Case_{i,t}$, $\#\ Secured\ Creditors_{i,t}$, and $\#\ Unsecured\ Creditors_{i,t}$. ∂_j, δ_k, and γ_t indicate industry, court, and filing year fixed effects. The number of secured and unsecured creditors are determined from claims registers filed with the bankruptcy court.

For the RDD analysis, we use our sample of Chapter 11 cases filed between March 2020 and September 2023 with total liabilities between $4 million and $11 million. The inability to observe

the true eligibility threshold introduces noise in the first-stage regression. In particular, there are 56 firms in this sample with total liabilities greater than $7.5 million but which use SubV; these firms therefore have noncontingent liabilities, without which they meet the threshold of less than $7.5 million. Including these 56 cases potentially biases our second stage estimates downwards, because these larger SubV cases act as control firms in the second stage regressions. We therefore exclude these cases from our main RDD analyses, but report results including them in Internet Appendix Tables IA.1 and IA.3. Excluding these 56 cases boosts our statistical power significantly while leaving the estimated coefficients similar.[21]

Our ending sample of 896 cases still includes cases, if any, with total liabilities above $7.5 million but noncontingent liabilities below $7.5 million but which did *not* choose to file under SubV. For descriptive purposes, Figure 3 shows the use of SubV (Panel A) and case outcomes (Panels B and C) above and below the observable cutoff of $7.5 million in total liabilities. Panels B and C show a significant decline in the probability of plan confirmation at the cutoff, regardless of the parametric assumption used based on the running variable.

The FJC data indicates if a plan was confirmed, but for a small set of cases a plan of liquidation rather than a plan of reorganization is confirmed. For all cases with confirmed plans in the RDD sample, we obtain the plan from PACER and manually identify whether it is a reorganization or liquidating plan. We identify 30 SubV cases and 41 non-SubV cases with liquidating plans, and group their outcomes together with cases that are converted to Chapter 7 liquidations. Table 3 reports summary statistics for the RDD sample, separately for SubV (Panel A) and non-SubV

[21] 52% of the 56 SubV cases above the threshold confirm plans of reorganization, while only 19% of non-SubV cases above the threshold confirm a plan. This difference indicates that including the 56 SubV firms as "control" cases when they were actually treated can have a substantial effect on point estimates and statistical significance. As expected, the Internet Appendix Tables show substantially lower but still significant first-stage F-tests, and second-stage regression coefficients for *SubV Hat* with similar sign, similar magnitude, and somewhat weaker statistical significance than reported in our main tables.

(Panel B) cases. We immediately observe that over 48% of SubV cases have their reorganization plans confirmed, while only 19% of non-SubV cases have their plans confirmed. On average, total liabilities of SubV cases are somewhat lower ($5.5 million) than that of non-SubV cases ($6.9 million), which is expected due to the eligibility threshold limiting larger firms from using SubV. Other firm characteristics, such as the debt-to-assets ratio and the share of secured debt, are smooth across the eligibility threshold, suggesting that the necessary assumption that firm characteristics do not discontinuously jump at the $7.5 million level is met (Figure 4).

Table 4 reports the RDD regression results for case outcomes (Panel A). In addition to analyses for cases with total liabilities between $4 and $11 million, we also report results for cases with total liabilities between $6 million and $9 million, limiting the sample to firms closer to the threshold. The coefficient estimates of *BelowCutoff* in the first stage are positive and significant in both Columns 1 and 3, with firms below the cutoff being 49.7 (50.4) percentage points more likely to use SubV than those above the cutoff in Column (1) (Column (3)). The *f*-tests for these first stage regressions are 71.99 and 33.05, showing that there is strong power to use 2SLS for these sample sizes. The first stage regressions also provide insight into which firms choose to use SubV. In particular, the positive and significant coefficient estimates of *# Secured Creditors and # Unsecured Creditors* suggest that firms facing greater coordination problems and a more time-consuming bargaining process with many creditors are more likely to choose SubV.[22]

The second stage results consistently show that SubV has an economically large effect on the probability a firm confirms a plan of reorganization. The coefficient estimates of *SubV Hat* are

[22] In Table IA.2, we report OLS results explaining the use of SubV for cases filed between March 2020 and September 2023 that are eligible to choose SubV (i.e., total liabilities between $4 million and $7.5 million), expanding the set of debt structure variables included. Coefficients for the number of secured and number of unsecured creditors are qualitatively similar to the first-stage results reported in Table 4. The concentration of creditors overall is negative and significant, consistent with the negative correlation between the number and the concentration of creditors.

positive and statistically significant at the 1% level in Columns (2) and (4). Using the wider bandwidth of firms with $4 – 11 million in liabilities, we estimate that SubV increases the likelihood of reorganization by 27.1 percentage points. The effect is even larger at 35.5 percentage points when focusing on the tighter bandwidth of $6 – 9 million, where the necessary identification assumptions are most likely to hold. Since Table 3 shows that only 19% of non-SubV cases have a reorganization plan confirmed, SubV more than doubles the probability of reorganizing, relative to nearly identical firms that are just over the size threshold.

Table 5 follows the analysis in Table 4 but the dependent variable in Column (2) is *Ln(# Days to Confirmation).* Since these regressions use only cases in which a reorganization plan is confirmed, we focus on the bandwidth of $4 to $11 million to use the larger sample size. The coefficient of *SubV Hat* is negative and statistically significant. This shows that, conditional on confirming a reorganization plan, small business debtors using SubV reach confirmation significantly faster. Economically, electing SubV reduces the time to confirmation by 38%. At the same time, we find no effect of SubV on the time to a negative outcome, as shown by the small and statistically insignificant coefficient estimates for *SubV Hat* in Column (4).[23]

With any threshold discontinuity design, it is important to consider whether firms have the ability to manipulate the measures defining eligibility. Manipulation of liabilities is especially unlikely early in our sample period when SubV was new and the original threshold was unexpectedly increased to $7.5 million. The potential for firms to reduce their liabilities in order to become eligible for SubV is likely to be substantially lower for distressed small businesses than for larger or healthier firms with more access to capital (or assets that can easily be liquidated) to pay down their debt. Still, we perform several additional tests to consider whether firms manipulate

[23] Tables IA.4 and IA.5 report the RDD regression results using 2nd-order polynomial functions as a robustness check. The results are qualitatively similar to those reported in Tables 4 and 5.

their liability size at the threshold. First, Figure 3D presents the density of bankruptcy cases over liability size. If firms were manipulating their liabilities to be under the threshold, or if SubV were attracting a large set of firms into bankruptcy, we would expect a discontinuous drop in the density of firms at the $7.5 million threshold. We apply a McCrary (2008) density test to investigate the distribution of cases around the liability threshold and find no evidence for any significant discontinuity around the threshold ($p = 0.14$). Second, Figure 4 shows the leverage ratio and secured debt ratio of bankruptcy filers are smooth around the liability cutoff, consistent with the necessary identifying assumption that firm characteristics are smooth across the threshold. Last, if we remove cases with liabilities between $7 million and $7.5 million (those that would be most likely to have manipulated their liabilities to be under the eligibility threshold) and repeat our RDD analyses, our key coefficients are essentially unchanged (see, Appendix Tables IA.6 and IA.7). We conclude that liability manipulation is unlikely to impact our estimates.

4.4. Difference-in-difference regressions

The introduction of SubV for firms with less than $7.5 million in noncontingent liabilities also lends itself well to a difference-in-difference (diff-in-diff) regression as follows:

$$y_i = \alpha + \beta_1 Treated_i + \beta_2 Post_t + \beta_3 Treated_i \times Post_t + X_{i,t} + \partial_j + \delta_c + \gamma_t + \epsilon_{i,j,c,t},$$

where y_i is either an indicator for the outcome of case i ($Confirmed_i$) or the time for case i to reach its outcome. $Treated_i$ is a dummy variable indicating whether case i has less than $7.5 million in total liabilities, such that it could be "treated" by SubV. $Post_t$ equals one if case i was filed after February 2020 and zero otherwise. $X_{i,t}$ includes the set of control variables previously defined for our RDD tests). ∂_j, δ_k, and γ_t indicate industry, court, and filing year fixed effects.

We use the 1,887 Chapter 11 cases filed between 2017Q1 and 2023Q3, with total liabilities between $4 million and $11 million for our diff-in-diff analyses. We label cases with total

liabilities between $4 million and $7.5 million as treated cases and those with total liabilities between $7.5 million and $11 million as control cases. As for the RDD regressions, we distinguish reorganization from liquidating plans, and group 150 cases of liquidating plans together with cases converted to Chapter 7 liquidations. Also, as in our RDD tests, we exclude the 56 SubV cases in our sample that have total liabilities above $7.5 million; these cases would be misclassified as "control" cases even though they are in fact treated with SubV, biasing coefficients towards zero.[24]

Table 6 reports summary statistics for this diff-in-diff sample. 31.2% of treated cases and 25.3% of control cases have reorganization plans confirmed. These numbers are similar to each other because many "treated" cases are filed before February 2020, when SubV is not yet available: Only 28% of total treated cases are filed under SubV. The average time for treated cases to have a reorganization plan confirmed is 333 days, 128 days faster than control cases. By construction, the average of total liabilities of treated cases ($5.5 million) is significantly lower than that of control cases ($9.1 million).

Table 7 reports the diff-in-diff regression results for case outcomes and duration. The coefficient estimate of *Treated x Post* in Column (1) is positive and statistically significant at the 1% level, suggesting treated cases are about 17.8 percentage points more likely to confirm a plan of reorganization after 2020. Further, similar to the RDD results in the previous section, Column (2) shows that SubV reduces the time to confirmation by 29%, while cases with negative outcomes are not processed any more quickly in SubV (Column (3)).

The results in Table 7 should be viewed as the "intent-to-treat" effect of SubV status on case outcomes since many cases with total liabilities between $4 million and $7.5 million do not file

[24] Internet Appendix Table IA.9 provides results for the diff-in-diff analysis including SubV cases with liabilities large than $7.5 million. Including these 56 cases reduces the magnitude of estimated coefficients, as expected, but we continue to find that SubV significantly increases both the ability of firms to reorganize and the speed at which they do so.

under SubV even after 2020. To understand the importance of this factor, for Table 8 we continue to label cases with total liabilities between $4 million and $7.5 million before 2020 as treated cases, but after 2020 we only label cases as treated if they have under $7.5 million in liabilities *and* they actually file under SubV. Thus, the *Treated X Post* interaction variable compares debtors that in fact use SubV to firms that are never able to use SubV as well as firms that could have used SubV but chose not to. This version of the diff-in-diff is not as clean from an identification standpoint; some of the effects of SubV we observe could be due to the endogenous choice of small businesses to use SubV. However, these estimates may come closer to the actual treatment of SubV, since we include only firms who actually use the new bankruptcy regime.

