

Can Small Businesses Survive Chapter 11?

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ABSTRACT

A majority of small U.S. businesses attempting to reorganize in bankruptcy fail to do so. Subchapter V of Chapter 11 (SubV) streamlines bankruptcy for small firms by reducing bankruptcy costs and negotiation frictions, and enables entrepreneurs to retain ownership. We show that many businesses reorganize under SubV that otherwise would liquidate. Creditor recoveries and postbankruptcy survival rates are at least as high in SubV as in traditional Chapter 11s. Our results show the increase in reorganizations is not associated with continuation of unviable firms, and that creditors are not harmed by a shift in bargaining power toward small business owners.

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, with the aim of enabling distressed firms to reorganize when creditors might otherwise force a liquidation, but that may lead to excessive

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reorganization of unviable firms. Empirical studies of large U.S. companies filing for bankruptcy show that liquidations are rare, with most firms able to emerge from bankruptcy and continue some or all of their operations.¹

At the same time, the ability of small businesses to avoid liquidation and emerge from Chapter 11 has been extremely limited. In response to this problem, the Small Business Reorganization Act of 2019 (SBRA) established a new subchapter of Chapter 11—Subchapter V (SubV)—to streamline the bankruptcy process for small businesses. In this paper, we examine whether SubV alters bankruptcy outcomes and the balance of bargaining power in small business bankruptcies. Using SubV's liability threshold of \$7.5 million for eligibility to use this new procedure, we employ a regression discontinuity design (RDD) and find that SubV more than doubles the probability of successful reorganization for eligible firms. Importantly, we also find that unsecured creditor recoveries are nearly 12 percentage points higher in SubV cases, which shows that the reform did not simply redistribute value away from creditors. Tracking firms over time after exiting bankruptcy, we find that firms using SubV have a 21 percentage point higher probability of survival in the years following their bankruptcy. Taken together, these results suggest that lowering frictions in small business bankruptcy allows significantly more small businesses to survive financial distress without harming creditor recoveries.

Prior to the introduction of SubV, 70% of small businesses entering bankruptcy over the period 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 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 reorganization of an insolvent firm means that the prebankruptcy equity holders are unlikely to retain their ownership. However, many small businesses would cease to exist without the contribution from their prebankruptcy owners' human capital (Rajan (2012)).

Motivated by models of the restructuring of distressed firms, we identify three key changes under SubV that directly reduce frictions in the negotiation process for eligible firms: (i) the ability to confirm a plan that deviates from absolute priority by preserving prebankruptcy owners' equity stake, even when dissenting creditors do not receive a 100% recovery; (ii) removal of costly and time-consuming requirements, such as the appointment of a creditors' committee and distribution of a disclosure statement; (iii) appointment of a SubV

¹ Firms survive as an ongoing business by confirming a reorganization plan or by selling the firm as a going concern. See Altman, Hotchkiss, and Wang (2019), Foroughi et al. (2025), and Hotchkiss, Thorburn, and Wang (2024).

² These figures are based on filing statistics from the Federal Judicial Center (FJC) for all business bankruptcy cases with less than \$7.5M in total liabilities.

Trustee to advise on and mediate the negotiation process, reducing information and coordination problems. These substantial changes are designed to lower the otherwise prohibitive fixed costs of bankruptcy and expedite the process, but potentially change the balance of negotiating power in bankruptcy. We use this setting to examine how the introduction of SubV affects bankrupt firms' ability to confirm a reorganization plan, unsecured creditor recoveries, and postbankruptcy 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 2024, we find that the total quarterly number of filings decreases with the onset of the COVID-19 pandemic in 2020Q2, consistent with Wang, Yang, and Jiang (2022). The decline in total filings is similar for both businesses eligible for SubV—those with less than \$7.5 million in liabilities³—and businesses above this threshold. As a result, it does not appear that SubV attracted large numbers of firms into the bankruptcy system in its first years of existence. However, among firms with less than \$7.5 million in liabilities, the proportion filing for Chapter 11 rises from about 18% to 24% after the introduction of SubV, suggesting that SubV may have induced some eligible firms to use Chapter 11 that otherwise would not have done so. Strikingly, more than 75% of small businesses entering Chapter 11 elect to use SubV instead of a traditional Chapter 11, which suggests that the majority of small firms seeking to reorganize in bankruptcy have adopted SubV. At the same time, among firms just above the eligibility threshold (those with \$7.5 million to \$15 million in liabilities), we do not see a change in the share of firms using Chapter 11 after 2020Q2 (see Figure 1).

We provide a baseline comparison of SubV to non-SubV cases by estimating ordinary least squares (OLS) regressions in which the dependent variable is an indicator for whether the debtor successfully reaches confirmation of a plan. If a plan is not confirmed, the case is either converted to Chapter 7 liquidation or dismissed from court, in which case the firm likely goes out of business since it does not get debt relief (Morrison (2007), Iverson (2018)). Using all Chapter 11 bankruptcies from 2020 to 2024 with total liabilities less than \$15 million, we show that SubV cases are 18.4 percentage points more likely to have a confirmed plan, after controlling for other observables. This is a significant economic difference relative to the baseline probability of confirming a plan of only 31.9%. 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, significantly reducing the overall costs of bankruptcy (Dou et al. (2021)).

While these baseline results are helpful to establish important differences in outcomes between SubV and traditional Chapter 11, it is possible that

³ Firms with more than \$7.5 million in total noncontingent liabilities cannot use SubV. This threshold was originally set to \$2.725 million but 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. We hereafter refer to reported total liabilities as “liabilities” and for brevity refer to the SubV eligibility threshold as “noncontingent liabilities.”

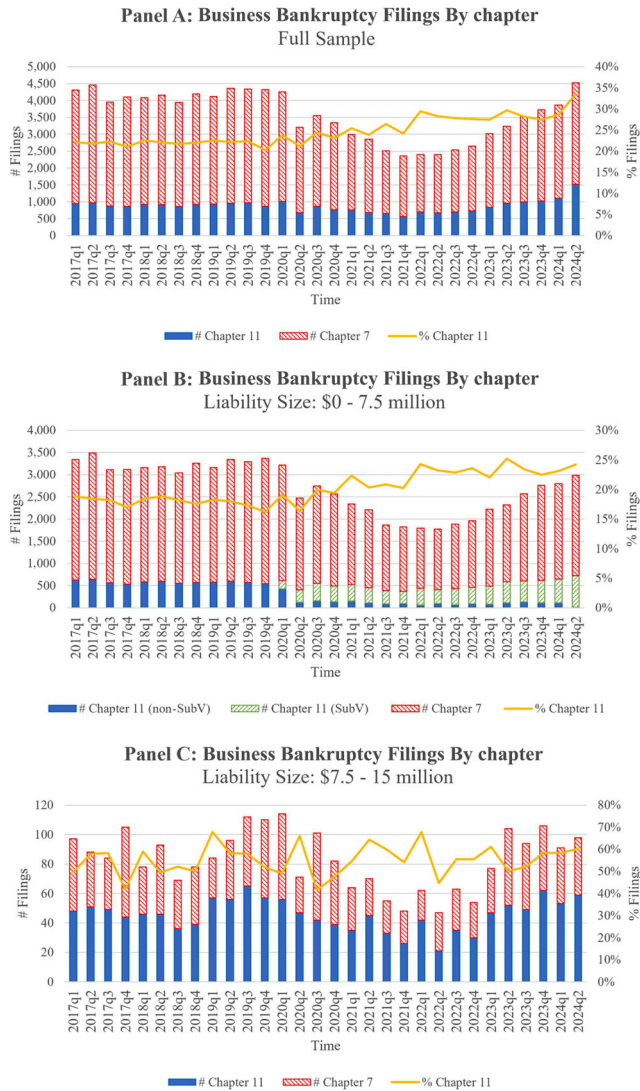


Figure 1. Time trend of Chapter 11 and 7 bankruptcy filings. The figure plots the time trend of Chapter 11 and 7 filings from 2017 to 2024. The dark blue and striped green (striped red) histogram bars represent the number of Chapter 11 (7) filings. The orange line represents the percentage of Chapter 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 nonlead cases, cases transferred to another court, and nonbusiness cases. (Color figure can be viewed at wileyonlinelibrary.com)

unobserved differences between SubV and non-SubV firms drive these differences. We therefore employ an RDD that exploits the fact that only firms with less than \$7.5 million in total noncontingent liabilities can use 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 noncontingent liabilities to focus on 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 by between 32 and 49 percentage points, relative to firms just above the threshold that successfully reorganize only 17% of the time. Thus, SubV more than doubles the probability of reorganization for firms near the \$7.5 million threshold. We further find that SubV cases reach confirmation 35% faster than non-SubV cases. Focusing only on firms that are eligible for SubV, we also provide descriptive evidence that firms that elect to use SubV tend to be those with more complex capital structures, that is, those for which coordination problems among creditors might make agreement on a restructuring more difficult (Bolton and Scharfstein (1996), Ayotte and Morrison (2009)).

As an alternative to RDD, these results are robust to using a difference-in-differences (diff-in-diff) approach comparing cases with greater than \$7.5 million in liabilities (the “never treated” group) to those below the threshold. For this analysis, we use the sample of firms with \$4 million to \$11 million in total liabilities from January 2017 to June 2024.⁵ After February 2020, only those with less than \$7.5 million in noncontingent liabilities have SubV available as an option. Accordingly, we define “treated” firms as those with less than \$7.5 million in total liabilities. The diff-in-diff interaction *Treated* x *Post* produces an “intent to treat” estimate because not all “treated” firms use SubV, either because they choose not to or because they are not aware it exists.⁶ This pushes the estimated impact of SubV down somewhat, but we continue to find that firms with less than \$7.5 million in total liabilities are 12.5 percentage points more likely than control firms to have their cases confirmed after February 2020.

The RDD and diff-in-diff estimates are intended to capture the causal effect of SubV on bankruptcy case outcomes. However, our estimates could be biased upward if the introduction of SubV induces higher-quality firms—those that would have successfully restructured out of court even absent SubV—to enter

⁴ The eligibility threshold excludes contingent and unliquidated liabilities. Contingent liabilities are those that a company might owe, depending on the outcome of future uncertain events, such as a lawsuit. We collect contingent liabilities from Schedules D and E/F to the filing petition for each case, as we discuss in detail in Section II.A.

⁵ Since data on noncontingent liabilities are not available for cases filed before 2020, we select the diff-in-diff sample based on total liabilities.

⁶ Bernstein et al. (2024) show that knowledge of bankruptcy, and SubV in particular, is low among small business owners.

bankruptcy when they otherwise would not have filed. As shown in Figure 1 (discussed above), it does not appear that SubV induced a large number of firms to enter bankruptcy. We further show that there is no excess bunching of firms below the \$7.5 million cutoff, and all observable firm characteristics are smooth across the threshold. If anything, firms that file for SubV are more highly distressed than firms in regular Chapter 11, making it harder to successfully reorganize and potentially biasing our estimates downward. Although these tests fail to provide evidence of significant selection, we cannot rule out selection into bankruptcy entirely and therefore perform an exercise demonstrating that an unrealistically large degree of selection into bankruptcy would be needed to nullify our main results.

While these results show that SubV has achieved its goal of enabling more small businesses to reorganize, they also raise concerns as to whether the balance has tipped too far, increasing the bargaining power of small business debtors at the expense of unsecured creditors. To address these concerns, we examine expected recovery rates for unsecured creditors for SubV versus non-SubV Chapter 11 cases. Using court documents (plans of reorganization/liquidation, disclosure statements, and final trustee reports for converted cases), we collect expected recovery rates for cases filed between March 2020 and June 2024 with noncontingent liabilities between \$4 million and \$11 million that confirm a plan or are liquidated. Recovery rates for dismissed cases are not observable, and thus, we classify dismissed cases into two categories based on information in the motion for dismissal—we assign “high” recovery to cases dismissed because a settlement is reached and “low” recovery to the remaining cases (primarily those for which operations have ceased or remaining assets have little value). We assume that the recovery rate for dismissed cases in the high (low) category is the average recovery rate of cases with confirmed reorganization plans (converted cases). Using the same RDD framework as above, we estimate that unsecured creditor recoveries are 11.9 percentage points higher in SubV relative to similar cases just above the eligibility threshold. Rather than a redistribution of value away from creditors, higher expected recoveries in SubV are consistent with bargaining outcomes in which the gains from avoiding liquidation and lower costs of the negotiating process are shared between creditors and prebankruptcy 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. To the extent this is the case, SubV may simply prolong the existence of “zombie” firms when liquidation would better preserve value. This further implies that creditors’ ultimate recoveries may not reach those projected at the time of reorganization. To study this concern, we examine how SubV affects postbankruptcy failure rates using our RDD setup. To measure survival, we manually collect the firm’s most recent operating status based on state-level business registry records from OpenCorporate and LexisNexis as of December 2024. We find that SubV *increases* firm survival by an estimated 21 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 million to \$9 million.

