Life After Death: A Field Experiment with Small Businesses on Information Frictions, Stigma, and Bankruptcy[*]

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Abstract

In an RCT with US small businesses, we document that a large share of firms are not well-informed about bankruptcy. Many assume that bankruptcy necessarily entails the death of a business and do not know about Chapter 11, where debts are renegotiated so that the business can continue operating. Firms also exhibit bankruptcy-related stigma, believing that bankruptcy is embarrassing, a sign of failure, and a negative signal to employees and customers. Short educational videos that address information or stigma increase knowledge and decrease stigma, both immediately and durably over 4 months. Videos increase reported interest in using Chapter 11 bankruptcy and increase intended debt and investment. However, we do not observe long-term real effects. Three years after the main RCT, we replicate our experiment on a totally different sample of larger firms, all of whom face substantial debt, and obtain the same results. A survey of bankruptcy attorneys and judges points to entrepreneurs' overconfidence and, to a lesser extent, excessive perceived legal fees as first-order frictions explaining the limited real impact of treatments that only address information and stigma.

Keywords: bankruptcy; small businesses; behavioral firms; information frictions; stigma

1   Introduction

Corporate bankruptcy is a cornerstone of modern financial markets. Worldwide, the efficiency of bankruptcy is correlated with debt market development and per capita income (Djankov et al., 2007, 2008). Without corporate bankruptcy, financial distress could lead to the unnecessary dissolution of many firms, and entrepreneurs and capital providers may be unwilling to take risks and make important investments in the first place (Haselmann et al., 2010). In this sense, corporate bankruptcy can be thought of as part of the social safety net, providing some insurance against negative outcomes. While large firms often view bankruptcy as a strategic option when facing distress, small firms use bankruptcy much more sparingly, leading policy-makers to argue that the bankruptcy system is underutilized by a large part of the economy.[1]

Academic research on corporate bankruptcy typically assumes that firms are fully informed about the costs and benefits of bankruptcy and, hence, that direct and indirect costs of bankruptcy are the main barriers to its optimal use. While this may be a reasonable benchmark for large, sophisticated firms, small business owners may face additional frictions that reduce their usage of the bankruptcy system when in financial distress. One such friction is lack of information. In everyday speech, people often use the phrase "going bankrupt" as synonymous with shutting down one's business. While lawyers at United Airlines certainly know the differences between Chapter 7 (liquidation) and Chapter 11 (reorganization) bankruptcy, it is possible that many small and medium-sized firms may not even be aware that there is a possibility for a business to continue after bankruptcy, which can be used as protection while negotiating with creditors.[2] Despite its implications for the effectiveness of major bankruptcy policies—such as the Small Business Reorganization Act (SBRA) passed by the US Congress in February 2020 in an effort to make bankruptcy more accessible and less costly for small businesses—little is known regarding small firms' knowledge about bankruptcy.

One additional explanation for small firms' limited use of bankruptcy protection is stigma. Researchers have considered the possibility that households may attach a significant stigma to going bankrupt (Fay et al., 2002; Gross and Souleles, 2002; Dick et al., 2008; Efrat, 2005), but most academic work on corporate bankruptcy assumes that firms view bankruptcy

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[1]For example, the COVID-19 pandemic created large disruptions for many small firms, forcing many to close their doors, but bankruptcy remained rare (Wang et al., 2021). Even during normal times, Greenwood et al. (2020) estimate that less than 10% of all firm closures occur within bankruptcy.

[2]On the other hand, we would expect firms to be relatively well-informed about bankruptcy given the high rate of firm failure, with the Bureau of Labor Statistics Business Employment Dynamics data showing that 20% of small businesses fail within one year of founding. Indeed, recent research suggests that firms have significantly lower information frictions than households (Link et al., 2021; Mikosch et al., 2021).

as a strategic option with no negative stigma (see, for example, Bulow and Shoven (1978); Gertner and Scharfstein (1991) and White (1989)). If households believe that going bankrupt is embarrassing or shameful, it is possible that small firms would also exhibit stigma (Sutton and Callahan, 1987). This would be consistent with a growing literature showing that behavioral factors affect firms' strategic choices (Goldfarb and Xiao, 2011; DellaVigna and Gentzkow, 2019; Hortaçsu et al., 2019). Yet, due to difficulties in measuring it empirically, little is known about small businesses' (as well as household) stigma against bankruptcy.

This paper addresses three questions. First, do small businesses exhibit lack of information and stigma about bankruptcy? Second, if so, is it possible to reduce the lack of information and stigma, both immediately and in the long run? Third, what are the implications for firms of reducing information unawareness and stigma? To do so, we conduct a large-scale randomized controlled trial (RCT) with US small businesses. To our knowledge, ours is the first RCT on how firms form beliefs and make decisions related to bankruptcy.

Our main partner in the RCT is SCORE, the leading US organization dedicated to mentoring small businesses. As such, it has a large network of small business owners at different stages of firm development, across a wide range of industries, which broadly mirrors the overall US population of small businesses. In the fall of 2020, 1,386 firms participated in a survey we developed jointly with SCORE. A few minutes into the survey, after responding to various questions about business details, firms are shown different professionally developed animated videos. In the Control group, as part of an introduction to what the survey is about, firms watch a one-minute video about a hypothetical small business owner who is struggling with financial issues, and a few options for the owner are mentioned. In the Information only treatment, firms are shown a video that is initially identical to the Control group video, but that contains an additional one-and-a-half minutes with information about bankruptcy protection, covering differences between Chapter 7 and Chapter 11 bankruptcy, and explaining the new Small Business Reorganization Act (SBRA). In the Information + Stigma treatment, firms watch a video that is identical to the Information treatment, but that contains an additional minute of content that tries to address stigma related to bankruptcy. The video highlights all the large, successful US corporations that have used bankruptcy as an avenue to restructure. It also highlights that bankruptcy protection is fundamental to US law and is part of the US Constitution, while also stressing the challenges posed by current business conditions.

After the videos, firms are asked various questions to evaluate their knowledge about bankruptcy and their attitudes toward it. They are then asked about their interest in bankruptcy, intended risk-taking, intended investment, and other financial expectations. Four months later, firms answer an additional survey collecting information on knowledge

of the bankruptcy system, stigma surrounding bankruptcy, as well actual financial outcomes during the last 4 months.

We document that small business owners have very little knowledge about bankruptcy. Among respondents in the Control group, 42% of firms are unaware that it is possible for a firm to continue operations after filing for bankruptcy. Only 34% are familiar with the differences between Chapter 7 and Chapter 11 bankruptcy, and only 11% are aware that the SBRA (which was passed 9 months prior to our survey and was highly publicized) made it easier for small businesses to file for bankruptcy. The lack of even basic information about the bankruptcy system is stark given the high failure rates among small businesses. This is especially true given that the survey was administered in November 2020, in the midst of intense economic uncertainty due to the COVID-19 pandemic. Further, we do not find higher knowledge among small business owners with a higher incentive to learn about bankruptcy—i.e., firms with more debt or those in which the owner has a personal guarantee.

We also find widespread negative stigma surrounding bankruptcy. 70% of respondents in the Control group believe that business owners who file for bankruptcy are viewed as failures. Almost two-thirds of respondents feel that friends and family will look down on a business owner who files for bankruptcy, and over half of the entrepreneurs agree that clients and employees will be less willing to work with a business owner who has filed for bankruptcy. Stigma about bankruptcy appears to be mostly outward-focused instead of inward-focused. Specifically, firms in the Control group are least concerned with whether declaring bankruptcy is unethical, and are most concerned with how bankruptcy will reflect on them or their business. Clearly, lack of information and widespread stigma may prevent small businesses from utilizing the bankruptcy system regardless of the benefits of doing so.

Our information treatments vastly reduce information unawareness. While only 58% of firms in the control group know that firms can continue operating after bankruptcy, the information treatment increases the share of firms recognizing the possibility of "life after death" by 25 percentage points (hereafter, "pp"), strongly reducing information unawareness by over half. The information treatment roughly doubles knowledge about different basic aspects of Chapter 11 bankruptcy. Moreover, the information treatment increases the share of firms that are aware of the SBRA by 65pp. Importantly, these effects remain strong even 4 months later, although there is some reduction in magnitudes. For example, 4 months after treatment, the impact on knowledge about "life after death" is 15pp instead of 25pp.

We similarly find that viewing the Stigma video has large and durable treatment effects. Compared to firms in the Control group, firms in the Information+Stigma group have their stigma reduced by about one-third of a standard deviation (hereafter, "σ") overall, with significant effects on all stigma categories except on whether bankruptcy is ethical, the

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category which indicated low stigma to start with. The treatment has a long-lasting effect on stigma. Four months later, the overall impact on stigma is -0.26σ, and we cannot reject that these longer-run effects are identical to the initial effect. Importantly, across both surveys, there is little difference between the Information and Control groups in terms of stigma, indicating that it is the specific content of the Information+Stigma video that is reducing stigma.

Our results show that small businesses exhibit significant unawareness of bankruptcy and a strong stigma against considering it as an option. However, these frictions can be reduced durably even with just a short video treatment. We then move to the analysis of business outcomes. Information and stigma frictions likely make the process of dealing with financial distress appear more uncertain and costly to firms, which should affect their investment and risk-taking. We test this by evaluating if the Information and Infomation+Stigma treatments have an impact on firms' stated intentions. The two treatments led firms to increase their immediate willingness to consider bankruptcy, intended investment, and intended risk-taking. On immediate effects, the Information treatment increases firms' stated willingness to consider Chapter 11 bankruptcy by 25pp, and the Information+Stigma treatment increases it by an additional 6pp. Likewise, firms in the Information treatment state that they are 11pp more likely to intend to increase their investment over the next 12 months, and the Information+Stigma boosted this by an additional 3pp. Treated firms were also more likely to state they intend to increase debt financing over the next 12 months. Overall, the Information treatment increased the composite score of firms' riskiness by 0.14σ and the Information+Stigma increased it by 0.21σ.

Our short-term results indicate that information and stigma are each separately contributing to firms' intended riskiness, and are consistent with the idea that reducing information unawareness and stigma makes firms more likely to consider bankruptcy, which in turn makes firms more willing to consider making greater investments and taking greater risks.

Turning to actual longer-run outcomes, however, we find mostly no statistically significant effects of our video treatments. Firms in the treatment groups were no more likely to report having considered bankruptcy over the previous 4 months or to actually have filed for bankruptcy. In addition, while firms in the Information group increased their debt, firms in the Information+Stigma group did not. We also find no effect of our treatments on firm survival, as proxied by various measures of online presence, including almost 2.5 years after treatment. These longer-run results, therefore, paint a picture in which information and stigma frictions can meaningfully and durably be reduced, but where the alleviation of these constraints does not have detectable effects on firms' use of bankruptcy or on other related

real business outcomes.

We discuss several possible mechanisms for our set of results. One obvious explanation is that bankruptcy is extremely rare, especially during the period we study (Wang et al., 2021). As a result, we might not have enough statistical power to detect such real effects. On the other hand, we do have more power to detect changes in investment and debt, and yet we find largely zero effects across those outcomes as well. This suggests one alternative explanation in which information and stigma might play a role, but where other factors still prevent small businesses from using bankruptcy. In particular, given how strongly reluctant small firms seem to be to consider bankruptcy—even post-SBRA when bankruptcy is a lower-cost option—it might be the case that changing information and stigma is important only to the extent that other frictions are also alleviated.

We provide additional, largely descriptive evidence on potential complementary frictions contributing to firms' unwillingness to consider bankruptcy by conducting a new survey of bankruptcy attorneys and judges. We conducted this survey in collaboration with the American Bankruptcy Institute, and we surveyed a total of 129 respondents. After explaining the details of our study, we ask respondents to evaluate potential mechanisms behind our mixed empirical findings. A significant majority of attorneys and judges point to another behavioral factor as the leading mechanism behind the limited real effects of reducing information and stigma: overconfidence of small business owners. To a lesser extent, respondents also indicate that bankruptcy might still be considered too costly by many small firms. To conclude, we further ask respondents if they feel that bankruptcy is over or under-utilized by small businesses given its costs and benefits. The vast majority feel that bankruptcy is under-utilized by small businesses, indicating they agree that there are significant non-monetary frictions that prevent entrepreneurs from turning to bankruptcy protection.

While our SCORE RCT has very high internal validity, we also address concerns about external validity. First, our RCT took place during COVID when there was a lot disruption—as well as a lot of government support—for small firms. We provide discussion and analysis on this issue, such as that results do not vary based on firms' exposure to COVID. We believe these results are highly reassuring, though we acknowledge they cannot resolve all concerns about COVID. Second, while our sample is highly representative of small firms, who are the population of interest, many firms in our sample do not have substantial debt. Our SCORE results are highly robust to restricting to firms with substantial debt, though statistical power in this sample is reduced.[3]

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[3]Of course, knowledge of bankruptcy could still be very useful for firms that don't have high amounts of debt, due to the ability to plan better and dynamically optimize for a future where they may have more

We overcome concerns surrounding the influence of COVID and small firms having no debt by replicating our SCORE experiment with an entirely new set of 998 firms in November 2023 using the survey provider Dynata. It is very rare in economics and finance for researchers to replicate their own experiments in large samples in the same paper, and we think that doing so bolsters our key results substantially. First, we required that respondents were owners of businesses with at least $100,000 of debt and 10 full-time employees—thus, our sample of small- and medium-sized firms is unlikely to face the concern that bankruptcy is less useful due to having less debt. Second, the timing is useful for addressing external validity concerns. Beyond the fact that the pandemic was over, the Larger Firms survey was conducted three and a half years after SBRA became effective, so knowledge about the new law should have had time to make its way to these business owners. Further, by late 2023 the number of corporate bankruptcies was rising from the depressed levels seen in the wake of COVID-related support, so that a significant number (42%) of the respondents in this survey report that liquidity issues have significantly affected their firm in the past year. Finally, our second experiment contributes by shedding further light on mechanisms, providing evidence in favor of overconfidence and against cost as key explanations.

This paper contributes to two primary strands of literature, the most important one being the literature on business bankruptcy. The literature on business bankruptcy has generally focused on the costs and consequences of different bankruptcy regimes (Hart, 2000; Bris et al., 2006; Davydenko and Franks, 2008; Bernstein et al., 2019a,b; Ma et al., 2022) and, as discussed above, has largely considered the problem of bankruptcy choice in terms of objective costs and benefits assuming that firms are rational and fully informed about the various costs and benefits (Bulow and Shoven, 1978; Bolton and Scharfstein, 1996; Gennaioli and Rossi, 2010; Dou et al., 2021). Such an approach is perhaps warranted when considering large, public firms, which are more likely to be informed. These large firms have been the focus of the majority of academic interest in bankruptcy. Instead, we approach the issue of firm bankruptcy from a different angle, focusing on the role of information unawareness and stigma, which are likely to play a significant role in small business decision-making.[4]

In consumer bankruptcy, several papers have examined the role that peers play in potentially reducing stigma or providing information about bankruptcy (Dick et al., 2008; Fisher, 2020; Kalda, 2020; Agarwal et al., 2020; Keys et al., 2020). These papers consistently show that peers can influence the personal bankruptcy decision, but the evidence is mixed on whether spillovers derive from information transfer, stigma, or other possible mechanisms.

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debt.

[4]There is also work on how consumers respond to perceptions of firm bankruptcy risk (Hortaçsu et al., 2011; Birge et al., 2017; Antill and Hunter, 2021). In addition, research considers whether there are bankruptcy spillovers between firms (Benmelech et al., 2019; Bernstein et al., 2019b).

A related body of work has focused particularly on personal bankruptcy stigma, with some papers arguing that stigma has decreased over time (Fay et al., 1998; Gross and Souleles, 2002; Jones and Zywicki, 1999) while others argue that stigma persists or has even increased (Sousa, 2018; Sullivan et al., 2006). While nearly all of this literature acknowledges that stigma may play a role in the bankruptcy decision, we add to this literature by making use of an RCT to explicitly distinguish between the information and stigma channels. Meanwhile, the role of stigma and information friction in affecting business bankruptcy has mostly been ignored in the academic literature. One recent exception to this is Gotberg (2021b), who presents qualitative evidence that a sample of small business owners express significant reluctance to consider bankruptcy.

We find substantial information unawareness and stigma among firms, but also that both can be reduced. This is extremely important for public policy. Even if good laws are passed that make bankruptcy more economically valuable, firms may not be able to take advantage of the laws if they lack knowledge about bankruptcy or if bankruptcy is stigmatized. Indeed, information and stigma barriers may interact to mutually reinforce each other. Stigma against bankruptcy could prevent firms from obtaining information, and a lack of information could lead them to assume that their biases against bankruptcy are likely true. While the video treatments in the RCT were carefully created using professional videographers, they are designed to be highly scalable. Our evidence of limited long-term real effects of information and stigma frictions highlights however the presence of other frictions affecting firms' bankruptcy decisions and points to the importance of future work that could leverage large-scale natural experiments and stronger interventions that also address other simultaneous behavioral factors, such as owners' overconfidence. Indeed, a broader message of this paper is that policies aimed at addressing complex issues such as corporate bankruptcy likely need to address several frictions simultaneously to be effective. For example, an experiment that addresses high costs of bankruptcy but does not reduce information and stigma frictions would likely find limited real effects given the findings of this paper.

The second main literature we contribute to is the one on behavioral firms. Empirical behavioral economics has frequently considered the possibility that consumers or employees are behavioral, analyzing how firms react. A small but growing literature on firms takes an alternative perspective that firms themselves may exhibit deviations from "full optimality." For example, Malmendier and Tate (2015) review the literature on behavioral CEOs and their effects on firms. A recent example is Gertler et al. (2022), who show how small businesses in Mexico fail to adopt profitable opportunities due to various behavioral frictions. Similarly, DellaVigna and Gentzkow (2019) show that retail chains forego sizeable increases in annual profits due in large part to managerial inertia. Other papers highlight that firms

face puzzling information frictions (Bloom et al., 2013, 2014, 2019; McKenzie and Woodruff, 2014), while recent work in behavioral economics shows that memories and salience have important effects on how information gets processed (Gennaioli and Shleifer, 2010; Bordalo et al., 2012, 2017, 2022). We show that firms exhibit both substantial information unawareness and substantial stigma in the important yet understudied setting of bankruptcy. Our use of simple and scalable surveys embedded within an RCT provides a methodological tool that other researchers can use while studying behavioral frictions among small businesses. We refer to Haaland et al. (2023) and Capozza et al. (2021) for comprehensive reviews of information experiments that share a similar experimental design to ours.

Our paper proceeds as follows. Section 2 briefly introduces the institutional context regarding small business bankruptcy. Section 3 discusses the experimental design. Section 4 provides a descriptive analysis of our data, analyzing information awareness and stigma using small businesses in the control. Section 5 reports the results from our RCT and the qualitative surveys of bankruptcy professionals. Section 7 concludes.

2   Bankruptcy Background

Small businesses in the US have two bankruptcy options when faced with financial distress. Under Chapter 7 bankruptcy, the assets of the firm are turned over to a trustee, who sells the assets and liquidates the firm, returning the proceeds to pay off creditors as much as possible. Firms that file for Chapter 7 constitute about 65% of all business bankruptcy filings according to US court filing statistics.

Alternatively, a firm may file for Chapter 11 bankruptcy, which is a bargaining process that aims to restructure the firm and allow it to survive if possible. While reorganization is the goal, many firms that file for Chapter 11 end up being liquidated, either by conversion to Chapter 7, the sale of all assets during the Chapter 11 process, or dismissal from court. This is especially the case for smaller firms. Greenwood et al. (2020) estimate that 86% of firms with over $500 million in assets that file for Chapter 11 successfully reorganize, while only 33% of firms that enter Chapter 11 with less than $50 million in assets avoid liquidation.

Chapter 11 can be a difficult process for smaller firms due to extensive reporting requirements and lengthy negotiations with creditors, both of which create large legal fees. Partially due to these costs, distressed small firms have predominantly either filed for Chapter 7 or avoided bankruptcy altogether (Greenwood et al., 2020). However, in February 2020—just prior to the COVID-19 pandemic—the Small Business Reorganization Act (SBRA) came into effect. The SBRA created a new bankruptcy option for small businesses, known as subchapter V of Chapter 11. Under subchapter V, businesses with less than $7.5 million

in liabilities can enter a significantly streamlined Chapter 11 process. One key feature of subchapter V is that small business debtors no longer need to confirm a reorganization plan with consent from their creditors. Instead, the small business works with an assigned trustee to create a plan that allows the firm to continue to operate while repaying creditors as much as possible over the next three to five years. Subchapter V also adjusts the Chapter 11 process to allow the entrepreneur to retain ownership of the firm even if creditors are not repaid in full. In subchapter V, the bankrupt firm is required to repay its creditors for a 3-5 year repayment period according to a plan that is approved by a judge and trustee, but then after that period any remaining unpaid debts are discharged and the small business owner retains control and ownership of the firm. Finally, deadlines for creating the plan are significantly accelerated under subchapter V, which significantly reduces the procedural costs of bankruptcy for small businesses.[5]

The SBRA was passed in August 2019, 15 months prior to our RCT, and went into effect in February 2020. The changes in the SBRA were widely expected to reduce the monetary costs of bankruptcy for small businesses and provide a higher chance at successful reorganization.[6] Initial data on bankruptcy filings soon after the SBRA went into effect suggest that these expectations were met, with the director of the Executive Office for U.S. Trustees stating in 2021, "We can say—without a doubt—that subchapter V has proven to be popular and is showing signs of success" (White III, 2021). More recently, Hotchkiss et al. (2024) show that marginal firms who are able to use Subchapter V are nearly twice as likely to survive bankruptcy as similar firms that are not allowed to use Subchapter V. Further, Hotchkiss et al. (2024) show that nearly all small businesses (those of similar size to the firms in our study) who enter Chapter 11 bankruptcy choose to use Subchapter V when they file for bankruptcy, but that in the three years since the law was passed there has not been a significant uptick in these small businesses using bankruptcy. Despite strong evidence of higher survival rates and lower costs of bankruptcy for this group, they are not availing themselves of the new bankruptcy procedure at higher rates. This suggests that significant frictions prevent many small businesses from using bankruptcy even though they would have a significant chance of a successful outcome.

While the SBRA makes bankruptcy a much more palatable option for many small businesses, if entrepreneurs do not know of the law change or have strong stigma against

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[5]We only highlight these three important changes affected by the SBRA. See Gotberg (2021a) for a full description of the SBRA and how it is viewed by small business owners.