Using the alternative control group, raw summary statistics (shown in Table IA.8) show that the difference between treated and control cases for case outcome becomes much larger: 34.5% of treated cases have reorganization plans confirmed, while only 22.9% of control cases do so. The coefficient estimate of *Treated x Post* in Column (1) of Table 8 is positive and statistically significant at the 1% level, with a magnitude comparable to the effect documented in our baseline OLS regressions. Economically, treated cases are 28.6 percentage points more likely to have a reorganization plan confirmed after 2020. Results for the time to plan confirmation are very similar to those in Table 7, showing that SubV reduces the time to confirmation by 27%. We continue to find no effect on the time to reach a negative case outcome.

5. Creditor recoveries and firm post-bankruptcy survival

5.1. Expected creditor recoveries

Our results in Section 4 document the positive causal impact of SubV status for debtors in terms of case outcomes and duration. It is less clear, however, whether creditors capture the benefit of the reduced bargaining frictions and costs associated with SubV. Standard bargaining models

show that creditors and equity owners can negotiate to share any overall gain in value. On the other hand, creditors lose bargaining power in SubV which could reduce their recoveries.

The factors driving ultimate recoveries for creditors in large bankruptcy cases have been extensively studied (Altman, Hotchkiss, and Wang 2019). Similar studies for smaller firms have been limited, likely because recoveries to creditors are frequently small or zero (Bris, Welch, and Zhu, 2006), and because statements of expected recoveries are only observable from manually collected court filings. In this section, we directly examine expected unsecured recoveries for cases where a reorganization plan is confirmed, relative to the likely recoveries for other outcomes where no ongoing business survives Chapter 11.[25]

For 313 Chapter 11 cases filed between March 2020 and September 2023, with total liabilities between $4 million and $11 million and which confirm a plan of reorganization, we are able to obtain the plan (for SubV cases) or disclosure statement (for non-SubV cases) from PACER. Information from these documents is sufficient to estimate the expected recovery rate to general unsecured creditors for 282 cases.[26] We calculate a percentage recovery rate for general unsecured creditors as follows: 1) the percentage recovery as directly stated in the plan or disclosure statement; or, 2) the estimated total payments to general unsecured divided by the total general unsecured claims. Total payments are either the full payment if made upon exit from bankruptcy, or the sum of projected monthly/quarterly/annual payments. The average expected unsecured creditor recovery rate for confirmed SubV plans is 33.8 percentage points, lower than that for confirmed non-SubV plans, 68.8%, as shown in Table 3.

[25] Estimating recoveries for secured creditors is problematic because often collateral is conveyed to satisfy their claims. Unsecured recoveries are more meaningful for our analyses, since these claims are directly above equity in priority and include "deficiency claims" when collateral values are insufficient to fully repay secured creditors.

[26] We are not able to estimate the expected recovery rate to general unsecured creditors for the remaining 31 cases due to insufficient information. These cases either do not have unsecured debt (7 cases) or do not describe their payment plan to general unsecured creditors in detail.

The unconditional difference in recovery rates between SubV and non-SubV cases could be due to endogenous differences between firms that choose to file SubV and those that do not. For example, if reorganization is more difficult and costly without SubV, only non-SubV debtors with especially strong prospects may successfully confirm a reorganization plan. We therefore focus on our RDD for this analysis.[27] We use the 952 Chapter 11 cases as in Section 4.3 and remove the 56 cases in our sample with total liabilities above $7.5 million that elect to use SubV.[28]

Cases that convert to Chapter 7 or that are dismissed from court do not have observable recovery rates, as creditor recoveries are not systematically collected for these cases. For these cases, we instead assume unsecured creditor recovery rates ranging from 0% to 50% and test how our conclusions are affected by this assumption. We report these results in Table 9. Panel A reports the RDD regression results for cases with total liabilities between $4 million and $11 million. The coefficient estimates of *BelowCutoff* in the first stage are positive and significant; firms below the cutoff are about 50 percentage points more likely to use SubV than those above the cutoff with an *f*-test of 72, showing there is sufficient power to use 2SLS with this number of observations. Columns (2) to (7) report the second stage results. If we assume that all non-reorganized cases have a recovery rate of zero (Column 2), we find that the coefficient of *SubV Hat* is 9.6% (significant at the 10% level). In other words, SubV causally increases creditor recovery rates if we assume that unsecured creditors receive no recovery in all cases that do not reorganize. As we increase the assumed unsecured recovery rate in Columns (3) to (7), the coefficient estimates of

[27] We report OLS regression results using only cases that confirm a reorganization plan in Appendix Table IA.10. These regressions suggest unsecured creditors in SubV cases have a higher probability of any positive recovery, but a lower probability of a recovery greater than 20%.

[28] Table IA.11 reports the RDD regression results using 2nd-order polynomial functions for the recovery rate tests. These results are qualitatively similar to those reported in Table 9. In addition, results are similar if we include the 56 SubV cases above the threshold, but statistical significance is diminished for all point estimates. Even if we include these cases, we never estimate that recovery rates are lower under SubV for any recovery rate assumption we make for liquidated cases.

SubV Hat become insignificant but point estimates remain positive as long as we assume recovery rates of less than 30%. Even if we assume that recovery rates in non-reorganization cases reach 50%, we estimate that creditors are no worse off under SubV than in traditional Chapter 11 cases. Given that the average recovery rate observed for reorganized cases is less than 50%, it is highly unlikely that creditors recover 50% in liquidated and dismissed cases.

Table 9 Panel B reports results for the narrower bandwidth of cases with total liabilities between $6 and $9 million. The coefficient estimates for *SubV Hat* become more statistically significant for these firms closest to the threshold. These results show that the use of SubV is causally related to an increase in unsecured recovery rates of 12 percentage points, even assuming recovery rates as high as 10% for other outcomes. Moreover, the coefficient estimates for *SubV Hat* remain positive, though insignificant, even if we assume non-reorganization case recovery rates are as high as 50%, suggesting that SubV does not lead to a worse outcome for unsecured creditors. Overall, it appears unlikely that SubV causally decreases recovery rates for unsecured creditors.

5.2. Post-bankruptcy firm survival

Do higher confirmation rates from SubV cases lead to lower post-bankruptcy survival rates, as marginal firms are allowed to reorganize in SubV? To answer this question, for firms with cases filed between March 2020 and September 2023 with liabilities between 4 million and 11 million, we obtain the firm's most recent operating status based on state-level business registry records from OpenCorporate.[29] We further cross-check the operating status of each firm based on public records from LexisNexis and data from Dunn & Bradstreet. The average survival rate for firms with confirmed reorganization plans as of December 2023 is 84.7 % for SubV cases, higher than

[29] OpenCorporate provides data sourced from state business registries and can be accessed from the following link: https://opencorporates.com/.

the 71.6% survival rate for non-SubV cases.[30] On the other hand, the average survival rate for firms without confirmed reorganization plans as of December 2023 is 47.3% (40.5%) for SubV (non-SubV) cases. Importantly, our measured survival rates are likely higher than actual survival rates, since there is a lag between firms ceasing operations and the dissolution being reported to state registries. However, see no reason why this measurement error should be more significant for SubV or non-SubV firms close to the eligibility threshold, and thus do not expect this to have a significant effect on our estimates.

Because of endogeneity concerns, we again use our regression discontinuity design to examine survivals.[31] We use the 952 Chapter 11 cases as in Section 4.3 and remove the 56 cases with liabilities above $7.5 million filed under SubV. Table 10 Columns (1) and (2) report these results for cases with liabilities between $4 million and $11 million. The first stage results in Column (1) report positive and significant coefficient estimates of *BelowCutoff*, with an *f*-test of 72, and again showing the positive relationship between bargaining complexity (number of secured, unsecured creditors) and the use of SubV. In the second stage, shown in Column (2), we estimate that SubV increases the probability of firm survival by 22 percentage points. This coefficient estimate is very similar in magnitude to the effect of SubV on confirming a reorganization plan (0.271), suggesting that most of the increased survival probability comes from marginal firms being enabled to reorganize in SubV. Table 10 Columns (3) and (4) report these results for the narrower bandwidth of $6 to $9 million. The coefficient estimate for *SubV Hat* reported in Column (4) is positive, but

[30] Cases early in our sample have had longer to fail than those that recently emerged from bankruptcy. Since we only observe the active status of the firm as of December 2023 (the date we collect these data), and not the date on which the firm goes out of business, we cannot run a hazard model or use a time-dependent survival probability as the dependent variable. Instead, our regressions all include year fixed effects to ensure that we are comparing case outcomes for firms that filed for bankruptcy in the same year.

[31] Internet Appendix Table IA.12 reports OLS regressions where the dependent variable, *Active Status*, equals one if a firm is active as of December 2023 and zero otherwise. The coefficient of *SubV* is positive and statistically significant in all four columns, suggesting that firms emerging from SubV are more likely to survive than those that emerge from traditional Chapter 11.

the point estimate is roughly half the size and is statistically insignificant. It is difficult to determine if we simply lack statistical power to accurately measure the effect of SubV on survival for this narrow bandwidth or if the true effect of SubV on survival is smaller in this sample. Regardless, we at least do not find evidence that SubV firms are less likely to survive than firms in traditional Chapter 11, and most of our evidence points to these firms having higher survival probabilities.[32]

We note that high survival is not necessarily economically efficient—it is possible that entrepreneurs who have their firms liquidated are able to start new firms that are more productive than firms that are allowed to reorganize.[33] However, Bernstein, Colonnelli, and Iverson (2019) show that the assets of small businesses that are forced to liquidate are often unable to be reallocated to better uses, which casts doubt on the possibility of liquidation causing significant amounts of creative destruction.

SubV directly changed frictions long hypothesized to drive the bargaining and outcomes for distressed businesses (see Section 2 above). While we cannot conduct a horse race to show which frictions matter most to the survival of small businesses in Chapter 11, descriptive results do suggest that allowing owners to retain equity in SubV plays a critical role. For confirmed cases, we hand-collect data for whether the pre-bankruptcy owner retains his/her equity stake when the firm exits bankruptcy. The original owner retains at least some equity in the reorganized business for 89% of SubV cases, while in traditional Chapter 11 this is true only 69% of the time.[34] We also

[32] One potential concern is the length of our measurement window for the active status variable, given all cases are filed after March 2020. To mitigate this concern, we identify 85 out of all 276 firms with total liabilities between $4 million and $11 million filing for Chapter 11 before March 2020, which confirm a reorganization plan but are subsequently inactive. Among these, 57provide information for the exact inactive date. The average time for these 57 inactive firms to be out of business after their plan is confirmed is 668 days. Using this estimate as an expected time to failure, we repeat our OLS regressions but include only firms with cases filed in 2020 and 2021. The results are qualitatively similar to those reported in Table IA.12.