To summarize, our analyses show that a reduction in the frictions that impede bankruptcy restructuring for small firms, as is implemented with SubV, can dramatically increase 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 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 postbankruptcy performance as consistent with excessive reorganization of unviable firms (Hotchkiss (1995)). More recently, Hotchkiss, Thorburn, and Wang (2024) 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 et al. (2021), Antill (2022)). The introduction of SubV studied in this paper provides an opportunity to demonstrate directly the effect of a more prodebtor system for resolving distress of small firms. The closest study to ours is Kumar (2023), who uses an RDD setting during the months shortly after the 2020 introduction of SubV as a natural experiment to show that plan confirmations increase for small firms with more secured debt and multiple creditors.

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 predistress 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.⁷ 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.⁸

⁷ 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.

⁸ Studies explaining the incidence of formal bankruptcy versus out-of-court restructurings include, among others, Sautner and Vladimirov (2018) and Giambona, Lopez-de Silanes, and Matta (2022). Notably, Donaldson et al. (2022) show that policies that make bankruptcy attractive to equity owners can at the same time facilitate less costly private workouts.

While we do not directly study out-of-court restructuring or ex ante effects on credit access, this literature suggests that the introduction of SubV is likely to 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 entrepreneurship in the U.S. economy overall. Based on bankruptcy filings from 2015 to 2024, 88% of all corporate filings have liabilities below \$7.5 million, so most business bankruptcies are eligible to use SubV. Small businesses have relatively high failure rates,⁹ 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 reallocating the assets of liquidated small businesses is difficult in many instances, leading to low utilization of these assets. As small businesses become aware of the SubV option, some will likely utilize the bankruptcy system as a path to restructure their business rather than simply shutting down.

The rest of the paper is organized as follows: Section I presents the economic framework and institutional background of SubV. Section II describes the data and sample. Section III presents the results on SubV case outcomes and duration. Section IV presents the results on creditor recoveries and firm post-bankruptcy survival. Section V provides further discussion of causal inference and threats to identification. Finally, Section VI concludes.

I. Economic Framework and Institutional Background of SubV

In this section, we briefly discuss some of the economic frictions affecting small businesses that attempt to use Chapter 11 to reorganize. We then lay out the main changes that SubV makes to Chapter 11 and discuss how these changes alleviate specific frictions relevant to small businesses' ability to reorganize.¹⁰

A. 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 legal and court fees. In addition, sufficient working capital is needed to run the business during the bankruptcy process. Larger firms are more likely to access the liquidity needed to cover these costs, since the fixed costs

⁹ The average annual firm death rate from 2017 to 2021 is 8.1% based on Business Dynamics Statistics data from the U.S. Census.

¹⁰ 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>.

of bankruptcy are smaller in comparison to their assets. In contrast, fixed bankruptcy costs 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 that 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, in the case of 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 rehire 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—and may be statutorily unable—to own the equity of those businesses. Thus, if absolute priority is followed and the prebankruptcy equity ownership is eliminated, it is more likely that the small firm will shut down because it lacks a dedicated owner/manager to run it.

Finally, coordination problems and conflicts of interest can introduce bargaining frictions that 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. Furthermore, 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 (e.g., a secured bank lender) when doing so does 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 ultimately be more valuable.

B. Institutional Background on SubV

SubV directly addresses the frictions discussed in Section I.A by reducing bankruptcy costs, enabling owners to fully retain their equity without the agreement of impaired creditors, and by requiring the appointment of a “SubV trustee” who acts as an advisor and mediator throughout the bankruptcy process. Under the SBRA, effective February 19, 2020 and as 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 its 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, reduce the time in bankruptcy, and reduce the direct and indirect costs to the debtor (Dou et al. (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 can stay in possession of the business during bankruptcy and can continue to own and control the reorganized firm through a violation of absolute priority. When a confirmed plan is "nonconsensual" (i.e., without sufficient agreement from creditors), the company is required to pay all of its projected disposable income to creditors over a three- to five-year period.¹¹ The ability of the prebankruptcy owners to retain their stake can be important to preserving the firm's going concern value, 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.¹² 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.

¹¹ The idea that the prebankruptcy 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 nonconsensual plan, that is, without the bank's consent.

¹² 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 (2024)). SubV trustee fees are paid by the debtor.

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 doing so violates absolute priority. While we cannot independently observe the impact of individual provisions, each of these changes is expected to increase the probability of 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 liquidation.

II. Data and Sample

A. Regression Sample Selection

We start with the universe of all Chapter 11 cases (49,113 cases) filed between 2017Q1 and 2024Q2 from the FJC database of bankruptcy filings.¹³ 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 nonlead cases, cases transferred to another court, nonbusiness cases, cases filed by tax-exempt entities, single-asset real estate cases, and cases filed in 2024 with pending status. We also drop one case filed before 2020 as a non-SubV case that 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 (or noncontingent liabilities in the RDD sample) centered at \$7.5 million: (i) our baseline OLS analyses use 6,431 cases filed between 2020Q1 and 2024Q2 with total liabilities below \$15 million, (ii) our RDD design uses 999 cases filed between March 2020 and June 2024 with noncontingent liabilities between \$4 million and \$11 million, and (iii) our diff-in-diff analyses use 2,297 cases filed between 2017Q1 and 2024Q2 with total liabilities between \$4 million and \$11 million. As noted above, the \$7.5 million debt threshold for SubV eligibility excludes contingent and unliquidated liabilities. Accordingly, we hand-collect Schedules D and E/F from Public Access to Court Electronic Records (PACER) to more precisely measure SubV eligibility for firms in the RDD sample, where we focus most of our analysis.

B. Identifying SubV 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 2024. We also use LexisNexis and PACER case summaries to verify which cases are administered

¹³ The FJC database keeps records of all bankruptcy filings in the United States since 2008 and is updated quarterly. Data are publicly available at <https://www.fjc.gov/research/idb/bankruptcy-cases-filed-terminated-and-pending-fy-2008-present>.

¹⁴ We thank Ed Flynn of the ABI for providing this listing of SubV cases (Flynn (2020)).

under SubV.¹⁵ This results in a sample of 3,728 SubV cases from the 6,431 Chapter 11 cases filed between 2020Q1 and 2024Q2 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—real estate, eating and drinking places, business services, health services, and special trade contractors—comprise only 38% of all SubV cases.

III. SubV Case Outcomes and Duration

A. Adoption of SubV

As discussed in the introduction, corporate bankruptcies fell with the onset of the pandemic (Wang, Yang, and Jiang (2022)). 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. In Figure 1, Panel A, we observe that among firms that file for bankruptcy, a higher percentage of filings use Chapter 11 than Chapter 7 after the introduction of SubV, largely due to a drop in Chapter 7 cases.¹⁶ Panels B and C show that the increase in Chapter 11 cases comes from firms with less than \$7.5 million in liabilities, and that for these firms, SubV significantly displaces traditional Chapter 11 filings by the first full quarter following its February 2020 introduction.¹⁷ Despite the increase in the share of firms using Chapter 11 among firms potentially eligible to use SubV, in Section V we provide evidence that the introduction of SubV did not lead to significant changes in observable characteristics of SubV-eligible firms that choose to enter bankruptcy.

Concurrent with the enactment of SBRA, the onset of the pandemic may have decreased the viability of some small businesses that 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. In Figure 2, we plot the annual Census Business Dynamic statistics for establishment deaths based on firm-size groups. Noting that the year-2021 measure captures deaths from March 2020 to March 2021, which includes the start of the pandemic, establishment closures are surprisingly flat. We observe an in-

¹⁵ Shortly after the enactment of SBRA, a small number of cases already in Chapter 11 changed to SubV. In addition, early in the use of SubV, a small number of cases were determined as ineligible for SubV based on the court's assessment of noncontingent liabilities.

¹⁶ This finding is consistent with Kumar (2023), who uses FJC data to examine the early months after the enactment of SBRA and an RDD approach to show an increase in the likelihood of firms choosing to file for Chapter 11 rather than Chapter 7.

¹⁷ A relatively small share of firms that are eligible for SubV still choose to use Chapter 11. Early on, this was likely due to unawareness of the new law, although Figure 1 suggests that adoption was rapid. Firms may still choose traditional Chapter 11 because of the accelerated deadlines in SubV or the involvement of a SubV Trustee.

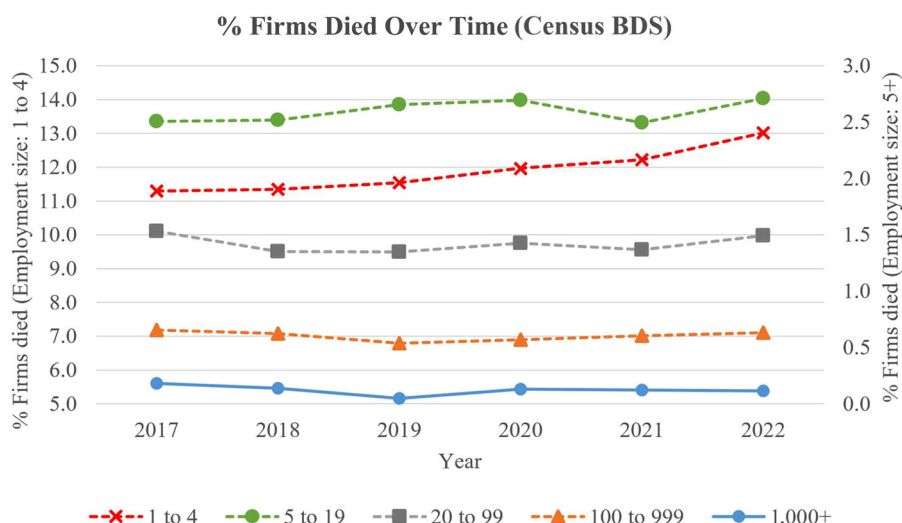


Figure 2. Firm death rate over time. The figure plots the percentage of firms that die over time from 2017 to 2022. Each year, deaths are measured through March of that year. The red line represents the death rate for firms with fewer than five employees. The green line represents the death rate for firms with five to 19 employees. The gray line represents the death rate for firms with 20 to 99 employees. The orange line represents the death rate for firms with 100 to 999 employees. The blue line represents the death rate for firms with more than 1,000 employees. Data source: Census Business Dynamics Statistics. (Color figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/jeb.12508))

crease in closures only for firms with fewer than five employees, and within that group the increase is only from 12% to just over 13%. This result is consistent with Crane et al. (2022), who find that business exit rates appeared lower than 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 firms in our analysis have between five and 19 employees (corresponding to the green line in Figure 2), firms for which we see no change in business exit rates in the Census data from March 2019 to March 2022. We interpret these statistics as indicating that the trends in filing rates that we observe are not confounded by a significant change in the number of companies choosing to close down out of court, but we return to this issue in Section V below.

Although a majority of firms below the eligibility threshold choose to use SubV, we can begin to understand the benefits of SubV by observing characteristics of firms that elect to use these procedures. In Internet Appendix Table IA.I, we use the sample of all Chapter 11 filings between March 2020 and June 2024 for firms with noncontingent liabilities between \$4 million and \$7.5 million and regress SubV usage on firm characteristics.¹⁸ All of these firms were eligible to use SubV, but 39% still chose a traditional Chapter 11. We find

¹⁸ The Internet Appendix may be found in the online version of this article.

that firms with a greater number and greater dispersion (as captured by the Herfindahl-Hirschman index (HHI)), of creditors are significantly more likely to choose SubV. While these are only correlations, the associations suggest that SubV helps alleviate some of the bargaining frictions present when creditors are dispersed (Bolton and Scharfstein (1996)). These findings are also consistent with Kumar (2023), who finds that firms with complex capital structures are more likely to use SubV. Overall, SubV appears especially impactful for firms for which bargaining with creditors is likely to be more complex, consistent with SubV trustees facilitating plan negotiations and with the removal of the unsecured creditors committee from the bankruptcy process.

B. Baseline Specification and Results

We now turn to our baseline analysis, which uses OLS regressions to examine outcomes and durations of cases filed under SubV. Specifically, we regress

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

where i refers to case and t to year, and y_i is either an indicator for the case outcome (*Confirmed_i*) or the number of days for case i to reach the outcome ($\text{Ln}(\# \text{ Days to Confirmation})$ or $\text{Ln}(\# \text{ Days to negative outcome})$). The variable *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 SubV and zero otherwise, and $X_{i,t}$ is a vector of control variables for case i —*Total Liability_{i,t}* (debtors' total liabilities), *Total Asset_{i,t}* (debtors' total assets), and *Leverage_{i,t}* (debtors' ratio of total liabilities to total assets), each reported at the time of bankruptcy—as well as three proxies for the complexity of negotiations—*Jointly Filed Case_{i,t}* (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}* (the ratio of secured over the total debt), and *Above 50 Creditors_{i,t}* (a dummy variable that equals one if case i has 50 or more creditors as reported in the voluntary petition and zero otherwise). Parameters ∂_j , δ_c , and γ_t again indicate industry (one-digit SIC), court, and filing year fixed effects.