[6]At the time of its passage, the American Bar Association (ABA) and several bankruptcy courts published summaries of the law, and disseminated information through a large network of law offices across the country. Essentially all these articles state an expectation of lower costs, e.g., an article published by the ABA states "[SBRA] lowers costs and streamlines the plan confirmation process to better enable small businesses to survive bankruptcy and retain control of its operations" (Wang-Ekvall and Evanston, 2020).

using bankruptcy then it does not matter how well the law functions. Firms must have a knowledge of the law and be willing to use it for it to have any effect. Our RCT helps demonstrate that knowledge is lacking and stigma is high, but that both of these barriers to using bankruptcy can potentially be reduced.

3   Experimental Design

In this section, we describe our empirical methodology. We focus our attention on the specific details of our data collection in Section 3.1, with Section 3.2 providing more information on the structure of the survey and the specific questions we ask. Section 3.3 details the experimental variation we introduce by means of animated videos. In Section 3.4 we briefly outline additional features of the survey that ensure the reliability of the data we collect. In Section 3.5 we discuss a second, largely identical experiment performed on larger firms.

3.1   Data Collection

We conducted our initial experimental survey in November 2020, in the midst of the COVID-19 crisis when multiple small businesses were struggling to stay afloat. We discuss the issue of external validity related to the timing of the survey in Section 5.5.

We designed the surveys using the Qualtrics online platform, and the survey links were then distributed by our research partner SCORE to their proprietary sample of US small businesses. SCORE is supported by the US Small Business Administration and is the largest small business volunteer mentor program in the US. We collected a total of 1,386 survey responses. The median time for completion of the survey was 20.25 minutes. To test the persistence of the effects, we also conducted a follow-up survey four months after the original survey, where we were able to reach approximately 36% of the sample for a total of 505 follow-up survey responses.

In Table 1 we report summary statistics of the main characteristics of all the surveyed firms and the socioeconomic background of their owners, with each column focusing on a specific subset of the respondents. Going from top to bottom of the table and focusing on the full sample (last column), we can see that 33% of the respondent firms are less than 3 years old. Half of the firms have some sort of debt, with almost one-quarter of these firms having more than $100,000 in debt. While roughly half of the sample reports no official debt, over 85% of the sample has some type of financial obligation. The most common financial obligations are business credit cards or other business loans (25%), with rent or mortgage being the second largest (also 25%). Business owners have personally guaranteed

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the business debts in 27% of firms, creating personal liability for a significant portion of the sample. Meanwhile, 10% of business owners think their firms are unlikely to remain open in the next 12 months. In terms of personal characteristics of the business owners, 63% of the sample are female and a large share (69%) has at least a college degree. The next panel shows that most respondents are between 45 and 64 years old. Finally, slightly more than half the respondents are white, 19% are Black, 9% are Hispanic, 6% are Asian American, and 2% are Native American or First Nation (the remaining respondents prefer not to answer).

3.2 Survey Structure and Measurement

We now provide a brief description of the survey, the structure of which is visually illustrated in Figure 1. After a brief introduction and consent form, the survey asks about basic business characteristics, then displays the animated videos, and then asks questions regarding knowledge of bankruptcy options, stigma regarding business bankruptcy, the main outcome variables, and finally the demographic characteristics of the firm's owners. We discuss each section of the survey in more detail below.

3.2.1 Basic Business Characteristics

The first section asks about the basic business characteristics of the firms we surveyed. We collect information on age, outstanding debt, financial obligations, nature of debt guarantees, number of workers, and the likelihood of the business remaining operational in the future.

3.2.2 Informational Videos

The second section of the survey consists of professionally animated videos, which we created to generate specific sources of experimental variation. The animated videos are discussed in detail in Section 3.3 and screenshots from the videos are displayed in Appendix Figures A1, A2, and A3.[7]

3.2.3 Bankruptcy Knowledge

A central part of our study consists of measuring small firms' perceptions and awareness of bankruptcy options. In particular, we measure how much small business owners in the US know about bankruptcy protection. We measure whether small business owners correctly believe that filing for bankruptcy can be a means to keep the business afloat during times of financial difficulties or whether they incorrectly believe that declaring bankruptcy

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[7]See http://emanuelecolonnelli.com for links to the videos.

necessarily entails the death of a firm, i.e., shutting down permanently. We also measure whether businesses are aware of the difference between Chapter 7 (liquidation) and Chapter 11 (reorganization). Finally, we measure awareness of the policy and legal framework, by asking whether respondents are aware that the recent Small Business Reorganization Act (SBRA) makes it easier for small businesses to file for Chapter 11 bankruptcy. We discuss the questions we ask on bankruptcy knowledge and responses among the control group in detail in Section 4.

3.2.4   Bankruptcy Stigma

Another central part of the study is to measure the extent to which small businesses in the US perceive the presence of a negative stigma against bankruptcy. To measure stigma, we ask respondents how much they agree with the following statements: *"It is embarrassing for a business owner to file for bankruptcy."; "People will think that a business owner who files for bankruptcy is a failure."; "People will think that a business owner who files for bankruptcy is unethical."; "Clients will be less willing to buy from a business owner who filed for bankruptcy."; "Employees will be less willing to work for a business owner who filed for bankruptcy.";* and *"Friends and family may look down on a business owner who files for bankruptcy."* We discuss the responses to these questions in detail in Section 4.

3.2.5   Outcome Variables

We measure outcomes in multiple ways. First, we ask to what extent firms would consider bankruptcy as an option to deal with financial difficulties in the future. We then measure firms' willingness to take on risk, intended future investment plans, and intended plans to take on more debt.

More specifically, our first outcome variable measures the likelihood that the respondent considers filing for bankruptcy in the next 12 months. We ask *"What is the likelihood that you will consider filing for bankruptcy in the next 12 months?"*, with answer options being: *"Definitely will not file; Moderately unlikely; Slightly unlikely; Neither likely nor unlikely; Slightly likely"*.

A second dependent variable captures business owners' willingness to consider bankruptcy conditional on being in financial distress. We ask the extent to which they agree with the following statement: *"If I am unable to pay my debt, I will consider filing for Chapter 11 bankruptcy"*, measured on the following 5-point scale: *"Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree"*.

The next outcome variable measures the likelihood of renegotiating debt in the next

12 months. That is, we ask business owners: *"What is the likelihood that you will consider renegotiating your debt and/or other payment obligations (such as rent) in the next 12 months?"*, which they can answer with: *"Extremely unlikely; Somewhat unlikely; Neither likely nor unlikely; Somewhat likely; Extremely likely"*.

The fourth outcome variable measures risk tolerance. To do so we ask: *"How much "risk" do you think that you will take in the next 12 months? By risk, we mean risks that your business may take (not risks from the external environment), like introducing a new product or expanding to a new location."* The answer options are: *"Less than typical amount of risk.; Typical amount of risk.; More than typical amount of risk."*

The fifth outcome variable aims to measure intended changes in firms' investment plans. Specifically, we ask *"Small businesses frequently need to make decisions about investment, such as whether to buy a new piece of equipment or a new facility. Over the next 12 months, how much investment do you intend to make relative to a typical year? More than usual, about the same as usual, or less than usual?"* Respondents have the five following options to choose from *"Much more than usual level of investment; Somewhat more than usual level of investment; About the same as the usual level of investment; Somewhat less than usual level of investment; Much less than usual level of investment"*.

Our last outcome variable measures the amount of debt business owners are willing to take. We ask *"Having taken the survey, do you think you may consider changing the amount of debt your business holds?"* Respondents can indicate if they will increase or decrease their amount of debt by choosing one of the following options: *"Will consider increasing the amount of debt; Will consider decreasing the amount of debt; No; I don't have any debt."*

3.2.6 Demographic Characteristics

The last section asks about the demographic background of the firm's owners. We collect information on gender, education, age, race, and ethnicity.

3.3 Experimental Variation

We introduce one main layer of randomization into our survey, aimed at inducing experimental variation in knowledge and stigma regarding small business bankruptcy. To do so, we generate two treatment groups—aimed at varying knowledge and/or stigma—and one control group. The set of questions asked is the same for all respondents. After randomly assigning respondents to one of the three groups (control, information, or information and stigma), we obtain variation by exposing respondents to different videos after the first section on basic business characteristics. We illustrate the experimental design, as well as the

total number of observations in each treatment and control group, in Figure 1.

A key assumption for our experimental design to be valid is that there is no statistical difference between treatment and control groups. A quick comparison of the first three columns of Table 1 shows that the composition of the different treatment groups is rather similar, both in terms of firm-level and individual-level characteristics. We further test for balance more directly in Table 2, where we aggregate some of the variables into coarser categories. In columns 1 and 2, we report the results from univariate regressions of an indicator variable for each treatment group on the main characteristics of interest. In columns 3 and 4 we conduct a similar analysis where the characteristics of interest are included together in the same regression. The results in the table display the randomization was effective, as there is only one coefficient that is statistically significant (at the 10% level), and because all the coefficients are small in magnitude across all specifications.

3.3.1 The Animated Videos

The experimental variation is introduced by means of animated videos. All videos have been professionally scripted and developed, and they are similar to the animated videos seen in a variety of contexts, including some of SCORE's instructional videos. The full scripts of all videos are reported in A.2.

The first video is a *control video*, which consists of a brief one-minute animation about a hypothetical small business owner who is struggling with financial issues. The video is pitched as a way to explain the main topics we ask about in the survey. No further information about bankruptcy fillings or SBRA is shown in the control video, which is intentionally designed so that respondents answer the subsequent questions with their own prior beliefs and knowledge about bankruptcy.

In designing the treatment videos, there are a few relevant considerations to notice. First, the treatment videos should ideally move all respondents' perceptions monotonically in the same direction. Second, the treatment should be truthful and not provide any incorrect information. With these goals in mind, we opted to treat respondents by means of qualitative statements, an approach similar in nature to Alesina et al. (2018) and Colonnelli et al. (2022) in the contexts of intergenerational mobility and corporate responsibility, respectively.

Our first treatment video—*Information*—aims at providing information about bankruptcy protection, covering basic differences between Chapter 7 and Chapter 11 bankruptcy, and explaining the SBRA.[8] It is shown that firms that file for bankruptcy do not necessarily go out of business. Indeed, the video indicates that filing for Chapter 11 bankruptcy can be a way for struggling businesses to find the means to stay operational. For example, the video

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[8]The first part of the video is identical to the *Control* video.

says: *"Many people think that bankruptcy means shutting down your business, this is called Chapter 7 bankruptcy. But there is another kind that helps you stay in business, Chapter 11. Chapter 11 is designed to protect the business until you can get back on your feet."* The information in the video is correct and shines a light on the possible uses of bankruptcy.

Our second treatment video—*Information and Stigma*—aims not only to provide basic information about business bankruptcy but also to reduce small business owners' stigma regarding bankruptcy. Specifically, in addition to the same *Information* video discussed above, respondents watch an additional minute aimed at reducing stigma. The video shows that filing for bankruptcy is lawful and even part of the constitution and that many successful US corporations have relied on the bankruptcy system and managed to remain profitable even after filing for bankruptcy. It contains statements such as: *"You didn't fail, business conditions changed.", "It's a tool that responsible people use to save their business after a setback.",* and *"Bankruptcy is a lot more common than you think. Big businesses have been using Chapter 11 for decades."*

3.4 Ensuring High Quality Data

The survey itself is designed to ensure the answers are reliable, with all videos intentionally set up to be easy to understand in terms of language. We make sure respondents pay attention to the informational videos by embedding forced stops into the videos when respondents change or minimize tabs on the web browser or move to another screen, program, or application. Also, respondents are unable to mute the audio and the fast-forward option is removed. We also track the time spent by each respondent on the survey, and we find that only 2.16% of the respondents completed the survey in less than 10 minutes. Respondents cannot skip questions, must actively click on the option to respond to each given question, and questions that require numeric entries cannot be answered with non-numerical characters. Furthermore, after asking for basic business but before we show the video, we ask respondents to confirm they have devoted full attention to the study. As discussed by Meade and Craig (2012), these questions aim to ensure the respondents pay attention to the subsequent questions, and they are effective independent of whether the respondents answer honestly. Almost all respondents (99.64%) explicitly state they devoted full attention to the survey. Before concluding, in one of the last questions, we ask respondents how much effort they have put forth and we find that 89.67% of the respondents state they put forth quite a bit or a lot of effort towards the study.

3.5   An Additional Survey of Larger Firms

To ensure the accuracy of our results and expand our tests to larger firms, we conducted a similar survey experiment at the end of 2023 using the well-established data collection partner Dynata, which we instructed to recruit a large sample of business owners (hereafter, we refer to this new survey as the "Larger Firms survey"). The set-up of this survey was largely similar to the experiment outlined above. The main purpose of this additional survey was to investigate whether the results would be similar in a sample of larger firms with more complicated capital structures. The original survey conducted with SCORE was designed to contain a sample of small businesses that would be more closely representative of the distribution of firms in the U.S. economy, which meant that many respondents were owners of small firms that had few financial obligations. While even firms with simple capital structures can use bankruptcy to resolve financial distress, this additional large-scale survey required businesses to have at least $100,000 in debt and 10 full-time employees. This new sample of firms is aimed to be considerably more representative of firms that file for bankruptcy in the U.S..

The Larger Firms survey was conducted over four weeks in November and December of 2023, and we collected 1,022 responses total. Respondents were again randomly assigned to control, information, or information + stigma treatment groups, and were shown the same videos as respondents to the SCORE surveys, with the same ordering of treatment and questions. Summary statistics for this experiment are provided in Appendix Table A1. As expected, survey respondents match the sample of firms that file for Ch. 7 or Ch. 11 bankruptcy quite well. Among the 1,022 respondents, 32% have less than $250,000 in total liabilities, while the similar figure among all firms that have filed for bankruptcy since 2015 is 28%.[9] In the Larger Firms survey, 33% of respondents have between $250,000 and $1 million in total liabilities, while the similar figure among actual bankruptcy filers is 41%. Among survey respondents, 20% have between $1 million and $2.5 million in liabilities, exactly matching the 20% of bankruptcy filers with amounts of debt in this range, and the remaining 14.3% of survey respondents had between $2.5 million and $7.5 million in debt, compared to 10.7% of actual bankruptcy filers. Overall, the size distribution of respondents is quite similar to small business bankruptcy filers in the U.S.. We discuss other summary statistics and results from the Larger Firms survey below.

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[9]The size distribution of firms filing for bankruptcy is based on the data from the Integrated Bankruptcy Database (IBD) produced by the Federal Judicial Center. For this calculation, we dropped all bankruptcy filers in the IBD that report zero total liabilities. We also remove firms that report more than $7.5 million in total liabilities from the IBD statistics, as these larger firms are not eligible to use the new SBRA subchapter of bankruptcy and are not the focus of this study.

4   Descriptive Analysis

Little is known about what small business owners know about bankruptcy or their views on the process.[10] Before discussing the impact of our treatments, in this section, we discuss some descriptive statistics that shed light on how small business owners in our sample view bankruptcy. We first describe summary statistics for the SCORE sample, and then discuss larger firms in the Larger Firms sample at the end of this section. We focus on the control group of our sample to ensure that the descriptive facts are not contaminated by our information and stigma treatments.[11]

4.1   Bankruptcy Knowledge

Small businesses fail at relatively high rates. Data from the Bureau of Labor Statistics Business Employment Dynamics show that roughly 20 percent of new business establishments fail within their first year, and less than 50 percent survive through five years. Given the relatively high possibility of facing financial and economic difficulties, one might expect that it would be valuable for small business owners to have at least some familiarity with the basics of bankruptcy as an option to deal with a struggling business.

However, summary statistics in Table 3 paint a different picture. Only 35 percent of respondents self-report that they have a good understanding of the bankruptcy system. This lack of understanding is borne out in responses to three basic true/false questions, where 35, 44, and 47 percent of respondents report that they don't know the answer to each question, respectively. For example, nearly half of the small business owners do not know that debts can be renegotiated with creditors in Chapter 11. Perhaps most strikingly, 42 percent of respondents either get the answer wrong or don't know the answer to the "life after death" question of whether bankruptcy necessarily forces a small business to cease operations. This means that a significant portion of small business owners may not view bankruptcy as an option to restructure and continue operating their firms.

Table 3 also shows that nearly all small business owners are unaware of the SBRA, with 88 percent reporting that they don't know if the SBRA makes it easier or harder for a small business to file for Ch. 11 bankruptcy. This is an important finding given the widespread financial difficulties small firms were facing at the time of our survey, and because for laws such as these to be effective it is important that those who might be affected by the law are

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[10]One exception is Gotberg (2021b), who provides qualitative interviews of 43 small business owners in Columbia, Missouri, discussing both information and stigma among this group.

[11]Figure 2 also reports means for knowledge about bankruptcy and stigma for both the control and treatment groups. The specific differences and respective magnitudes are discussed later in the results' section.

made aware of it.

In Figure 3, we display how basic knowledge about bankruptcy varies across various socio-demographic and business characteristics. In these figures, we code "don't know" responses as "incorrect," and then plot the average and 95% confidence intervals for various subsets of the data. Several consistent patterns emerge from this descriptive analysis. First, both owner and firm age are strongly related to having more knowledge of bankruptcy. On average, older business owners as well as owners of older businesses score significantly higher on all basic knowledge questions. Similarly, business owners that have finished college score significantly higher on most questions. We also observe differences by gender, with male business owners scoring higher than female business owners. On the other hand, we do not observe significant differences between white and non-white business owners.[12]

Businesses must have debt to file for bankruptcy, and so one might expect that business owners with debt would be more informed about bankruptcy. However, we find that business owners with debt get a similar percentage of knowledge questions correct. Similarly, business owners that have personally guaranteed their business loans do not display greater knowledge of bankruptcy.

4.2   Bankruptcy Stigma

Control group responses also give a unique insight into the stigma that business owners have against bankruptcy. Panel D of Table 3 shows that stigma is large across five of the six dimensions of stigma we asked about. We find the strongest response when respondents are asked if bankruptcy is viewed as a failure, with 70% agreeing with this statement. Between 53% and 64% of respondents agree that bankruptcy is embarrassing and that it will make it harder to work with clients or employees. 62% feel that friends and family will look down on a business owner who files for bankruptcy. All of these suggest that business owners expect quite a lot of social stigma from a bankruptcy filing.

On the other hand, only a quarter of respondents agree that it is unethical to file for bankruptcy. While 25% is still a significant portion of respondents, this is far lower than figures for other stigma questions and suggests that many business owners do not personally view bankruptcy as unethical but still worry about how a bankruptcy will reflect on their reputation and ability to run a business.

Figure 4 shows that there is significant heterogeneity in how various socio-demographic groups view small business bankruptcy. In particular, non-white owners are much less likely to agree that bankruptcy is embarrassing or a failure than white owners. They are also

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[12]We see no differences in knowledge about SBRA, as all subsets of the data are largely uninformed about the new law.

significantly less likely to agree that bankruptcy will damage relationships with clients, employees, or friends and family. We also see differences by gender, with male business owners displaying more stigma than female business owners across most questions. However, these differences by gender and race do not replicate in the Larger Firms sample (described below), suggesting that they do not persist among business owners of slightly larger firms.

Finally, we examine the differences between businesses with and without debt and those with and without personal guarantees. Ex ante, one might expect that business owners with more stigma against bankruptcy would avoid taking on debt or providing personal guarantees, so as to avoid bankruptcy. Instead, we observe the opposite of this relationship, finding that businesses with debt have more stigma against bankruptcy than those without debt. Similarly, business owners with personal guarantees exhibit more stigma than those without personal guarantees. Given that these are purely descriptive correlations, we cannot pin down exactly why business owners with more debt and personal guarantees display more stigma against bankruptcy. One possibility is that having debt and personal guarantees makes them more averse to bankruptcy. Alternatively, it is possible that business owners with a strong stigma regarding bankruptcy think it is unlikely they will ever get into financial difficulties and thus do not expect to file for bankruptcy, leading them to be more willing to take on debt.

4.3   Descriptives on Larger Firms

The Larger Firms survey contains business owners of firms with at least $100,000 in total debt and at least 10 employees, making these firms much larger than those in the SCORE sample on average. Appendix Table A2 contains summary statistics for knowledge and stigma among the control group of the Larger Firms survey, similar to Table 3. As expected, owners of these larger business are generally more knowledgeable about the bankruptcy system than those in the SCORE survey.[13] For example, 90% know that debts can be renegotiated in bankruptcy. However, 54% incorrectly believe that bankrupt firms must cease operations and an additional 9% don't know the answer to this crucial "life after death" question. Knowledge of the SBRA is more widespread among this sample, but 20% of respondents incorrectly believe that the SBRA makes bankruptcy more difficult for small businesses and an additional 10% don't know if it makes it easier or harder. Overall, knowledge of bankruptcy is higher among these business owners but there is still a strong misperception about bankruptcy leading to the death of the business.

Reassuringly, heterogeneity in knowledge about bankruptcy is largely similar in the

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[13]In the Larger Firms survey, 77% of respondents have a college degree, compared to 69% in the SCORE sample.

Larger Firms survey to what we observe in the SCORE sample (see Appendix Figure A4). In particular, business owners of older firms and those with college degrees score higher on most questions in both samples. Among the larger firms in the Larger Firms sample we observe an additional pattern across debt levels. We find that business owners with above-median debt (those with more than $1 million in debt) rate their own knowledge of the bankruptcy system higher than those with less debt, but those with below-median debt are significantly more likely to know that bankruptcy does not require the business to shut down and that one should use Chapter 11 to reorganize a firm. In other words, high-debt business owners *feel* that they have more bankruptcy knowledge, but actually score slightly worse on basic knowledge questions. The same general patterns hold for business owners with a personal guarantee in the Larger Firms sample (77% of this sample has a personal guarantee): those with a personal guarantee self-assess higher levels of bankruptcy knowledge but score worse when asked whether a firm can continue to operate after filing for bankruptcy and which chapter allows a firm to reorganize. These patterns suggest that business owners who are most willing to take on risk also have the least amount of knowledge about bankruptcy.

Respondents to the Larger Firms survey have similarly high levels of negative stigma towards bankruptcy. Across nearly all dimensions of stigma that were asked, roughly two-thirds of respondents agree that filing for bankruptcy is embarrassing, viewed as a failure, will make it harder to work with clients or employees, and that friends and family will look down on them if they file for bankruptcy. The largest difference in the Larger Firms survey is that 54% also agree that bankruptcy is unethical, as compared to only 24% in the SCORE sample. Thus, if anything these respondents have even more negative stigma towards bankruptcy than respondents to the SCORE survey.