[33] Using the owner's name from bankruptcy petitions, we match firm owners with their LinkedIn profiles to examine their subsequent employment. However, due to difficulties in name matching and incomplete coverage of owners on LinkedIn, we are only able to match 113 observations, making any inference difficult.

[34] In 87% of SubV cases and 61% of traditional Chapter 11 cases the owner retains 100% of equity at exit.

find using OLS regressions that retaining equity is strongly associated with firm survival. Appendix Table IA.13 shows that cases with confirmed reorganization plans where the original entrepreneur retains equity are 15.7 percentage points more likely to survive than confirmed cases without any equity retention. Indeed, when we include both *SubV* and *Retain Equity* in the same regression, the coefficient on *SubV* becomes insignificant while *Retain Equity* is strongly associated with firm survival. While these OLS regressions do not address causality and should be interpreted with caution, the correlations are at least suggestive of a strong link between preserving the original owners' stake and firm survival.

6. Discussion of causal inference and threats to identification

Both RDD and difference-in-differences estimates demonstrate the significant and large effects of SubV on bankruptcy outcomes for firms with liabilities just below the $7.5 million eligibility threshold. While both approaches are intended to isolate the causal impact of SubV on firm outcomes, it is possible our estimates are biased if the set of firms that choose to enter bankruptcy changes because SubV is introduced. If so, the differences in case outcomes we document could be partially due to selection rather than SubV treatment. Importantly, this potential selection bias is only due to the set of firms choosing to *enter* bankruptcy at all, not firms choosing to use SubV or not within Chapter 11. The selection into SubV will not affect either the RDD or diff-in-diff estimates because both of these approaches estimate an "intent to treat" effect for firms below the threshold, regardless of whether the firm actually uses SubV or not.

The direction of a selection bias stemming from a change in the set of firms that choose to enter bankruptcy depends crucially on the quality of firms that select into SubV that otherwise would not have entered Chapter 11 at all. On the one hand, our results can be viewed as a lower bound for SubV's impact if the newly-filed SubV cases come disproportionately from highly-

distressed firms—those that would have liquidated (either out of court or in Chapter 7) if SubV did not exist. On the other hand, if SubV induces bankruptcy filings from higher quality, less distressed firms that would likely survive a traditional Chapter 11 but choose to use SubV anyway, our estimates may be biased upwards.

To shed light on these alternatives, we examine the level of distress of firms with total liabilities between $4 and $11 million entering Chapter 11 before and after the introduction of SubV. We use firms' leverage ratio (total liabilities/total assets) as a proxy for the level of distress, noting that prior to the introduction of SubV, firms with a one standard deviation higher leverage ratio are 3.4 percentage points less likely to successfully reorganize (significant at the 5% level). Figure 5 plots the leverage ratio of firms filing for Chapter 11 over time. Panel A compares the leverage ratio of cases with liabilities above versus below the $7.5 million threshold. Leverage ratios at the time of bankruptcy are very similar for these firms both before and after the introduction of SubV; if anything, leverage ratios are higher for firms below the threshold (especially toward the end of the sample). This suggests that SubV did not attract less distressed firms to enter bankruptcy.

More directly, in Panel B of Figure 5, we consider how SubV might affect selection into bankruptcy by examining the leverage ratio of firms with between $4 and $7.5 million total liabilities that choose SubV as compared to similar firms that enter standard Chapter 11. Interestingly, the average leverage ratio of SubV cases is higher than that of non-SubV cases, suggesting that the average quality of firms filing for SubV is lower than that of non-SubV Chapter 11 firms. Thus, selection into SubV is associated with a higher average distress level for firms below the threshold. As noted above, this selection into SubV will not affect the RDD and diff-in-diff estimates in Tables 4, 5, and 7, as these tests compare case outcomes for *all* firms below the threshold to those above the threshold, regardless of whether firms below the threshold actually

choose to use SubV or not. However, to the extent that SubV induces firms to enter bankruptcy, this figure suggests it attracts more highly distressed firms that would be more likely to liquidate rather than reorganize if SubV did not exist.[35]

In Appendix Figures IA.1 and IA.2, we test the assumption of parallel trends for the validity of our diff-in-diff analysis. These figures plot coefficient estimates (β_t) from the following dynamic version of our diff-in-diff regression:

$$y_i = \alpha + \beta_1 Treated_i + \sum_{t=2017}^{2023} \beta_t Treated_i \times Year_t + X_{i,t} + \partial_j + \delta_c + \gamma_t + \epsilon_{i,j,c,t},$$

where $Year_t$ equals one for year t and zero otherwise. The β_t coefficients are year-specific difference-in-differences (DiD) coefficients (with 2019 acting as the reference year).

Figure IA.1 plots the parallel trend test results for our main difference-in-difference sample used in Table 7. Panel A plots coefficient estimates (β_t) for *Reorganization Plan Confirmed*. It shows that the significant effects begin in the policy year (not before). Since we find no effects before the policy, our results are likely causal. Panels B and C plot coefficient estimates (β_t) for *Ln(# Days to Confirmation)* and *Ln(# Days to a negative outcome)*. Consistent with the results reported in Table 7, there is no significant effect on *Ln(# Days to a negative outcome)* throughout our sample period. While there is no single statistically significant coefficient in the post period for *Ln(# Days to Confirmation),*[36] we see the largest negative estimates appear only in the post period. Figure IA.2 plots the parallel trend test results for our alternative measurement of SubV treatment for the difference-in-difference analysis in Table 8 above, showing similar results as

[35] Prior to the introduction of SubV, less-distressed firms would have avoided bankruptcy by negotiating with creditors out of court. SubV likely increases the bargaining power for owners of less-distressed firms by giving them a better bankruptcy option, but this could just affect how out-of-court restructurings are negotiated without these firms actually entering SubV. See Donaldson, Morrison, Piacentino, and Yu (2023).

[36] Lack of significance is likely due to small sample sizes, as these regressions do not pool all post-treatment years.

Figure IA.1. To summarize, there is no evidence of pre-policy period effects for any of the parallel trend tests.

Finally, we note that effects from the COVID-19 pandemic, as well as government relief in response, should not have a large effect on our estimates due to the inclusion of year fixed effects in all specifications. By using the $7.5 million threshold, we compare firms with similar exposures to the pandemic in the same time period. For example, firms above and below the threshold received PPP loans at similar rates; controlling for the presence of these loans has no effect on our regressions. This is not surprising, because we find only 26 cases (<3%) in our sample have unsecured loans from Small Business Administration (SBA) based on claims register records, and PPP loans are a subset of SBA loans.

7. Conclusion

Taken together, our results establish that SubV has dramatically changed the bankruptcy landscape for small businesses. Our most credible causal estimates suggest that SubV cases are 36% more likely to successfully reorganize as similar cases that do not file under SubV. In addition, SubV cases that confirm reorganization plans move about 33% faster, reducing the overall costs of bankruptcy for these firms. As small businesses have learned about the benefits of the SubV option, a large proportion use this option as opposed to a traditional Chapter 11, with many avoiding liquidation.

It is possible that SubV swings the pendulum too far, resulting in small businesses being allowed to continue when they are not truly economically viable or potentially lowering creditor recovery rates. However, our estimates suggest that unsecured creditors are no worse off under SubV even if we make the unrealistic assumption that recovery rates in non-reorganization cases are higher than those in reorganization cases. Meanwhile, it is likely the case that SubV leads to

higher chances of long-run survival for small businesses, suggesting that many of the smaller firms that are liquidated in traditional Chapter 11 could reorganize and survive in a more pro-debtor system. Lastly, although our estimates are not affected by manipulation of liability size to become eligible for SubV, going forward, the benefits of this procedure to small business owners above the current $7.5 million threshold may make such behavior more attractive. Similarly, as the effects of SubV become more widely recognized, we anticipate that lenders will adjust credit standards and lending terms to account for these effects. Borrowers may take on more debt or take more risk given the greater survival rates of SubV. These general equilibrium effects are harder to anticipate and estimate precisely, and will be important to evaluate in the future.