For our baseline analyses, we use the 6,431 Chapter 11 cases filed between 2020Q1 and 2024Q2 with total liabilities below \$15 million. Table I reports summary statistics for this sample. We find that 31.9% of cases have confirmed plans, which we consider a positive outcome, with an average duration of 319 days. For other (negative) outcomes, 39.5% of cases are dismissed and 9.9% are converted to Chapter 7.¹⁹ The remaining 18.6% of cases have not been resolved but have been pending more than nine months, which we view as a

¹⁹ 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.

Table I
Summary Statistics: Baseline Sample, 2020 to 2024

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 June 2024 with total liabilities below \$15 million.

	Mean	Min	p50	Max	SD	N
Case Outcome						
<i>Plan Confirmed</i>	0.319	0	0	1	0.466	6,431
<i>Dismissed</i>	0.395	0	0	1	0.489	6,431
<i>Converted to Ch 7</i>	0.099	0	0	1	0.299	6,431
<i>Case Pending</i>	0.186	0	0	1	0.389	6,431
# Days to Confirmation	319	24	265	1,484	201	2,053
# Days to Dismissal	213	1	164	1,462	183	2,541
# Days to Conversion	288	1	200	1,417	267	639
Case Characteristics						
Total Liability	2,674,549	45	1,475,554	14,994,473	3,028,607	6,431
Total Asset	2,892,297	0	531,605	1,000,000,000	21,696,837	6,431
Leverage	5.551	0.107	1.194	69.791	12.829	6,431
Secured Debt / Total Liability	0.508	0	0.549	1	0.404	6,431
Sub V	0.580	0	1	1	0.494	6,431
Jointly Filed Case	0.065	0	0	1	0.246	6,431
Above 50 Creditors	0.139	0	0	1	0.346	6,431

negative outcome given the median case duration of fewer than nine months for our baseline sample. The average debtor has total liabilities of \$2.7 million, a leverage ratio of 5.5, and a secured debt ratio of 50.8%.²⁰ More than half of the cases (58.0%) are administered under SubV. These small business cases also contrast with the large, complex cases typically examined in prior literature: only 6.5% of cases are jointly administered with other nonlead cases, and less than 14% have more than 50 creditors.

Table II, Panel A reports the OLS regression results for case outcomes. The coefficient estimates for *SubV* are positive and statistically significant across all four columns using different controls and fixed effects, suggesting that small business debtors who file their petitions under Sub V of Chapter 11 are more likely to have a plan confirmed. Economically, choosing SubV is associated with an 18 percentage point increase in the probability of confirming a plan. Larger and more complex cases also appear more likely to have a plan confirmed.

Table II 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 on *SubV* is negative and statistically significant in all four columns, suggesting that among small business cases that successfully confirm a plan, those that file under SubV complete the process much faster.

²⁰ We winsorize the leverage ratio at the 2.5% threshold throughout our empirical analyses to mitigate the effect of outliers. Our results are robust to winsorizing the leverage ratio at different thresholds (e.g., 1% or 5%).

Table II
Subchapter V, Case Outcome, and Duration: Baseline Sample, 2020 to 2024

This table presents case-level OLS regression results estimating the impact of Subchapter V on case outcome and duration. The sample covers Chapter 11 cases filed from March 2020 to June 2024 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. Standard errors are clustered at the county $\times$ year level. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

Panel A: Case Status

	<i>Plan Confirmed</i>			
	(1)	(2)	(3)	(4)
<i>Sub V</i>	0.219*** (18.26)	0.184*** (14.54)	0.187*** (14.78)	0.184*** (14.52)
<i>Total Liability</i>	0.023*** (10.86)	0.024*** (11.26)	0.018*** (7.79)	0.015*** (5.89)
<i>Total Asset</i>			0.015*** (3.93)	0.012** (2.15)
<i>Jointly Filed Case</i>			0.111*** (4.49)	0.106*** (4.25)
<i>Secured Debt/Total Liability</i>				0.016 (1.08)
<i>Leverage</i>				−0.000 (−0.25)
<i>Above 50 Creditors</i>				0.118*** (6.40)
Year FE	Yes	Yes	Yes	Yes
SIC FE	No	Yes	Yes	Yes
Court FE	No	Yes	Yes	Yes
Number of observations	6,431	6,426	6,426	6,426
R^2	0.115	0.169	0.174	0.181

Panel B: # Days to Confirmation

	<i>Ln(# Days to Confirmation)</i>			
	(1)	(2)	(3)	(4)
<i>Sub V</i>	−0.285*** (−9.67)	−0.262*** (−8.21)	−0.269*** (−8.31)	−0.268*** (−8.46)
<i>Total Liability</i>	−0.027*** (−7.51)	−0.027*** (−6.67)	−0.019*** (−3.92)	−0.005 (−0.83)
<i>Total Asset</i>			−0.028*** (−2.59)	−0.059*** (−3.66)
<i>Jointly Filed Case</i>			−0.010 (−0.23)	0.009 (0.19)

(Continued)

Table II—Continued

Panel B: # Days to Confirmation				
	Ln(# Days to Confirmation)			
	(1)	(2)	(3)	(4)
Secured Debt / Total Liability				−0.034 (−1.00)
Leverage				−0.006*** (−3.38)
Above 50 Creditors				−0.088** (−2.55)
Year FE	Yes	Yes	Yes	Yes
SIC FE	No	Yes	Yes	Yes
Court FE	No	Yes	Yes	Yes
Number of observations	2,053	2,050	2,050	2,050
R ²	0.114	0.199	0.205	0.215
Panel C: # Days to Negative Outcome				
	Ln(# Days to Negative Outcome)			
	(1)	(2)	(3)	(4)
Sub V	0.229*** (6.81)	0.175*** (5.03)	0.171*** (4.91)	0.166*** (4.73)
Total Liability	−0.005 (−0.94)	−0.002 (−0.41)	0.002 (0.37)	0.013* (1.80)
Total Asset			−0.023** (−2.35)	−0.052*** (−3.57)
Jointly Filed Case			0.311*** (4.88)	0.314*** (4.91)
Secured Debt / Total Liability				−0.083* (−1.75)
Leverage				−0.005*** (−3.04)
Above 50 Creditors				0.014 (0.25)
Year FE	Yes	Yes	Yes	Yes
SIC FE	No	Yes	Yes	Yes
Court FE	No	Yes	Yes	Yes
Number of observations	4,378	4,373	4,373	4,373
R ²	0.065	0.120	0.126	0.129

Economically, SubV cases reach confirmation 24% faster.²¹ Table II Panel C reports results using *Ln(# Days to negative outcome)* as the dependent variable. Interestingly, the coefficient estimates on *SubV* become positive and signifi-

²¹ Since these are log-linear models in which the independent variable of interest, *SubV*, is a dummy variable, the estimated impact of moving to SubV on time to confirmation is $100[\exp(\beta) - 1]$.

cant, 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 note that they only measure correlations. Firms that choose to use SubV may differ along several dimensions, which could lead to the differences we observe in this analysis.

C. Regression Discontinuity Design

Because filing under SubV is a choice of the small business debtor, we turn to an RDD as one means to address possible endogeneity. Debtors eligible to use SubV must have noncontingent liabilities below \$7.5 million.²² We collect contingent and unliquidated liabilities from Schedules D and E/F of bankruptcy court documents for all cases in our RDD sample, and subtract these amounts from total liabilities to measure noncontingent liabilities used for the SubV eligibility threshold. By definition, we should observe a discrete jump to a zero probability of a Sub V case above this eligibility threshold. However, we still observe 12 SubV cases with total noncontingent liabilities greater than \$7.5 million due to cases in which it appears the court has determined additional liabilities are contingent or unliquidated. Importantly, some firms below the threshold still choose to use traditional Chapter 11. We therefore use total *noncontingent liabilities* as the forcing variable for a fuzzy RDD, since the level of noncontingent liabilities does not entirely determine SubV usage for smaller firms.

We implement our fuzzy RDD by instrumenting a SubV case with the debt size cutoff, *BelowCutoff*, which equals one if a small business firm's noncontingent liabilities are below \$7.5 million and zero otherwise. That is, *BelowCutoff*_{*i*} for firm *i* is defined as:

$$\text{BelowCutoff}_i = \begin{cases} 1, & \text{Noncontingent liability}_i \leq \$7.5 \text{ million,} \\ 0, & \text{Noncontingent liability}_i > \$7.5 \text{ million,} \end{cases}$$

where *Noncontingent 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 case outcomes should be continuous around the debt size cutoff in the absence of SubV. We next employ the two-stage least squares (2SLS) regression:

$$\begin{aligned} \text{First stage: } \text{Sub V}_i &= \alpha + \text{BelowCutoff}_i + f(\text{Noncontingent liability} - \$7.5 \text{ million}) \\ &\quad + \text{BelowCutoff}_i \times f(\text{Noncontingent liability} - \$7.5 \text{ million}) \\ &\quad + X_{i,t} + \partial_j + \delta_c + \gamma_t + \epsilon_{i,j,c,t}, \end{aligned}$$

²² 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 therefore hold the overall effects of the COVID-19 disruption constant, which implies that they compare bankrupt firms 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.

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

where y_i is either an indicator for the case outcome (*Confirmed_i*) or the time to reach the outcome for case i , $\widehat{\text{Sub } V_i}$ equals one if case i is filed under SubV and zero otherwise, $\widehat{\text{Sub } V_i}$ is the fitted value of $\text{Sub } V_i$ from the first-stage regression, and f is a polynomial function of *Noncontingent 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)). The vector $X_{i,t}$ includes the following control variables: *Total Asset_{i,t}*, *Leverage_{i,t}*, *Secured Debt/Total Liability_{i,t}*, *Jointly Filed Case_{i,t}*, # *Secured Creditors_{i,t}*, and # *Unsecured Creditors_{i,t}*. The parameters ∂_j , δ_c , and γ_t indicate industry, court, and filing year fixed effects.²³ The number of secured and unsecured creditors is obtained from claims registers filed with the bankruptcy court.²⁴ We cluster standard errors at the county $\times$ year level to account for potential local economic shocks.

For the RDD analysis, we use our sample of 999 Chapter 11 cases filed between March 2020 and June 2024 with noncontingent liabilities between \$4 million and \$11 million. For descriptive purposes, Figure 3 shows the use of SubV (Panel A) and case outcomes (Panels B and C) above and below the cutoff of \$7.5 million in noncontingent 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 indicate whether a plan is confirmed, but for a small set of cases a liquidation plan rather than a reorganization plan 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 43 SubV cases and 53 non-SubV cases with liquidating plans, and group their outcomes together with cases that are converted to Chapter 7 liquidations. Table III reports summary statistics for the RDD sample, separately for SubV (Panel A) and non-SubV (Panel B) cases. Over 46% of SubV cases have their reorganization plans confirmed, while only 17% of non-SubV cases have their plans confirmed. On average, noncontingent liabilities of SubV cases are somewhat lower (\$5.6 million) than those 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 leverage ratio, share

²³ For cases reporting zero total assets in the FJC data for each year, we impute the total assets using the correlation between total assets and total liabilities derived from cases with available information.

²⁴ Claims information is not available from claims registers for some cases. For these cases, we impute the number of secured and unsecured creditors using the correlation in cases with available information between total liabilities and each creditor type. In addition, for cases that have a positive secured debt ratio but lack filed secured claims, we impute the number of secured creditors based on the correlation between the secured debt ratio and the proportion of secured creditors in cases in which this information is available. We also winsorize the number of secured creditors and unsecured creditors at the 1% level throughout our empirical analyses to mitigate the effect of outliers.

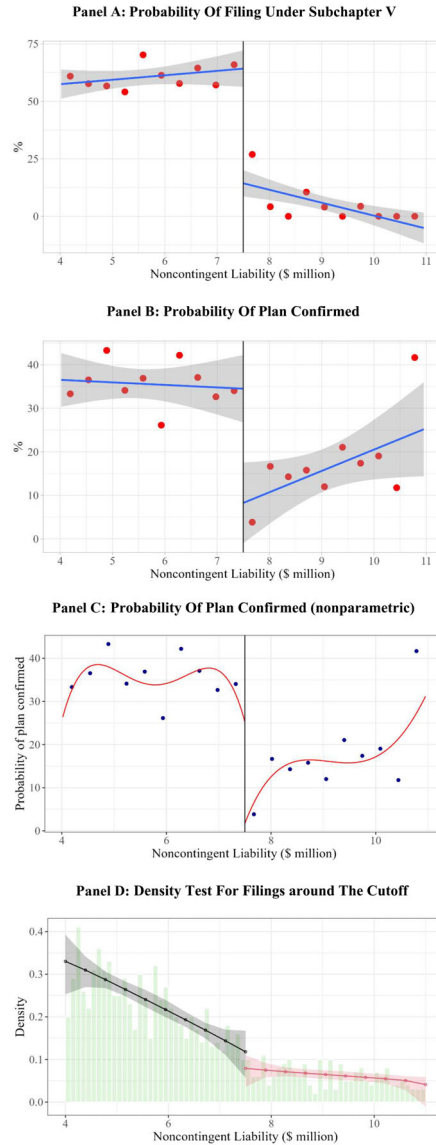


Figure 3. Probability of filing bankruptcy under Subchapter V and case outcome. The figure plots the distribution of Subchapter V filings and case outcomes around the cutoff. The x-axis presents the forcing variable Noncontingent Liability, measured in millions of USD. The y-axis corresponds to the probability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

Table III
Summary Statistics: RDD Sample, 2020 to 2024

This table presents summary statistics for outcomes and characteristics of Chapter 11 cases filed from March 2020 to June 2024 with total noncon-
tingent liabilities between \$4 million and \$11 million. *Sub V* is a dummy indicating whether a case is filed under Subchapter V.