In the SCORE sample, we saw significant heterogeneity in stigma across race and gender. These differences do not persist among business owners of larger firms (see Appendix Figure A5). However, differences in stigma across levels of debt and the presence of personal guarantees replicate strongly in the Larger Firms survey. Business owners with more than $1 million in total debt or with personal guarantees exhibit significantly stronger stigma than those with between $100,000 and $1 million across all six dimensions of stigma. Similarly, business owners with a personal guarantee have much more negative perceptions of bankruptcy across all stigma questions. As noted above, these are also the business owners with less knowledge of bankruptcy.

To summarize, three points stick out from the descriptive analysis. First, most business owners know very little about bankruptcy despite high failure rates. While business owners of larger firms generally have more bankruptcy knowledge, there is still a significant lack of knowledge even among this group. Second, stigma appears to be quite high, with a

majority of business owners labeling bankruptcy as embarrassing or a failure, and expecting bankruptcy to damage their relationships with others. Third, both information and stigma vary substantially across the sociodemographic spectrum, with older and college-educated business owners having more knowledge, while owners with higher debt and with personal guarantees display the most stigma against bankruptcy.

5 Results

In this section, we describe the results of our information and stigma video experiments from the SCORE experiment. We first report the results on small business owners' knowledge of bankruptcy in Section 5.1. In Section 5.2 we study the effects on stigma. In Section 5.3 we discuss the analysis of firm-intended and real outcomes. In Section 5.4 we explore mechanisms for our results using a qualitative survey of bankruptcy attorneys and judges. Section 5.5 contains a brief discussion of validity threats to our experimental setting.

Our econometric specification is a regression of various outcomes on indicator variables for the two treatment groups, controlling for several pre-RCT characteristics of firms.[14] We focus on results with robust standard errors in parentheses since the randomization is at the level of the firm. A concern in nearly all RCTs, as well as observational studies, is multiple hypothesis testing: could our results be driven by the fact that we examine many hypotheses? We assuage such concerns by creating and closely following our AEA RCT pre-registration, which specifies the outcomes that we test. In addition, our tables present Westfall-Young family-wise error rate adjusted p-values (following our pre-analysis plan) in square brackets. These p-values account for multiple hypothesis testing and all of our main conclusions are robust to these tests.

5.1 Impacts on Knowledge

Panel A of Table 4 shows that the information treatment had a large immediate effect on knowledge. As seen in column 2, the two information treatments increase the share of firms who know that bankruptcy allows for "life after death" by roughly 25pp each, raising knowledge of the truth from 58% to over 80% of firms. The treatments raise the share of True/False correct answers by 35pp. The treatments massively increase knowledge regarding Chapter 11 bankruptcy, almost doubling the share of firms knowing that business assets are protected in Chapter 11 (column 6) and more than doubling the share knowing that Chapter 11 allows firms to reorganize (column 8). Finally, the treatments boost knowledge that the

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[14]Results are nearly identical with no control variables, as discussed in Section 5.5.

SBRA makes bankruptcy easier by roughly 65pp, increasing knowledge from 11% in the control group to 75-80% in the treatment groups.

In all information RCTs, a fundamental issue is whether changes in knowledge or beliefs are transitory. One reason this is important is experimenter-demand effects, i.e., a concern that people may change their minds to please the experimenter. Another reason is simply to assess whether changes in knowledge or beliefs are durable, since more durable changes in belief may be necessary to affect longer-run outcomes.

Panel B of Table 4 shows that there are persistent improvements in knowledge about bankruptcy after 4 months. Some of the treatment effects are partially muted, e.g., the impacts on life after death shrink from 25pp to 15pp. However, the effects remain economically sizable.

As seen in Table 4, the impact of the information-only treatment and the information+stigma treatment are similar. This is unsurprising given that the key difference between the two treatments concerns stigma instead of information. Reassuringly, these results suggest that it is the informational component of the video that is providing information about bankruptcy to subjects, as opposed to subjects engaging in general information acquisition in response to more video content.

Given that the sample after 4 months is considerably smaller, an important issue is whether such changes in beliefs reflect actual changes in beliefs versus sample attrition. Appendix Table A3 presents the impacts on immediate changes in information for firms that remain in the sample throughout the RCT. As seen in Panel A, the immediate information treatment effects among firms in the sample for the entire time period are similar to the immediate effects among all firms. This suggests that attrition bias is unlikely to be a main driver of the results in Panel B of Table 4.

Improvements to information about bankruptcy are observed across a wide range of firm and owner characteristics. As shown in Figure 3, Control group respondents of all types have little knowledge of the bankruptcy system, with average T/F scores ranging between 57% and 65% for all subgroups. Appendix Table A5 shows that the informational video improved knowledge for small and large firms, firms with debt and without debt, young and old owners, and owners with a college education and those without. We examine these subgroups because we observe the largest differences in baseline knowledge and stigma in the Control group along these dimensions (see Figure 3). In the case of bankruptcy knowledge, younger business owners and those without a college education score worse on basic knowledge questions. However, Appendix Table A5 shows that there are not consistent differences in response to treatment for any of these subgroups. Meanwhile, the main treatment effect remains large and significant across all sample splits. Overall, the treatments had large impacts across all

respondents without much heterogeneity in response.

5.2   Impacts on Stigma

Panel A of Table 5 shows that the stigma treatment has a substantial negative effect on stigma regarding bankruptcy, both economically and statistically. For all but one variable, we see reductions in the stigma of roughly 0.2σ to 0.35σ, as well as a reduction in the combined stigma of 0.29σ. The one instance where the stigma treatment fails to reduce stigma is whether subjects regard bankruptcy as unethical. This is unsurprising given that this is the one question where subjects show low stigma in the control group.

Panel B of Table 5 shows that the effects are highly persistent after 4 months. Unlike knowledge, the effects on stigma show relatively little attenuation. The combined stigma effect after 4 months is 0.26σ.[15]

We believe that this finding is important as it shows that the stigma about bankruptcy may be partially addressed using relatively low-cost interventions. While one might imagine that experimenter-demand effects might cause businesses to reduce stigma immediately after treatment, it is unlikely that such effects would cause stigma to be reduced 4 months after treatment, as also discussed in Haaland et al. (2023).

We consistently see that the information+stigma treatment significantly reduces stigma, whereas the information-only treatment fails to significantly reduce stigma. For example, while the information+stigma treatment reduces immediate stigma by 0.29σ, the information-only treatment reduces stigma by only 0.05σ. Again reassuringly, this suggests that it is the stigma-related content of the videos that is reducing stigma as opposed to the general experience of viewing a video, as intended.

What type of firms exhibit stigma and respond to the treatment? The answer on both accounts is a broad range of firms. As discussed in Section 4 above, for example, businesses with debt have more stigma than those without, and white business owners also display an especially high stigma against bankruptcy. Despite this heterogeneity, all groups exhibit a sizeable degree of negative stigma. For example, 70% of respondents with debt agree or strongly agree that bankruptcy is embarrassing while the similar figure for respondents without debt is 60%. Stigma is observed in firms of different sizes and operating in different industries, and firms of all types respond to our interventions and demonstrate persistence. In Appendix Table A6, we test whether certain types of firms and owners respond more

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[15]A caveat is that we did not ask the stigma question about whether bankruptcy was unethical in the 4-month follow-up, due to limits on survey length for the follow-up. Still, even if we create a combined measure of immediate stigma reduction using only the same questions that were asked in the 4-month followup, the patterns are broadly similar.

strongly to the stigma intervention. Similar to our tests of heterogeneity in response to the knowledge treatment, we find very little heterogeneity in response across the different firm and owner characteristics, with no statistically significant differences by firm size, owner age, owner education, or firm debt levels. Instead, we find that all firm types respond significantly to the stigma treatment.

Magnitudes. To benchmark our 0.29σ reduction in stigma, we compare our magnitudes with those in research on stigma reduction in other contexts. Broockman and Kalla (2016) is an influential recent RCT on reducing stigma and prejudice toward transgender people using a brief canvassing intervention.[16] Their intervention improves transgender tolerance by strikingly similar magnitudes to ours (0.29σ after 3 days, 0.34σ after 3 months). Broockman and Kalla (2016) refer to their effect size as "substantial" and their intervention as "broadly successful", especially relative to other behavioral interventions aimed at reducing stigma and prejudice (see Paluck et al. (2021) for a review).

5.3 Firm Outcomes

Our results show that small businesses exhibit significant unawareness of bankruptcy and a strong stigma against considering it as an option. We now analyze firm outcomes.

Intended Outcomes Immediately Following Treatment. Panel A of Table 6 shows that the treatments had sizable effects on many intended outcomes. Effects are generally larger for the information+stigma treatment than the information treatment, though the difference is generally not large enough to reject that the coefficients are the same.

Columns 1-2 show that the treatments make firms more willing to consider bankruptcy, especially in the case of the information+stigma treatment. In column 1, the information+stigma treatment increases firms' willingness to consider bankruptcy by 0.13σ, which seems moderate in size. In column 2, the information treatment makes firms 0.25σ more willing to use Chapter 11 bankruptcy conditional on not being able to repay, and the effect from the information+stigma treatment is 0.31σ.

Interestingly, the treatments made firms less likely to intend to renegotiate their debts, by 0.10σ for the information treatment and 0.18σ for the information+stigma treatment. A simple explanation is that when bankruptcy becomes more attractive in the mind of a business owner, there is less need to want to renegotiate debts with creditors, as such debts can be reduced via bankruptcy.

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[16]Stigma related to bankruptcy may seem quite different from stigma related to transgender people. However, as noted above, we are not aware of other RCTs on reducing firms' stigma toward bankruptcy.

Columns 4-6 consider risk-taking and investment. Column 4 shows that the treatments did not have statistically significant effects on intended self-defined risk-taking, though the effects are in the positive direction. Columns 5-6 show that the treatments increase firms' intention to increase debt and investment. For each outcome (debt or investment), firms are asked whether they intend to increase the level over the next 6 months, keep the level the same, or decrease it. Thus, column 5 shows that the treatments increase the share of firms intending to increase debt by 0.11σ to 0.15σ and increase the share of firms intending to increase investment by 0.11σ to 0.14σ.

Finally, column 7 considers a risk composite score, comprised of the average of normalized values for columns 1-6. The information treatment increases the risk composite score by 0.14σ, while the information+stigma treatment increases the risk composite score by 0.21σ. We cannot reject that the two treatments have the same effect ($p = 0.29$).

Actual Outcomes Months After Treatment. Despite the large effects on immediate outcomes, limited effects are observed on self-reported past outcomes, which we observe as part of our 4-month follow-up. We report these results in Panel B of Table 6. Treatment firms were no more likely to have reported considering using bankruptcy in the past 4 months. There are also no consistent effects on self-reported changes in investment during the last 4 months, changes in debt during the last 4 months, or debt renegotiation during the last 4 months.[17] The null effects are reasonably precise, e.g., we can rule out with 95% confidence that the information and information+stigma treatments increase consideration of bankruptcy by 6pp and 3pp, respectively.

These results warrant the strong caveat that there is sizable sample attrition, as only 505 firms respond to our follow-up survey. Still, recall from above that the impacts on information awareness and stigma were similar for the firms who stayed in the sample throughout the whole period. This suggests that sample attrition is unlikely to be a main driver.[18]

In addition to intended outcomes after 4 months, we also collected data on whether a firm was still in operation, for the full set of firms in our baseline survey. We do this by manually checking to see if the firm has an active website or if we can find other active presence of the firm on the internet, such as any LinkedIn or Facebook page activity. For most of the firms in our sample, there is enough information in the data to examine whether or not the firm has continued to maintain a website, and we use this as our measure of firm survival. This was done separately 7-8 months after treatment (2021/06 and 2021/07), 15

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[17]The information only treatment has a positive effect on whether a firm increases debt, but the information+stigma treatment has no such effect.

[18]In Appendix Table A4, we also regress an indicator variable for whether a firm does not respond to the follow-up survey on various predictors. The only significant predictor of sample attrition is business owner race.

months after treatment (2022/02), and 29 months after treatment (2023/04). The number of observations for our firm survival outcomes is roughly 850 firms, reflecting that, for the remaining firms (about 39% of our sample), we lack full information on firm name and/or location to confidently assess whether the firm is still in operation.

As seen in columns 5-7 of Panel B of Table 6 shows, there is no apparent impact of the treatment on firm survival. The null effects are reasonably precisely estimated. For firm survival in June-July 2021, we can rule out effects greater than 6 percentage points in either direction. For firm survival in April 2023, about 2.5 years after treatment, the coefficient is slightly negative, and we can rule out a positive effect for the information treatment of more than 4 percentage points (e.g., we can rule out that the treatments boost firm survival from 80% to 84%). This means we can rule out effects on survival that are a modest fraction of those that have been detected for small firms in other contexts. For example, in a business plan competition, McKenzie (2017) finds that financial grants boost survival of existing firms 3 years after treatment by 20pp (i.e., from 76% survival in the control group to 96% in the treatment group) and survival of new firms by 37pp (i.e., from 54% to 91%).

Finally, we also checked bankruptcy filings by manually searching public court records on PACER (www.pacer.gov) to see if there were effects on actual bankruptcy filings. However, we found out that none of the small businesses in our sample had filed for bankruptcy by April 2023.[19] As a result, we do not include a column for bankruptcy filings in Table 6.

In sum, our longer-run results paint a picture in which information and stigma frictions can meaningfully and durably be reduced, but where the alleviation of these constraints does not have detectable effects on firms' use of bankruptcy or on other related real business outcomes. We discuss potential explanations in the next subsection.

5.4   Discussion: A Survey of Bankruptcy Attorneys and Judges

Overall, we observe no effect of our treatments on longer-run firm outcomes. Thus, while addressing information and stigma related to bankruptcy affects firms' shorter-run outcomes, there may be other long-run impediments to bankruptcy. To investigate this possibility, we conducted a survey of bankruptcy attorneys and judges through the American Bankruptcy Institute (ABI)—the largest network of bankruptcy professionals in the US—where we ask respondents to evaluate potential mechanisms behind our mixed empirical findings.

In the survey, we lay out the results of the experiment, explaining that the treatments have strong effects on information and stigma even four months after viewing the videos but

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[19] While it may seem surprising that zero firms in our RCT entered bankruptcy, bankruptcy rates fell to record-low levels during the COVID-19 pandemic (Wang et al., 2021). This was on top of generally low levels of bankruptcy usage by small businesses (Greenwood et al., 2020).

that we do not see persistent changes in actual outcomes four months later. We then ask the respondents why they think the results do not persist, giving them several options as well as a free response "Other" category. We received 129 responses to the survey, which was emailed out by ABI to all members on our behalf.

Table 7 summarizes the results. By far the strongest response was that entrepreneurs are overconfident in their ability to avoid financial distress, with 56% of respondents marking this as a likely reason there were no long-run real effects.[20] Overconfident entrepreneurs in treatment groups could have stigma reduced and information increased, but still not change actual business practices because they feel that the probability of distress is too low to warrant any changes. To the extent that this occurs, it would contribute to a "double behavioral" mechanism in which lack of information and stigma are important barriers to small businesses using bankruptcy, but overconfidence is also a significant friction.[21]

In addition to overconfidence, 35% of bankruptcy professionals also report that the perceived costs of filing for bankruptcy are a significant friction for small businesses. As shown in Gross et al. (2014), consumers in financial distress face liquidity constraints that prevent them from entering bankruptcy even when it is valuable to do so.[22] This same intuition appears to be true for small businesses as well. There are few academic studies that have explored the costs of bankruptcy for small businesses, but the available evidence suggests that these costs could be prohibitive for many small firms. Lawless et al. (1994) estimate that professional fees account for 20% of total firm value in small business Chapter 11 cases. Similarly, Bris et al. (2006) estimate that bankruptcy fees are equivalent to 23% of firm value for the median small business. Clearly, it would be hard for a small business that is already in financial distress to find a quarter of its value in cash or new borrowing to hire an attorney. Thus, it seems plausible that even if our treatment fully eliminated information and stigma frictions, some small businesses would be unable to enter bankruptcy due to liquidity constraints.

We note, however, that while this may have been true prior to the SBRA, the passage of this law appears to have reduced professional fees and made bankruptcy significantly more attractive for many small businesses. Using data collected around the same time as our experiment, Harner et al. (2021) estimate more than 50% of subchapter V cases had

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[20]Survey respondents were allowed to mark up to two options, so the percentages in Table 7 do not add to 100%. Also, the options were presented in random order so that no option received extra attention.

[21]An important issue, which we view as mostly beyond the scope of the current paper, is what is the mechanism by which overconfidence would make our treatments have a limited effect on longer-run outcomes. One story is that overconfidence makes firms less likely to think they need to use bankruptcy in the future, and that this overconfidence was temporarily overcome by making bankruptcy salient (Bordalo et al., 2012).

[22]Bruhn et al. (2018) find a similar role of fixed costs in the presence of liquidity constraints as leading to lack of adoption of profitable opportunities by small businesses in Mexico.

confirmed a reorganization plan within six months of entering bankruptcy. Prior to the SBRA, data from the Federal Judicial Center show that only 33% of small business Chapter 11 cases were able to reorganize at all, let alone within a six-month timeframe. Further, many small businesses did not even attempt to reorganize prior to the SBRA. As Harner et al. (2021) conclude, "small businesses appear now to have a restructuring tool that is both affordable and effective for addressing their financial needs."

Other possible explanations for the drop-off in long-run effects, such as bankruptcy being too complicated or time-consuming or that small businesses do not benefit from bankruptcy, have far less support in the survey. Overall, most professionals feel that over-confidence and the monetary costs of bankruptcy are the leading impediments to distressed small businesses filing.

In addition to asking bankruptcy professionals why we do not observe long-run effects, we also asked respondents whether they feel that small businesses over- or under-utilize the bankruptcy system. The purpose of this question is to get a sense of whether there are *any* frictions that prevent small businesses from using bankruptcy or if, instead, professionals feel that the system is over-used by small business owners and bankruptcy is not costly enough. If bankruptcy is over-used, then it could be that information and stigma are not large impediments and this would explain the lack of long-run effects. We do not find this to be the opinion of bankruptcy professionals. Overall, 64.5% of respondents feel that too few small businesses use bankruptcy given its current costs and benefits. Meanwhile, 26.6% feel that small businesses use it about the right amount, and only 8.9% feel that it is over-used by small businesses. These results are largely consistent with ample anecdotal evidence and the broader policy debate regarding how to guide small businesses as well as individuals through the potential benefits of bankruptcy protection regimes.

In addition, we note two other possible explanations for the lack of long-term effects. First, it is possible that we do not have enough statistical power to detect long-run effects, especially considering the much smaller sample size in our 4-month follow-up. Given the infrequent nature of bankruptcy filings and firm failure, this is likely true for these two outcomes and further work at a much larger scale would be needed to detect meaningful long-term effects. On the other hand, we have more statistical power to detect changes in debt or investment levels. For example, we would detect an effect with 80% power if the treatment moved the share of respondents who increased investment from 8pp to 18pp. Similarly, we would detect an effect with 80% power if the treatment induced at least 7% of respondents to increase their debt.

Finally, it is possible that the video treatments were not large enough to induce a change in firm behavior. While this is a possibility, it is important to keep in mind that

the treatments significantly affected both knowledge and stigma at the four-month horizon. Further, there was not much depreciation in the effects on knowledge and stigma over the four months after viewing the videos, and the treatment did affect small business owners willingness to consider bankruptcy and investment plans at the time of the original survey (Panel A of Table 6). If the treatment was large enough to affect information and stigma with little depreciation over time, it seems unlikely that the effect of the treatment on other outcomes would depreciate significantly more unless some other factor was also affecting entrepreneurs' willingness to consider bankruptcy.

Regardless, it is important to note that there are likely interactions between knowledge gaps, stigma, and other frictions to small business bankruptcy. For example, a small business owner with a strongly negative view of bankruptcy is unlikely to spend time obtaining information about the bankruptcy process. Then, if this entrepreneur encounters financial difficulties, their lack of information and stigma could lead them to wait far too long to even consider bankruptcy as an option. When they finally do consider it, it may be too late to be able to obtain the funds needed to hire an attorney or pay filing fees, resulting in the firm shutting down rather than reorganizing. In this example, liquidity constraints were the immediate impediment to the firm entering bankruptcy, but the stigma against bankruptcy was the fundamental friction that led to the liquidity constraint binding. The knowledge deficiencies and strong stigma against bankruptcy that we have shown in this study suggest that these two frictions are likely important impediments to small businesses using bankruptcy. Other frictions such as overconfidence and liquidity constraints may interact with these to result in low usage of the bankruptcy system.

5.5 Other Threats to Validity

Hawthorne Effects. A common concern for RCTs is Hawthorne effects, where subjects change their answer or behavior so as to please the experimenter, even though the underlying answer or behavior is unchanged. Our treatments led to increased knowledge and decreased stigma, both immediately after treatment and durably after four months. While it is possible that an immediate post-treatment in stigma could be driven by stigma, this is far less plausible for questions asked after four months. It is also far less clear how Hawthorne Effects could be responsible for subjects becoming more informed about bankruptcy, both immediately and after four months.[23]

We also find that the treatments led to sizable increases in the intended use of bankruptcy and risk-taking behavior, but not over the longer run. It is possible that Hawthorne Effects

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[23]Hawthorne Effects are often thought to be driven by social pressure (Levitt and List, 2011), and it is not clear how social pressure would make someone more informed.

could play a role in explaining this pattern of behavior. However, such a role of Hawthorne Effects would be fully consistent with our main argument, namely that firms exhibit clear behavioral tendencies in terms of knowledge and stigma on bankruptcy, but these tendencies are not enough to durably affect interest in bankruptcy.

Econometric Specifications. Recent work by Goldsmith-Pinkham et al. (2022) argues that adding covariates in regressions for RCTs can lead to contamination bias in terms of estimating average treatment effects. All our main results are robust to not including covariates in regressions, suggesting that contamination bias does not drive our results.

External Validity OF SCORE sample. Our sample of firms is those who are involved with SCORE. SCORE is one of the largest small business networks in the US. Appendix Table A7 provides a comparison of SCORE firms to a broader population of small businesses in the US, namely, the firms in the Kauffman Survey, showing that they are broadly similar.[24] This suggests that our results are likely to have applicability to a broader population of small businesses. Indeed, in Section 6 below we show that our results replicate in an entirely different sample of larger businesses. Though we would certainly not claim that they would extend to significantly larger firms, who are likely to be much more informed about bankruptcy options and to face less stigma regarding using bankruptcy, they seem to be consistent across a broad range of small and medium businesses. Importantly, the results in Section 6 are designed to be valid for a set of firms that is representative of the population of businesses typically filing for bankruptcy in the U.S..