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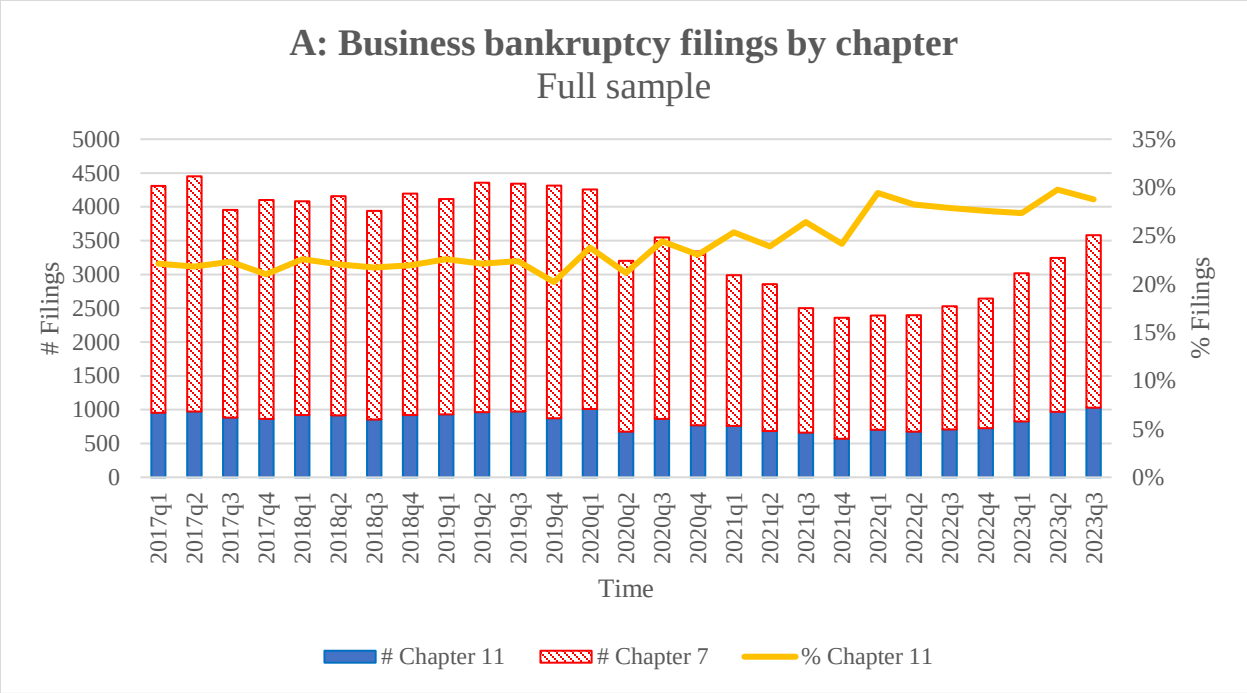
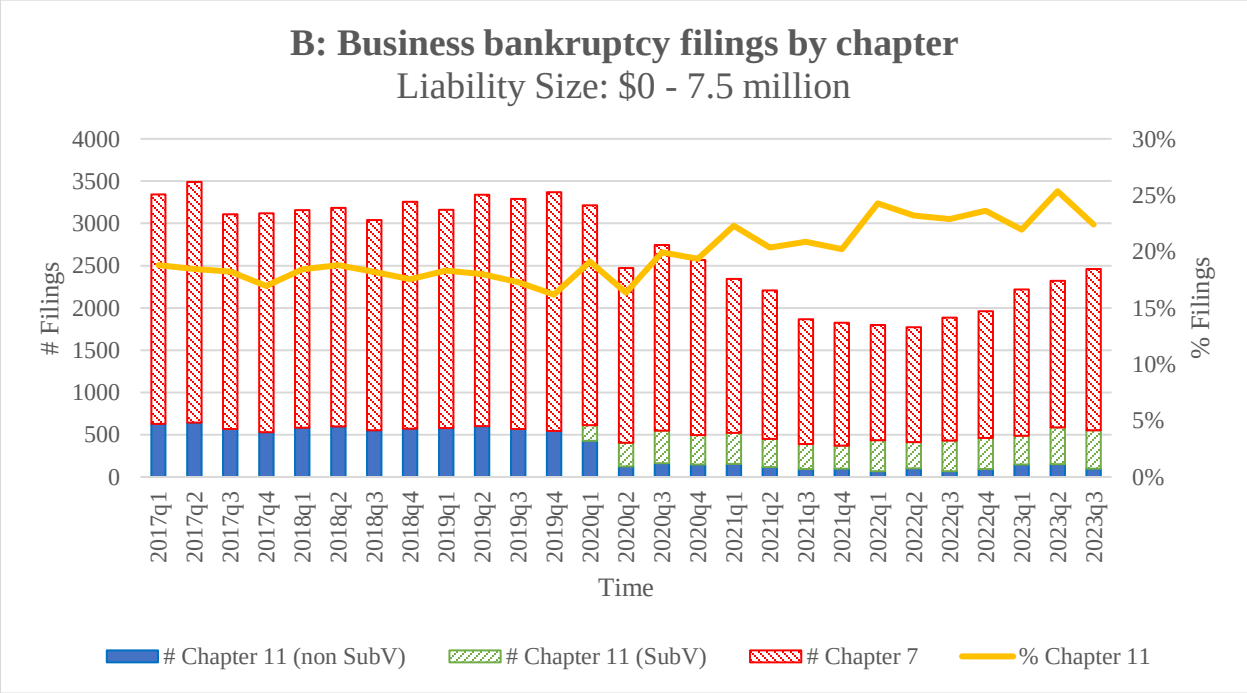

A: Business bankruptcy filings by chapter
Full sample
Filings
% Filings
Time
Chapter 11
Chapter 7
% Chapter 11


B: Business bankruptcy filings by chapter
Liability Size: $0 - 7.5 million
Filings
% Filings
Time
Chapter 11 (non SubV)
Chapter 11 (SubV)
Chapter 7
% Chapter 11

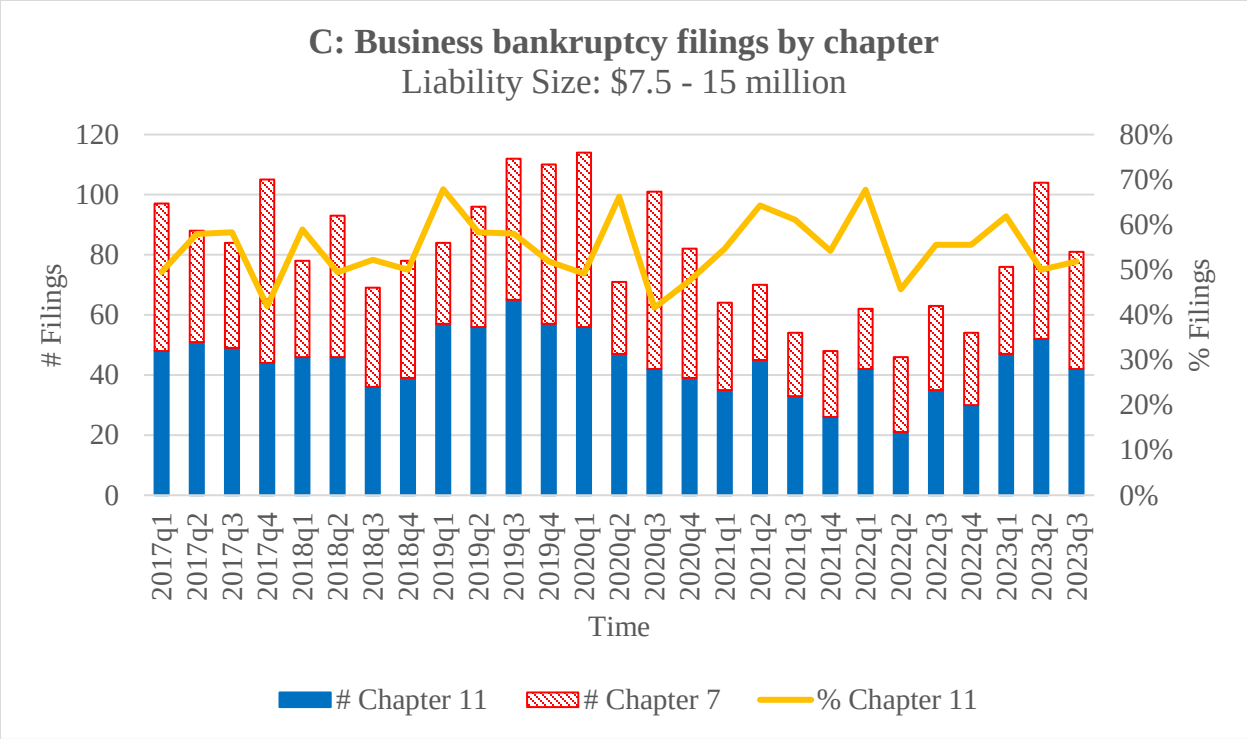


Figure 1: Time trend of Chapter 11 and 7 bankruptcy filings

The figure plots the time trend of Chapters 11 and 7 filings from 2017 to 2023. The dark (light) blue histogram represents the number of Chapter 11 (7) filings. The orange line represents the percentage of Chapter 11 filings over total (Chapter 11+ Chapter 7) bankruptcy filings. Panel A is based on all filings with any liabilities; Panel B is based on filings with liabilities less than $7.5 million; Panel C is based on filings with liabilities between $7.5 million and $15 million. All filings exclude non-lead cases, cases transferred to another court, and non-business cases.

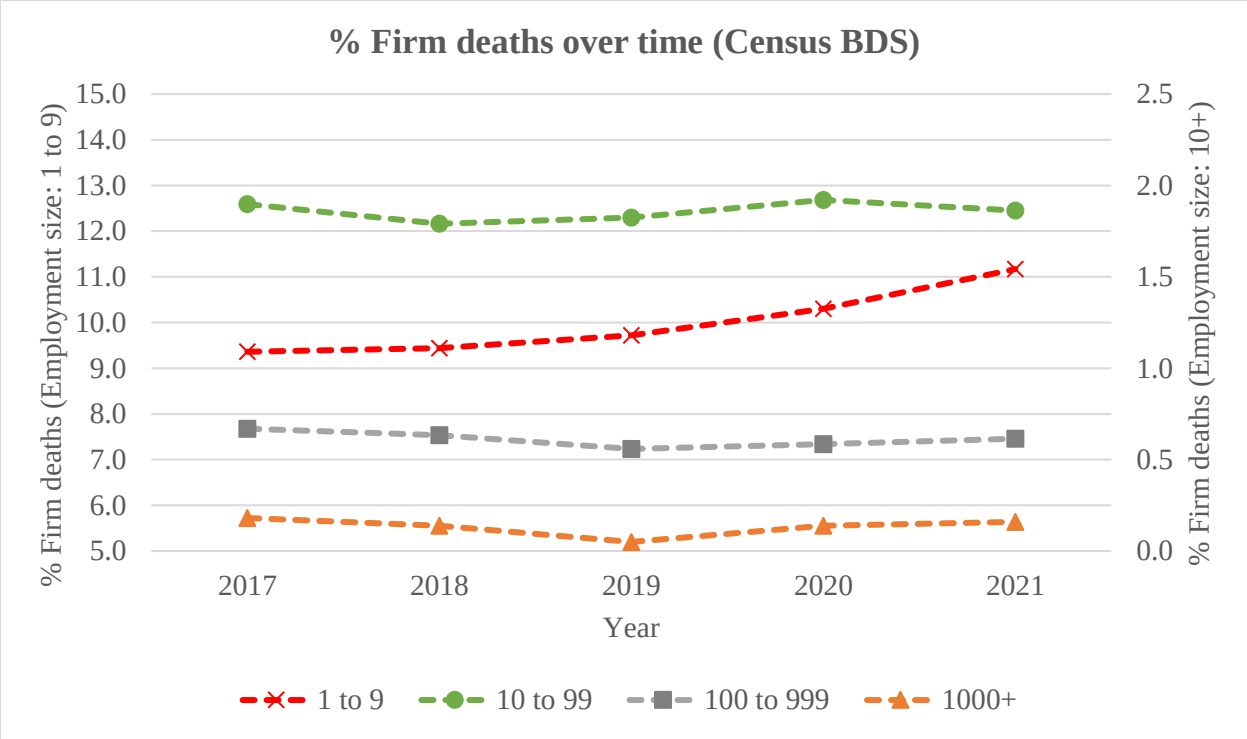


Figure 2: Firm death rate over time

The figure plots the percentage of firms that die over time from 2017 to 2021. Each year, deaths are measured through March of that year. The red line represents the death rate for firms with less than 10 employees. The green line represents the death rate for firms with 10 to 99 employees. The gray line represents the death rate for firms with 100 to 999 employees. The orange line represents the death rate for firms with more than 1,000 employees. Data source: Census Business Dynamics Statistics