	Mean	Min	p50	Max	SD	N
Panel A: Sub-V Cases						
Case Outcome						
Reorganization Plan Confirmed	0.463	0	0	1	0.499	486
Dismissed	0.222	0	0	1	0.416	486
Converted to Ch 7 or Liquidating Plan	0.257	0	0	1	0.438	486
Case Pending	0.058	0	0	1	0.233	486
# Days to Confirmation	246	32	206	903	145	225
# Days to Dismissal	202	22	176	731	137	108
# Days to Conversion	252	16	182	1,280	226	125
Case Characteristics						
Total Noncontingent Liability	5,596,338	4,019,000	5,512,953	9,846,433	1,040,233	486
Total Asset	4,142,985	0	1,914,048	208,600,000	11,156,985	486
Secured Debt / Total Liability	0.478	0	0.509	1	0.366	486
Leverage	8.389	0.258	1.648	107,442	20,842	486
Jointly Filed Case	0.086	0	0	1	0.281	486
# Secured Creditors	4.575	0	3	16	3.87	486
# Unsecured Creditors	14.245	0	9	88	16.83	486
% Recovery rate for unsecured creditors						
Cases with recovery information	0.256	0	0.069	1	0.353	322
Cases with confirmed plans	0.328	0	0.128	1	0.377	208
Converted or liquidated cases	0.124	0	0.061	1	0.259	114
Postbankruptcy firm survival						
Active Status as of December 2024	0.716	0	1	1	0.451	486

(Continued)

Table III—Continued

	Mean	Min	p50	Max	SD	N
<i>Panel B: Non-SubV cases</i>						
Case Outcome						
Reorganization Plan Confirmed	0.173	0	0	1	0.379	513
Dismissed	0.450	0	0	1	0.498	513
Converted to Ch 7 or Liquidating Plan	0.296	0	0	1	0.457	513
Case Pending	0.080	0	0	1	0.271	513
# Days to Confirmation	329	58	297	1,046	173	89
# Days to Dismissal	219	15	176	1,108	177	231
# Days to Conversion	241	27	221	848	159	152
Case Characteristics						
Total Noncontingent Liability	6,896,274	4,033,139	6,500,000	10,952,113	2,026,242	513
Total Asset	8,050,509	0	4,900,146	197,300,000	15,697,771	513
Secured Debt / Total Liability	0.634	0	0.823	1	0.391	513
Leverage	4.937	0.258	0.974	107,442	16,063	513
Jointly Filed Case	0.099	0	0	1	0.3	513
# Secured Creditors	3.262	0	2	16	2.932	513
# Unsecured Creditors	9.602	0	4	88	14.037	513
% Recovery rate for unsecured creditors						
Cases with recovery information	0.334	0	0.070	1	0.408	227
Cases with confirmed plans	0.608	0	1	1	0.433	83
Converted or liquidated cases	0.176	0	0.061	1	0.296	144
Postbankruptcy firm survival						
Active Status as of December 2024	0.507	0	1	1	0.5	513

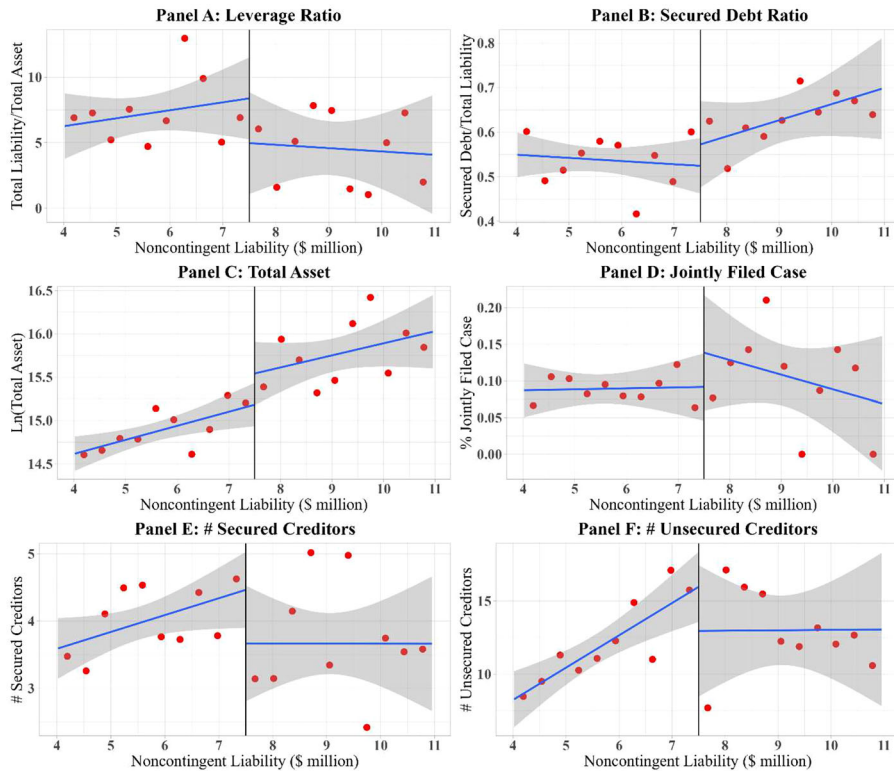


Figure 4. Distribution of case characteristics. The figure plots the distribution of case characteristics around the cutoff. The x-axis presents the forcing variable Noncontingent Liability, measured in millions of USD. The y-axis corresponds to the leverage ratio (Panel A), the secured debt ratio (Panel B), the natural logarithm of total assets (Panel C), the percentage of jointly filed cases (Panel D), the number of secured creditors (Panel E), and the number of unsecured creditors (Panel F). Each dot represents the average case characteristics for each of the 20 bins. The vertical line represents the cutoff amount of Noncontingent Liability, \$7.5 million. The solid lines represent the fitted values of a first-degree polynomial of Noncontingent Liability estimated on the intervals \$4 million to \$7.5 million and \$7.5 million to \$11 million. (Color figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com))

of secured debt, total assets, jointly filed cases, number of secured creditors, and number of unsecured creditors, are smooth across the eligibility threshold, consistent with the necessary assumption that firm characteristics do not discontinuously jump at the \$7.5 million level (Figure 4).

Table IV reports the RDD regression results for case outcomes (Panel A). In addition to analyses for cases with noncontingent liabilities between \$4 million and \$11 million, we also report results for cases with noncontingent liabilities between \$6 million and \$9 million, limiting the sample to firms closer to the threshold. The coefficient estimates on *BelowCutoff* in the first stage are positive and significant in both columns (1) and (3), with firms below the cutoff being 41.9 (37.1) percentage points more likely to use SubV than those above

Table IV
Subchapter V and Case Outcome: RDD Sample, 2020 to 2024

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 SubV from the first-stage regression. *BelowCutoff* is a dummy variable that equals one if noncontingent liabilities are below \$7.5 million and zero otherwise. *Distance to Cutoff* is the polynomial of the assignment variable, which is the noncontingent liability minus \$7.5 million. *t*-Statistics are reported in parentheses. Standard errors are clustered at the county $\times$ year level. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

	<i>Reorganization Plan Confirmed</i>			
	First Stage (1)	Second Stage (2)	First Stage (3)	Second Stage (4)
<i>Sub V Hat</i>		0.320*** (4.37)		0.495*** (3.65)
<i>BelowCutoff</i>	0.419*** (6.88)		0.371*** (3.23)	
<i>Distance to Cutoff</i>	-0.032 (-1.38)		-0.118 (-1.25)	
<i>BelowCutoff</i> $\times$ <i>Distance to Cutoff</i>	0.034 (1.13)		0.174 (1.44)	
<i>Total Asset</i>	-0.053*** (-3.29)	-0.015 (-0.81)	-0.097*** (-3.21)	0.018 (0.50)
<i>Secured Debt/Total Liability</i>	-0.109** (-2.55)	-0.037 (-0.86)	-0.148* (-1.87)	0.034 (0.45)
<i>Leverage</i>	-0.002* (-1.73)	-0.002 (-1.32)	-0.006*** (-2.69)	0.003 (1.03)
<i>Jointly Filed Case</i>	-0.046 (-1.02)	0.114* (1.96)	-0.111 (-1.59)	0.047 (0.47)
# <i>Secured Creditors</i>	0.015*** (3.67)	0.005 (0.96)	0.016** (1.97)	-0.012 (-1.29)
# <i>Unsecured Creditors</i>	0.001 (1.34)	-0.000 (-0.15)	-0.000 (-0.13)	0.001 (0.75)
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 (Local Linear)	Yes	Yes	Yes	Yes
R^2		0.084		0.111
Observations	993	993	329	329
First-stage <i>F</i> -test	71.23		19.71	

the cutoff in column (1) (column (3)). The F -tests for these first-stage regressions are 71.23 and 19.71, showing that there is strong power to use 2SLS for these sample sizes.

The second-stage results consistently show that SubV has an economically large effect on the probability that a firm confirms a reorganization plan. The coefficient estimates on *SubV Hat* are positive and statistically significant at the 1% level in columns (2) and (4). Using the wider bandwidth of firms with \$4 million to 11 million in liabilities, we find that SubV increases the likelihood of reorganization by 32.0 percentage points. The effect is even larger at 49.5 percentage points for the tighter bandwidth of \$6 million to 9 million, where the necessary identification assumptions are most likely to hold. Since Table III shows that only 17.3% of non-SubV cases have a reorganization plan confirmed, SubV more than doubles the probability of reorganizing, relative to similar firms just over the size threshold.²⁵

Table V follows the analysis in Table IV but the dependent variable in column (2) is $\ln(\# \text{ Days to Confirmation})$. Since these regressions use only cases in which a reorganization plan is confirmed, we focus on the bandwidth of \$4 million to \$11 million to use the larger sample size. The coefficient on *SubV Hat* is negative and statistically significant. This result indicates 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 35%. 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 on *SubV Hat* in column (4).²⁶

With any threshold discontinuity design, it is important to consider whether firms have the ability to manipulate the measures defining eligibility. A firm's ability to alter their level of noncontingent liabilities to be eligible for SubV is especially unlikely early in our sample period when SubV was new and the original threshold was unexpectedly increased to \$7.5 million. Furthermore, the potential for the distressed small businesses in our sample to significantly reduce their liabilities to become eligible for SubV is likely to be substantially lower 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 detect whether firms manipulate their liability size at the threshold. First, Figure 3, Panel D shows the density of bankruptcy cases over noncontingent liabilities. If firms were manipulating their liabilities to be under the threshold, or if SubV were attracting a large set of firms into bankruptcy, we should expect a discontinuous drop in the density of firms above the \$7.5 million threshold. We apply a McCrary (2008) density test to

²⁵ Kumar (2023) also finds that SubV significantly increases the likelihood of plan confirmation, but only for firms with high amounts of secured debt. The difference in findings likely stems from different samples; Kumar (2023) uses filings only from March to December 2020 and therefore considers a wider bandwidth of \$1 million to \$50 million in total liabilities due to his sample size.

²⁶ Tables IA.II and IA.III report the RDD regression results using second-order polynomial functions as a robustness check. The results are qualitatively and quantitatively similar to those reported in Tables IV and V.