COVID-19 Pandemic. It was natural to conduct the RCT in November 2020 given the recent passage of the SBRA and the concern that small businesses were not exploiting the new law, perhaps due to unawareness and stigma. Still, one may ask if our results are likely to be driven by the timing of the RCT during the pandemic? We do not see a clear reason why the COVID context would drive our results. For example, concerns about business failure were more salient than usual during the pandemic, but that would seem to work against our finding of limited bankruptcy knowledge (i.e., firms might be more informed than usual).[25] To shed light on the issue quantitatively, we exploit the fact that pandemic conditions varied widely across the US in November 2020. Some states had much higher cumulative COVID exposure rates than others. We correlated COVID exposure rates to (i) Levels of knowledge and stigma, (ii) Treatment effects on knowledge and stigma, and (iii)

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[24]One industry where they differ is "Technical & Scientific Services," though this difference likely reflects at least in part that the Kauffman survey category is "Professional, Scientific, and Technical Services" and thus includes professionals.

[25]Likewise, if anything, one might imagine that there would be less stigma than normal against bankruptcy, running at odds with out finding of significant stigma.

Treatment effects on business activity (intended and actual), and we found no systematic patterns.

Relevance Beyond the US. While our results are specific to the US, the decision about liquidation vs. reorganization is common in many countries (Djankov et al., 2008). We suspect that information deficits and stigma could play an important role in other countries too. In response to the COVID pandemic, many countries made reforms to make bankruptcy easier and more debtor-friendly, including Germany, UK, and Singapore (Djankov, 2021). The impact of such laws depends on what firms know and believe about bankruptcy.

6 Results for Larger Firms, All with Substantial Debt

The results described above use the SCORE sample of firms, which contains small businesses similar in size to many small businesses in the United States. These are firms that lack knowledge or that have strong stigma against bankruptcy and thus are the ideal sample for this study. However, it is possible that we do not find significant effects on real outcomes because many of these firms lack debt, and may not anticipate being large enough to consider bankruptcy.[26] To address this concern and check for replicability of our main results, in November and December of 2023 we conducted a new experiment with a sample of 998 significantly larger firms using our data collection partner Dynata. To be included in this experiment, firms had to have at least $100,000 in total debt and 10 employees. For reference, using data from the Federal Judcial Center's Integrated Bankruptcy Database[27] on all corporate bankruptcy cases filed from 2010 - 2022 that reported non-zero liabilities at the time of bankruptcy, firms at the 5th percentile had $79,000 in total liabilities and the median firm had $1.02 million in total liabilities. In the Larger Firms sample, 64 percent of firms have between $100,000 and $1 million in total liabilities and 20 percent have between $1 million and $2.5 million. The remaining 14 percent of firms have more than $2.5 million in debt. Thus, the firms in this sample have significant overlap with the size distribution of firms that actually file for bankruptcy in the U.S.

Another benefit of the Larger Firms survey is that it was conducted three and a half years after the introduction of the SBRA, so knowledge of the new Subchapter V had time to pass through to small business owners. Further, the COVID-19 pandemic had subsided and firms were essentially back to normal operations, reducing concerns that our original

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[26]Importantly, even in the SCORE sample, our results all hold when limiting only to larger firms with more debt.

[27]Available at https://www.fjc.gov/research/idb/bankruptcy-cases-filed-terminated-and-pending-fy-2008-present

results were contaminated by other events occurring at the same time.

Participants in the Larger Firms experiment were divided into the same control, information, and information and stigma treatment groups and were shown the same videos. As discussed in Section 4.3 above, business owners in this section were more knowledgeable about bankruptcy than those in the SCORE sample, which is to be expected given that they are owners of significantly larger firms. Accordingly, the effects of the information treatment on bankruptcy knowledge were somewhat smaller in this sample, but were still large and statistically significant. Panel A of Table 8 shows that treated business owners are 13 percentage points more likely to know that bankruptcy does not necessarily mean the death of the business and are about 15 percentage points more likely to know that Ch. 11 is the chapter of bankruptcy used to reorganize a firm. Awareness of the SBRA increased by about 10 percentage points as well.

The effects of the stigma treatment in the Larger Firms survey are strikingly similar to those found in the SCORE survey (Panel B of Table 8). Across all six stigma questions, we see reductions in stigma of about 0.19σ, on average. The overall combined reduction in stigma across categories is 0.24σ, as compared to 0.29σ in the SCORE sample.

Table 8 also displays how the treatments affected how business owners in the Larger Firms sample expected to run their businesses (Panel C). In the SCORE sample, we saw changes in stated intentions, but no real effects after four months had passed. In this sample, the only significant change observed is that treated business owners state that they would be more willing to consider Ch. 11 if they were unable to repay their debt. Treated business owners (either in the information or information and stigma treatment groups) do not appear to be more likely to renegotiate debt, take more risk, or increase debt or investment as a result of the treatment.

Overall, findings from the Larger Firms sample replicate and validate those from the SCORE survey. Even among business owners of larger firms we are able to significantly increase bankruptcy knowledge and reduce stigma, but this alone does not appear to affect the way these business owners actually run their businesses. Thus, the lack of real effects in the SCORE sample cannot be due to the firms being too small and thus bankruptcy not being relevant for those firms. In addition, the results are not due to the influence of the COVID-19 pandemic or the short timeframe between the passage of the SBRA and the administration of the SCORE survey.

Heterogeneity. In general, we find very little heterogeneity in responses to the treatments in the Larger Firms sample, similar to the SCORE survey. Treatment effects are similar across firm size, owner age, owner education, and firm debt levels, showing that knowledge and stigma can be significantly affected by simple interventions across a wide

range of firms.

Given the responses by the bankruptcy professionals described in Section 5.4 above, we asked respondents in the Larger Firms survey to estimate what the total costs of bankruptcy would be for a firm like theirs. Our goal was to better understand if anticipated high costs of bankruptcy prevent small business owners from considering bankruptcy even if knowledge and stigma frictions are removed. To benchmark expected bankruptcy costs against actual costs, we randomly selected 100 actual bankruptcy cases filed between 2015 and 2022 and manually collected information on total fees paid to lawyers, consultants, and other bankruptcy professionals for these cases.[28] Using this information, we predict what the actual costs of bankruptcy would be for the 998 respondents to the Larger Firms survey based on the size of the firm and the number of creditors the firm has.[29] Across the board, business owners estimate significantly higher direct bankruptcy costs than actual costs. The average respondent estimated bankruptcy costs \$55,656 higher than our prediction of costs based on actual filings. Put differently, the median respondent expected fees to be 11.9 times higher than actual data would predict fees to be. Only two of the 998 respondents predicted bankruptcy fees to be lower than our estimates. Thus, it seems reasonable to predict that this misinformation about bankruptcy costs plays a large role in mitigating the effect of our treatments on willingness to consider bankruptcy.

However, when we split the sample into respondents with above- and below-median bankruptcy cost prediction errors, we find no difference in treatment effects for knowledge, stigma, or real firm outcomes, as shown in Appendix Table A8. While it could be that misinformation about bankruptcy costs is preventing many small businesses from using bankruptcy, this does not appear to be why we do not find real effects in our study.[30]

In addition to monetary costs, entrepreneur overconfidence was identified by bankruptcy professionals as a likely factor in preventing small business owners from considering bankruptcy. While we do not measure overconfidence directly in the Dyanata survey, we can explore this dimension by focusing on firms that have recently experienced liquidity issues. A surprisingly high 42 percent of respondents replied that they had encountered significant liquidity issues in the past 12 months that had affected their businesses. Having experienced some financial

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[28]Bankrupt firms must request permission from the court to pay professional fees, so these get disclosed in court documents.

[29]In this sample, median direct bankruptcy costs are 2.1% of total assets at the time of bankruptcy, very similar to the costs estimated in (Bris et al., 2006) of 1.9%. However, since most bankruptcies are filed by small firms, this means that the level of direct costs is relatively small, with a median of only \$1,978.

[30]In an alternative test, we also separated our respondents into those that are relatively optimistic about bankruptcy fees and the duration of bankruptcy proceedings (those with below-median bankruptcy fee prediction errors and below-median bankruptcy duration prediction errors), those that are relatively pessimistic about bankruptcy costs (those with above-median expected fees and durations), and those in the middle. We do not find significant differences when using this alternative sample split.

distress does not necessarily make these business owners overconfident, but other responses by this group indicate a significant level of overconfidence among these entrepreneurs. For example, 78% of the entrepreneurs with liquidity shortages plan to *increase* debt in the future, as compared to only 29% of non-distressed entrepreneurs, a difference that is significant at the 1% level. In addition, owners who have experienced liquidity issues in the past on average believe that there is an 86% chance their firm is still operational in 12 months, as compared to 88% among entrepreneurs without liquidity shortages (this difference is statistically insignificant). These firms are also significantly more likely to have a personal guarantee (93% have a personal guarantee, compared to 65% of firms without liquidity issues). Finally, business owners who have had liquidity issues *self-assess* their bankruptcy knowledge 0.28σ higher than business owners without liquidity issues. However, these individuals are 22pp less likely to know that firms can continue to operate after bankruptcy and 17pp less likely to know that Ch. 11 is the type of bankruptcy that allows a firm to reorganize.[31] Taken together, many of the entrepreneurs who have experienced liquidity issues in the past are arguably overconfident in their ability to avoid financial distress in the future.

Do distressed business owners react differently to the treatment videos? Table 9 shows that the information treatment did not increase knowledge as much among this group, with generally negative point estimates for the interaction of treatment with an indicator for firms that had experienced liquidity issues in the past. Distressed business owners were especially unlikely to pick up information about the SBRA, which is precisely the law that could potentially help their firms reorganize. Given that these business owners start from a lower baseline knowledge along some of these dimensions, one might expect that the information treatment would be especially effective for this group. Rather, after treatment distressed business owners still have a significant knowledge deficiency about the ability of a firm to survive bankruptcy and the new small business bankruptcy law, as compared to non-distressed business owners who were given the same information video.

Panel B of Table 9 shows that the stigma treatment did not have differential impacts on distressed business owners. Both distressed and non-distressed business owners in the stigma treatment group reduce their overall stigma by about 0.27σ. However, since distressed owners begin with 0.25σ higher stigma higher in the first place (Appendix Table A10), this means that after treatment these entrepreneurs still have significantly more negative feelings about bankruptcy than non-distressed business owners who were also treated.

In terms of business outcomes and real activity, business owners who have experienced liquidity shortages are generally less affected by information and stigma treatments, as shown

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[31]Appendix Table A10 shows how respondents who have had liquidity issues differ from those that do not across all outcome variables.

in Panel C of Table 9. In particular, they are significantly less likely to change their willingness to consider using Ch. 11.[32] Meanwhile, treatment effects are quite large among entrepreneurs who have not had liquidity shortages. Specifically, information and stigma treatments increase an entrepreneur's willingness to use Ch. 11 bankruptcy by 0.35σ among non-distressed entrepreneurs. This is very similar to the effect size found in the SCORE sample of 0.31σ for this same question.

Appendix Table A9 examines heterogeneity in treatment effects according to firms' debt, dividing by above- versus below-median. There is no evidence that treatment effects systematically vary with firms' level of debt. For firms with above median levels of debt, which is quite high for the Larger Firms sample, the same patterns of treatment effects are present as in with below median debt, and in the SCORE sample. This suggests that our results are unlikely to be driven by some firms having lower levels of debt.

In summary, the Larger Firms survey strongly replicates the initial SCORE survey in an entirely different sample and different time period. In addition, heterogeneity in the Larger Firms survey provides some suggestive evidence that entrepreneur overconfidence could play a significant role in mitigating the effect of the information and stigma treatments. Meanwhile, differences in perceived bankruptcy costs do not appear to explain the lack of real effects observed in either the SCORE or Larger Firms surveys.

7   Conclusion

Using a large-scale RCT with a broadly representative sample of US small businesses, we first document that the vast majority of firms are not well-informed about bankruptcy options. In addition, many firms exhibit stigma about bankruptcy, showing for example special concerns that workers may not be willing to work with firms that file for bankruptcy, as well as concerns that customers will not want to do business with them. The first contribution of our paper is therefore to establish these new facts regarding bankruptcy and to show that both informational frictions and stigma are pervasive across industries and types of firms.

Second, we design short and scalable educational videos that address information or stigma gaps and show that access to these videos leads to increased firm knowledge about bankruptcy and decreased perceptions of stigma, both immediately and durably over four months. Furthermore, these experimental treatments led to sizable effects on firms' intended behavior, such as whether firms intended to increase risk-taking and increase investment, and

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[32]However, respondents who had experienced liquidity in the past start with a higher willingness to consider using bankruptcy, so it is possible that the smaller treatment effects are because they start from a higher baseline.

whether firms reported interest in using Chapter 11 bankruptcy. These findings replicate in a separate RCT with larger firms selected to have at least $100,000 in debt and conducted after the original RCT, indicating that results are not driven by the COVID context or due to many firms in the original sample not currently having debt. However, we do not see longer-run real outcomes from our treatments. While part of the reason is likely a lack of statistical power to detect effects on bankruptcy outcomes, we rely on a new qualitative survey of bankruptcy attorneys and judges to investigate other potential reasons why firms might not change real outcomes despite better information and a reduction in stigma. In particular, we discuss the behavioral role of entrepreneurs' overconfidence and, to a lesser extent, excessive perceived legal fees as first-order frictions likely explaining the limited real impact of treatments that only address information and stigma.

Recent research shows that small firms can benefit from bankruptcy protection, especially Chapter 11 (Hotchkiss et al., 2024). Our results suggest that information unawareness and stigma present challenges for small firms in considering bankruptcy. While it is possible to reduce these frictions, our RCTs suggest that public policies may need to address additional frictions for firms to realize the potential benefits of bankruptcy protection. More broadly, policies that aim to affect complex issues such as corporate bankruptcy likely need to address multiple frictions at the same time to be effective. Addressing only a subset of the frictions can result in limited effects on overall behavior even if the frictions addressed are important impediments to better outcomes.

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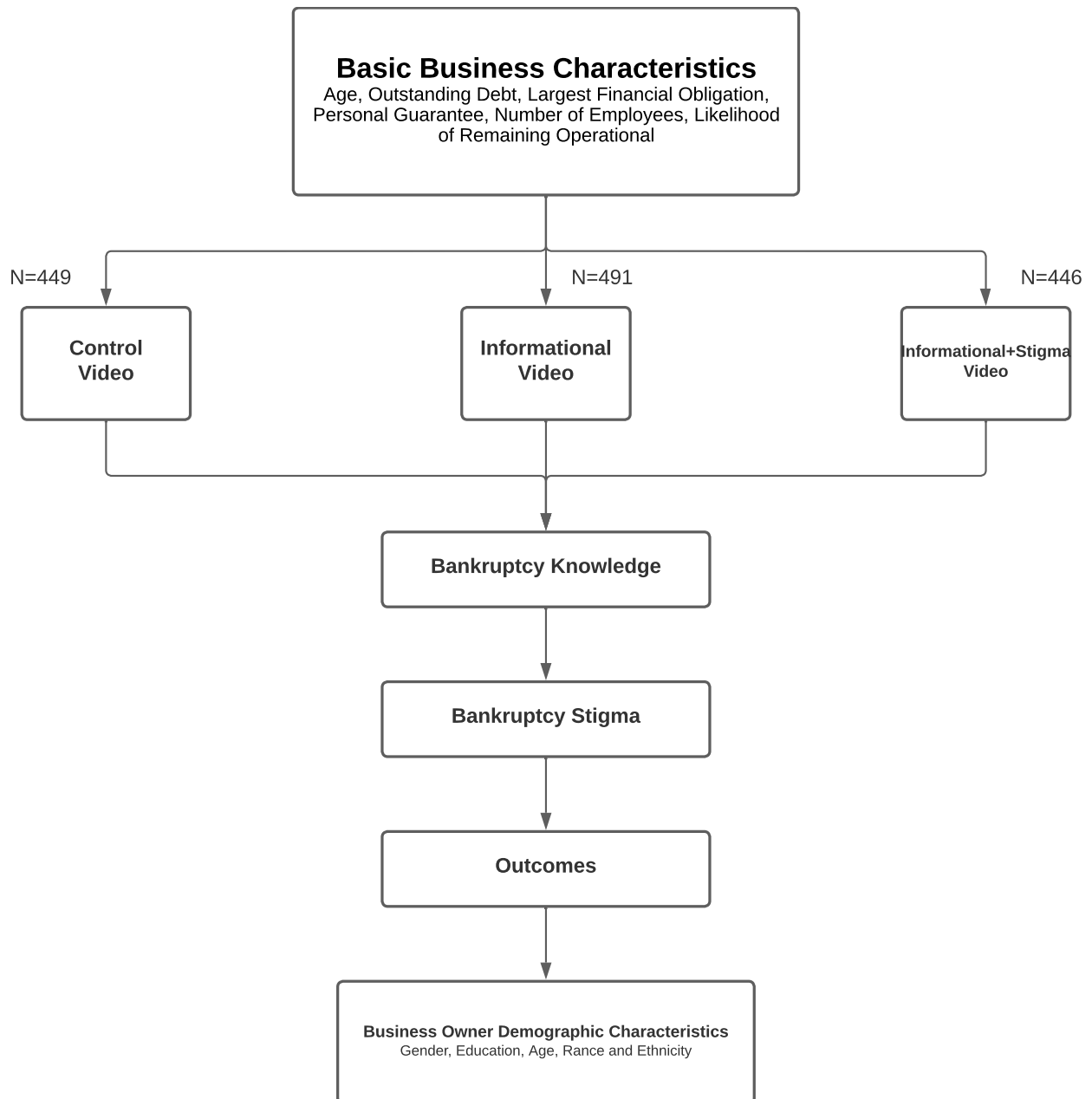
Figure 1: Experimental Design

Notes: This figure illustrates our experimental design, including the randomization layers and the sample sizes associated with each treatment and control group. The details of the design are discussed in Section 3.3.
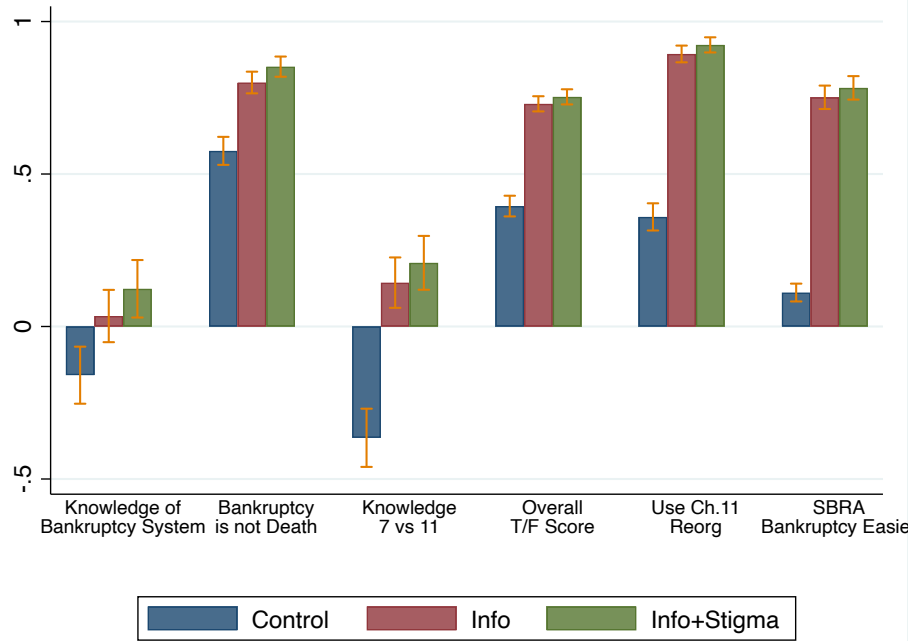
A. Knowledge
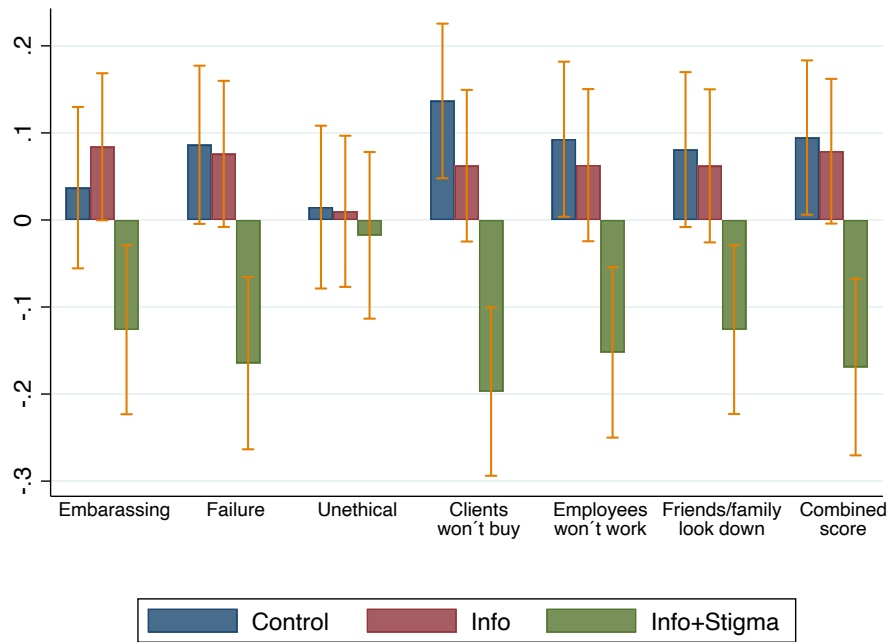
B. Stigma

Figure 2: Summary Statistics for Knowledge and Stigma

Notes: Sub-figure A shows the average and the 95% confidence interval for our main knowledge measures per treatment group; all variables are defined in Section 3.2.3. Sub-figure B shows the average and the 95% confidence interval for our main stigma measures per treatment group; all variables are defined in Section 3.2.4.