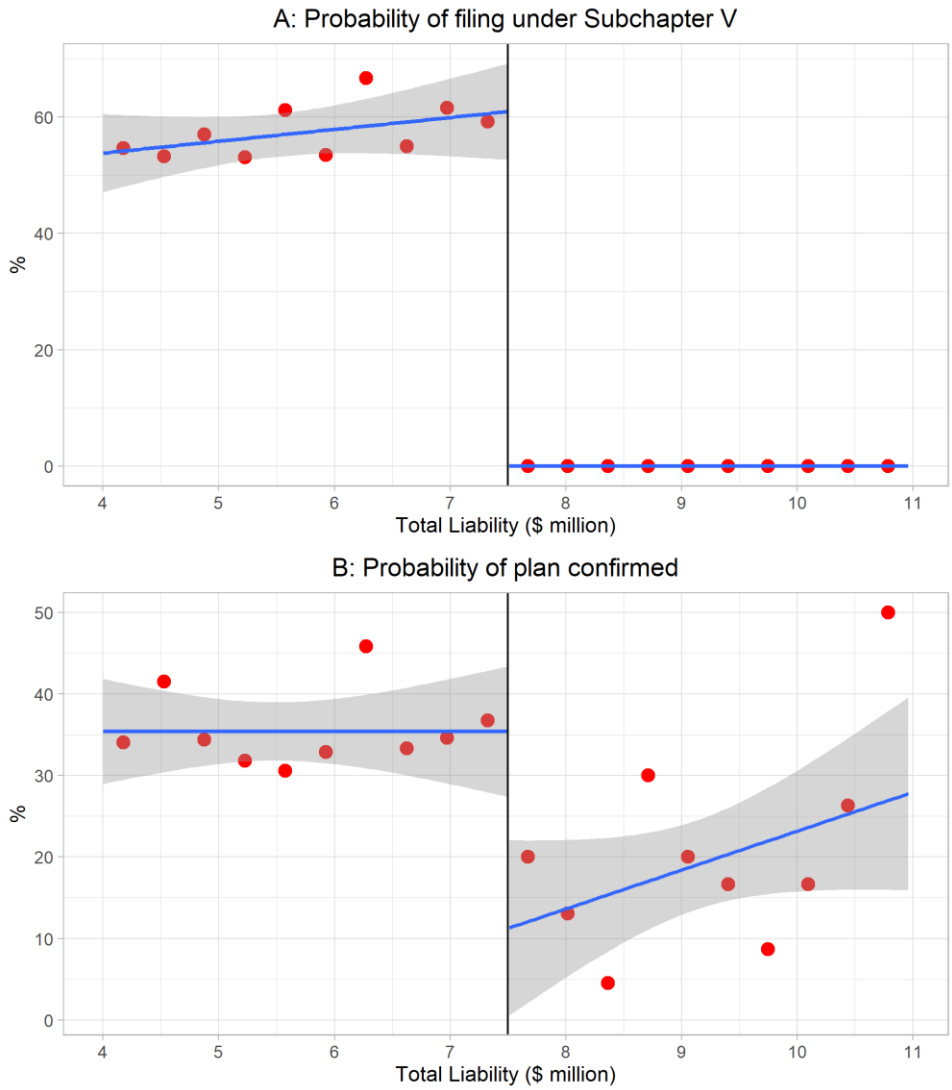
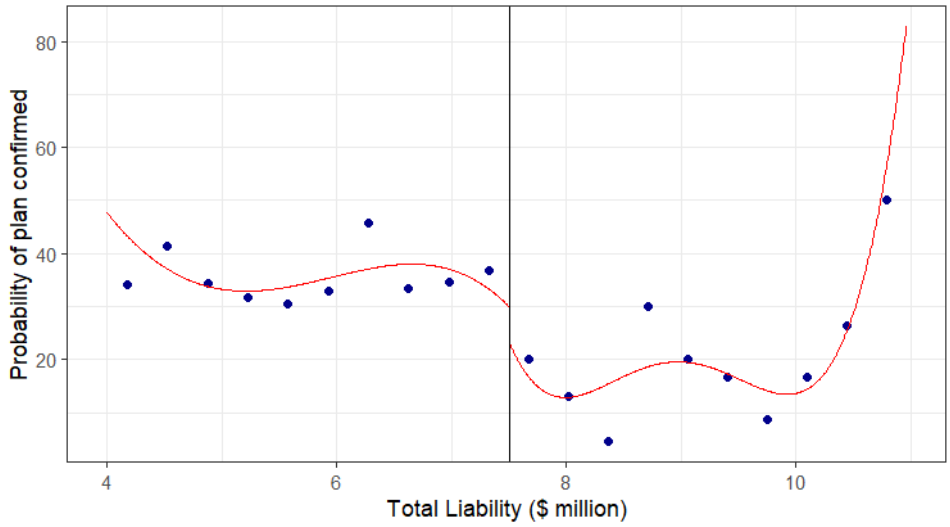


Figure 3: Probability of filing bankruptcy under Subchapter V and case outcome

The figure plots the distribution of Subchapter V filings and case outcomes around the cutoff. The x-axis presents the forcing variable Total Liability, measured in millions of USD. The y-axis corresponds to the probability of filing bankruptcy under Subchapter V (Panel A) and the case outcome being confirmed (Panels B and C). Each dot in Panel A (Panels B and C) represents the average probability of filing bankruptcy under Subchapter V (percentage of case outcome being confirmed). The vertical line represents the cutoff amount of total liability, $7.5 million. The solid lines represent the fitted values of a first-degree polynomial of Total Liability estimated on the interval $4 million ≤ Total Liability ≤ $11 million. Figure 3D plots the density discontinuity test around the cutoff liability.

C: Probability of plan confirmed (non-parametric)



D: Density test for filings around the cutoff

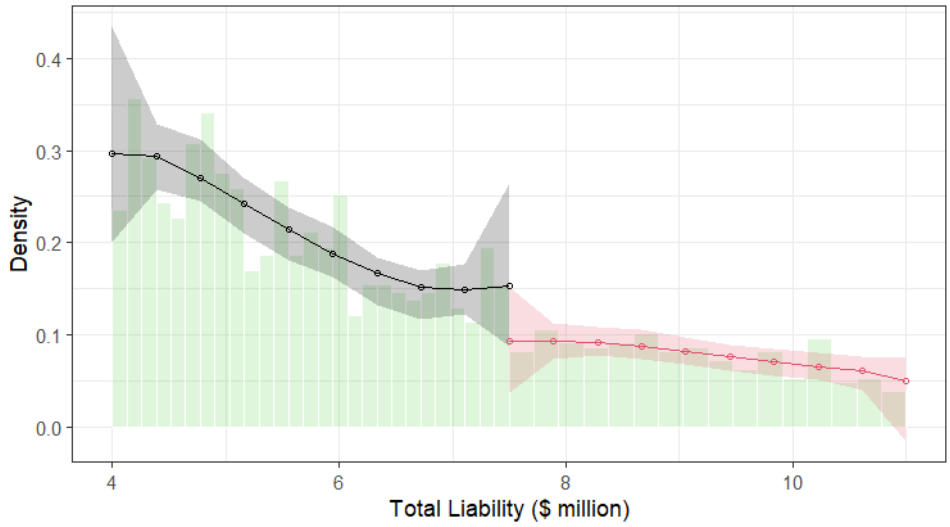


Figure 3: continued

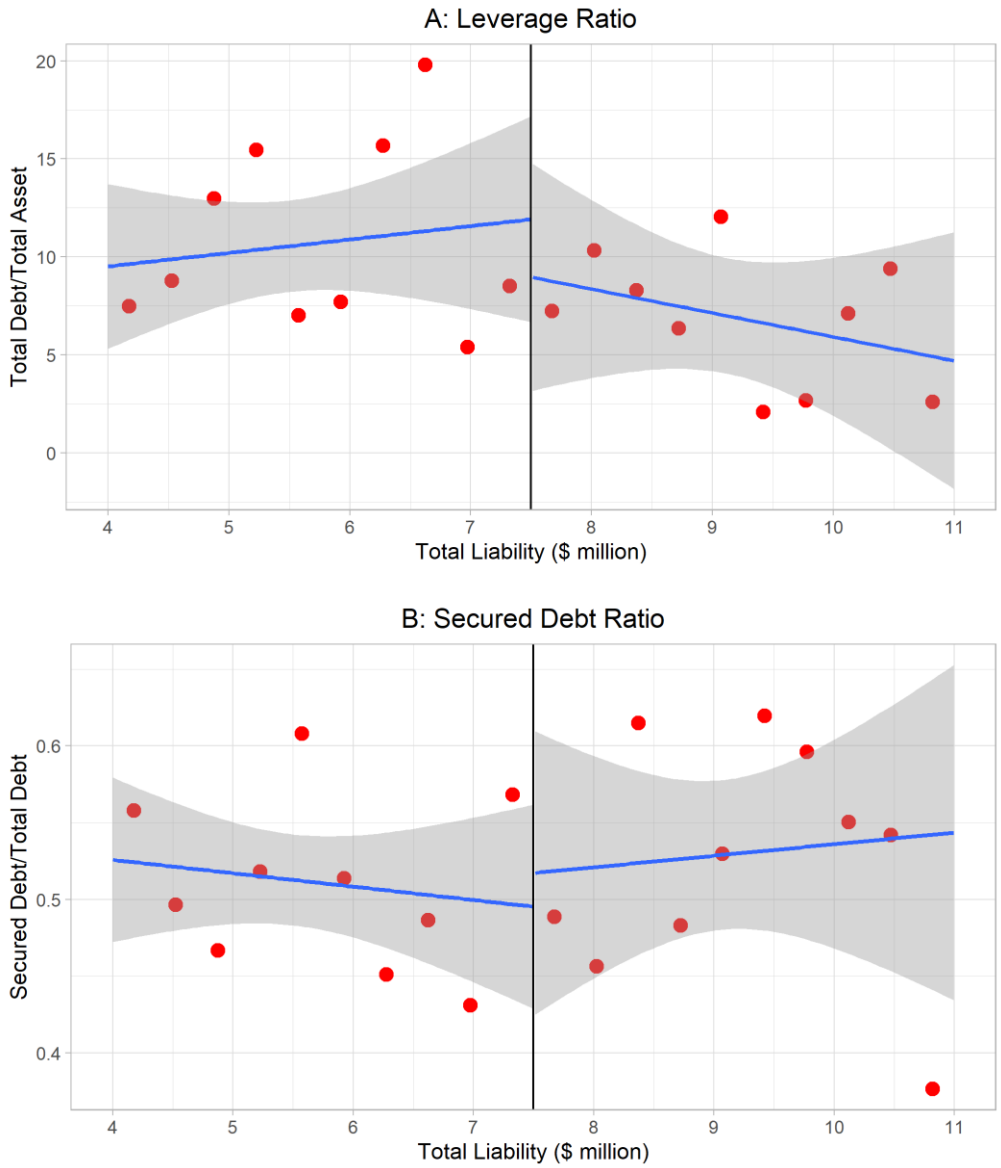


Figure 4: Distribution of case characteristics

The figure plots the distribution of case characteristics around the cutoff. The x-axis presents the forcing variable Total Liability, measured in millions of USD. The y-axis corresponds to the leverage ratio (Panel A) and the secured debt ratio (Panel B). Each dot in Panel A (Panel B) represents the average leverage ratio (the secured debt ratio). The vertical line represents the cutoff amount of total liability, $7.5 million. The solid lines represent the fitted values of a first-degree polynomial of Total Liability estimated on the interval $4 million ≤ Total Liability ≤ $11 million.