Table V
Subchapter V and Case Duration: RDD Sample, 2020 to 2024

This table presents case-level 2SLS regression results estimating regression discontinuity design. The outcome variable in columns (1) and (2) is $\ln(\# \text{ Days to Confirmation})$, 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 $\ln(\# \text{ Days to a negative outcome})$, 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 SubV from the first-stage regression. *BelowCutoff* is a dummy variable that equals one if the noncontingent liability of a case is below \$7.5 million and zero otherwise. *Distance to Cutoff* is the polynomial of the assignment variable, which is the noncontingent liability minus \$7.5 million. *t*-Statistics are reported in parentheses. Standard errors are clustered at the county $\times$ year level. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

	<i>Ln(# Days to Confirmation)</i>		<i>Ln(# Days to negative outcome)</i>	
	First Stage (1)	Second Stage (2)	First Stage (3)	Second Stage (4)
<i>Sub V Hat</i>		−0.431*** (−2.82)		−0.008 (−0.03)
<i>BelowCutoff</i>	0.688*** (4.02)		0.310*** (4.05)	
<i>Distance to Cutoff</i>	−0.037 (−0.56)		−0.016 (−0.64)	
<i>BelowCutoff</i> $\times$ <i>Distance to Cutoff</i>	0.095 (1.38)		−0.009 (−0.26)	
<i>Total Asset</i>	−0.048 (−1.51)	−0.033 (−0.81)	−0.031 (−1.54)	0.023 (0.62)
<i>Secured Debt/Total Liability</i>	−0.167** (−2.18)	0.131 (1.22)	−0.089* (−1.67)	−0.104 (−0.94)
<i>Leverage</i>	−0.004* (−1.73)	−0.001 (−0.48)	0.000 (0.10)	−0.001 (−0.42)
<i>Jointly Filed Case</i>	−0.092 (−1.16)	−0.041 (−0.33)	−0.024 (−0.38)	0.250* (1.79)
<i># Secured Creditors</i>	0.010 (1.61)	0.013 (1.47)	0.014** (2.41)	0.021* (1.92)
<i># Unsecured Creditors</i>	0.001 (0.59)	−0.001 (−0.28)	0.001 (0.88)	−0.001 (−0.48)
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 (Local Linear)	Yes	Yes	Yes	Yes
R^2		0.080		0.019
Observations	288	288	672	672
First-stage <i>F</i> -test	33.96		33.31	

investigate the distribution of cases around the liability threshold and find no evidence for any significant discontinuity around the threshold ($p = 0.25$). Second, Figure 4 tests for smoothness of firm characteristics across the liability cutoff. The leverage ratio, secured debt ratio, total assets, number of secured creditors, number of unsecured creditors, and an indicator for a jointly filed

case are all smooth around the liability cutoff, consistent with the necessary identifying assumption that firm characteristics do not jump discontinuously across the threshold. We also follow Lee and Lemieux (2010) and use a Seemingly Unrelated Regression to jointly test whether these covariates change at the threshold and find that the six coefficients are both individually and jointly insignificant (see Table IA.IX). Third, we repeat our RDD analyses after removing cases with liabilities between \$7 million and \$7.5 million (those most likely to have manipulated their liabilities to be under the eligibility threshold). Our key coefficients are again essentially unchanged (see Tables IA.IV and IA.V). We conclude that liability manipulation is unlikely to impact our estimates.

Our identification assumption that firms around the debt size cutoff are comparable also could be violated if eligibility for SubV affects whether firms choose to enter bankruptcy. In addition to our analysis of firm characteristics around the SubV eligibility threshold, in Section V we provide several tests to consider whether firms just below the threshold selected bankruptcy rather than out-of-court liquidation or restructuring once SubV becomes available. Although these tests each fail to detect selection into bankruptcy during our sample period, we cannot fully rule out violations of the exclusion restriction. We therefore also provide an exercise intended to put bounds on the potential effect of selection on our estimates, and caution readers that interpretation of our estimates as causal effects depends on the assumption that firms are as good as randomly distributed around the threshold.

D. Diff-in-Diff Regressions

The introduction of SubV for firms with less than \$7.5 million in noncontingent liabilities also lends itself well to a diff-in-diff regression. Results using this approach 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 under SubV even after 2020.²⁷ The diff-in-diff specification is

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

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, and ∂_j , δ_c , and γ_t indicate industry, court, and filing year fixed effects. Standard errors are clustered at the county $\times$ year level to account for potential local economic shocks.

We use the 2,297 Chapter 11 cases filed between 2017Q1 and 2024Q2, with total liabilities between \$4 million and \$11 million for our diff-in-diff analysis.

²⁷ We report these results for robustness, but view our RDD results as our main specifications for further analysis.

ses. 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. For this analysis, we categorize a firm as treated if its total liabilities are below \$7.5 million, which proxies for the true eligibility, which is based on noncontingent liabilities.²⁸ As in the RDD regressions, we distinguish reorganization from liquidating plans, and group 193 cases of liquidating plans together with cases converted to Chapter 7 liquidations.

Table VI reports summary statistics for this diff-in-diff sample. We find that 32.5% of treated cases and 28.3% 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 was not yet available: only 35% of total treated cases are filed under SubV. Furthermore, 86 SubV cases in the diff-in-diff sample have total liabilities above \$7.5 million, and thus are included in the control group. The average time for treated cases to have a reorganization plan confirmed is 318 days, which is 82 days faster than control cases. By construction, the average total liabilities of treated cases (\$5.5 million) are significantly lower than that of control cases (\$9.1 million).

Table VII reports the diff-in-diff regression results for case outcomes and duration. The coefficient estimate on *Treated* × *Post* in column (1) shows that after the introduction of SubV in 2020, all cases between \$4 million and \$7.5 million become 12.5 percentage points more likely to confirm a reorganization plan; since not all cases below the eligibility threshold use SubV, the coefficient on the “intent to treat” effect of SubV is pushed significantly lower than the estimate of 32pp from the RDD analysis in Table IV.²⁹ While cases with positive (negative) outcomes are processed quicker (slower) in SubV as shown in column (2) (column (3)), these coefficients are not statistically significant.

In Internet Appendix Figure IA.1, 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:

$$y_i = \alpha + \beta_1 \text{Treated}_i + \sum_{t=2017}^{2024} \beta_t \text{Treated}_i \times \text{Year}_t + X_{i,t} + \partial_j + \delta_c + \gamma_t + \epsilon_{i,j,c,t},$$

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

²⁸ We do not hand-collect noncontingent liabilities for the full diff-in-diff sample, which would require obtaining schedules of liabilities for the full preperiod of 2017 to 2020. To be consistent within the diff-in-diff sample, we use this classification for all firms, even if we have obtained post-2020 noncontingent liabilities for our RDD analysis.

²⁹ Conditional on observables, being below the cutoff increases the likelihood of using SubV by 42 percentage points (Table IV, column (1)). Thus, a rough estimate of the local average treatment effect can be backed out from the intent-to-treat estimate by dividing it by 0.42, giving an estimate of $12.5/0.42 = 29.8$ percentage points, which is very close to the RDD estimates. The coefficient is also biased downward in the diff-in-diff regressions because we do not observe *noncontingent* liabilities for this sample. As a result, some firms with greater than \$7.5 million in total liabilities but that use SubV are in the control group for this regression.

Table VI
Summary Statistics: Diff-in-Diff Sample, 2017 to 2024

This table presents summary statistics for outcomes and characteristics of Chapter 11 cases filed from 2017Q1 to 2024Q2 with total liabilities between \$4 million and \$11 million. *Treated* equals one if the total liabilities of a case are between \$4 million and 7.5 million and zero otherwise.

Panel A: <i>Treated Group</i>	Mean	Min	p50	Max	SD	N
Case Outcome						
<i>Reorganization Plan Confirmed</i>	0.325	0	0	1	0.469	1,660
<i>Dismissed</i>	0.354	0	0	1	0.478	1,660
<i>Converted to Ch 7 or Liquidating Plan</i>	0.266	0	0	1	0.442	1,660
<i>Case Pending</i>	0.055	0	0	1	0.228	1,660
<i># Days to Confirmation</i>	318	21	259	1,480	203	540
<i># Days to Dismissal</i>	277	3	209	1,917	258	594
<i># Days to Conversion</i>	369	15	237	2,704	395	441
Case Characteristics						
<i>Total Liability</i>	5,514,886	4,000,214	5,385,512	7,498,760	1,001,998	1,660
<i>Total Asset</i>	4,724,387	0	2,599,125	245,200,000	12,105,862	1,660
<i>Secured Debt / Total Liability</i>	0.549	0	0.633	1	0.38	1,660
<i>Leverage</i>	8.038	0.28	1.411	120,648	21,787	1,660
<i>Sub V</i>	0.354	0	0	1	0.478	1,660
<i>Jointly Filed Case</i>	0.116	0	0	1	0.321	1,660
<i># Secured Creditors</i>	3.664	0	3	16	3.242	1,660
<i># Unsecured Creditors</i>	12.193	0	7	98	16.234	1,660

(Continued)

Table VI—Continued

Panel B: Control Group						
Case Outcome						
Reorganization Plan Confirmed	0.283	0	0	1	0.451	637
Dismissed	0.38	0	0	1	0.486	637
Converted to Ch 7 or Liquidating Plan	0.286	0	0	1	0.452	637
Case Pending	0.052	0	0	1	0.222	637
# Days to Confirmation	400	32	326	1,807	272	180
# Days to Dismissal	310	11	249	2,320	292	242
# Days to Conversion	418	16	241	2,504	522	182
Case Characteristics						
Total Liability	9,072,862	7,507,877	8,987,778	10,995,571	975,874	637
Total Asset	10,708,215	0	4,900,025	772,000,000	36,760,511	637
Secured Debt / Total Liability	0.557	0	0.637	1	0.363	637
Leverage	5.845	0.187	1.145	67.925	13.381	637
Sub V	0.135	0	0	1	0.342	637
Jointly Filed Case	0.130	0	0	1	0.337	637
# Secured Creditors	4.038	0	3	18	3.485	637
# Unsecured Creditors	16.035	0	9	81	18.328	637

Table VII
Subchapter V, Case Outcome, and Duration: Diff-in-Diff Sample, 2017 to 2024

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 2024Q2 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 June 2024. *t*-Statistics are reported in parentheses. Standard errors are clustered at the county $\times$ year level. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

	<i>Reorganization Plan Confirmed</i>	<i>Ln(# Days to Confirmation)</i>	<i>Ln(# Days to negative outcome)</i>
	(1)	(2)	(3)
<i>Treated</i> $\times$ <i>Post</i>	0.125*** (2.87)	-0.093 (-0.80)	0.055 (0.52)
<i>Treated</i>	-0.005 (-0.11)	-0.122 (-1.08)	-0.150 (-1.18)
<i>Post</i>	0.112 (1.60)	-0.427*** (-3.43)	-0.164 (-1.11)
<i>Leverage</i>	-0.003*** (-3.18)	0.000 (0.02)	0.000 (0.06)
<i>Leverage</i> $\times$ <i>Post</i>	0.001 (1.57)	0.002 (0.99)	-0.003 (-1.52)
<i>Total Asset</i>	-0.013 (-1.14)	0.028 (1.02)	-0.002 (-0.08)
<i>Total Liability</i>	0.014 (1.40)	-0.024 (-1.02)	-0.017 (-0.67)
<i>Secured Debt / Total Liability</i>	-0.074** (-2.53)	0.127* (1.65)	-0.131* (-1.78)
<i>Jointly Filed Case</i>	0.052 (1.56)	0.064 (0.89)	0.281*** (3.65)
<i># Secured Creditors</i>	0.007** (2.23)	0.016*** (2.74)	0.038*** (4.59)
<i># Unsecured Creditors</i>	-0.002*** (-2.84)	-0.000 (-0.24)	0.003 (1.55)
Year FE	Yes	Yes	Yes
SIC FE	Yes	Yes	Yes
Court FE	Yes	Yes	Yes
Number of observations	2,291	708	1,571
R^2	0.113	0.366	0.212

Figure IA.1 plots the parallel trend test results for our main diff-in-diff sample used in Table VII. Panel A plots coefficient estimates (β_t) for *Reorganization Plan Confirmed*, and it shows that the significant effects begin in the policy year, not before. Since we find no effects before the policy, it is more plausible that our results are 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 VII, there is no significant effect on *Ln(# Days to a negative outcome)* throughout our sample period.³⁰ To summarize, we find no evidence of prepolicy period effects for any of the parallel trend tests.

IV. Creditor Recoveries and Firm Postbankruptcy Survival

A. Expected Creditor Recoveries

Our results in Section III are consistent with a 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. In contrast, creditors lose bargaining power in SubV, which could reduce their recoveries.

The factors driving ultimate creditors' recoveries 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 statements of expected recoveries are observable only from manually collected court filings. In this section, we directly examine expected unsecured recoveries for cases in which a reorganization plan is confirmed, relative to the likely recoveries for other outcomes in which no ongoing business survives Chapter 11.³¹

For 314 Chapter 11 cases in the RDD sample that confirm a reorganization plan, we are able to obtain the plan (for SubV cases) or disclosure statement (for non-SubV cases) from PACER. We further obtain sufficient information from these documents to estimate the expected recovery rate to general unsecured creditors for 291 cases.³² We take the percentage recovery rate for general unsecured creditors to be either the percentage recovery rate directly stated in the plan or disclosure statement or the ratio of the estimated total payments to general unsecured claims to the total general unsecured claims.

³⁰ Lack of significance is likely due to small sample sizes, as these regressions do not pool all posttreatment years.

³¹ Estimating recoveries for secured creditors is problematic because collateral is often 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.

³² We are not able to estimate the expected recovery rate to general unsecured creditors for the remaining 23 cases due to insufficient information. These cases either do not have unsecured debt or do not describe their payment plan to general unsecured creditors in detail.

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 32.8%, which is lower than the 60.8% for confirmed non-SubV plans as shown in Table III.

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 employ our RDD for this analysis.

We additionally collect the expected recovery rate from the liquidating plan for 29 cases with a liquidation plan and the actual (not expected) recovery rate from the final trustee report for 229 cases that convert to Chapter 7. We leave the recovery rate for the 19 converted cases with insufficient information in the liquidating plan or without a trustee report as missing. As shown in Table III, the average expected unsecured creditor recovery rate for 114 converted or liquidated SubV cases is 12.4%, which is lower than that for 144 converted or liquidated non-SubV cases (17.6%).