A. Knowledge of Bankruptcy System **B.** Bankruptcy is not Death **C.** Knowledge of 7 vs 11

D. Overall T/F Score **E.** Use Ch. 11 for Reorg **F.** SBRA Makes Bankruptcy Easier
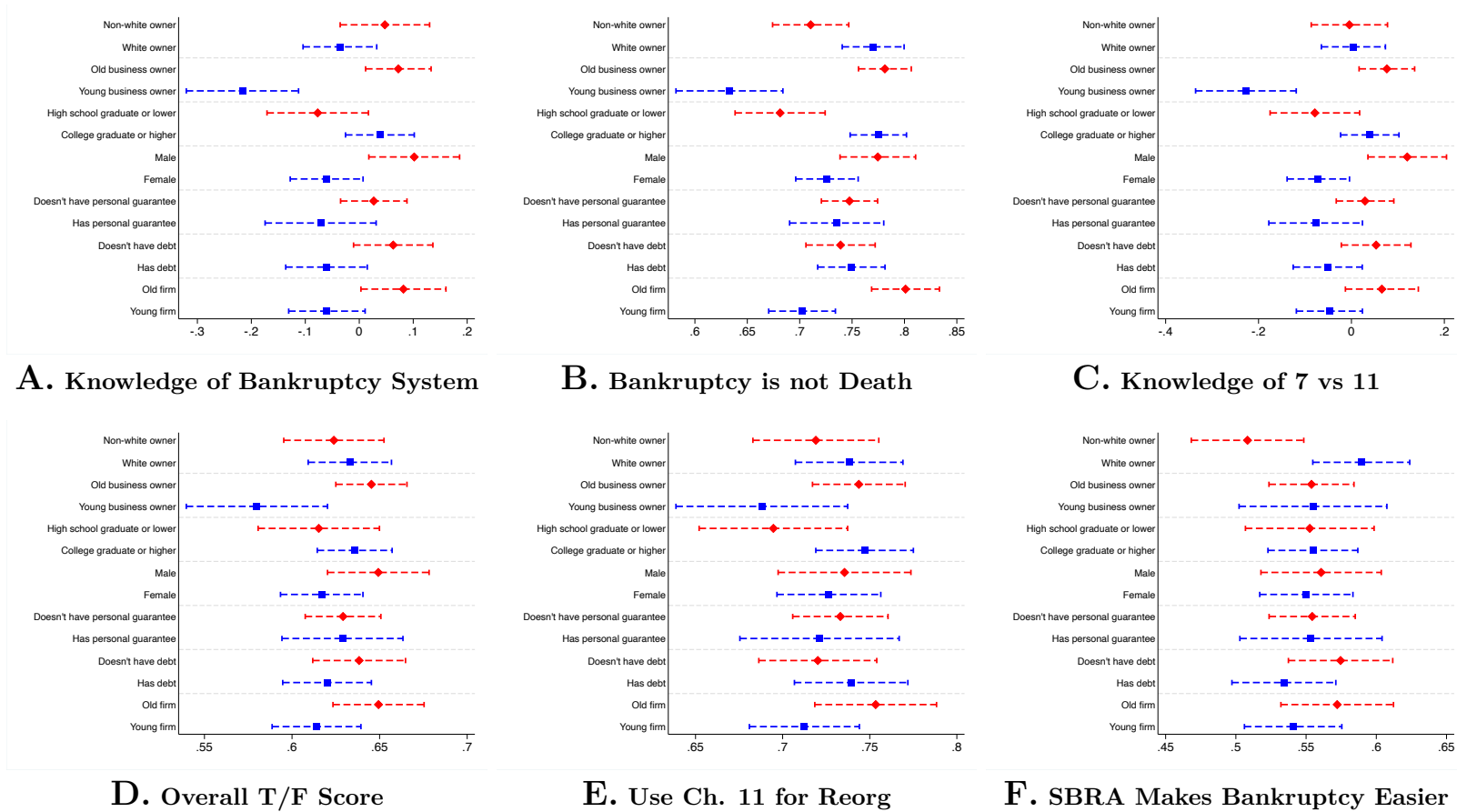
Figure 3: Heterogeneity: Knowledge

Notes: This figure shows how our measure of bankruptcy knowledge varies across the socio-demographic and business characteristics of the respondents. The sample consists of respondents in the Control video group. See Table 2 for a definition of each specific socio-demographic and business characteristics indicator variable. The sub-figures display the average and the 95% confidence interval.

A. Embarrassing   **B.** Failure   **C.** Unethical

D. Clients won't Buy **E.** Employees won't **F.** Friends and Family
work Look Down

G. Combined Score
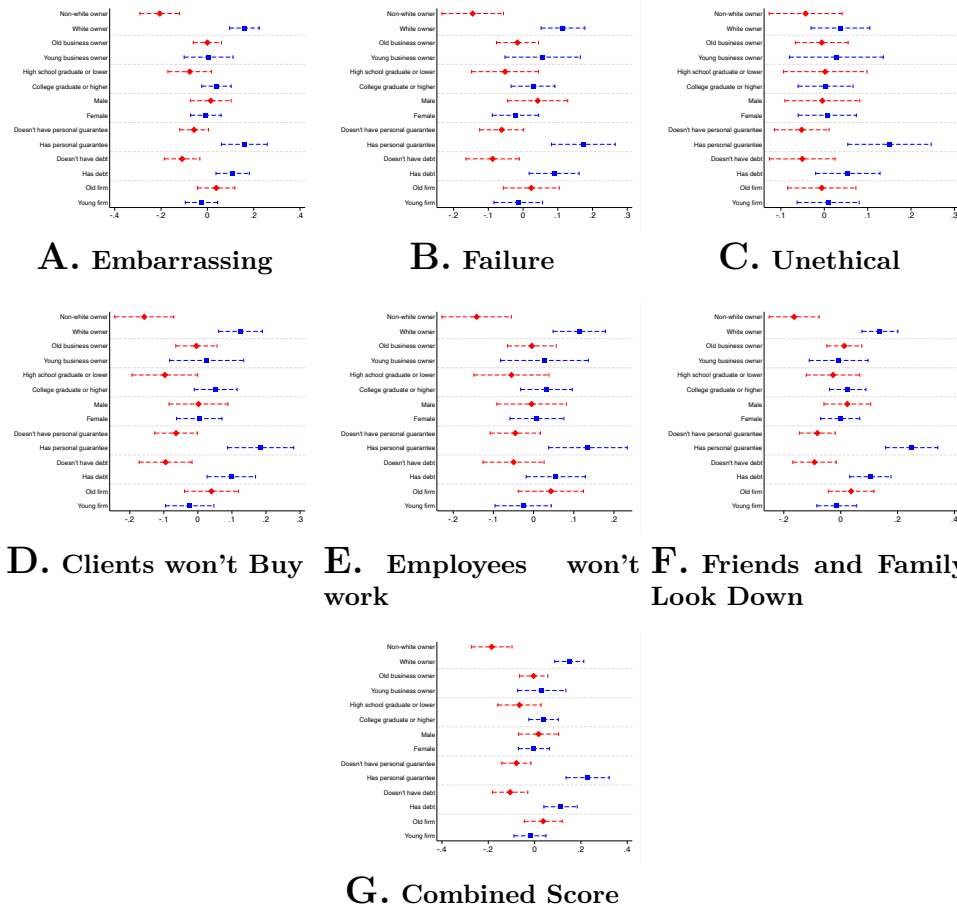
Figure 4: Heterogeneity: Stigma

Notes: This figure shows how our measure of bankruptcy stigma varies across the socio-demographic and business characteristics of the respondents. The sample consists of respondents in the Control video group. See Table 2 for a definition of each specific socio-demographic and business characteristics indicator variable. The sub-figures display the average and the 95% confidence interval.

Table 1: Summary Statistics: Firm Characteristics

	Control	Information	Information + Stigma	Full
Obs	449	491	446	1386
Firm Age				
< 1 year	15%	15%	13%	15%
1-2 years	19%	17%	20%	18%
3-5 years	26%	23%	25%	25%
6-10 years	15%	20%	13%	16%
11+ years	24%	26%	29%	26%
Has Any Debt	50%	52%	50%	51%
Total Debt (conditional on having debt)				
< $1,000	4%	4%	1%	3%
$1,001 - $5,000	13%	15%	14%	14%
$5,001 - $10,000	19%	15%	17%	17%
$10,001 - $25,000	16%	15%	14%	15%
$25,001 - $50,000	11%	14%	16%	14%
$50,001 - $100,000	14%	13%	13%	13%
> $100,000	24%	24%	25%	25%
Largest financial obligation				
Business Credit Card / Other business loan	25%	22%	28%	25%
Rent / Mortgage for business location	24%	25%	24%	25%
Payments to vendors for goods bought on credit	11%	16%	16%	14%
Equipment leases	2%	3%	1%	2%
Other	19%	20%	18%	19%
No obligations	18%	14%	13%	15%
Has Personal Guarantee	26%	27%	29%	27%
Extremely or somewhat unlikely to remain open in 12 months	11%	10%	9%	10%
Female	62%	62%	64%	63%
College Graduate or higher	70%	67%	69%	69%
Business Owner Age				
18-34	7%	7%	5%	6%
35-44	20%	18%	19%	19%
45-54	30%	31%	30%	30%
55-64	30%	33%	35%	33%
65+	14%	11%	12%	12%
Race				
White (non-Hispanic)	56%	56%	59%	55%
Black/African American	24%	24%	20%	19%
Hispanic	8%	8%	7%	9%
Asian American	2%	2%	3%	6%
Native American or First Nation	2%	1%	2%	2%
Prefer not to answer	9%	9%	9%	11%

Notes: This table provides summary statistics on the firm and firm owner characteristics of our sample per treatment group.

Table 2: Balance

Variables	(1) *Univariate Balance* Information Treatment	(2) Information + Stigma Treatment	(3) *Joint Balance* Information Treatment	(4) Information + Stigma Treatment
Young	-0.063*	-0.028	-0.066	-0.019
	(0.055)	(0.406)	(0.122)	(0.662)
Has debt	0.021	0.008	0.009	-0.014
	(0.527)	(0.815)	(0.800)	(0.708)
Has personal guarantee	0.016	0.036	0.002	0.045
	(0.659)	(0.336)	(0.962)	(0.286)
Respondent is female	-0.004	0.026	0.003	0.034
	(0.898)	(0.451)	(0.930)	(0.331)
College graduate or higher	0.031	0.023	-0.016	0.007
	(0.371)	(0.525)	(0.712)	(0.872)
Young business owner	-0.022	-0.039	-0.004	-0.039
	(0.562)	(0.307)	(0.915)	(0.335)
White owner	0.035	-0.010	0.022	-0.020
	(0.295)	(0.771)	(0.526)	(0.565)
Observations	940	895	940	895
Joint significance: p-value	–	–	0.793	0.827

Notes: We check for balance in two ways: (i) through univariate regressions of an indicator variable equal to 1 if the individual is subject to a given treatment on each demographic characteristic separately (columns 1-2), and (ii) through multivariate regressions of an indicator variable equal to 1 if the individual is subject to a given treatment on all demographic characteristics jointly (columns 3-4). The sample for each column consists of all individuals in the specific treatment group and all individuals in the control group. *Young firm* is an indicator variable equal to 1 for firms that are 5 years old or younger. *Has debt* is an indicator variable equal to 1 for the sample of firms with a positive amount of debt. *Has personal guarantee* is an indicator variable equal to 1 for the sample of owners that have personally guarantee at least a portion of their business debt. *Respondent is female* is an indicator variable equal to 1 for the sample of individuals who are females. *College graduate or higher* is an indicator variable equal to 1 for the sample of individuals who have a college degree or higher. *Young business owner* indicates owners who are 45 years old or younger. *White owner* is an indicator variable equal to 1 for the sample of individuals who are white. P-value in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 3: Summary Statistics: Knowledge and Stigma About Bankruptcy

Statement/Question			
Panel A: Knowledge About Bankruptcy (Agree/Disagree)	**Agree**	**Disagree**	**Neither agree nor disagree**
I have a good understanding of the bankruptcy system, its advantages and disadvantages.	35%	43%	21%
I am familiar with the differences between Ch. 7 Bankruptcy and Ch. 11 Bankruptcy.	34%	50%	15%
Panel B: Knowledge About Bankruptcy (True/False)	**True**	**False**	**Don't Know**
Soon after declaring bankruptcy, a small business must cease operations.	7%	58%	35%
What happens in a small business Ch. 11 bankruptcy? Debts can be renegotiated with creditors.	54%	2%	44%
What happens in a small business Ch. 11 bankruptcy? Business assets are protected while a reorganization plan is created.	48%	5%	47%
What happens in a small business Ch. 11 bankruptcy? Under the SBRA, lenders get paid based on the profits of the company.	16%	7%	77%
Panel C: Knowledge About Bankruptcy (Correct/Incorrect)	**Correct answer**	**Wrong answer**	**Don't Know**
If you wanted your business to continue to operate after bankruptcy, which chapter of bankruptcy would you use?	36%	7%	57%
Did SBRA make it easier or harder for a small business to file for Ch. 11 bankruptcy?	11%	1%	88%
Panel D: Bankruptcy Stigma	**Agree**	**Disagree**	**Neither agree nor disagree**
It is embarrassing for a business owner to file for bankruptcy.	64%	17%	19%
People will think that a business owner who files for bankruptcy is a failure.	70%	14%	15%
People will think that a business owner who files for bankruptcy is unethical.	24%	45%	30%
Clients will be less willing to buy from a business owner who filed for bankruptcy.	53%	19%	29%
Employees will be less willing to work for a business owner who filed for bankruptcy.	56%	16%	27%
Friends and family may look down on a business owner who files for bankruptcy.	62%	16%	23%

Notes: This table reports the answers to survey questions that assess the control group's knowledge and stigma on bankruptcy (sample size of 449 observations). **Panel A** reports the share of respondents in the control group that agree, disagree, or neither agree nor disagree with statements on knowledge about bankruptcy. **Panel B** reports the shares of respondents who answered "true", "false", or "I don't know" on statements regarding bankruptcy policies. **Panel C** reports the percentages of respondents that answer correctly, incorrectly, or "I don't know" on questions about bankruptcy. Finally, **Panel D** reports the shares of respondents that agree, disagree, or neither agree nor disagree with statements regarding bankruptcy stigma.

Table 4: Effects on Knowledge About Bankruptcy

Variables	(1) Knowledge of Bankruptcy System (Std 0-1)	(2) Bankruptcy is not Death (Binary)	(3) Knowledge 7 vs 11 (Std 0-1)	(4) Overall T/F Score –	(5) Can Renegotiate Debt in Ch. 11 (Binary)	(6) Business Assets Protected in Ch. 11 (Binary)	(7) Knowledge of SBRA (Binary)	(8) Use Ch. 11 Reorg (Binary)	(9) SBRA Bankruptcy Easier (Binary)
Panel A: Immediate Effects									
Info only treatment	0.192***	0.225***	0.523***	0.336***	0.350***	0.374***	0.281***	0.535***	0.638***
	(0.064)	(0.030)	(0.064)	(0.021)	(0.028)	(0.028)	(0.029)	(0.027)	(0.025)
	[0.003]	[0.000]	[0.000]		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Info+Stigma treatment	0.277***	0.278***	0.565***	0.356***	0.363***	0.402***	0.299***	0.570***	0.668***
	(0.068)	(0.029)	(0.065)	(0.021)	(0.027)	(0.028)	(0.030)	(0.026)	(0.025)
	[0.000]	[0.000]	[0.000]		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	1,386	1,384	1,381	1,382	1,380	1,378	1,371	1,381	1,386
Mean D.V. Control	-0.223	0.576	-0.417	0.395	0.541	0.479	0.163	0.359	0.111
Panel B: 4-month Follow-up									
Info only treatment	0.255**	0.147***			0.132***			0.184***	0.142***
	(0.116)	(0.043)			(0.051)			(0.055)	(0.053)
	[0.029]	[0.003]			[0.027]			[0.005]	[0.027]
Info+Stigma treatment	0.296**	0.149***			0.112**			0.217***	0.184***
	(0.117)	(0.043)			(0.052)			(0.055)	(0.055)
	[0.026]	[0.003]			[0.032]			[0.001]	[0.003]
Observations	505	506			506			505	505
Mean D.V Control	-0.123	0.747			0.624			0.473	0.266

Notes: All dependent variables are defined in Section 3.2.3. For both panels we show robust standard errors in parentheses, and the Westfall-Young p-values generated with 5,000 simulations in square brackets. For Westfall-Young, we divide the hypotheses in two families: one on immediate effects and one on 4-month follow-up.*** p<0.01, ** p<0.05, * p<0.1.

Panel A of this table shows the treatment effects of our experiments on bankruptcy knowledge measures. The specification is $Y_i = \alpha + \sum_{j=1}^{j=2} \beta^j T_i^j + Controls + FE + \nu_i$. *Knowledge bankruptcy system* represents self-assessed understanding of the U.S. bankruptcy system, and the variable is standardized to have mean 0 and standard deviation 1. *Bankruptcy is not death* is an indicator variable equal to 1 for individuals who know that a business does not necessarily cease operations after declaring bankruptcy. *Knowledge 7 v 11* represents self-assessed familiarity with the differences between Ch. 7 and Ch. 11 bankruptcy, and the variable is standardized to have mean 0 and standard deviation 1. *Overall T/F score* is the share of correct answers to the columns (5) to (7). *Can renegotiate debt in Ch. 11* is an indicator variable equal to 1 for individuals who know that a business can renegotiate its debt after declaring Ch. 11 bankruptcy. *Business assets protected in Ch. 11* is an indicator variable equal to 1 for individuals who know that business assets are protected from lenders like banks and suppliers while a reorganization plan is created. *Knowledge of SBRA* is an indicator variable equal to 1 for individuals who know that under the SBRA lenders get paid based on the profits of the company. *Use Ch. 11 reorg* is an indicator variable equal to 1 for individuals know that a business must use Ch. 11 bankruptcy to continue to operate after bankruptcy. *SBRA bankruptcy easier* is an indicator variable equal to 1 for individuals who know that the SBRA makes it easier for small business to file for Chapter 11 bankruptcy. All dependent variables are defined in Section 3.2.3. We display coefficients on the two key independent variables, *Info only treatment* and *Info+Stigma treatment* which are equal to 1 for respondents in each treatment group. All specifications also include as control variables *Has debt*, *Has personal guarantee*, and *Respondent is female*, which are described in Table 2. Additionally, each specification also includes fixed effects for 19 industry categories, 5 firm age bins, 5 bins for the number of employees at the firm, the educational attainment of the owner, 5 owner age bins, and the owner's race are included in all regressions.

Panel B shows impacts on our bankruptcy knowledge measures in the 4 months follow up survey. In the follow-up survey we only ask questions about dependent variables in columns (1), (2), (5), (8), and (9). The specifications are identical to those in Panel A, except that outcomes are measured 4 months after the initial treatment.

Table 5: Effects on Bankruptcy Stigma

Variables	(1) Embarrassing (Std 0-1)	(2) Failure (Std 0-1)	(3) Unethical (Std 0-1)	(4) Clients won't buy (Std 0-1)	(5) Employees won't work (Std 0-1)	(6) Friends/family look down (Std 0-1)	(7) Combined score (Std 0-1)
Panel A: Immediate Effects							
Info only treatment	0.020	-0.041	-0.032	-0.093	-0.043	-0.038	-0.046
	(0.063)	(0.063)	(0.065)	(0.062)	(0.063)	(0.063)	(0.060)
	[0.944]	[0.944]	[0.944]	[0.490]	[0.944]	[0.944]	
Info+Stigma treatment	-0.187***	-0.262***	-0.051	-0.366***	-0.268***	-0.233***	-0.293***
	(0.066)	(0.068)	(0.069)	(0.066)	(0.068)	(0.066)	(0.067)
	[0.009]	[0.001]	[0.462]	[0.000]	[0.001]	[0.002]	
Observations	1,384	1,374	1,378	1,378	1,378	1,377	1,384
Mean D.V Control	0.695	0.778	-0.357	0.425	0.518	0.606	0.0711
Panel B: 4-month Follow-up							
Info only treatment		-0.112		-0.075	-0.041	-0.077	-0.089
		(0.105)		(0.103)	(0.103)	(0.108)	(0.103)
		[0.625]		[0.784]	[0.784]	[0.784]	
Info+Stigma treatment		-0.267**		-0.208*	-0.242**	-0.170	-0.257**
		(0.117)		(0.115)	(0.114)	(0.117)	(0.117)
		[0.063]		[0.111]	[0.077]	[0.136]	
Observations		505		506	505	505	506
Mean D.V Control		0.657		0.553	0.671	0.612	0.0701

Notes: All dependent variables are defined in Section 3.2.4. For both panels we show robust standard errors in parentheses, and the Westfall-Young p-values generated with 5,000 simulations in square brackets, we divide the hypotheses in two families: one on immediate effects and one on 4-month follow-up.*** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Panel A of this table shows the treatment effects of our experiments on our bankruptcy stigma measures. The specification is $Y_i = \alpha + \sum_{j=1}^{j=2} \beta^j T_i^j + Controls + FE + \nu_i$. The dependent variable in each column codes whether the respondent strongly disagrees, disagrees, is neutral, agrees, or strongly agrees with each statement. All dependent variables are standardized to have mean 0 and standard deviation 1. *Embarrassing* represents how much individuals believe it is embarrassing for a business owner to file for bankruptcy. *Failure* represents how much individuals believe people will think that a business owner who files for bankruptcy is a failure. *Unethical* represents how much individuals believe people will think that a business owner who files for bankruptcy is unethical. *Clients won't buy* represents how much individuals believe clients will be less willing to buy from a business owner who filed for bankruptcy. *Employees won't work* represents how much individuals believe employees will be less willing to work for a business owner who filed for bankruptcy. *Friends/family look down* represents how much individuals believe friends and family may look down on a business owner who files for bankruptcy. *Combined score* is the mean score across all 6 question in columns (1) to (6). All dependent variables are defined in Section 3.2.4. All specifications also include as control variables *Has debt*, *Has personal guarantee*, and *Respondent is female*, which are described in Table 2. Additionally, each specification also includes fixed effects for 19 industry categories, 5 firm age bins, 5 bins for the number of employees at the firm, the educational attainment of the owner, 5 owner age bins, and the owner's race are included in all regressions.

Panel B of this table shows the treatment effects of our experiments on our bankruptcy stigma measures in the 4 months follow up survey. In the follow-up survey we only ask questions about dependent variables in columns (2), (4), (5), (6), and (7). The specification, dependent variables, and independent variables are all identical to those in Panel A, except that the dependent variables are measured 4 months after the initial treatment.