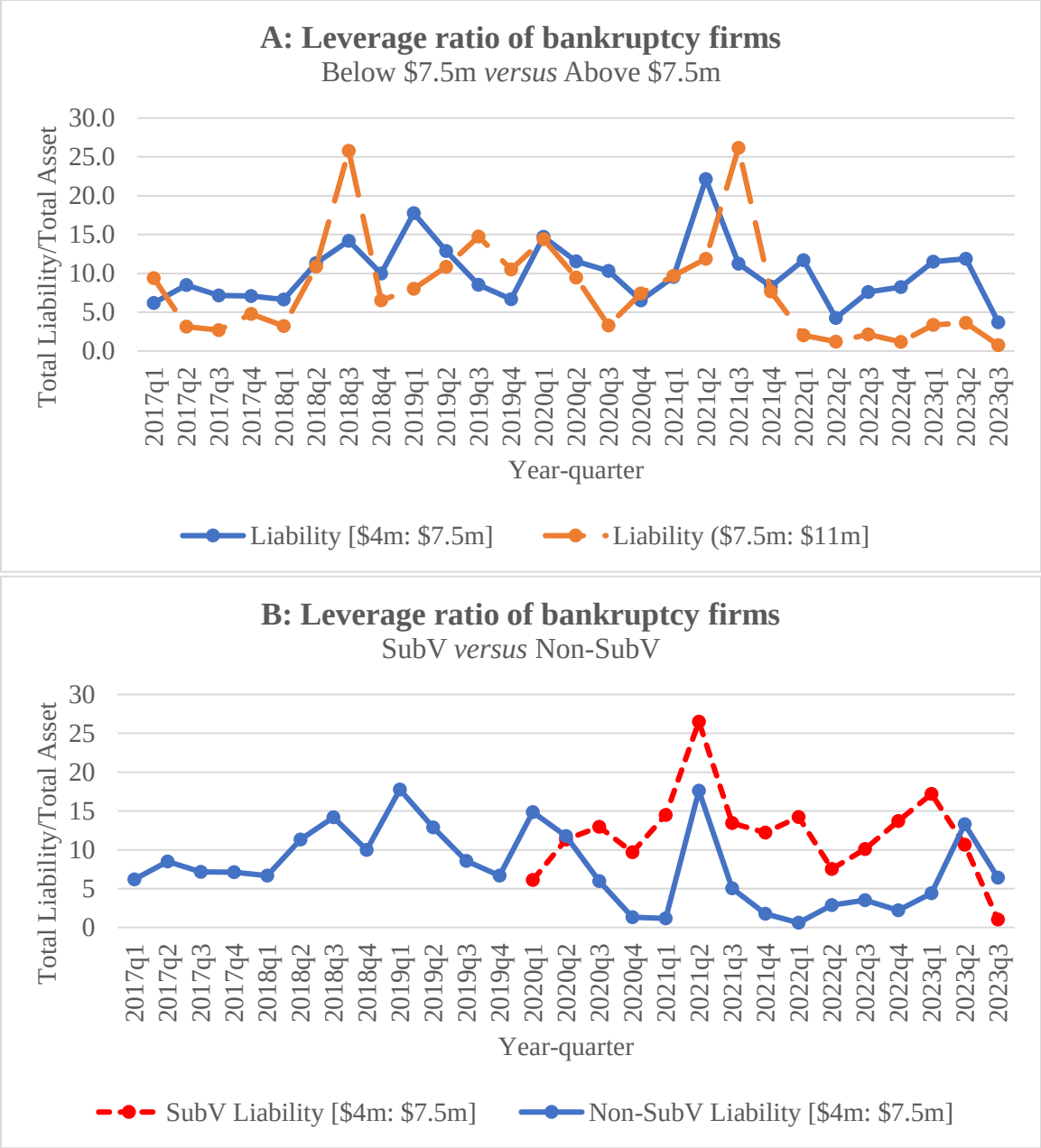


Figure 5: Time trend of leverage ratio of bankruptcy filings

The figure plots the time trend of leverage ratio of bankruptcy filings from 2017 to 2023. Panel A compares the leverage ratio of cases with liability below $7.5 million to those with liability above $7.5 million. The blue (orange dash) line represents the leverage ratio of cases with liability below (above) $7.5 million. Panel B compares the leverage ratio of SubV cases to the leverage ratio of non-SubV cases. The blue (red dash) line represents the leverage ratio of non-SubV cases (SubV cases).

Table 1: Summary statistics - Baseline sample, 2020-2023

This table presents summary statistics for outcomes and characteristics of cases used in our baseline analyses. The sample covers Chapter 11 cases filed from March 2020 to September 2023 with total liabilities below $15 million.

	Mean	Min	p50	Max	S.D.	N
Case Outcome						
Plan Confirmed	0.329	0	0	1	0.470	5,094
Dismissed	0.399	0	0	1	0.490	5,094
Converted to Chapter 7	0.098	0	0	1	0.298	5,094
Case Pending	0.174	0	0	1	0.379	5,094
# Days to Confirmation	298	2	251	1,142	174	1,673
# Days to Dismissal	190	0	144	1,046	163	2,066
# Days to Conversion	271	1	196	1,232	243	509
Case Characteristics						
Total Liability	2,511,789	45	1,345,579	14,968,420	2,953,951	5,094
Total Asset	2,633,909	0	443,992	996,000,000	19,441,719	5,094
Secured Debt/Total Liability	0.466	0	0.456	1	0.410	5,094
Sub V	0.569	0	1	1	0.495	5,094
Jointly Filed Case	0.068	0	0	1	0.252	5,094
Above 50 Creditors	0.141	0	0	1	0.348	5,094

Table 2: Subchapter V, case outcome, and duration - Baseline sample, 2020-2023

This table presents case-level OLS regression results estimating the impact of Subchapter V on the case outcome and duration. The sample covers Chapter 11 cases filed from March 2020 to September 2023 with total liabilities below $15 million. The outcome variable in Panel A is *Plan Confirmed*, which equals one if a plan is confirmed for the case and zero otherwise. The outcome variable in Panel B is *Ln(# Days to Confirmation)*, the natural logarithm of the number of days from the case filing date to the plan confirmation date. The outcome variable in Panel C is *Ln(# Days to negative outcome)*, the natural logarithm of the number of days from the case filing date to the negative outcome date. A negative case outcome includes dismissal, conversion to Chapter 7, or pending more than nine months. *Sub V* is a dummy indicating whether a case is filed under Subchapter V. *t*-statistics are reported in parentheses. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

Panel A: Case Status

	Plan Confirmed			
	(1)	(2)	(3)	(4)
Sub V	0.239***	0.205***	0.206***	0.205***
	(18.66)	(14.99)	(15.09)	(15.00)
Total Liability	0.026***	0.026***	0.024***	0.019***
	(12.07)	(11.87)	(10.96)	(8.55)
Total Asset			0.001**	0.001**
			(2.09)	(2.00)
Jointly Filed Case			0.113***	0.106***
			(4.52)	(4.25)
Secured Debt/Total Liability				0.033**
				(1.96)
Above 50 Creditors				0.138***
				(7.16)
Year FE	Yes	Yes	Yes	Yes
SIC FE	No	Yes	Yes	Yes
Court FE	No	Yes	Yes	Yes
Number of observations	5094	5088	5088	5088
R^2	0.103	0.159	0.163	0.172

Panel B: # Days to Confirmation				
	Ln(# Days to Confirmation)			
	(1)	(2)	(3)	(4)
Sub V	-0.279***	-0.283***	-0.279***	-0.273***
	(-9.33)	(-8.87)	(-8.71)	(-8.50)
Total Liability	-0.016***	-0.016***	-0.016***	-0.012**
	(-3.69)	(-3.47)	(-3.58)	(-2.51)
Total Asset			0.001*	0.001**
			(1.93)	(2.03)
Jointly Filed Case			-0.001	0.005
			(-0.01)	(0.11)
Secured Debt/Total Liability				-0.010
				(-0.27)
Above 50 Creditors				-0.105***
				(-3.05)
Year FE	Yes	Yes	Yes	Yes
SIC FE	No	Yes	Yes	Yes
Court FE	No	Yes	Yes	Yes
Number of observations	1673	1669	1669	1669
R^2	0.120	0.215	0.217	0.222
Panel C: # Days to negative outcome				
	Ln(# Days to negative outcome)			
	(1)	(2)	(3)	(4)
Sub V	0.264***	0.197***	0.199***	0.211***
	(7.41)	(5.17)	(5.22)	(5.52)
Total Liability	0.012*	0.015**	0.009	0.010
	(1.88)	(2.38)	(1.30)	(1.52)
Total Asset			0.004	0.004
			(1.61)	(1.40)
Jointly Filed Case			0.314***	0.331***
			(3.97)	(4.18)
Secured Debt/Total Liability				0.128***
				(2.79)
Above 50 Creditors				-0.114*
				(-1.82)
Year FE	Yes	Yes	Yes	Yes
SIC FE	No	Yes	Yes	Yes
Court FE	No	Yes	Yes	Yes
Number of observations	3419	3411	3411	3411
R^2	0.072	0.141	0.145	0.149

Table 3: Summary statistics - RDD sample, 2020-2023

This table presents summary statistics for outcomes and characteristics of Chapter 11 cases filed from March 2020 to September 2023 with total liabilities between $4 million and $11 million. *Sub V* is a dummy indicating whether a case is filed under Subchapter V. The sample excludes SubV cases with liabilities larger than $7.5 million.