Information for creditor recoveries in cases that are dismissed is not systematically recorded. We classify these cases into two categories with high or low expected recovery based on the reasons stated in the dismissal motion/order. For the 28 cases dismissed because the debtor and all creditors reached a settlement, we assume that the recovery rate is the same as the average recovery rate for cases with confirmed reorganization plans. For 259 dismissed cases, the motion for dismissal indicated a negative outcome and we assume that the recovery rate is equal to the average recovery rate of converted cases. Specifically, these cases were dismissed for one of the following reasons: settlement with only secured creditors (usually leading to the seizure of collateral), a dismissal petition filed by creditors, a dismissal petition that includes a motion to convert to Chapter 7, a dismissal order lifting the automatic stay (allowing foreclosure on collateral), a sale of all assets or no assets remaining in the debtor's estate, the debtor ceases operations (or discontinued, shut down, wane down, lack of viability), administrative insolvency (i.e., insufficient value to pay bankruptcy expenses), and bad faith filings (typically followed by foreclosure). We are unable to determine the reason for dismissal for the remaining 52 dismissed cases and leave these recovery rates missing.

We report the RDD results in Table VIII. Column (2) reports the second-stage results for cases with noncontingent liabilities between \$4 million and \$11 million. We find that the coefficient on *SubV Hat* is 11.9 percentage points (significant at the 5% level), indicating a positive effect of SubV on unsecured creditor recovery rates. For the narrower bandwidth of cases with noncontingent liabilities between \$6 million and \$9 million (column (4)), the coefficient estimate for *SubV Hat* remains nearly unchanged at 13.9 percentage points but becomes statistically insignificant. Overall, it appears unlikely that SubV decreases recovery rates for unsecured creditors.

Table VIII
Subchapter V, Recovery Rate for General Unsecured Creditors: RDD
Sample, 2020 to 2024

This table presents case-level 2SLS regression results estimating regression discontinuity design. The outcome variable *% Recovery rate* is the actual percentage recovery rate for general unsecured creditors stated in the reorganization plan for cases with confirmed plans and the assumed percentage 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 first-stage regression. *BelowCutoff* is a dummy variable that equals one if the noncontingent liability of a case is below \$7.5 million and zero otherwise. *Distance to Cutoff* is the polynomial of the assignment variable, which is the noncontingent liability minus \$7.5 million. *t*-Statistics are reported in parentheses. Standard errors are clustered at the county $\times$ year level. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

	% Recovery Rate for General Unsecured Creditors			
	First Stage (1)	Second Stage (2)	First Stage (3)	Second Stage (4)
<i>Sub V Hat</i>		0.119** (2.15)		0.139 (1.23)
<i>BelowCutoff</i>	0.383*** (5.70)		0.356*** (2.75)	
<i>Distance to Cutoff</i>	-0.056** (-1.98)		-0.134 (-1.32)	
<i>BelowCutoff x Distance to Cutoff</i>	0.058* (1.71)		0.223* (1.73)	
<i>Total Asset</i>	-0.042** (-2.33)	0.052*** (3.97)	-0.075** (-2.15)	0.072** (2.41)
<i>Secured Debt / Total Liability</i>	-0.131*** (-2.74)	-0.015 (-0.46)	-0.167* (-1.93)	0.070 (0.99)
<i>Leverage</i>	-0.001 (-1.09)	0.002* (1.77)	-0.005* (-1.94)	0.003 (1.63)
<i>Jointly Filed Case</i>	-0.047 (-0.96)	0.130*** (2.86)	-0.131* (-1.66)	0.180** (2.23)
<i># Secured Creditors</i>	0.016*** (3.76)	-0.004 (-1.26)	0.016* (1.87)	-0.009 (-1.19)
<i># Unsecured Creditors</i>	0.001 (1.45)	-0.002*** (-2.66)	-0.001 (-0.46)	-0.002 (-1.19)
<i>Year FE</i>	Yes	Yes	Yes	Yes
<i>SIC FE</i>	Yes	Yes	Yes	Yes
<i>Court FE</i>	Yes	Yes	Yes	Yes
<i>Sample</i>	[\$4 million: \$11 million]		[\$6 million: \$9 million]	
<i>Polynomial Degree = 1 (Local Linear)</i>	Yes	Yes	Yes	Yes
<i>R</i> ²		0.026		0.092
<i>Observations</i>	852	852	278	278
<i>First-stage F</i> -test	60.00		16.44	

Because these regressions require assumptions for cases in which information is not reported, Table IA.VI reports results assuming that all dismissed cases, converted cases without recovery information, and pending cases have recovery rates equal to the average among cases with confirmed reorganization plans. This assumption is highly conservative, as it implies unrealistically high recovery rates for cases that are dismissed due to poor prospects for reorganizing or that cease operations. Because dismissed cases are predominantly

non-SubV cases, we can think of this regression as providing a lower bound on the effect of SubV on recovery rates. Even with this conservative assumption, we still obtain a positive, though insignificant, coefficient on the effect of SubV on recovery rates of 7.4 percentage points.

In addition to the assumptions described above, a caveat in interpreting these results is that recovery rates are estimates provided at the time of plan confirmation, rather than the ultimate payouts made to creditors. Furthermore, our interpretation depends only on a comparison of SubV versus non-SubV Chapter 11 cases, and our conservative assumptions likely overstate recoveries for dismissals, 68% of which are non-SubV cases. Notwithstanding, our estimates provide no evidence that SubV reduces recoveries for unsecured creditors and instead suggest that creditors can benefit when value is preserved by avoiding liquidation.

B. Postbankruptcy Firm Survival

Do higher confirmation rates from SubV cases lead to lower postbankruptcy survival rates, as marginal firms are allowed to reorganize in SubV? Higher confirmation rates in SubV indicate that more firms are able to avoid liquidation in bankruptcy, but postbankruptcy survival rates give a better indication of whether SubV allows “zombie” firms to continue operating.

To address this question, for firms in the RDD sample we obtain the firm’s most recent operating status based on state-level business registry records from OpenCorporate.³³ We further cross-check the operating status of each firm based on public records from LexisNexis and data from Dun & Bradstreet. The average survival rate for firms in our RDD sample as of December 2024 is 71.6% for SubV cases, which is higher than the 50.7% survival rate for non-SubV cases (Table III).³⁴ 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, we see no reason why this measurement error should be more significant for SubV versus non-SubV firms close to the eligibility threshold, and thus we do not expect this to have a significant effect on our estimates.

Because of endogeneity concerns, we again use our RDD to examine survivals. For comparison, column (1) of Table IX displays the OLS coefficient, which is positive and significant at the 1% level. Columns (2) and (3) report the 2SLS results for cases with liabilities between \$4 million and \$11 million. In the second stage (column (3)), we find that SubV increases the probability of

³³ OpenCorporate provides data sourced from state business registries and can be accessed from the following link: <https://opencorporates.com/>.

³⁴ Cases early in our sample have had longer to fail than those that recently emerged from bankruptcy. Since we observe the active status of the firm only as of December 2024 (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 include year fixed effects to ensure that we are comparing case outcomes for firms that filed for bankruptcy in the same year.

Table IX
Subchapter V, Postbankruptcy Survival: RDD Sample, 2020 to 2024

This table presents case-level OLS regression and 2SLS regression results estimating regression discontinuity design. The outcome variable *Active Status* is the survival status as of December 2024 for firms filed for Chapter 11 between March 2020 and June 2024. *Sub V* is a dummy indicating whether a case is filed under Subchapter V. *Sub V Hat* is the predicted SubV from the first-stage regression. *BelowCutoff* is a dummy variable that equals one if the noncontingent liability of a case is below \$7.5 million and zero otherwise. *Distance to Cutoff* is the polynomial of the assignment variable, which is the noncontingent liability minus \$7.5 million. *t*-Statistics are reported in parentheses. Standard errors are clustered at the county $\times$ year level. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

	Active Status as of December 2024				
	OLS (1)	First Stage (2)	Second Stage (3)	First Stage (4)	Second Stage (5)
<i>Sub V</i>	0.237*** (6.37)				
<i>Noncontingent Liability</i>	0.006 (0.58)				
<i>Sub V Hat</i>			0.207** (2.50)		0.162 (1.20)
<i>BelowCutoff</i>		0.419*** (6.88)		0.371*** (3.23)	
<i>Distance to Cutoff</i>		-0.032 (-1.38)		-0.118 (-1.25)	
<i>BelowCutoff x Distance to Cutoff</i>		0.034 (1.13)		0.174 (1.44)	
<i>Total Asset</i>	-0.004 (-0.25)	-0.053*** (-3.29)	-0.004 (-0.21)	-0.097*** (-3.21)	-0.005 (-0.16)
<i>Secured Debt/Total Liability</i>	-0.053 (-1.15)	-0.109** (-2.55)	-0.055 (-1.16)	-0.148* (-1.87)	-0.127* (-1.72)
<i>Leverage</i>	-0.002 (-1.02)	-0.002* (-1.73)	-0.001 (-0.95)	-0.006*** (-2.69)	0.001 (0.36)
<i>Jointly Filed Case</i>	0.051 (0.83)	-0.046 (-1.02)	0.050 (0.82)	-0.111 (-1.59)	-0.056 (-0.68)
<i># Secured Creditors</i>	0.005 (1.02)	0.015*** (3.67)	0.006 (1.12)	0.016** (1.97)	0.010 (1.07)
<i># Unsecured Creditors</i>	-0.002* (-1.75)	0.001 (1.34)	-0.002* (-1.71)	-0.000 (-0.13)	-0.001 (-0.47)
Year FE	Yes	Yes	Yes	Yes	Yes
SIC FE	Yes	Yes	Yes	Yes	Yes
Court FE	Yes	Yes	Yes	Yes	Yes
Sample		[\$4 million: \$11 million]		[\$6 million: \$9 million]	
Polynomial Degree = 1 (Local Linear)	Yes	Yes	Yes	Yes	
R^2	0.246		0.062		0.069
Observations	993	993	993	329	329
First-stage <i>F</i> -test		71.23		19.71	

firm survival by 20.7 percentage points. Table IX, columns (4) and (5) report the results for the narrower bandwidth of \$6 million to \$9 million. The coefficient estimate on *SubV Hat* reported in column (5) is positive, but the point estimate is somewhat smaller in magnitude 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 do not find evidence that SubV firms are less likely to survive than firms in traditional Chapter 11, and our evidence points to these firms having higher survival probabilities.³⁵

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. Similarly, it is possible that the assets of liquidated firms are reallocated to more productive uses than if the firm had survived. On this point, Bernstein, Colonnelli, and Iverson (2019) show that when small businesses are forced to liquidate in Chapter 7, the business locations often become vacant rather than being reallocated to more productive firms, which casts doubt on the possibility of liquidation causing significant amounts of creative destruction.³⁶ However, Bernstein, Colonnelli, and Iverson (2019) do not track all assets owned by bankrupt firms, nor do they track the employees or entrepreneurs, so it is possible that these other factors of production are able to reallocate to superior uses following a liquidation. In the same way, our results cannot empirically show that SubV is more economically efficient than traditional Chapter 11 as we cannot track all factors of production.

SubV directly changed frictions long hypothesized to drive the bargaining and outcomes for distressed businesses (see Section I above). While we cannot conduct a horse race to show which friction matters most to the survival of small businesses in Chapter 11, descriptive results suggest that allowing owners to retain equity in SubV plays a critical role. For confirmed cases, we hand-collect data for whether the prebankruptcy owner retains his or her equity stake when the firm exits bankruptcy. The original owner retains at least some equity in the reorganized business for 91% of SubV cases, while in traditional Chapter 11 this is true only 65% of the time.³⁷ Using OLS regressions, we also find that retaining equity is strongly associated with firm survival. Table IA.VIII shows that cases with confirmed reorganization plans in which the original entrepreneur retains equity are 18.7 percentage points more likely to survive than confirmed cases without any equity retention.

³⁵ One potential concern is the length of our measurement window for the active status variable, given all cases are filed after March 2020 and we measure active status as of December 2024. To mitigate this concern, Table IA.VII reports results where we limit our sample to firms that file in 2020 or 2021. We continue to find that SubV increases survival likelihood by a similar amount for these firms that have longer potential time to failure. We also examine time to firm failure for a sample of 57 firms that reorganized in Chapter 11 prior to the introduction of SubV and subsequently went out of business. The average time to failure is 668 days, suggesting that a three-year window is long enough to capture a meaningful portion of firm failures.

³⁶ Bernstein, Colonnelli, and Iverson (2019) use sensitivity to judicial biases as an instrument for liquidation. The marginal firms in their study are not necessarily the same as those affected by SubV, so their estimates may not directly apply to our study. However, the authors show that a broad swath of bankrupt firms are sensitive to judicial assignment and that small businesses are particularly affected.

³⁷ In 89% of SubV cases and 57% of traditional Chapter 11 cases, the owner retains 100% of equity at exit.

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.