Table 6: Effects on Business Outcomes and Real Activity

Panel A: Immediate effects	(1) Consider Bankruptcy (Std 0-1)	(2) Use Ch. 11 if can't repay (Std 0-1)	(3) Renegotiate Debt (Std 0-1)	(4) Take More Risk (Std 0-1)	(5) Increase Debt (Std 0-1)	(6) Increase Investment (Std 0-1)	(7) Risk Composite Score (Std 0-1)
Info only treatment	0.062	0.254***	-0.101	0.005	0.113	0.113*	0.144**
	(0.061)	(0.064)	(0.064)	(0.065)	(0.078)	(0.065)	(0.065)
	[0.311]	[0.000]	[0.214]	[0.940]	[0.270]	[0.215]	
Info+Stigma treatment	0.132**	0.310***	-0.179***	0.070	0.151*	0.144**	0.213***
	(0.066)	(0.066)	(0.064)	(0.066)	(0.078)	(0.066)	(0.065)
	[0.047]	[0.000]	[0.011]	[0.293]	[0.104]	[0.083]	
Observations	1,386	1,383	1,386	1,386	1,012	1,386	1,386
Mean D.V Control	1.666	0.011	-0.414	0.0223	-0.327	-0.0334	0.530

Panel B: 4-month Follow-up	(1) Have considered bankruptcy (Binary)	(2) Have renegotiated (Binary)	(3) Increased debt (-1 to +1 scale)	(4) Increased Investment (-1 to +1 scale)	(5) June 2021 (Binary)	(6) February 2022 (Binary)	(7) April 2023 (Binary)
					Business open with website in:		
Info only treatment	-0.006	-0.004	0.163**	-0.045	-0.005	-0.025	-0.027
	(0.034)	(0.035)	(0.074)	(0.089)	(0.030)	(0.032)	(0.034)
	[0.980]	[0.980]	[0.055]	[0.607]	[0.857]	[0.733]	[0.733]
Info+Stigma treatment	-0.034	-0.022	-0.047	0.091	0.008	0.023	-0.016
	(0.033)	(0.037)	(0.075)	(0.085)	(0.031)	(0.033)	(0.035)
	[0.529]	[0.560]	[0.519]	[0.480]	[0.867]	[0.798]	[0.867]
Observations	506	506	506	503	854	851	847
Mean D.V Control	0.094	0.135	0.088	0.077	0.846	0.823	0.803

Notes: All dependent variables are defined in Section 3.2.4. For both panels we show robust standard errors in parentheses, and the Westfall-Young p-values generated with 5,000 simulations in squared brackets, we divide the hypotheses in four families; two on the bankruptcy and risk-investment of the immediate effects and two on the bankruptcy and risk-investment of the 4-month follow-up. *** p<0.01, ** p<0.05, * p<0.1.

Panel A of this table shows the treatment effects of our experiments on respondents' attitudes towards bankruptcy and firms' stated intentions. The specification is $Y_i = \alpha + \sum_{j=1}^{j=2} \beta^j T_i^j + Controls + FE + \nu_i$. All the dependent variables are standardized to have mean 0 and standard deviation 1. *Consider bankruptcy* represents the likelihood that the respondent will consider filing for bankruptcy in the next 12 months, with higher numbers representing higher likelihoods. *Use Ch. 11 if can't repay* represents how much individuals agree with the following statement: *"If I am unable to pay my debt, I will consider filing for Chapter 11 bankruptcy"*. *Renegotiate debt* represents the likelihood that individuals will consider renegotiating their debt and/or other payment obligations (such as rent) in the next 12 months. *Take more risk* is a variable which indicates the amount of risk the individual will take in the next 12 months. *Increase debt* is a variable which indicates if the respondent may consider changing their amount of debt after taking the survey. *Increase investment* how much investment individuals' intend to make relative to a typical year in the next 12 months. *Risk composite score* is the average of *Consider bankruptcy, Increase debt,* and *Increase investment*. All dependent variables are defined in Section 3.2.5. All specifications also include as control variables *Has debt, Has personal guarantee,* and *Respondent is female*, which are described in Table 2. Additionally, each specification also includes fixed effects for 19 industry categories, 5 firm age bins, 5 bins for the number of employees at the firm, the educational attainment of the owner, 5 owner age bins, and the owner's race are included in all regressions.

Panel B of this table shows the treatment effects of our experiments on our bankruptcy outcome measures in the 4 months follow up survey (columns 1-4) or on measures of firm survival (columns 5-7). The specification is identical to that in Panel A except the dependent variables measure realized outcomes rather than expectations. Specifically, *Have considered bankruptcy* is an indicator variable equal to 1 for the sample of individuals who have considered or actually filed for bankruptcy in the previous 4 months. *Have renegotiated* is an indicator variable equal to 1 for the sample of individuals who have renegotiated their debt in the previous 4 months. *Increased debt* is a variable that indicates if individuals have changed their amount of debt in the past 4 months; the variable codes whether the respondent "Kept the amount of debt the same", "Increased the amount of debt", or "Decreased the amount of debt". *Increased investment* is a variable that indicates if individuals have changed their amount of investment in the past 4 months; the variable codes whether the respondent "Kept investment the same", "Increased investment", or "Decreased investment". *Business open with website in June 2021* is an indicator variable equal to 1 for the sample of firms that have an functioning website as of June 2021 or July 2021.

Table 7: Why Don't Our Treatments Lead to Persistent Effects on Actual Outcomes? Survey of Bankruptcy Attorneys and Judges

	(1)
Entrepreneurs are overconfident	56%
Bankruptcy is too expensive	35%
Most small businesses are unlikely to benefit from bankruptcy	18%
Bankruptcy is too complicated or will take too much time	14%
Doubt conclusions of the study	5%
Other	23%
Observations	129

Notes: This table presents the results of our survey of bankruptcy attorneys and judges that we conducted in collaboration with the American Bankruptcy Institute (ABI). In the survey, we asked respondents why they think that information and stigma treatments don't have long-lasting effects on most firm outcomes, as shown in Table 6. The survey briefly described the RCT and its results, and then asked respondents: "As an expert in bankruptcy, what do you think are the main reasons that, 4+ months after viewing the videos, small business owners do not actually change their actions in response to the videos—or even change their stated willingness to consider using bankruptcy—even though their information and stigma about bankruptcy were still improved at the 4-month check-in?" The full statement for each option was: (1) "Entrepreneurs are overconfident about future prospects for their businesses, and this makes it hard for instructional videos to have durable effects."; (2) "Bankruptcy is too expensive for small businesses; they can't afford the monetary costs."; (3) "Most small businesses are unlikely to benefit from bankruptcy, as their business is just not viable or the debt reduction is not meaningful enough."; (4) "The bankruptcy process takes too much time from the business owner, or is too confusing."; (5) "I doubt the conclusions of the study. I believe that improving information and reducing stigma would cause small business owners to be more likely to consider and use bankruptcy."; (6) "Other." Options were presented in random order to respondents, and each respondent could select up to two items on the list.

Table 8: Effects on Knowledge About Bankruptcy, Bankruptcy Stigma, and Business Outcomes and Real Activity (Larger Firms Sample)

Panel A: Effects on Knowledge About Bankruptcy

Variables	(1) Knowledge of Bankruptcy System (Std 0-1)	(2) Bankruptcy is not Death (Binary)	(3) Knowledge 7 vs 11 (Std 0-1)	(4) Overall T/F Score –	(5) Can Renegotiate Debt in Ch. 11 (Binary)	(6) Business Assets Protected in Ch. 11 (Binary)	(7) Knowledge of SBRA (Binary)	(8) Use Ch. 11 Reorg (Binary)	(9) SBRA Bankruptcy Easier (Binary)
Info only treatment	0.0511	0.1347***	0.2924***	0.0508***	0.0052	0.0671**	0.0800**	0.1698***	0.1079***
	(0.0749)	(0.0351)	(0.0785)	(0.0192)	(0.0224)	(0.0289)	(0.0368)	(0.0347)	(0.0321)
	[0.4953]	[0.0001]	[0.0002]	[0.0084]	[0.8181]	[0.0203]	[0.0300]	[0.0000]	[0.0008]
Info+Stigma treatment	0.0761	0.1252***	0.3754***	0.0444**	0.0149	0.0521*	0.0661*	0.1208***	0.1002***
	(0.0732)	(0.0344)	(0.0757)	(0.0195)	(0.0224)	(0.0292)	(0.0369)	(0.0362)	(0.0319)
	[0.2984]	[0.0003]	[0.0000]	[0.0227]	[0.5060]	[0.0744]	[0.0732]	[0.0009]	[0.0017]
Observations	1010	1022	1015	1022	1022	1022	1022	1022	1022
Mean D.V. Control	-0.000	0.470	0.000	0.796	0.907	0.834	0.647	0.681	0.770

Panel B: Effects on Bankruptcy Stigma

Variables	(1) Embarrassing (Std 0-1)	(2) Failure (Std 0-1)	(3) Unethical (Std 0-1)	(4) Clients won't buy (Std 0-1)	(5) Employees won't work (Std 0-1)	(6) Friends/family look down (Std 0-1)	(7) Combined score (Std 0-1)
Info only treatment	-0.0570	-0.1041	-0.1225*	-0.1737**	-0.1084	-0.1525**	-0.1496**
	(0.0751)	(0.0725)	(0.0713)	(0.0727)	(0.0742)	(0.0719)	(0.0700)
	[0.4479]	[0.1514]	[0.0861]	[0.0170]	[0.1443]	[0.0341]	[0.0329]
Info+Stigma treatment	-0.1522**	-0.2207***	-0.1641**	-0.2509***	-0.1147	-0.1756**	-0.2246***
	(0.0769)	(0.0753)	(0.0720)	(0.0736)	(0.0728)	(0.0733)	(0.0721)
	[0.0482]	[0.0034]	[0.0229]	[0.0007]	[0.1152]	[0.0167]	[0.0019]
Observations	1022	1022	1022	1022	1022	1022	1022
Mean D.V. Control	-0.000	0.000	-0.000	-0.000	0.000	0.000	0.000

Panel C: Effects on Business Outcomes and Real Activity

Variables	(1) Consider Bankruptcy (Std 0-1)	(2) Use Ch. 11 if can't repay (Std 0-1)	(3) Renegotiate Debt (Std 0-1)	(4) Take More Risk (Std 0-1)	(5) Increase Debt (Std 0-1)	(6) Increase Investment (Std 0-1)	(7) Risk Composite Score (Std 0-1)
Info only treatment	-0.0378	0.1752**	-0.0065	-0.1364*	-0.0645	-0.0670	-0.0741
	(0.0732)	(0.0758)	(0.0738)	(0.0776)	(0.0730)	(0.0745)	(0.0714)
	[0.6058]	[0.0209]	[0.9296]	[0.0791]	[0.3776]	[0.3689]	[0.2996]
Info+Stigma treatment	0.1058	0.2104***	0.0501	-0.0324	-0.0584	-0.0215	0.0332
	(0.0723)	(0.0747)	(0.0727)	(0.0736)	(0.0723)	(0.0741)	(0.0702)
	[0.1438]	[0.0049]	[0.4909]	[0.6594]	[0.4198]	[0.7718]	[0.6363]
Observations	1022	1022	1022	1022	1022	1022	1022
Mean D.V. Control	-0.000	-0.000	-0.000	-0.000	0.000	0.000	0.000

Notes: This table reports treatment effects on knowledge, stigma, and business outcomes for respondents in the Larger Firms survey. Panel A shows results on knowledge of bankruptcy, similar to the results for the SCORE sample in Panel A of Table 4. Panel B is similar to Table 5 Panel A, and Panel C is analogous to Table 6 Panel A. All variables are defined identically to previous tables and all control variables are included in these regressions as in previous tables. Standard errors are reported in parentheses; p-values are reported in brackets. *** p<0.01, ** p<0.05, * p<0.1.

Table 9: Heterogeneous Effects on Knowledge About Bankruptcy, Bankruptcy Stigma, and Business Outcomes and Real Activity: Encountered liquidity issues in last 12M (Larger Firms Sample)

Panel A: Effects on Knowledge About Bankruptcy

Variables	(1) Knowledge of Bankruptcy System (Std 0-1)	(2) Bankruptcy is not Death (Binary)	(3) Knowledge 7 vs 11 (Std 0-1)	(4) Overall T/F Score –	(5) Can Renegotiate Debt in Ch. 11 (Binary)	(6) Business Assets Protected in Ch. 11 (Binary)	(7) Knowledge of SBRA (Binary)	(8) Use Ch. 11 Reorg (Binary)	(9) SBRA Bankruptcy Easier (Binary)
Info only treatment	0.1296	0.1807***	0.4428***	0.0712***	0.0335	0.0420	0.1382***	0.1963***	0.2110***
	(0.1067)	(0.0473)	(0.1098)	(0.0266)	(0.0305)	(0.0383)	(0.0490)	(0.0418)	(0.0393)
Info+Stigma treatment	0.1366	0.1528***	0.4648***	0.0697**	0.0421	0.0502	0.1168**	0.1379***	0.1985***
	(0.1054)	(0.0462)	(0.1060)	(0.0277)	(0.0302)	(0.0385)	(0.0490)	(0.0446)	(0.0395)
Info only treatment ×	-0.1931	-0.0956	-0.3733**	-0.0510	-0.0703	0.0590	-0.1417*	-0.0552	-0.2441***
Liquidity issues in last 12M	(0.1474)	(0.0670)	(0.1532)	(0.0375)	(0.0448)	(0.0583)	(0.0739)	(0.0712)	(0.0649)
Info+Stigma treatment ×	-0.1549	-0.0440	-0.2388	-0.0630	-0.0685	0.0046	-0.1251*	-0.0282	-0.2299***
Liquidity issues in last 12M	(0.1430)	(0.0665)	(0.1477)	(0.0387)	(0.0435)	(0.0608)	(0.0743)	(0.0734)	(0.0652)
Observations	1010	1022	1015	1022	1022	1022	1022	1022	1022
Mean D.V. Control	-0.000	0.470	0.000	0.796	0.907	0.834	0.647	0.681	0.770

Panel B: Effects on Bankruptcy Stigma

Variables	(1) Embarrassing (Std 0-1)	(2) Failure (Std 0-1)	(3) Unethical (Std 0-1)	(4) Clients won't buy (Std 0-1)	(5) Employees won't work (Std 0-1)	(6) Friends/family look down (Std 0-1)	(7) Combined score (Std 0-1)
Info only treatment	-0.0743	-0.1095	-0.1692*	-0.2418**	-0.0890	-0.1829*	-0.1805*
	(0.0980)	(0.0964)	(0.0947)	(0.1015)	(0.1026)	(0.0992)	(0.0974)
Info+Stigma treatment	-0.1692*	-0.2786***	-0.1825*	-0.3387***	-0.1474	-0.2072**	-0.2758***
	(0.0996)	(0.1012)	(0.0950)	(0.0999)	(0.1000)	(0.0986)	(0.0978)
Info only treatment ×	0.0268	0.0095	0.0917	0.1534	-0.0521	0.0614	0.0605
Liquidity issues in last 12M	(0.1506)	(0.1503)	(0.1439)	(0.1470)	(0.1488)	(0.1423)	(0.1408)
Info+Stigma treatment ×	0.0173	0.1283	0.0142	0.1922	0.0650	0.0570	0.0987
Liquidity issues in last 12M	(0.1549)	(0.1515)	(0.1421)	(0.1480)	(0.1441)	(0.1469)	(0.1436)
Observations	1022	1022	1022	1022	1022	1022	1022
Mean D.V. Control	-0.000	0.000	-0.000	-0.000	0.000	0.000	0.000

Panel C: Effects on Business Outcomes and Real Activity

Variables	(1) Consider Bankruptcy (Std 0-1)	(2) Use Ch. 11 if can't repay (Std 0-1)	(3) Renegotiate Debt (Std 0-1)	(4) Take More Risk (Std 0-1)	(5) Increase Debt (Std 0-1)	(6) Increase Investment (Std 0-1)	(7) Risk Composite Score (Std 0-1)
Info only treatment	0.0423	0.3579***	-0.0075	-0.2427***	0.0197	-0.0817	0.0018
	(0.0940)	(0.1091)	(0.1058)	(0.0916)	(0.0887)	(0.0923)	(0.0885)
Info+Stigma treatment	0.1818*	0.3021***	0.0266	-0.0522	0.0983	-0.0745	0.1203
	(0.0933)	(0.1102)	(0.1018)	(0.0875)	(0.0895)	(0.0916)	(0.0884)
Info only treatment ×	-0.2226	-0.4546***	-0.0179	0.2494	-0.2354*	0.0232	-0.2185
Liquidity issues in last 12M	(0.1421)	(0.1429)	(0.1379)	(0.1625)	(0.1388)	(0.1547)	(0.1348)
Info+Stigma treatment ×	-0.2301*	-0.2522*	0.0223	0.0455	-0.4205***	0.1040	-0.2644**
Liquidity issues in last 12M	(0.1383)	(0.1420)	(0.1388)	(0.1557)	(0.1403)	(0.1545)	(0.1321)
Observations	1022	1022	1022	1022	1022	1022	1022
Mean D.V. Control	-0.000	-0.000	-0.000	-0.000	0.000	0.000	0.000

Notes: This table tests for differences in response to the video treatments across previous experiences with liquidity shortages. *Encountered liquidity issues in last 12M* is a dummy variable equal to one if the business owner reports that a lack of liquidity has significantly affected business operations in the past 12 months. All dependent variables are defined identically to previous tables. The sample includes all respondents to the Larger Firms survey, and standard errors are reported in parentheses. All control variables contained in regressions in Tables 4 and 5 are included in these regressions as well. *** p<0.01, ** p<0.05, * p<0.1.

Internet Appendix for "Life After Death: A Field Experiment with Small Businesses on Information Frictions, Stigma, and Bankruptcy"

Shai Bernstein, Emanuele Colonnelli, Mitchell Hoffman, Benjamin Iverson

A.1 contains additional figures and tables. A.2 provides transcripts of the videos used in the experiment. The videos themselves can be watched at http://emanuelecolonnelli.com/.

A.1   Additional Figures and Tables
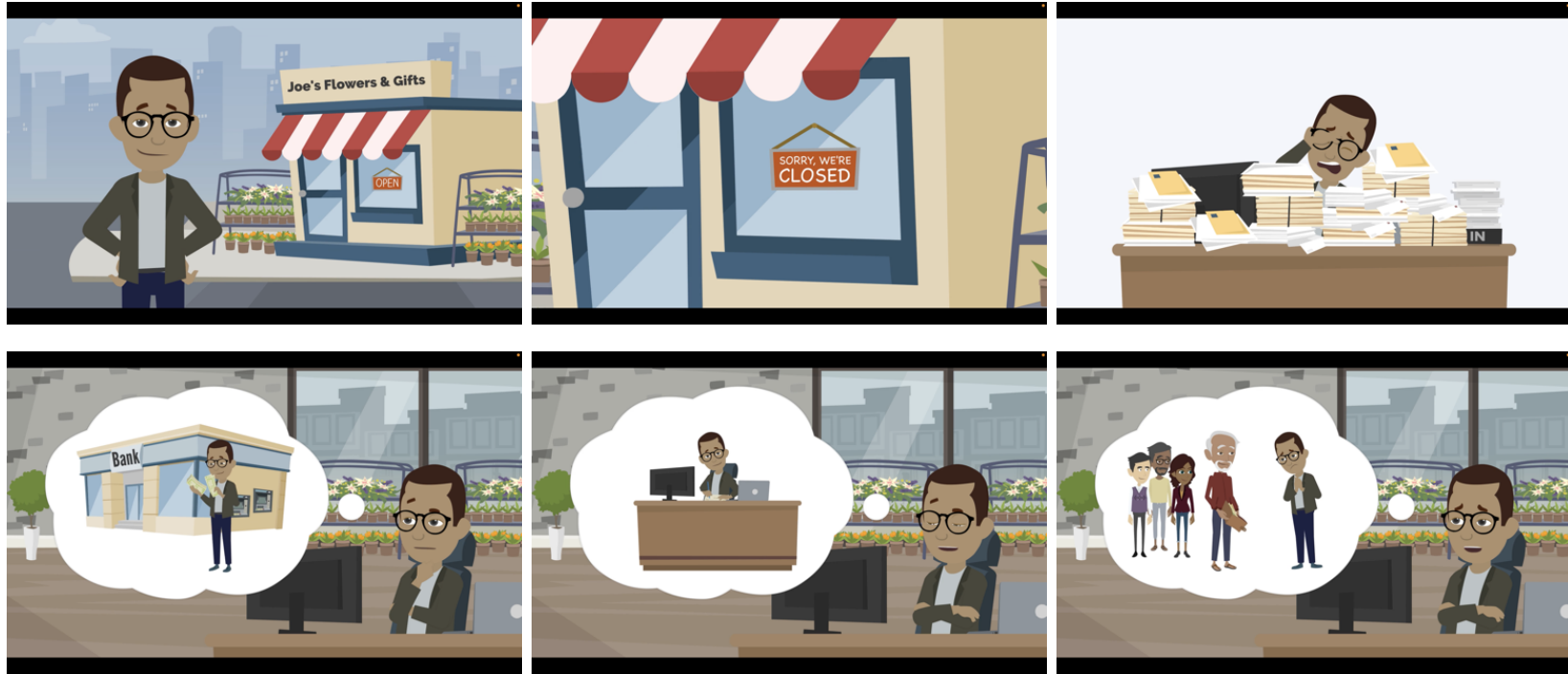
Figure A1: Screenshots: Control Video

Notes: This figure shows a sample of screenshots from the control video.

Figure A2: Screenshots: Information Treatment Video

Notes: This figure shows a sample of screenshots from the Information treatment video.