	Mean	Min	p50	Max	S.D.	N
Panel A: Sub-V Cases						
Case Outcome						
Reorganization Plan Confirmed	0.477	0	0	1	0.500	396
Dismissed	0.220	0	0	1	0.415	396
Converted to Ch 7 or Liquidating Plan	0.235	0	0	1	0.424	396
Case Pending	0.068	0	0	1	0.252	396
# Days to Confirmation	241	51	211	802	120	189
# Days to Dismissal	235	37	199	753	159	90
# Days to Conversion	253	16	188	1,179	202	94
Case Characteristics						
Total Liability	5,535,108	4,001,547	5,451,557	7,472,634	997,364	396
Total Asset	3,235,539	0	1,426,888	70,800,000	6,422,972	396
Secured Debt/Total Liability	0.432	0	0.426	1	0.373	396
Jointly Filed Case	0.098	0	0	1	0.298	396
# Secured Creditors	6.427	0	4.5	114	8.25	396
# Unsecured Creditors	19.008	0	10	547	42.099	396
Plan recovery for unsecured creditors						
% Recovery rate	0.338	0	0.130	1	0.387	170
Recovery rate (>0%)	0.984	0	1	1	0.125	189
Recovery rate (>20%)	0.360	0	0	1	0.481	189
Recovery rate (>50%)	0.243	0	0	1	0.430	189
Recovery rate (=100%)	0.196	0	0	1	0.398	189
Post-plan firm survival						
Active status	0.847	0	1	1	0.361	189

Panel B: Non-sub-V cases						
Case Outcome						
Reorganization Plan Confirmed	0.190	0	0	1	0.393	500
Dismissed	0.430	0	0	1	0.496	500
Converted to Ch 7 or Liquidating Plan	0.272	0	0	1	0.445	500
Case Pending	0.108	0	0	1	0.311	500
# Days to Confirmation	332	76	299	916	167	95
# Days to Dismissal	208	0	169	971	166	221
# Days to Conversion	243	27	204	1,083	185	140
Case Characteristics						
Total Liability	6,921,812	4,033,139	6,633,793	10,959,117	2,048,456	500
Total Asset	9,151,291	0	4,598,128	772,000,000	36,777,205	500
Secured Debt/Total Liability	0.605	0	0.790	1	0.403	500
Jointly Filed Case	0.118	0	0	1	0.323	500
# Secured Creditors	4.638	0	3	41	5.165	500
# Unsecured Creditors	10.516	0	4	112	15.601	500
Plan recovery for unsecured creditors						
% Recovery rate	0.688	0	1	1	0.425	85
Recovery rate (>0%)	0.958	0	1	1	0.202	95
Recovery rate (>20%)	0.642	0	1	1	0.482	95
Recovery rate (>50%)	0.611	0	1	1	0.490	95
Recovery rate (=100%)	0.547	0	1	1	0.500	95
Post-plan firm survival						
Active status	0.716	0	1	1	0.453	95

Table 4: Subchapter V and case outcome - RDD sample, 2020-2023

This table presents case-level 2SLS regression results using a regression discontinuity design. The outcome variable is *Reorganization Plan Confirmed*, which equals one if a reorganization plan in the case is confirmed and zero otherwise. *Sub V* is a dummy indicating whether a case is filed under Subchapter V. *Sub V Hat* is the predicted Sub V from the 1st-stage regression. *BelowCutoff* is a dummy variable, which equals one if total liabilities are below $7.5 million and zero otherwise. *p(Total liability-Cutoff liability)* is the polynomials of the assignment variable, which is the total liability minus $7.5 million. The sample excludes SubV cases with liabilities larger than $7.5 million. *t*-statistics are reported in parentheses. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

	Reorganization Plan Confirmed			
	1st-stage	2nd-stage	1st-stage	2nd-stage
	(1)	(2)	(3)	(4)
Sub V Hat		0.271***		0.355***
		(3.76)		(3.36)
BelowCutoff	0.497***		0.504***	
	(7.25)		(4.58)	
p(Total liability-Cutoff liability)	-0.002		-0.018	
	(-0.05)		(-0.17)	
BelowCutoff x p(Total liability-Cutoff liability)	-0.002		-0.014	
	(-0.04)		(-0.11)	
Secured Debt/Total Liability	-0.165***	-0.084*	-0.124	0.088
	(-4.06)	(-1.83)	(-1.62)	(1.07)
Total Asset	-0.001	0.001	0.001	-0.005
	(-1.08)	(1.29)	(0.41)	(-1.28)
Jointly Filed Case	-0.040	0.089*	-0.077	0.037
	(-0.86)	(1.78)	(-0.96)	(0.44)
# Secured Creditors	0.005**	0.005**	0.004	-0.012**
	(2.22)	(2.06)	(0.72)	(-2.12)
# Unsecured Creditors	0.001***	-0.001*	0.001**	-0.000
	(2.63)	(-1.71)	(1.97)	(-0.57)
Year FE	Yes	Yes	Yes	Yes
SIC FE	Yes	Yes	Yes	Yes
Court FE	Yes	Yes	Yes	Yes
Sample	[$4 million: $11 million]		[$6 million: $9 million]	
Polynomial Degree	1	1	1	1
R^2		0.098		0.171
Observations	886	886	283	283
1st-stage *F*-test	71.99		33.05	

Table 5: Subchapter V and case duration - RDD sample, 2020-2023

This table presents case-level 2SLS regression results estimating regression discontinuity design. The outcome variable in Columns (1) and (2) is *Ln(# Days to Confirmation)*, the natural logarithm of the number of days from the case filing date to the reorganization plan confirmation date. The outcome variable in Columns (3) and (4) is, *Ln(# Days to a negative outcome)*, the natural logarithm of the number of days from the case filing date to the negative outcome date. A negative case outcome includes dismissal, conversion to Chapter 7, or pending more than nine months. *Sub V* is a dummy indicating whether a case is filed under Subchapter V. *Sub V Hat* is the predicted Sub V from the 1st-stage regression. *BelowCutoff* is a dummy variable, which equals one if the liability of a case is below $7.5 million and zero otherwise. *p(Total liability-Cutoff liability)* is the polynomials of the assignment variable, which is the total liability minus $7.5 million. The sample excludes SubV cases with liabilities larger than $7.5 million. *t*-statistics are reported in parentheses. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

	Ln(# Days to Confirmation)		Ln(# Days to negative outcome)	
	1st-stage	2nd-stage	1st-stage	2nd-stage
	(1)	(2)	(3)	(4)
Sub V Hat		-0.474***		0.021
		(-3.75)		(0.11)
BelowCutoff	0.712***		0.361***	
	(4.80)		(4.59)	
p(Total liability-Cutoff liability)	-0.045		0.022	
	(-0.69)		(0.61)	
BelowCutoff x p(Total liability-Cutoff liability)	0.107		-0.064	
	(1.47)		(-1.55)	
Secured Debt/Total Liability	-0.254***	0.028	-0.114**	-0.103
	(-3.35)	(0.29)	(-2.29)	(-0.99)
Total Asset	-0.000	0.000	-0.001	0.003
	(-0.18)	(0.39)	(-1.01)	(1.14)
Jointly Filed Case	-0.003	0.084	-0.030	0.298**
	(-0.04)	(0.90)	(-0.47)	(2.37)
# Secured Creditors	0.009**	0.006	0.004	0.019***
	(2.06)	(1.05)	(1.40)	(3.50)
# Unsecured Creditors	0.001	0.001	0.001**	-0.001
	(1.28)	(1.08)	(2.24)	(-0.43)
Year FE	Yes	Yes	Yes	Yes
SIC FE	Yes	Yes	Yes	Yes
Court FE	Yes	Yes	Yes	Yes
Sample	[$4 million: $11 million]		[$4 million: $11 million]	
Polynomial Degree	1	1	1	1
R^2		0.123		0.038
Observations	263	263	591	591
1st-stage *F*-test	31.04		36.22	

Table 6: Summary statistics - Diff-in-diff sample, 2017-2023

This table presents summary statistics for outcomes and characteristics of Chapter 11 cases filed from 2017Q1 to 2023Q3 with total liabilities between $4 million and $11 million. *Treated* equals one if the total liability of a case is between $4 million and 7.5 million and zero otherwise.

	Mean	Min	p50	Max	S.D.	N
Panel A: Treated Group						
Case Outcome						
Reorganization Plan Confirmed	0.312	0	0	1	0.463	1,396
Dismissed	0.372	0	0	1	0.484	1,396
Converted to Ch 7 or Liquidating Plan	0.263	0	0	1	0.440	1,396
Case Pending	0.053	0	0	1	0.224	1,396
# Days to Confirmation	333	21	275	1,480	211	435
# Days to Dismissal	289	3	222	1,917	263	536
# Days to Conversion	398	15	257	2,205	409	380
Case Characteristics						
Total Liability	5,506,337	4,000,214	5,367,841	7,498,760	1,001,877	1,396
Total Asset	4,947,913	0	2,704,653	245,200,000	12,923,667	1,396
Secured Debt/Total Liability	0.555	0	0.637	1	0.375	1,396
Sub V	0.284	0	0	1	0.451	1,396
Jointly Filed Case	0.122	0	0	1	0.328	1,396
# Secured Creditors	5.665	0	4	114	6.723	1,396
# Unsecured Creditors	17.323	0	8	722	39.343	1,396
Panel B: Control Group						
Case Outcome						
Reorganization Plan Confirmed	0.253	0	0	1	0.435	491
Dismissed	0.401	0	0	1	0.491	491
Converted to Ch 7 or Liquidating Plan	0.275	0	0	1	0.447	491
Case Pending	0.073	0	0	1	0.261	491
# Days to Confirmation	461	75	424	1,190	257	124
# Days to Dismissal	316	0	251	1,644	272	201
# Days to Conversion	419	16	244	2,384	484	139
Case Characteristics						
Total Liability	9,067,599	7,507,877	8,999,997	10,994,408	967,822	491
Total Asset	10,781,291	0	4,973,284	772,000,000	39,583,996	491
Secured Debt/Total Liability	0.580	0	0.665	1	0.363	491
Sub V	0	0	0	0	0	491
Jointly Filed Case	0.149	0	0	1	0.356	491
# Secured Creditors	6.448	0	4	72	7.208	491
# Unsecured Creditors	23.291	0	12	798	52.219	491

Table 7: Subchapter V, case outcome, and duration - Diff-in-diff sample, 2017-2023

This table presents case-level OLS regression results estimating the impact of Subchapter V options on case outcome and duration. The sample covers Chapter 11 cases filed from 2017Q1 to 2023Q3 with total liabilities between $4 million and $11 million. The outcome variable in Column (1) is *Reorganization Plan Confirmed*, which equals one if a reorganization plan in the case is confirmed and zero otherwise. The outcome variable in Column (2) is *Ln(# Days to Confirmation)*, the natural logarithm of the number of days from the case filing date to the plan confirmation date. The outcome variable in Column (3) is *Ln(# Days to negative outcome)*, the natural logarithm of the number of days from the case filing date to the negative outcome date. A negative case outcome includes dismissal, conversion to Chapter 7, or pending more than nine months. *Treated* equals one if the total liability of a case is between $4 million and 7.5 million and filed and zero otherwise. *Post* is an indicator that equals one for cases filed between March 2020 and September 2023. The sample excludes SubV cases with liabilities larger than $7.5 million. *t*-statistics are reported in parentheses. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