To consider whether our finding of higher survival rates for SubV cases is due to selection into bankruptcy of higher-quality firms, we examine how SubV affects total survival rates for firms both in and out of court. If SubV merely shifts eligible good firms (i.e., those more likely to survive regardless of SubV) into bankruptcy, we should not expect a relative increase in total survivals in and out of court that is specific to smaller firms post-2020. To test this prediction, we use county-level firm exit data from Census Business Dynamics Statistics. We use the percentage of small firms in each county from 2008 to 2015 to proxy for the ex ante exposure to SubV for each county. We define small firms in two ways: (i) single-establishment firms with fewer than 10 employees using data from YourEconomy Time Series (YTS), and (ii) firms filing for Chapter 11 from 2008 to 2015 with total liabilities of less than \$7.5 million based on data from the FJC. We then run diff-in-diff regressions with the above county-year panel as follows:

$$y_{i,t} = \alpha + \beta_1 \% \text{ Small Firms}_i + \beta_2 \text{Post}_t + \beta_3 \% \text{ Small Firms}_i \times \text{Post}_t \\ + X_{i,t-1} + \partial_i + \gamma_t + \epsilon_{i,t},$$

where $y_{i,t}$ is the firm exit rate, measured as the percentage of firms exiting in county i and year t , $\% \text{ Small Firms}_i$ is the percentage of small firms in county i in the early period (2008 to 2015), Post_t equals one for year 2020 and thereafter and zero otherwise, $X_{i,t-1}$ includes the number of firms and COVID cases in county i and year $t - 1$, and ∂_i and γ_t indicate county and year fixed effects. We cluster standard errors at the county level to account for any correlation within the same county.

Table X reports the diff-in-diff regression results for firm exit rates. The coefficient estimates on $\% \text{ Small Firms} \times \text{Post}$ are negative and statistically significant in all four columns, suggesting that counties with an ex ante higher percentage of small firms have a lower firm exit rate after 2020.³⁸ The decline in exit rates post-2020 is due to smaller establishments, which are likely to be able to use SubV. Furthermore, the economic significance of $\% \text{ Small Firms} \times \text{Post}$ is similar using the two proxies for small firms—a one-standard-deviation increase in the percentage of small firms proxied by employment size (liability size) reduces the firm exit rate by 19 (13) basis points.

The relative decline in exits (i.e., increase in survival rates) in counties with a greater proportion of small firms cannot be due to selection of higher-quality firms into bankruptcy once they can use SubV, since all firm exits are included

³⁸ We also run dynamic diff-in-diff regressions and find that the negative effect becomes significant only in post-SubV years.

Table X
County-Level Firm Exit Rate, 2018 to 2022

This table presents county-year-level OLS regression results estimating the impact of ex ante exposures to the Subchapter V options on firm exit rates. The sample covers county-year-level firm exit rates from 2018 to 2022. The outcome variable is *Firm Exit Rate (%)*, the percentage of firms that died each year based on data from Census Business Dynamic Statistics (BDS). The ex ante exposure to the Subchapter V options in each county is measured using %*Small Firms*. %*Small Firms* in columns (1) and (2) is the percentage of single-establishment firms with fewer than 10 employees from 2008 to 2015 based on data from YourEconomy Time Series (YTS). %*Small Firms* in columns (3) and (4) is the percentage of Chapter 11 cases filed from 2008 to 2015 with total liabilities of less than \$7.5 million based on data from the Federal Judicial Center (FJC). *t*-Statistics are reported in parentheses. Standard errors are clustered at the county level. *, **, and *** denote 10%, 5%, and 1% statistical significance levels, respectively.

	<i>Firm Exit Rate (%)</i>			
	Small Firms = Below 10 Jobs		Small Firms = below \$7.5 Million Liabilities	
	(1)	(2)	(3)	(4)
<i>Post x %Small Firms</i>	−0.035*	−0.041**	−0.002***	−0.001*
	(−1.94)	(−2.24)	(−2.84)	(−1.78)
<i>Post</i>	3.329**		0.352***	
	(2.10)		(5.89)	
<i>Ln(# Firms)</i>	14.256***	14.343***	14.285***	14.248***
	(10.90)	(10.31)	(10.69)	(10.23)
<i>Ln(# Covid Cases)</i>	0.046***	−0.053**	0.047***	−0.041
	(14.44)	(−1.98)	(14.92)	(−1.59)
Year FE	No	Yes	No	Yes
County FE	Yes	Yes	Yes	Yes
Number of observations	15,110	15,110	15,110	15,110
<i>R</i> ²	0.471	0.482	0.471	0.482

in the estimates. We caution that %*Small Firms* proxies for SubV eligibility based only on counties with a higher share of small firms. Furthermore, identification is not as clean as our RDD results for firm-level survivals, since our results in Table X may be affected by other events in 2020 that affect small firms differently from large firms. Despite these caveats, our diff-in-diff results using county-level business exits provide further support for our RDD tests indicating that SubV itself enables smaller firms to survive.

V. Further Discussion of Causal Inference and Threats to Identification

Selection effects may be related to both the type of firms within bankruptcy that choose SubV and the decision to enter bankruptcy at all because of SubV. It is not possible to fully rule out selection effects because one cannot observe all firm characteristics, such as investment opportunities or managers' incentives. However, the choice of SubV *within* bankruptcy will not affect either the RDD or the diff-in-diff estimates—the RDD estimates instrument for SubV using the eligibility threshold, and the diff-in-diff regressions estimate

an “intent to treat” effect for firms below the threshold regardless of whether the firm uses SubV or not.

Large amounts of selection into SubV would be expected to change the number and characteristics of firms entering bankruptcy around the threshold, but we do not observe this in the data. Figure 1, Panel B shows that the share of firms using Chapter 11 rises slightly from 20% to 25% after March 2020, suggesting that some additional firms may have chosen to use Chapter 11 after SubV became available. However, there is no excess mass of firms just below the eligibility threshold (Figure 3, Panel D), and all observable firm characteristics are smooth across the cutoff (Figure 4 and Table IA.IX).

In the remainder of this section, we present evidence on the direction of possible bias, and we conduct additional tests to shed further light on how selection into bankruptcy and other threats to identification may be affecting our main estimates.

A. Direction of Possible Bias

It is possible that SubV changed the types of firms entering bankruptcy in ways that we cannot detect with standard selection tests. The direction of a potential bias in our estimates depends crucially on the quality of firms choosing 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 upward.

To shed light on these alternatives, we examine the level of distress for firms with noncontingent liabilities between \$4 million and \$11 million entering Chapter 11 before and after the introduction of SubV. We use firms’ leverage ratio (total liabilities to total assets) as a proxy for the level of distress. Using data from 2017 to 2020 (prior to the introduction of SubV), we find that firms with a one-standard-deviation higher leverage ratio are 3.4 percentage points less likely to successfully reorganize (significant at the 5% level), supporting the use of leverage as an indicator of plan confirmation likelihood.³⁹ 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. Consistent with Figure 4, leverage ratios at the time of bankruptcy are very similar for these firms both before and after the introduction of SubV. This finding runs against the idea that SubV attracted less distressed firms into 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 be-

³⁹ This evidence is consistent with Hotchkiss, Smith, and Strömberg (2021), who find that leverage is a significant determinant of the outcome of bankruptcy restructurings.

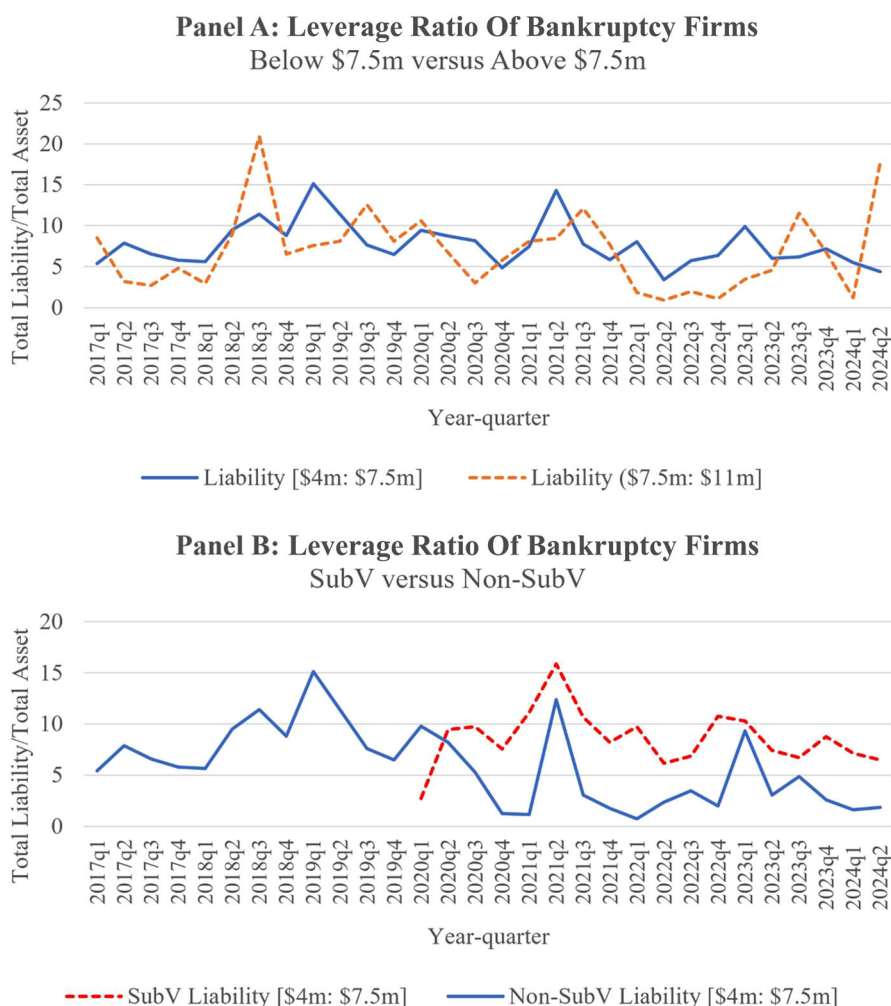


Figure 5. Time trend of leverage ratio of bankruptcy filings. The figure plots the time trend of the leverage ratio of bankruptcy filings from 2017 to 2024. Panel A compares the leverage ratio of cases with total liabilities below \$7.5 million to those with total liabilities above \$7.5 million. The blue (orange dashed) line represents the leverage ratio of cases with total liabilities 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 dashed) line represents the leverage ratio of non-SubV (SubV) cases. (Color figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/terms-and-conditions))

tween \$4 million and \$7.5 million noncontingent liabilities that choose SubV 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, 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. However, to the extent that SubV induces firms to enter bankruptcy, this figure suggests it attracts more distressed firms that would be more likely to liquidate rather than reorganize if SubV did not exist.⁴⁰ This direction of selection would bias our estimates downward.

B. Additional Firm Characteristics

Using data from YTS, we can observe how the age and employment level of firms that file for bankruptcy change after the introduction of SubV. We use a fuzzy name-matching procedure to identify firms in our diff-in-diff sample with data available in YTS (we are able to match 50% of firms to YTS). Panel A of Figure 6 compares the average employment growth of firms at the time of bankruptcy in cases with liabilities above versus below the \$7.5 million threshold. Employment growth is very similar for these firms both before and after the introduction of SubV. Panel B compares the average age of firms at the time of bankruptcy and shows similar ages for firms above and below the threshold even after the introduction of SubV.

We statistically test for changes in employment growth and age after the introduction of SubV using diff-in-diff regressions. We start from all single-establishment firms in the YTS database any time between 2017 and 2019 with fewer than 10 employees, and match these firms to Chapter 11 or Chapter 7 filings from FJC between 2017 and 2023. Using fuzzy name matching, we also match around 50% of the 20,587 Chapter 11 and 23,438 Chapter 7 cases. We then run a diff-in-diff regression using a firm-year panel. Specifically, we regress

$$y_{i,t} = \alpha + \beta_1 \text{Employment Growth}_{i,t} + \beta_2 \text{Post}_t + \beta_3 \text{Employment Growth}_{i,t} \\ \times \text{Post}_t + \partial_j + \delta_s + \gamma_t + \epsilon_{i,j,s,t},$$

where $y_{i,t}$ is an indicator for filing a Chapter 11 (or Chapter 7) case by firm i in year t , $\text{Employment Growth}_{i,t}$ is the log growth rate of employment of firm i in year t , Post_t equals one for year 2020 and thereafter and zero otherwise, and ∂_j , δ_s , and γ_t indicate industry, state, and year fixed effects. We cluster standard errors at the firm and year levels to account for any correlation within the same firm or year.

⁴⁰ 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 of owners of less-distressed firms by giving them a better bankruptcy option, but this could also affect how out-of-court restructurings are negotiated without these firms actually entering SubV (see Donaldson et al. (2022)). Figure IA.2 plots the ratio of Chapter 11 filings to Small Business Administration 7(a) loan charge-offs, a proxy for the overall financial distress of small businesses. The figure shows that this ratio has not increased since the introduction of Sub V, suggesting that firms able to resolve distress out of court likely continued to do so after the introduction of Sub V.