Figure A3: Screenshots: Information + Stigma Treatment Video

Notes: This figure shows a sample of screenshots from the Information + Stigma treatment video.
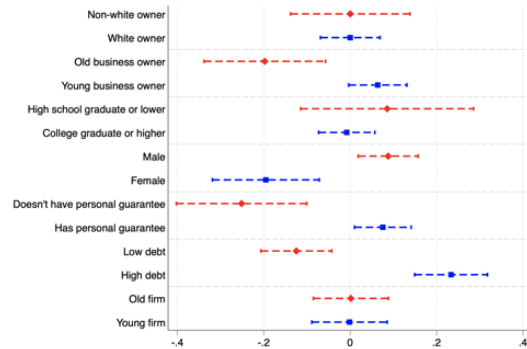
A. **Knowledge of Bankruptcy System**
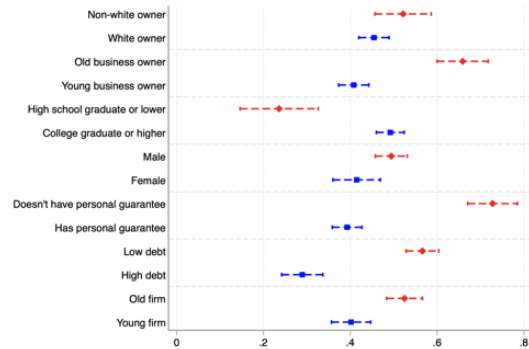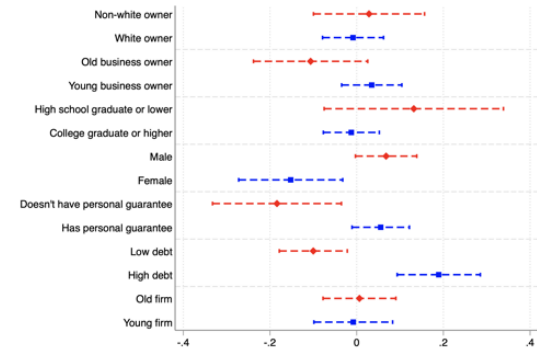
B. **Bankruptcy is not Death**

C. **Knowledge of 7 vs 11**
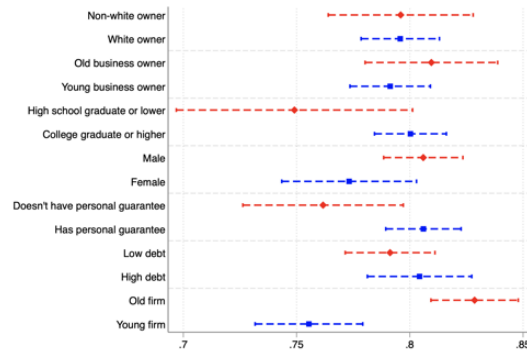
D. **Overall T/F Score**
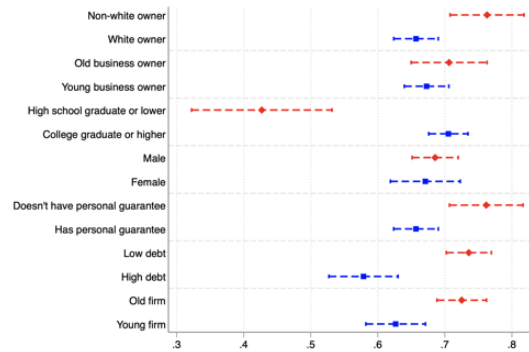
E. **Use Ch. 11 for Reorg**
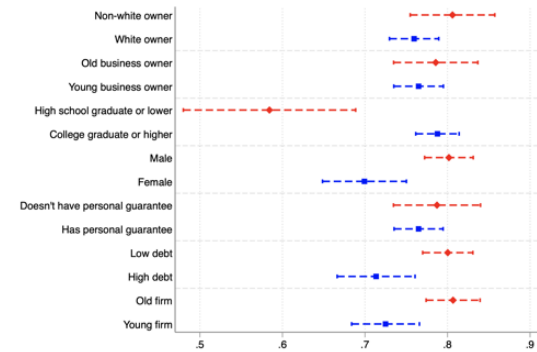
F. **SBRA Makes Bankruptcy Easier**

Figure A4: Heterogeneity: Knowledge (Larger Firms Sample)

Notes: This figure shows how our measures of bankruptcy knowledge vary across the socio-demographic and business characteristics of the respondents in the Larger Firms Sample. The sample consists of respondents in the Control video group. See Table 2 for a definition of each specific socio-demographic and business characteristics indicator variable. The sub-figures display the average and the 95% confidence interval.

A. Embarrassing   **B.** Failure   **C.** Unethical

D. Clients won't Buy   **E.** Employees won't work   **F.** Friends and Family Look Down

G. Combined Score
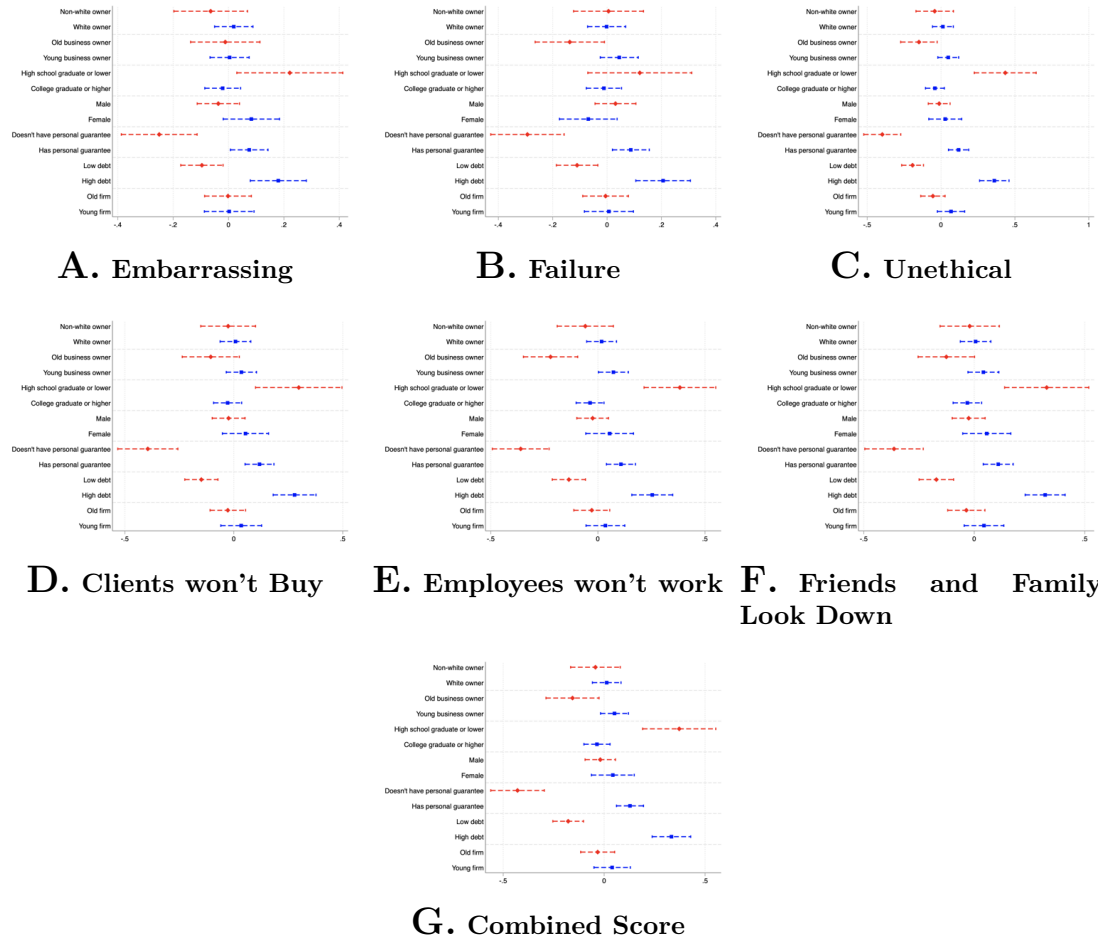
Figure A5: Heterogeneity: Stigma (Larger Firms Sample)

Notes: This figure shows how our measures of bankruptcy stigma vary across the socio-demographic and business characteristics of the respondents in the Larger Firms Sample. The sample consists of respondents in the Control video group. See Table 2 for a definition of each specific socio-demographic and business characteristics indicator variable. The sub-figures display the average and the 95% confidence interval.

Table A1: Summary Statistics: Firm Characteristics (Larger Firms Sample)

	Control	Information	Information + Stigma	Full
Obs	349	338	335	1022
Firm Age				
< 1 year	0%	0%	1%	0%
1-2 years	10%	7%	8%	8%
3-5 years	36%	36%	37%	36%
6-10 years	36%	39%	38%	38%
11+ years	18%	18%	17%	18%
Total Debt				
$100,001-$250,000	31%	34%	32%	32%
$250,001-$1,000,000	33%	32%	34%	33%
$1,000,001-$2,500,000	21%	22%	19%	20%
$2,500,001-$7,500,000	12%	10%	12%	11%
> $7,500,000	4%	3%	3%	3%
Largest financial obligation				
Business credit card / other business loan	63%	62%	61%	62%
Rent / Mortgage for business location	9%	11%	15%	11%
Payments to vendors for goods bought on credit	22%	22%	20%	21%
Equipment leases	4%	4%	4%	4%
No obligations	1%	1%	0%	1%
Other	1%	1%	1%	1%
Has Personal Guarantee	77%	76%	77%	77%
Female	31%	32%	30%	31%
College Graduate or higher	78%	77%	76%	77%
Business Owner Age				
18-34	23%	31%	25%	26%
35-44	52%	45%	50%	49%
45-54	20%	18%	19%	19%
55-64	3%	5%	5%	4%
65+	3%	1%	1%	2%
Race				
White (non-Hispanic)	79%	77%	76%	77%
Black/African American	10%	14%	13%	13%
Hispanic	8%	6%	9%	8%
Asian American	2%	2%	2%	2%
Native American or First Nation	0%	1%	0%	0%
Prefer not to answer	0%	1%	0%	0%

Notes: This table provides summary statistics on the firm and firm owner characteristics of our sample per treatment group for the Larger Firms survey.

Table A2: Summary Statistics: Knowledge and Stigma About Bankruptcy (Larger Firms Sample)

Statement/Question			
Panel A: Knowledge About Bankruptcy (Agree/Disagree)	**Agree**	**Disagree**	**Neither agree nor disagree**
I have a good understanding of the bankruptcy system, its advantages and disadvantages.	89%	6%	5%
I am familiar with the differences between Ch. 7 Bankruptcy and Ch. 11 Bankruptcy.	88%	6%	6%
Panel B: Knowledge About Bankruptcy (True/False)	**True**	**False**	**Don't Know**
Soon after declaring bankruptcy, a small business must cease operations.	48%	47%	5%
What happens in a small business Ch. 11 bankruptcy? Debts can be renegotiated with creditors.	91%	7%	2%
What happens in a small business Ch. 11 bankruptcy? Business assets are protected while a reorganization plan is created.	83%	12%	5%
What happens in a small business Ch. 11 bankruptcy? Under the SBRA, lenders get paid based on the profits of the company.	65%	23%	12%
Panel C: Knowledge About Bankruptcy (Correct/Incorrect)	**Correct answer**	**Wrong answer**	**Don't Know**
If you wanted your business to continue to operate after bankruptcy, which chapter of bankruptcy would you use?	68%	29%	3%
Did SBRA make it easier or harder for a small business to file for Ch. 11 bankruptcy?	77%	19%	4%
Panel D: Bankruptcy Stigma	**Agree**	**Disagree**	**Neither agree nor disagree**
It is embarrassing for a business owner to file for bankruptcy.	61%	26%	13%
People will think that a business owner who files for bankruptcy is a failure.	63%	20%	17%
People will think that a business owner who files for bankruptcy is unethical.	50%	29%	21%
Clients will be less willing to buy from a business owner who filed for bankruptcy.	60%	20%	20%
Employees will be less willing to work for a business owner who filed for bankruptcy.	66%	18%	16%
Friends and family may look down on a business owner who files for bankruptcy.	63%	19%	18%

Notes: This table reports the answers to survey questions that assess the control group's knowledge and stigma on bankruptcy for the Larger Firms Sample. **Panel A** reports the share of respondents in the control group that agree, disagree, or neither agree nor disagree with statements on knowledge about bankruptcy. **Panel B** reports the shares of respondents who answered "true", "false", or "I don't know" on statements regarding bankruptcy policies. **Panel C** reports the percentages of respondents that answer correctly, incorrectly, or "I don't know" on questions about bankruptcy. Finally, **Panel D** reports the shares of respondents that agree, disagree, or neither agree nor disagree with statements regarding bankruptcy stigma.

Table A3: Immediate Effects on Knowledge and Stigma for Respondents Included in the 4-month Follow-up

Panel A: Knowledge	(1) Knowledge of Bankruptcy System (Std 0-1)	(2) Bankruptcy is not Death (Binary)	(3) Knowledge 7 vs 11 (Std 0-1)	(4) Overall T/F Score –	(5) Can Renegotiate Debt in Ch. 11 (Binary)	(6) Business Assets Protected in Ch. 11 (Binary)	(7) Knowledge of SBRA (Binary)	(8) Use Ch. 11 Reorg (Binary)	(9) SBRA Bankruptcy Easier (Binary)
Info only treatment	0.1314	0.2219***	0.5100***	0.3319***	0.3643***	0.3679***	0.2629***	0.4911***	0.6016***
	(0.1139)	(0.0489)	(0.1103)	(0.0354)	(0.0456)	(0.0480)	(0.0492)	(0.0464)	(0.0453)
Info+Stigma treatment	0.1556	0.2884***	0.5303***	0.3458***	0.3596***	0.3725***	0.2999***	0.5305***	0.6669***
	(0.1141)	(0.0459)	(0.1095)	(0.0365)	(0.0457)	(0.0496)	(0.0512)	(0.0441)	(0.0437)
Observations	506	505	504	505	504	503	502	506	506

Panel B: Stigma	(1) Embarrassing (Std 0-1)	(2) Failure (Std 0-1)	(3) Unethical (Std 0-1)	(4) Clients won't buy (Std 0-1)	(5) Employees won't work (Std 0-1)	(6) Friends/family look down (Std 0-1)	(7) Combined score (Std 0-1)
Info only treatment	0.0741	-0.0444	0.1431	-0.0488	-0.0440	0.0472	0.0271
	(0.0980)	(0.0987)	(0.1060)	(0.1009)	(0.1045)	(0.0997)	(0.0982)
Info+Stigma treatment	-0.2195**	-0.3298***	-0.0008	-0.4007***	-0.2642**	-0.2619**	-0.3182***
	(0.1090)	(0.1148)	(0.1100)	(0.1067)	(0.1126)	(0.1090)	(0.1097)
Observations	506	505	506	506	506	506	506

Notes: **Panel A** of this table shows the immediate treatment effects of the experiments on bankruptcy knowledge measures for the respondents included in the 4 months follow-up survey. The specification is $Y_i = \alpha + \sum_{j=1}^{j=2} \beta^j T_i^j + Controls + FE + \nu_i$. *Knowledge bankruptcy system* represents self-assessed understanding of the U.S. bankruptcy system, and the variable is standardized to have mean 0 and standard deviation 1. *Bankruptcy is not death* is an indicator variable equal to 1 for individuals who know that a business does not necessarily cease operations after declaring bankruptcy. *Knowledge 7 v 11* represents self-assessed familiarity with the differences between Ch. 7 and Ch. 11 bankruptcy, and the variable is standardized to have mean 0 and standard deviation 1. *Overall T/F score* is the share of correct answers to the columns (5) to (7). *Can renegotiate debt in Ch. 11* is an indicator variable equal to 1 for individuals who know that a business can renegotiate its debt after declaring Ch. 11 bankruptcy. *Business assets protected in Ch. 11* is an indicator variable equal to 1 for individuals who know that business assets are protected from lenders like banks and suppliers while a reorganization plan is created. *Knowledge of SBRA* is an indicator variable equal to 1 for individuals who know that under the SBRA lenders get paid based on the profits of the company. *Use Ch. 11 reorg* is an indicator variable equal to 1 for individuals know that a business must use Ch. 11 bankruptcy to continue to operate after bankruptcy. *SBRA bankruptcy easier* is an indicator variable equal to 1 for individuals who know that the SBRA makes it easier for small business to file for Chapter 11 bankruptcy. All dependent variables are defined in Section 3.2.3. We display coefficients on the two key independent variables, *Info only treatment* and *Info+Stigma treatment* which are equal to 1 for respondents in each treatment group. All specifications also include as control variables *Has debt, Has personal guarantee*, and *Respondent is female*, which are described in Table 2. Additionally, each specification also includes fixed effects for 19 industry categories, 5 firm age bins, 5 bins for the number of employees at the firm, the educational attainment of the owner, 5 owner age bins, and the owner's race are included in all regressions. **Panel B** of this table shows the immediate treatment effects of the experiments on our bankruptcy stigma measures for the respondents included in the 4 months follow-up survey. The specification is $Y_i = \alpha + \sum_{j=1}^{j=2} \beta^j T_i^j + Controls + FE + \nu_i$. The dependent variable in each column codes whether the respondent strongly disagrees, disagrees, is neutral, agrees, or strongly agrees with each statement. All dependent variables are standardized to have mean 0 and standard deviation 1. *Embarrassing* represents how much individuals believe it is embarrassing for a business owner to file for bankruptcy. *Failure* represents how much individuals believe people will think that a business owner who files for bankruptcy is a failure. *Unethical* represents how much individuals believe people will think that a business owner who files for bankruptcy is unethical. *Clients won't buy* represents how much individuals believe clients will be less willing to buy from a business owner who filed for bankruptcy. *Employees won't work* represents how much individuals believe employees will be less willing to work for a business owner who filed for bankruptcy. *Friends/family look down* represents how much individuals believe friends and family may look down on a business owner who files for bankruptcy. *Combined score* is the mean score across all 6 question in columns (1) to (6). All dependent variables are defined in Section 3.2.4. All specifications also include as control variables *Has debt, Has personal guarantee*, and *Respondent is female*, which are described in Table 2. Additionally, each specification also includes fixed effects for 19 industry categories, 5 firm age bins, 5 bins for the number of employees at the firm, the educational attainment of the owner, 5 owner age bins, and the owner's race are included in all regressions. For both panels we show robust standard errors in parentheses.*** p<0.01, ** p<0.05, * p<0.1.

Table A4: Attrition

Variables	(1) Attrition
Young	-0.0344
	(0.0328)
Has debt	-0.0133
	(0.0288)
Has personal guarantee	-0.0469
	(0.0320)
Respondent is female	0.0311
	(0.0264)
College graduate or higher	0.0236
	(0.0339)
Young business owner	0.0093
	(0.0300)
White owner	0.1740***
	(0.0261)
Observations	1,386

Notes: We check for attrition through multivariate regression of an indicator variable equal to 1 if the individual responds to the follow-up survey on all demographic characteristics jointly. *Young firm* is an indicator variable equal to 1 for firms which are 5 years old or younger. *Has debt* is an indicator variable equal to 1 for the sample of firms with a positive amount of debt. *Has personal guarantee* is an indicator variable equal to 1 for the sample of owners that have personally guarantee at least a portion of their business debt. *Respondent is female* is an indicator variable equal to 1 for the sample of individuals which are females. *College graduate or higher* is an indicator variable equal to 1 for the sample of individuals who have a college degree or higher. *Young business owner* indicates owners who are 45 years old or younger. *White owner* is an indicator variable equal to 1 for the sample of individuals who are white. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A5: Heterogeneous Treatment Effects on Knowledge

Variables	(1) Knowledge of Bankruptcy System (Std 0-1)	(2) Overall T/F Score -	(3) Knowledge of Bankruptcy System (Std 0-1)	(4) Overall T/F Score -	(5) Knowledge of Bankruptcy System (Std 0-1)	(6) Overall T/F Score -	(7) Knowledge of Bankruptcy System (Std 0-1)	(8) Overall T/F Score -
Info only treatment	0.1580*	0.2838***	0.2599***	0.3029***	0.0746	0.3180***	0.1065	0.3565***
	(0.0906)	(0.0301)	(0.0742)	(0.0248)	(0.1169)	(0.0392)	(0.0884)	(0.0300)
Info+Stigma treatment	0.2525***	0.3343***	0.3422***	0.3327***	0.1668	0.2830***	0.2483***	0.3693***
	(0.0918)	(0.0288)	(0.0767)	(0.0244)	(0.1232)	(0.0411)	(0.0929)	(0.0308)
Small Firm	-0.1353	-0.0767**						
	(0.0993)	(0.0358)						
Small firm x Info only treatment	0.0631	0.1078**						
	(0.1287)	(0.0428)						
Small firm x Info+Stigma treatment	0.0598	0.0474						
	(0.1349)	(0.0429)						
Young business owner			-0.0954	-0.1280***				
			(0.1121)	(0.0386)				
Young Owner x Info only treatment			-0.2736*	0.1277***				
			(0.1462)	(0.0485)				
Young Owner x Info+Stigma treatment			-0.2405	0.0965*				
			(0.1562)	(0.0506)				
Owner college grad or above					-0.1324	-0.0525		
					(0.1048)	(0.0391)		
Owner college grad or above x Info only treatment					0.1654	0.0250		
					(0.1405)	(0.0472)		
Owner college grad or above x Info+Stigma treatment					0.1642	0.1072**		
					(0.1467)	(0.0482)		
Has debt							-0.2339**	-0.0140
							(0.1003)	(0.0353)
Has debt x Info only treatment							0.1620	-0.0404
							(0.1292)	(0.0429)
Has debt x Info+Stigma treatment							0.0654	-0.0238
							(0.1347)	(0.0426)
Observations	1,386	1,382	1,386	1,382	1,386	1,382	1,386	1,382

Notes: This table shows heterogeneous effects of the treatments on two of our bankruptcy knowledge measures, using as heterogeneity of interest firm size, owners' age, owners' education, and firms' debt level. The specification is: $Y_i = \alpha_0 + \sum_{j=1}^{j=2} \beta^j T_i^j + \alpha_1 \times het_i + \sum_{j=1}^{j=2} \phi^j T_i^j \times het_i + Controls + FE + \nu_i$. The dependent variables are: (1) *Knowledge bankruptcy system* represents self-assessed understanding of the U.S. bankruptcy system, and the variable is standardized to have mean 0 and standard deviation 1; and (2) *Overall T/F score* is the share of correct answers to the columns (5) to (7) of Table 4 (see Table 4 and Section 3.2.3 for more details on the dependent variables). *Small firm* is an indicator variable equal to 1 for firms which have less than two employees. *Young business owner* indicates owners who are 45 years old or younger. *Owner college graduate or higher* is an indicator variable equal to 1 for the sample of individuals who have a college degree or higher. *Has debt* is an indicator variable equal to 1 for the sample of firms with a positive amount of debt. We display coefficients on the fours key independent variables, *Info only treatment* and *Info+Stigma treatment* which are equal to 1 for respondents in each treatment group, and their interaction with the heterogeneities of interest. All specifications also include as control variables *Has debt, Has personal guarantee, Small firm, Owner college graduate or higher, Young business owner* and *Respondent is female*, which are described in Table 2. Additionally, all specifications also include fixed effects for 19 industry categories, 5 firm age bins, and the owner's race are included in all regressions. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A6: Heterogeneous Treatment Effects on Stigma

Variables	(1) Combined score (Std 0-1)	(2) Combined score (Std 0-1)	(3) Combined score (Std 0-1)	(4) Combined score (Std 0-1)
Info only treatment	-0.1052	-0.0483	-0.1005	-0.0506
	(0.0841)	(0.0704)	(0.1137)	(0.0881)
Info+Stigma treatment	-0.3212***	-0.2964***	-0.2044	-0.3560***
	(0.0922)	(0.0781)	(0.1258)	(0.0970)
Small Firm	0.0681			
	(0.0918)			
Small firm x Info only treatment	0.1232			
	(0.1204)			
Small firm x Info+Stigma treatment	0.0624			
	(0.1351)			
Young business owner		0.0799		
		(0.0993)		
Young Owner x Info only treatment		0.0105		
		(0.1361)		
Young Owner x Info+Stigma treatment		0.0216		
		(0.1503)		
Owner college grad or above			-0.0487	
			(0.1021)	
Owner college grad or above x Info only treatment			0.0820	
			(0.1349)	
Owner college grad or above x Info+Stigma treatment			-0.1243	
			(0.1494)	
Has debt				0.0952
				(0.0956)
Has debt x Info only treatment				0.0117
				(0.1217)
Has debt x Info+Stigma treatment				0.1291
				(0.1351)
Observations	1,384	1,384	1,384	1,384