	Reorganization Plan Confirmed	Ln(# Days to Confirmation)	Ln(# Days to negative outcome)
	(1)	(2)	(3)
Treated x Post	0.178***	-0.345***	0.030
	(3.68)	(-2.90)	(0.26)
Treated	0.021	-0.114	-0.202*
	(0.44)	(-1.07)	(-1.69)
Post	0.063	-0.174	-0.198
	(0.85)	(-0.96)	(-1.14)
Total Liability	0.014	-0.014	-0.034
	(1.36)	(-0.60)	(-1.29)
Secured Debt/Total Liability	-0.076**	0.138*	-0.116
	(-2.49)	(1.92)	(-1.56)
Total Asset	0.000	0.000	-0.001
	(0.82)	(0.30)	(-0.53)
Jointly Filed Case	0.041	0.138**	0.249***
	(1.25)	(2.01)	(3.03)
# Secured Creditors	0.006***	0.009**	0.025***
	(3.91)	(2.58)	(5.91)
# Unsecured Creditors	-0.001***	0.000	0.001*
	(-3.34)	(0.26)	(1.80)
Year FE	Yes	Yes	Yes
SIC FE	Yes	Yes	Yes
Court FE	Yes	Yes	Yes
Number of observations	1878	543	1319
R^2	0.121	0.438	0.235

Table 8: Subchapter V, case outcome, and duration - Diff-in-diff sample, 2017-2023 (alternative treatment definition)

This table presents case-level OLS regression results estimating the impact of Subchapter V options on case outcome and duration. The sample covers Chapter 11 cases filed from 2017Q1 to 2023Q3 with total liabilities between $4 million and $11 million. The outcome variable in Column (1) is *Reorganization Plan Confirmed*, which equals one if a reorganization plan in the case is confirmed and zero otherwise. The outcome variable in Column (2) is *Ln(# Days to Confirmation)*, the natural logarithm of the number of days from the case filing date to the plan confirmation date. The outcome variable in Column (3) is *Ln(# Days to negative outcome)*, the natural logarithm of the number of days from the case filing date to the negative outcome date. A negative case outcome includes dismissal, conversion to Chapter 7, or pending more than nine months. *Treated* equals one if the total liability of a case is between $4 million and 7.5 million and filed before March 2020, or a case is filed under Subchapter V, and zero otherwise. *Post* is an indicator that equals one for cases filed between March 2020 and 2023Q3. The sample excludes SubV cases with liabilities larger than $7.5 million. *t*-statistics are reported in parentheses. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

	Reorganization Plan Confirmed	Ln(# Days to Confirmation)	Ln(# Days to negative outcome)
	(1)	(2)	(3)
Treated x Post	0.286***	-0.310***	0.167
	(6.07)	(-2.87)	(1.41)
Treated	-0.006	0.004	-0.092
	(-0.15)	(0.04)	(-0.92)
Post	0.086	-0.286*	-0.272
	(1.22)	(-1.67)	(-1.61)
Total Liability	0.007	0.020	-0.002
	(0.93)	(1.09)	(-0.12)
Secured Debt/Total Liability	-0.053*	0.111	-0.108
	(-1.73)	(1.54)	(-1.45)
Total Asset	0.000	0.000	-0.001
	(0.95)	(0.35)	(-0.46)
Jointly Filed Case	0.047	0.137**	0.249***
	(1.46)	(2.00)	(3.03)
# Secured Creditors	0.006***	0.010***	0.025***
	(3.41)	(2.75)	(5.90)
# Unsecured Creditors	-0.001***	0.000	0.001*
	(-3.42)	(0.43)	(1.74)
Year FE	Yes	Yes	Yes
SIC FE	Yes	Yes	Yes
Court FE	Yes	Yes	Yes
Number of observations	1878	543	1319
R^2	0.148	0.443	0.234

Table 9: Subchapter V, plan recovery rate for general unsecured creditors - RDD sample, 2020-2023

This table presents case-level 2SLS regression results estimating regression discontinuity design. The outcome variable *% Recovery rate*, which is the actual percentage of recovery rate for general unsecured creditors stated in the reorganization plan for cases with confirmed plans and the assumed percentage of recovery rate for general unsecured creditors for cases without confirmed plans. *Sub V* is a dummy indicating whether a case is filed under Subchapter V. *Sub V Hat* is the predicted Sub V from the 1st-stage regression. *BelowCutoff* is a dummy variable, which equals one if the liability of a case is below $7.5 million and zero otherwise. *p(Total liability-Cutoff liability)* is the polynomials of the assignment variable, which is the total liability minus $7.5 million. The sample excludes SubV cases with liabilities larger than $7.5 million. Panel A uses cases with liabilities between $4 million and $11 million. Panel B uses cases with liabilities between $6 million and $9 million. *t*-statistics are reported in parentheses. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

Panel A: Cases with liabilities between $4 million and $11 million

	% Recovery rate for general unsecured creditors						
% Recovery rate assumed for non-confirmed case	0%	10%	20%	30%	40%	50%	
	1st-stage	2nd-stage					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sub V Hat		0.096*	0.069	0.042	0.015	-0.012	-0.039
		(1.85)	(1.46)	(0.97)	(0.37)	(-0.32)	(-1.05)
BelowCutoff	0.497***						
	(7.25)						
p(Total liability-Cutoff liability)	-0.002						
	(-0.05)						
BelowCutoff x p(Total liability-Cutoff liability)	-0.002						
	(-0.04)						
Secured Debt/Total Liability	-0.165***	0.005	0.014	0.022	0.030	0.039	0.047**
	(-4.06)	(0.15)	(0.45)	(0.79)	(1.18)	(1.59)	(1.98)
Total Asset	-549.915	1035.723***	965.514***	895.305***	825.096***	754.888***	684.679**
	(-1.08)	(2.64)	(2.70)	(2.74)	(2.73)	(2.63)	(2.43)
Jointly Filed Case	-0.040	0.139***	0.130***	0.121***	0.112***	0.103***	0.094***
	(-0.86)	(3.82)	(3.93)	(4.00)	(4.00)	(3.88)	(3.61)
# Secured Creditors	0.005**	0.001	0.001	0.000	-0.000	-0.001	-0.001
	(2.22)	(0.73)	(0.49)	(0.19)	(-0.16)	(-0.56)	(-0.97)
# Unsecured Creditors	0.001***	-0.001*	-0.001*	-0.001*	-0.000	-0.000	-0.000
	(2.63)	(-1.88)	(-1.81)	(-1.69)	(-1.52)	(-1.27)	(-0.97)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Court FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Polynomial Degree	1	1	1	1	1	1	1
R^2		0.025	0.022	0.022	0.027	0.039	0.056
Observations	886	886	886	886	886	886	886
1st-stage *F*-test	71.99						

Panel B: Cases with liabilities between $6 million and $9 million

	% Recovery rate for general unsecured creditors					
% Recovery rate assumed for non-confirmed case	0%	10%	20%	30%	40%	50%
1st-stage	2nd-stage					
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sub V Hat	0.158**	0.122*	0.087	0.051	0.015	-0.020
	(1.98)	(1.68)	(1.30)	(0.83)	(0.26)	(-0.35)
BelowCutoff	0.504***					
	(4.58)					
p(Total liability-Cutoff liability)	-0.018					
	(-0.17)					
BelowCutoff x p(Total liability-Cutoff liability)	-0.014					
	(-0.11)					
Secured Debt/Total Liability	-0.124	0.087	0.078	0.069	0.060	0.051	0.043
	(-1.62)	(1.40)	(1.37)	(1.33)	(1.25)	(1.13)	(0.96)
Total Asset	1452.708	303.007	775.968	1248.929	1721.890	2194.852	2667.813
	(0.41)	(0.11)	(0.31)	(0.54)	(0.80)	(1.07)	(1.34)
Jointly Filed Case	-0.077	0.147**	0.144**	0.140***	0.136***	0.132***	0.129***
	(-0.96)	(2.29)	(2.45)	(2.60)	(2.73)	(2.80)	(2.79)
# Secured Creditors	0.004	-0.007	-0.006	-0.004	-0.003	-0.002	-0.001
	(0.72)	(-1.63)	(-1.48)	(-1.27)	(-1.01)	(-0.68)	(-0.30)
# Unsecured Creditors	0.001**	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(1.97)	(-0.61)	(-0.59)	(-0.55)	(-0.49)	(-0.42)	(-0.32)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Court FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Polynomial Degree	1	1	1	1	1	1	1
R^2		0.061	0.050	0.042	0.038	0.044	0.060
Observations	283	283	283	283	283	283	283
1st-stage *F*-test	33.05						

Table 10: Subchapter V, post-bankruptcy survival - RDD sample, 2020-2023

This table presents case-level 2SLS regression results estimating regression discontinuity design. The outcome variable *Active Status*, which is the survival status as of December 2023 for firms filed for Chapter 11 between March 2020 and September 2023. *Sub V* is a dummy indicating whether a case is filed under Subchapter V. *Sub V Hat* is the predicted Sub V from the 1st-stage regression. *BelowCutoff* is a dummy variable, which equals one if the liability of a case is below $7.5 million and zero otherwise. *p(Total liability-Cutoff liability)* is the polynomials of the assignment variable, which is the total liability minus $7.5 million. The sample excludes SubV cases with liabilities larger than $7.5 million. Columns (1) and (2) use cases with liabilities between $4 million and $11 million. Columns (3) and (4) use cases with liabilities between $6 million and $9 million. *t*-statistics are reported in parentheses. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

	Active status as of December 2023			
	1st-stage	2nd-stage	1st-stage	2nd-stage
	(1)	(2)	(3)	(4)
Sub V Hat		0.220***		0.073
		(2.75)		(0.60)
BelowCutoff	0.496***		0.504***	
	(7.23)		(4.58)	
p(Total liability-Cutoff liability)	-0.002		-0.018	
	(-0.06)		(-0.17)	
BelowCutoff x p(Total liability-Cutoff liability)	-0.002		-0.014	
	(-0.06)		(-0.11)	
Secured Debt/Total Liability	-0.168***	-0.071	-0.124	-0.090
	(-4.10)	(-1.39)	(-1.62)	(-0.95)
Total Asset	-553.067	841.775	1452.708	-2.3e+03
	(-1.08)	(1.40)	(0.41)	(-0.55)
Jointly Filed Case	-0.041	0.070	-0.077	0.097
	(-0.87)	(1.26)	(-0.96)	(0.99)
# Secured Creditors	0.005**	0.007***	0.004	0.003
	(2.17)	(2.69)	(0.72)	(0.42)
# Unsecured Creditors	0.001***	-0.000	0.001**	0.001
	(2.59)	(-0.39)	(1.97)	(1.02)
Year FE	Yes	Yes	Yes	Yes
SIC FE	Yes	Yes	Yes	Yes
Court FE	Yes	Yes	Yes	Yes
Sample	[$4 million: $11 million]		[$6 million: $9 million]	
Polynomial Degree	1	1	1	1
R^2		0.051		0.028
Observations	882	882	283	283
1st-stage *F*-test	72.06		33.05	