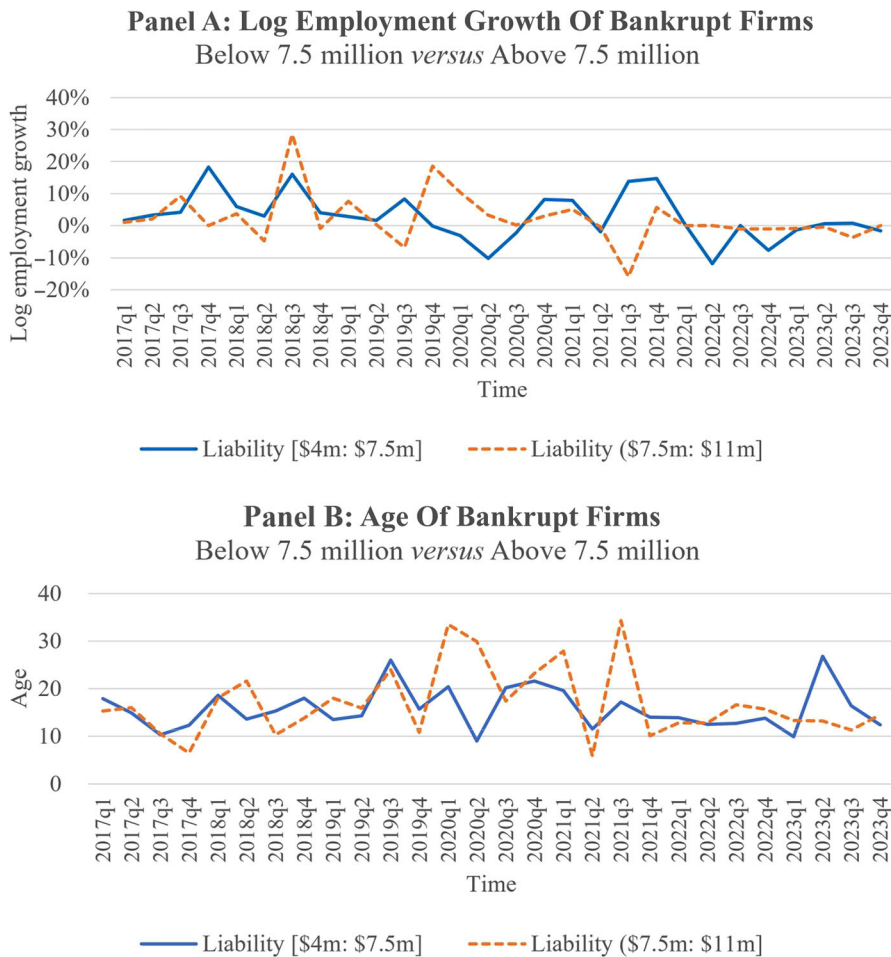


Figure 6. Time trend of job growth and age of bankruptcy firms. The figure plots the time trend of employment growth and age of firms filing Chapter 11 from 2017 to 2023. Panel A compares the log growth rate of employment of cases with total liabilities below \$7.5 million to those with total liabilities above \$7.5 million. The blue (orange dashed) line represents the employment growth of cases with total liabilities below (above) \$7.5 million. Panel B compares the firm age of cases with total liabilities below \$7.5 million to those with total liabilities above \$7.5 million. The blue (red dashed) line represents the age of cases with total liability below (above) \$7.5 million. (Color figure can be viewed at wileyonlinelibrary.com)

Table XI, Panel A reports the diff-in-diff regression results for employment growth. The coefficient estimate on *Log Employment Growth* $\times$ *Post* is statistically insignificant in column (1), indicating no changes in employment growth for firms filing for Chapter 11 after the introduction of SubV. Furthermore, in column (2) we find that there is also no change in employment growth for firms entering Chapter 7. This is further evidence that there was no signif-

Table XI
Firm Characteristics, Chapter 11 and 7 Filings, 2017 to 2023

This table presents firm-year-level OLS regression results estimating the effects of firm employment growth and firm age on bankruptcy filings. The sample covers single-establishment firms from 2017 to 2023 with fewer than 10 employees from 2017 to 2019. The outcome variable in column (1) is the dummy variable *Ch11 Filing*, which equals one if the firm is filing a Chapter 11 case in a given year and zero otherwise. The outcome variable in column (2) is the dummy variable *Ch7 Filing*, which equals one if the firm is filing a Chapter 7 case in a given year and zero otherwise. *Log Employment Growth* is the log growth rate of employment for each firm in a given year based on the number of employees each year from YourEconomy Time Series (YTS). *Ln(Age)* is the natural logarithm of firm age for each firm in a given year based on the founded year of each firm from YTS. *t*-Statistics are reported in parentheses. Standard errors are two-way clustered at the firm and year levels. ** and *** denote 5% and 1% statistical significance levels, respectively.

	<i>Ch 11 Filing</i>	<i>Ch 7 Filing</i>
	(1)	(2)
<i>Panel A: Log Employment Growth</i>		
<i>Log Employment Growth</i> x <i>Post</i>	0.00005 (1.86)	0.00002 (1.30)
<i>Log Employment Growth</i>	−0.00003 (−1.62)	−0.00000 (−0.31)
Year FE	Yes	Yes
SIC FE	Yes	Yes
State FE	Yes	Yes
Number of observations	57,327,461	57,327,461
<i>R</i> ²	0.00016	0.00003
<i>Panel B: Log Age</i>		
<i>Ln(Age)</i> x <i>Post</i>	−0.00018 (−1.33)	−0.00002*** (−4.62)
<i>Ln(Age)</i>	0.00015 (1.16)	−0.00001** (−2.77)
Year FE	Yes	Yes
SIC FE	Yes	Yes
State FE	Yes	Yes
Number of observations	55,628,656	55,628,656
<i>R</i> ²	0.00028	0.00003

ificant selection away from Chapter 7 and into SubV after its introduction, since selection of this type would also change the characteristics of firms entering Chapter 7. We find similar results for firm age in Panel B. The coefficient estimates on *Ln(Age)* x *Post* are statistically insignificant for firms entering Chapter 11. We find a statistically significant negative coefficient in column (2) for Chapter 7, but the magnitude of the coefficient on the interaction term is close to zero (0.002%) and not economically meaningful. Overall, the results show similar employment growth and age for firms entering into the bankruptcy system both before and after the introduction of SubV.

C. Placing Bounds on Potential Selection Effects

While the statistical tests above do not detect selection effects, we do not claim to entirely rule out selection into bankruptcy. We therefore attempt to bound any such effects. From 2017 to 2019—before the introduction of SubV—70.6% of all Chapter 11 filings by firms between \$4 million and \$11 million are below the \$7.5 million threshold. Given there was no incentive to bunch below the threshold before SubV, we treat this as a baseline expectation of the share of firms that would be expected to be below the threshold absent SubV. From 2020 to 2024, this share rises slightly to 73.5%. Although this difference is not statistically significant, we conservatively estimate that at most 2.9% of firms in the RDD sample are “excess mass” due to SubV.

If we assume that SubV leads 2.9% more firms to file than would have otherwise, this equates to 29 additional below-threshold firms in the RDD sample. To put bounds on the magnitude of potential selection effects, we assume that these 29 firms would have been restructured as a going concern regardless of the existence of SubV and thus were untreated. Because we do not know which 29 firms within our sample these would be, we randomly remove 29 SubV firms that reorganize and rerun our RDD analysis. This exercise will weaken the estimated effect of SubV by removing 29 positive-outcome firms from the treatment set. We repeat this exercise 100 times and find that SubV increases the probability of confirming a plan by 29.1% on average. Compared to our RDD estimate of 32.0 percentage points, this result suggests that selection is driving our point estimates up by at most 2.9 percentage points. Indeed, we calculate that we would need to drop at least 120 SubV firms with a positive reorganization outcome to reduce the point estimate to zero. Dropping the more realistic number of 29 random SubV firms also has little effect on the SubV coefficients for other outcomes: we estimate lower bounds of the effect of SubV on time to confirmation, recovery rates, and survival to be -0.428 , 0.114 , and 0.197 , respectively, compared to our main estimates of -0.431 , 0.119 , and 0.208 . This bounding exercise suggests that selection has relatively small effects on our point estimates.

D. Ex Ante Effects

Changes to the bankruptcy system could impact how debtors and creditors behave prior to bankruptcy, shifting the characteristics of firms as they enter bankruptcy. Ex ante adjustments are less likely to contaminate our estimates if we consider the effects of SubV immediately after its implementation. This is especially true because as mentioned above, the threshold for SubV eligibility was unexpectedly adjusted upward from \$2.75 million to \$7.5 million with the onset of COVID-19—in this early period, firms in the size range we examine would not have expected to be eligible for SubV. Furthermore, under the assumption that ex ante effects take some time to realize, one would expect estimates of the effect of SubV to slowly trend following its introduction; however, the parallel trends tests in Figure IA.1 do not show a significant trend

in the estimated effects of SubV on bankruptcy outcomes following the introduction of SubV. This evidence does not suggest that changes in the nature of firms entering bankruptcy impacts our estimates of the effects of SubV.

E. Confounding Effects from the COVID-19 Pandemic

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 Paycheck Protection Program (PPP) loans at similar rates; controlling for the presence of these loans has no effect on our regressions. This is not surprising, as we find that only 31 cases in our sample have unsecured loans from the Small Business Administration based on claims register records. Consistent with this, year-by-year estimates of the effect of SubV (Figure IA.1) do not change as the effects of the pandemic wane in 2023 to 2024. Furthermore, all of our main results (Tables IV through IX) hold after excluding cases filed in 2020.

A placebo test helps further rule out effects of the COVID-19 pandemic. If our main findings were driven by COVID-19, it would have to be the case that firms with liabilities between \$4 million and \$7.5 million were treated differently from firms with \$7.5 million and \$11 million in liabilities. Following this logic, as a placebo test one can pick an artificial threshold of \$4 million and test if firms below this threshold were even more likely to reorganize than those above this threshold, under the hypothesis that government support during the pandemic was particularly focused on smaller firms. We estimate the RDD model using this artificial threshold of \$4 million in Table IA.X.⁴¹ With a bandwidth of \$1 million to \$7 million in liabilities (Panel A), we find that firms below this artificial threshold are *less* likely to reorganize. This is consistent with the typical relationship that smaller firms struggle to survive the bankruptcy process, but it is inconsistent with our main finding that below-threshold firms are *more* likely to reorganize. If COVID-19 policies were causing our results, these policies would need to affect outcomes for firms with \$4 million to \$7 million in liabilities but not for firms above or below this range. We also find no difference in the timing of outcomes around the placebo threshold. Furthermore, in Panel B of Table IA.X we use a narrower bandwidth of \$3 million to \$5 million in liabilities, giving us a similar sample size than our main RDD regressions. Within this bandwidth, we find no significant differences across any bankruptcy outcome variables. Collectively, the placebo regressions fail to uncover a story consistent with COVID-19 affecting our results or interpretations in a significant way.

⁴¹ For these placebo tests, we use total liabilities as the running variable rather than noncontingent liabilities because we lack data on noncontingent liabilities for firms smaller than \$3 million in total liabilities. This likely adds some noise to these regressions.

VI. Conclusion

In the past 10 years, at least 11 countries including the United States have adopted simplified insolvency procedures for the reorganization of small businesses.⁴² Our paper provides the first comprehensive evidence of the impact of such reforms based on SubV. A vast proportion of eligible businesses entering Chapter 11 bankruptcy in the United States now utilize SubV for their case. By reducing frictions that explain the traditionally high liquidation rates when small businesses become distressed, SubV has dramatically changed bankruptcy case outcomes for these firms. Our most credible causal estimates suggest that debtors utilizing SubV are 49% more likely to successfully reorganize than similar cases that do not file under SubV. In addition, SubV cases that confirm reorganization plans move about 35% faster, reducing the overall costs of bankruptcy for these firms.

It is possible that SubV swings the pendulum too far, resulting in small businesses continue when they are not truly economically viable, and helping owners retain their businesses at the expense of lower creditor recovery rates. However, our estimates suggest that unsecured creditors are no worse off under SubV, and can share in the gains from avoiding a costly liquidation. Meanwhile, it is likely that SubV leads to higher chances of long-run survival for small businesses, suggesting that a number of small firms that are liquidated in traditional Chapter 11 could reorganize and survive in a more pro-debtor system. As the effects of SubV become more widely recognized, borrowers may take on more debt or take more risk given the greater prospects for survival with SubV. We anticipate that lenders will adjust credit standards and lending terms to account for these effects, but these general equilibrium effects are harder to anticipate and estimate precisely, and will be important to evaluate in the future.

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⁴² This includes Australia, Chile, Columbia, India, Laos, Myanmar, Thailand, Spain, Singapore, and South Korea. See Gurreea-Martínez (2024) for a discussion of insolvency law in these countries.

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Supporting Information

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Appendix S1: Internet Appendix.
Replication Code.