Notes: This table shows heterogeneous effects of the treatments on our combined bankruptcy stigma score, using as heterogeneity of interest firm size, owners' age, owners' education, and firms' debt level. The specification is: $Y_i = \alpha_0 + \sum_{j=1}^{j=2} \beta^j T_i^j + \alpha_1 \times het_i + \sum_{j=1}^{j=2} \phi^j T_i^j \times het_i + Controls + FE + \nu_i$. The dependent variable in each column is the mean score across 6 stigma measures that code whether the respondent strongly disagrees, disagrees, is neutral, agrees, or strongly agrees with each statement (see Table 5 and Section 3.2.4 for more details on the dependent variable). *Small firm* is an indicator variable equal to 1 for firms which have less than two employees. *Young business owner* indicates owners who are 45 years old or younger. *Owner college graduate or higher* is an indicator variable equal to 1 for the sample of individuals who have a college degree or higher. *Has debt* is an indicator variable equal to 1 for the sample of firms with a positive amount of debt. We display coefficients on the fours key independent variables, *Info only treatment* and *Info+Stigma treatment* which are equal to 1 for respondents in each treatment group, and their interaction with the heterogeneity of interest. All specifications also include as control variables *Has debt, Has personal guarantee, Small firm, Owner college graduate or higher, Young business owner* and *Respondent is female*, which are described in Table 2. Additionally, all specifications also include fixed effects for 19 industry categories, 5 firm age bins, and the owner's race are included in all regressions. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A7: Comparison of Survey Sample with Kauffman Firm Survey Sample

Industry	Share (%) Experimental Survey	Share (%) Kauffman Survey
Agriculture, Farming, Fishing & Hunting	1.82	0.81
Nonprofit, Public and Professional Organizations	1.82	0.06
Real estate, Rental & Leasing	2.77	3.60
Banking, Finance & Insurance	2.87	3.78
Education/Day Care	3.92	0.59
Transportation & Warehousing	4.40	2.28
Construction	4.68	7.93
Technical & Scientific Services	4.97	24.46
Arts, Entertainment & Recreation	6.79	2.14
Health Care & Social Assistance	6.98	2.46
Manufacturing & Industrial	7.07	14.76
Accommodation and Food Services	8.70	1.99
Other Services	12.62	9.23
Other	13.38	10.76
Retail & Wholesale Trade	17.21	15.15

Notes: We grouped our experimental survey and the Kauffman survey industries in the following way: Agriculture, Farming, Fishing & Hunting (experimental survey: Agriculture, Farming, Fishing & Hunting. Kauffman survey: Agriculture, Farming, Fishing & Hunting.), Nonprofit, Public and Professional Organizations (experimental survey: Nonprofit, Public and Professional Organizations. Kauffman survey: Public Administration.), Real estate, Rental & Leasing (experimental survey: Real estate, Rental & Leasing. Kauffman survey: Real estate, Rental & Leasing.), Banking, Finance & Insurance (experimental survey: Banking, Finance & Insurance. Kauffman survey: Finance and Insurance.), Education/Day Care (experimental survey: Education/Day Care. Kauffman survey: Educational Services.), Transportation & Warehousing (experimental survey: Transportation & Warehousing;Travel. Kauffman survey: Transportation & Warehousing), Construction (experimental survey: Construction. Kauffman survey: Construction.), Technical & Scientific Services (experimental survey: Technical & Scientific Services. Kauffman survey: Professional, Scientific, and Technical Services.), Arts, Entertainment & Recreation (experimental survey: Arts, Entertainment & Recreation. Kauffman survey: Arts, Entertainment & Recreation.), Health Care & Social Assistance (experimental survey: Health Care & Social Assistance. Kauffman survey: Health Care and Social Assistance.), Manufacturing & Industrial (experimental survey: Manufacturing & Industrial. Kauffman survey: Utilities; Manufacturing.), Accommodation and Food Services (experimental survey: Restaurants & Food Services; Hotels and Accommodations. Kauffman survey: Accommodation and Food Services.), Other Services (experimental survey: Home Maintenance Services; Personal Services. Kauffman survey: Other Services (except Public Administration).), Other (experimental survey: Other. Kauffman survey: Mining; Information; Administrative and Support; Waste Management and Remediation Services), and Retail & Wholesale Trade (experimental survey: Retail & Wholesale Trade. Kauffman survey: Wholesale; Retail Trade). We removed participants who selected *Professional & Business Services* in our survey and *Management of Companies and Enterprises* in the Kauffman survey.

Table A8: Heterogeneous Effects on Knowledge About Bankruptcy, Bankruptcy Stigma, and Business Outcomes and Real Activity: Prediction error about bankruptcy fees (Larger Firms Sample)

Panel A: Panel A: Effects on Knowledge About Bankruptcy

Variables	(1) Knowledge of Bankruptcy System (Std 0-1)	(2) Bankruptcy is not Death (Binary)	(3) Knowledge 7 vs 11 (Std 0-1)	(4) Overall T/F Score –	(5) Can Renegotiate Debt in Ch. 11 (Binary)	(6) Business Assets Protected in Ch. 11 (Binary)	(7) Knowledge of SBRA (Binary)	(8) Use Ch. 11 Reorg (Binary)	(9) SBRA Bankruptcy Easier (Binary)
Info only treatment	-0.0348	0.1274**	0.2611**	0.0939***	0.0312	0.0909**	0.1596***	0.1651***	0.1467***
	(0.1122)	(0.0496)	(0.1136)	(0.0266)	(0.0297)	(0.0513)	(0.0469)	(0.0469)	(0.0427)
Info+Stigma treatment	0.1275	0.1361***	0.4553***	0.0604**	0.0312	0.0547	0.0953*	0.1303***	0.1365***
	(0.1109)	(0.0505)	(0.1080)	(0.0282)	(0.0299)	(0.0419)	(0.0527)	(0.0491)	(0.0435)
Info only treatment × Prediction error about bankruptcy fees (above median)	0.1702	0.0222	0.0552	-0.0872**	-0.0524	-0.0476	-0.1617**	0.0130	-0.0785
	(0.1472)	(0.0692)	(0.1546)	(0.0382)	(0.0457)	(0.0570)	(0.0732)	(0.0692)	(0.0627)
Info+Stigma treatment × Prediction error about bankruptcy fees (above median)	-0.1177	-0.0056	-0.1803	-0.0315	-0.0314	-0.0042	-0.0590	-0.0114	-0.0708
	(0.1498)	(0.0689)	(0.1514)	(0.0392)	(0.0451)	(0.0588)	(0.0736)	(0.0720)	(0.0638)
Observations	1010	1022	1015	1022	1022	1022	1022	1022	1022
Mean D.V. Control	-0.000	0.470	0.000	0.796	0.907	0.834	0.647	0.681	0.770

Panel B: Effects on Bankruptcy Stigma

Variables	(1) Embarrassing (Std 0-1)	(2) Failure (Std 0-1)	(3) Unethical (Std 0-1)	(4) Clients won't buy (Std 0-1)	(5) Employees won't work (Std 0-1)	(6) Friends/family look down (Std 0-1)	(7) Combined score (Std 0-1)
Info only treatment	-0.0227	-0.0532	-0.1243	-0.1495	-0.1155	-0.1609	-0.1305
	(0.1053)	(0.1000)	(0.0983)	(0.1064)	(0.0993)	(0.0993)	(0.0985)
Info+Stigma treatment	-0.2583**	-0.2417**	-0.1304	-0.3221***	-0.1740	-0.2752***	-0.2920***
	(0.1107)	(0.1078)	(0.1032)	(0.1077)	(0.1082)	(0.1044)	(0.1058)
Info only treatment × Prediction error about bankruptcy fees (above median)	-0.0779	-0.1126	-0.0048	-0.0498	0.0115	0.0120	-0.0462
	(0.1499)	(0.1462)	(0.1420)	(0.1458)	(0.1497)	(0.1437)	(0.1411)
Info+Stigma treatment × Prediction error about bankruptcy fees (above median)	0.1882	0.0210	-0.0827	0.1362	0.1091	0.1830	0.1156
	(0.1533)	(0.1511)	(0.1454)	(0.1492)	(0.1472)	(0.1478)	(0.1466)
Observations	1022	1022	1022	1022	1022	1022	1022
Mean D.V. Control	-0.000	0.000	-0.000	-0.000	0.000	0.000	0.000

Panel C: Effects on Business Outcomes and Real Activity

Variables	(1) Consider Bankruptcy (Std 0-1)	(2) Use Ch. 11 if can't repay (Std 0-1)	(3) Renegotiate Debt (Std 0-1)	(4) Take More Risk (Std 0-1)	(5) Increase Debt (Std 0-1)	(6) Increase Investment (Std 0-1)	(7) Risk Composite Score (Std 0-1)
Info only treatment	-0.1337	0.2421**	-0.0939	-0.0650	0.0141	-0.0517	-0.0958
	(0.0991)	(0.1198)	(0.1150)	(0.1050)	(0.1007)	(0.1054)	(0.0966)
Info+Stigma treatment	0.1531	0.2910**	0.0394	-0.0387	-0.0150	0.0385	0.1022
	(0.1022)	(0.1173)	(0.1135)	(0.0990)	(0.0997)	(0.1027)	(0.0965)
Info only treatment × Prediction error about bankruptcy fees (above median)	0.1802	-0.1578	0.1568	-0.1468	-0.1712	-0.0458	0.0249
	(0.1437)	(0.1497)	(0.1440)	(0.1545)	(0.1451)	(0.1473)	(0.1394)
Info+Stigma treatment × Prediction error about bankruptcy fees (above median)	-0.1192	-0.2034	-0.0193	0.0065	-0.1101	-0.1472	-0.1725
	(0.1430)	(0.1501)	(0.1445)	(0.1480)	(0.1448)	(0.1476)	(0.1381)
Observations	1022	1022	1022	1022	1022	1022	1022
Mean D.V. Control	-0.000	-0.000	-0.000	-0.000	0.000	0.000	0.000

Notes: This table shows heterogeneous effects of the treatments on key outcome variables in the Larger Firms Sample, using as heterogeneity owner's predictions of the monetary costs of bankruptcy. The dependent variables are defined identically to those in Panel A of Table 4, Panel A of Table 5, and Panel A of Table 6. *Prediction error about bankruptcy fees (above median)* is an indicator variable equal to 1 for business owners that had above-median prediction errors for total expenses for a bankruptcy filing, where the prediction error is the owner's prediction less forecasted costs based on actual fees reported in bankruptcies of firms of similar size. We display coefficients on the four key independent variables, *Info only treatment* and *Info+Stigma treatment* which are equal to 1 for respondents in each treatment group, and their interaction with the heterogeneity of interest. All specifications also the same control variables and fixed effects as those in the main tables of the paper, which are described in Table 2. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A9: Heterogeneous Effects on Knowledge About Bankruptcy, Bankruptcy Stigma, and Business Outcomes and Real Activity: Heterogeneity by Level of Debt (Larger Firms Sample)

Panel A: Effects on Knowledge About Bankruptcy

Variables	(1) Knowledge of Bankruptcy System (Std 0-1)	(2) Bankruptcy is not Death (Binary)	(3) Knowledge 7 vs 11 (Std 0-1)	(4) Overall T/F Score –	(5) Can Renegotiate Debt in Ch. 11 (Binary)	(6) Business Assets Protected in Ch. 11 (Binary)	(7) Knowledge of SBRA (Binary)	(8) Use Ch. 11 Reorg (Binary)	(9) SBRA Bankruptcy Easier (Binary)
Info only treatment	0.0899	0.1674***	0.4236***	0.0690***	-0.0175	0.0909**	0.1337***	0.1712***	0.1198***
	(0.1000)	(0.0447)	(0.1042)	(0.0251)	(0.0284)	(0.0362)	(0.0457)	(0.0420)	(0.0381)
Info+Stigma treatment	0.1131	0.1428***	0.5265***	0.0603**	0.0341	0.0549	0.0920**	0.1165***	0.1015***
	(0.0989)	(0.0445)	(0.0980)	(0.0256)	(0.0256)	(0.0378)	(0.0462)	(0.0444)	(0.0387)
Info only treatment × Debt amount (above median)	-0.1090	-0.0927	-0.3703**	-0.0514	0.0651	-0.0676	-0.1518**	-0.0041	-0.0340
	(0.1496)	(0.0711)	(0.1571)	(0.0465)	(0.0465)	(0.0591)	(0.0762)	(0.0746)	(0.0693)
Info+Stigma treatment × Debt amount (above median)	-0.1038	-0.0490	-0.4326***	-0.0450	-0.0573	-0.0064	-0.0714	0.0124	-0.0030
	(0.1476)	(0.0710)	(0.1644)	(0.0396)	(0.0493)	(0.0607)	(0.0772)	(0.0766)	(0.0688)
Observations	1010	1022	1015	1022	1022	1022	1022	1022	1022
Mean D.V. Control	-0.000	0.470	0.000	0.796	0.907	0.834	0.647	0.681	0.770

Panel B: Effects on Bankruptcy Stigma

Variables	(1) Embarrassing (Std 0-1)	(2) Failure (Std 0-1)	(3) Unethical (Std 0-1)	(4) Clients won't buy (Std 0-1)	(5) Employees won't work (Std 0-1)	(6) Friends/family look down (Std 0-1)	(7) Combined score (Std 0-1)
Info only treatment	-0.0508	-0.1493	-0.1029	-0.2238**	-0.0436	-0.1636*	-0.1529
	(0.0953)	(0.0922)	(0.0924)	(0.0951)	(0.0975)	(0.0960)	(0.0929)
Info+Stigma treatment	-0.0939	-0.2320**	-0.0814	-0.1965**	-0.0788	-0.1803*	-0.1798*
	(0.0976)	(0.0938)	(0.0929)	(0.0928)	(0.0938)	(0.0954)	(0.0929)
Info only treatment × Debt amount (above median)	-0.0158	0.1281	-0.0530	0.1445	-0.1831	0.0314	0.0109
	(0.1540)	(0.1501)	(0.1436)	(0.1460)	(0.1479)	(0.1407)	(0.1384)
Info+Stigma treatment × Debt amount (above median)	-0.1691	0.0298	-0.2387	-0.1616	-0.0997	0.0128	-0.1305
	(0.1615)	(0.1600)	(0.1486)	(0.1553)	(0.1514)	(0.1504)	(0.1519)
Observations	1022	1022	1022	1022	1022	1022	1022
Mean D.V. Control	-0.000	0.000	-0.000	-0.000	0.000	0.000	0.000

Panel C: Effects on Business Outcomes and Real Activity

Variables	(1) Consider Bankruptcy (Std 0-1)	(2) Use Ch. 11 if can't repay (Std 0-1)	(3) Renegotiate Debt (Std 0-1)	(4) Take More Risk (Std 0-1)	(5) Increase Debt (Std 0-1)	(6) Increase Investment (Std 0-1)	(7) Risk Composite Score (Std 0-1)
Info only treatment	-0.0350	0.2471**	0.0089	-0.2194**	-0.0274	-0.0949	-0.0687
	(0.0931)	(0.1034)	(0.0978)	(0.0956)	(0.0899)	(0.0948)	(0.0896)
Info+Stigma treatment	0.1457	0.2901***	0.0382	-0.0900	-0.0515	-0.0034	0.0671
	(0.0904)	(0.1028)	(0.0954)	(0.0927)	(0.0894)	(0.0913)	(0.0876)
Info only treatment × Debt amount (above median)	-0.0065	-0.2019	-0.0442	0.2343	-0.1054	0.0801	-0.0142
	(0.1521)	(0.1488)	(0.1483)	(0.1617)	(0.1531)	(0.1520)	(0.1493)
Info+Stigma treatment × Debt amount (above median)	-0.1155	-0.2265	0.0356	0.1614	-0.0172	-0.0546	-0.0981
	(0.1521)	(0.1514)	(0.1446)	(0.1586)	(0.1536)	(0.1602)	(0.1477)
Observations	1022	1022	1022	1022	1022	1022	1022
Mean D.V. Control	-0.000	-0.000	-0.000	-0.000	0.000	0.000	0.000

Notes: This table shows heterogeneous effects of the treatments on key outcome variables in the Larger Firms Sample, using as heterogeneity an indicator for businesses with above-median debt (those with more than $1 million in debt). The dependent variables are defined identically to those in Panel A of Table 4, Panel A of Table 5, and Panel A of Table 6. We display coefficients on the four key independent variables, *Info only treatment* and *Info+Stigma treatment* which are equal to 1 for respondents in each treatment group, and their interaction with the heterogeneity of interest. All specifications also the same control variables and fixed effects as those in the main tables of the paper, which are described in Table 2. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A10: Knowledge About Bankruptcy, and Business Outcomes and Real Activity by Having Encountered liquidity issues in last 12M (Larger Firms Sample, Control group)

Panel A: Differences in Baseline Knowledge and Stigma About Bankruptcy

Variables	(1) Knowledge of Bankruptcy System (Std 0-1)	(2) Bankruptcy is not Death (Binary)	(3) Knowledge 7 vs 11 (Std 0-1)	(4) Overall T/F Score –	(5) Use Ch. 11 Reorg (Binary)	(6) SBRA Bankruptcy Easier (Binary)	(7) Combined Stigma Score (Std 0-1)
Encountered liquidity issues in last 12M	0.2865**	-0.2206***	0.3360**	0.0596*	-0.1526**	0.0730	0.2528**
	(0.1300)	(0.0546)	(0.1433)	(0.0315)	(0.0619)	(0.0562)	(0.1007)
Observations	343	349	348	349	349	349	349
Mean D.V. Control	-0.028	0.375	-0.201	0.761	0.579	0.691	0.135

Panel B: Differences in Bankruptcy Attitudes and Intended Real Activity

Variables	(1) Consider Bankruptcy (Std 0-1)	(2) Use Ch. 11 if can't repay (Std 0-1)	(3) Renegotiate Debt (Std 0-1)	(4) Take More Risk (Std 0-1)	(5) Increase Debt (Std 0-1)	(6) Increase Investment (Std 0-1)	(7) Risk Composite Score (Std 0-1)
Encountered liquidity issues in last 12M	0.7936***	0.5679***	0.3998***	-0.0283	0.7683***	0.2258	0.8707***
	(0.1096)	(0.1202)	(0.1188)	(0.1266)	(0.1144)	(0.1407)	(0.1159)
Observations	349	349	349	349	349	349	349
Mean D.V. Control	-0.026	-0.120	-0.003	0.040	0.056	0.051	0.026

Notes: This table reports OLS regressions that test for differences in knowledge, stigma, and intended business outcomes by whether the firm has encountered liquidity issues in the past 12 months. In all regressions, the sample is the control group of the Larger Firms survey. *Encountered liquidity issues in last 12M* is a dummy variable equal to one if the business owner reported that they have "encountered significant liquidity issues" that have affected their business in the last 12 months. All specifications include identical control variables as in the main regression tables of the paper, as defined in Table 2. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

A.2 Transcripts of Animated Videos

A.1 Control Video

- **Narrator:** Meet Joe.

- **Joe:** Hi.

- **Narrator:** For the last 15 years, he's owned a successful flower and gift shop. And then came the pandemic. He had to close his shop. He still has lots of bills to pay – rent, utilities, a bank loan, insurance – but no income. He's worried that the business can't survive. He's thinking about his options.

- **Joe:** Maybe I can raise money. Another bank loan. Or I could invest my savings back into the company. Maybe I can borrow from friends and family. Or I could sell one of my delivery vans, and some equipment. Maybe I can renegotiate some of my debts. Or I might need to file for bankruptcy.

- **Narrator:** If you are interested, please sign up for a related webinar at the end of the survey.

A.2 Information Video

- **Joe:** But what does "bankruptcy" really mean? Can it help me, or just put me out of business?.

- **Narrator:** Many people think that bankruptcy means shutting down your business. This is called Chapter 7 bankruptcy. But there's another kind that helps you stay in business, Chapter 11. Chapter 11 is designed to protect the business until you can get back on your feet. Basically, it means creating a court-approved plan for you to pay off your debts in a way that lets you keep the business running. The goal in Chapter 11 is for the company to get a fresh start.

  Chapter 11 used to be long and expensive, and only worked for large firms. Luckily, there's a new and simple version of Chapter 11 for small businesses with debts of less than $7.5 million, thanks to the Small Business Reorganization Act, or SBRA.

- **Joe:** My debts are way less than that. So, bankruptcy can help me keep my business?

- **Narrator:** That's right. SBRA is simpler, faster, and less expensive for small businesses. Here's what happens. You make an application, and the court appoints a trustee to help you make a plan to pay your debts. And you can continue running the business.

- **Joe:** But what if it takes a long time for my business to recover?

- **Narrator:** That's OK. You and the trustee will develop a plan that fits with the future of your business. Under the plan you can renegotiate your debts – your lease, bank and credit card payments, supplier terms. . . . You reduce the amount you pay, so it works with the amount of sales you expect. You can go back to running your business the way you used to.

- **Joe:** I had no idea. Wow, that could really help.

- **Narrator:** Of course, bankruptcy is not for everyone, but it is worth understanding what your options are if you end up in a difficult situation. If you are interested, please sign up for a related webinar at the end of the survey.

A.3 Information + Stigma Video

- **Joe:** But, the idea of bankruptcy makes me feel like a failure.

- **Narrator:** I know you're feeling discouraged, but your business isn't in trouble because you did something wrong. You didn't fail. Business conditions changed. Now you're ready to move forward with your business, but you need some help. That's what Chapter 11 is designed to do – help you make a new start. Bankruptcy is even part of the U.S. Constitution, to provide a safety net for people and companies. It isn't a badge of dishonor, and it won't haunt you for the rest of your life. It's a tool that responsible people use to save a good business after a setback.

- **Joe:** But, I worry what my clients might think about me if my business files for bankruptcy.

- **Narrator:** Bankruptcy is a lot more common than you may think. Big businesses have been using Chapter 11 for decades. General Motors, Marvel Entertainment, United Airlines, Six Flags, the Chicago Cubs, the list goes on. Bankruptcy is part of the reason they are still in business. Hertz is using it right now to recover from the pandemic too. Thousands of companies have used Chapter 11 bankruptcy protection to regain their financial strength.

- **Joe:** Wow. Those companies are so successful. That sounds like it might be a good option. I want to learn more about it.

- **Narrator:** If you are interested, please sign up for a related webinar at the end of the survey.