KEEP CALM AND BANK ON: PANIC-DRIVEN BANK RUNS AND THE ROLE OF PUBLIC COMMUNICATION

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Abstract

Using a survey with information treatments conducted in the aftermath of SVB's collapse, we document several novel findings about U.S. households' perspectives on bank stability, the potential for panic-driven bank runs, and the role of FDIC insurance and public communication. First, households are generally poorly informed about events in the banking sector and have limited knowledge of deposit insurance. Second, when informed about the bank run leading to SVB's collapse, households become considerably more likely to withdraw deposits, even if insured. The predicted size of deposit withdrawals matches the deposit outflows in the wake of SVB's collapse. Third, households reallocate deposit withdrawals primarily into other banks and cash, with little passthrough into durable spending. Fourth, information about FDIC insurance and communication about bank stability by the Federal Reserve can play a crucial role in reassuring depositors. In contrast, communication from political leaders only influences their electoral base.

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"Americans can have confidence that the banking system is safe. Your deposits will be there when you need them." President Biden (March 13, 2023).

"Our banking system is sound and resilient, with strong capital and liquidity." Fed Chair Powell (March 22, 2023).

1. Introduction

On March 9, 2023, Silicon Valley Bank (SVB) was pushed into insolvency by a bank run of extraordinary speed, involving deposit outflows of over $40 billion (Barr, 2023). Being the first major bank failure since the global financial crisis, SVB's collapse cast an ominous shadow on the U.S. banking system and raised fears that other banks could experience similar runs. The rapid dissemination of information, facilitated in part by the expanding influence of social media (Rose, 2023), further intensified these apprehensions. To reassure depositors and prevent other bank runs, U.S. authorities made public announcements expressing confidence in the stability of the U.S. banking system. On the morning of Monday, March 13, President Biden addressed the nation to provide assurance regarding the safety of the banking sector. A few days later, Fed Chair Powell opened the FOMC press conference by declaring that the banking system was sound and resilient.

How do households perceive the stability of the U.S. banking system and what factors do they view as determining the riskiness of banks? Does information about a large bank run increase people's propensity to take deposits out of other banks and, if so, how large are the potential deposit outflows? What is the role of FDIC insurance? Can public statements by political and central bank authorities contain the panic effects triggered by a large bank collapse?

In this paper, we address these questions by examining the results of a household survey on retail bank depositors which was designed and launched in the aftermath of the SVB's collapse. The survey gathers a rich set of information about households' perspectives on bank stability and leverages hypothetical questions and information treatments to gain a deeper understanding of the factors that influence confidence in bank deposits. To the best of our knowledge, this is the first study that uses these survey techniques to assess the potential for panic-driven bank runs and the effectiveness of public communication tools to prevent such outcomes.

We find that survey participants are generally confident about the safety of their bank deposits. Furthermore, their perceptions about the financial stability of banks have not deteriorated in the months preceding the survey. These results are striking given that the survey was conducted just a few weeks after the demise of SVB, at a time of heightened tensions in the U.S. banking sector. Households' confidence in bank deposits appears to be only partly

underpinned by FDIC insurance since only a quarter of respondents know about the FDIC insurance limits. Furthermore, about half of households expect to suffer considerable losses on their deposits if their bank were to fail, even on deposit balances well within the FDIC insurance limits. These results caution against the widely held assumption that insured depositors are unlikely to engage in bank runs since they know, understand, and trust the protection provided by the FDIC insurance.

Households' confidence in bank deposits instead appears to be linked to several other factors beyond deposit insurance. First, we find that less than half of the survey participants knew about SVB, indicating that most people are uninformed about distress events in the banking sector. Second, we document that people tend to have stronger confidence in their bank than in the banking sector at large and thus may discount bank failures as not being relevant to the financial prospects of their own bank. Third, households may count on moving their money out of the bank if problems arise since about three quarters of the respondents report that switching bank would be easy or very easy. More precisely, we find that households would move deposits to another bank if they were offered a 1.7 percentage point higher interest rate. This estimate informs discussions on the franchise value of deposits, which is critical for understanding the fragility of U.S. banks in the spring of 2023 (Jiang et al., 2023; Drechsler et al., 2023; Haddad et al., 2023; Koont et al., 2024).

To gain further insights into the forces shaping people's confidence in bank deposits, we leverage the information provision experiments built into the survey. These experiments use a randomized controlled trial (RCT) design whereby survey participants are randomly assigned to either a control group or one of four treatment groups. Each treated group receives information related to the banking crisis. Specifically, one group is informed about the collapse of SVB, while the other three groups are provided with information regarding FDIC deposit insurance or public assurances about the state of the U.S. banking system by either President Biden or the Federal Reserve. The survey elicits people's propensity to withdraw deposits because of concerns about bank risk—that we refer to as the "propensity to run"—before and after the information treatments. The econometric analysis compares changes in people's propensity to run before and after receiving the information treatments against the control group.

This approach allows us to identify the causal impact of each information treatment on people's propensity to withdraw their deposits. In particular, the SVB information treatment helps us to gauge the extent to which news about a large bank run may instill fear among retail depositors and prompt them to withdraw their money, even without any knowledge about the fundamentals of the bank experiencing the run. On the other hand, the FDIC, President Biden, and Fed

information treatments offer key insights into the effectiveness of FDIC insurance and public communication in alleviating depositors' concerns. The survey also elicits households' prior beliefs about the information treatments. This is crucial to verify that the information treatments affect only people without prior knowledge of them, thus ruling out priming effects (Haaland et al., 2022). Finally, we ask survey participants about their post-treatment perceptions that their bank may fail and the expected losses on deposits in case of bank failure. This makes it possible to disentangle the channels through which the information treatments affect people's propensity to run.

A unique strength of our analysis is that the survey was launched within a few weeks following the collapse of SVB, specifically at the end of April 2023. This timing offers two significant advantages. First, it ensures the relevance of the information treatments and thus their potential to affect people's perceptions. If the survey had been conducted at a later date, people could have dismissed information about SVB and the authorities' public statements as outdated and thus irrelevant to the present condition of the banking system. Second, the survey was conducted at a time of heightened concerns about the U.S. banking sector. For example, the FDIC announced the closure and sale of First Republic Bank to JPMorgan Chase on May 1, 2023. Hence, the effectiveness of the information treatments is assessed against the backdrop of tensions in the U.S. banking sector, precisely when these types of public pronouncements typically occur.

We find that the information treatment regarding the bank run on SVB increases people's propensity to withdraw their deposits from other banks. This effect happens through two channels. First, information about the SVB collapse leads households to perceive their own bank as riskier. Second, it makes households believe that they are likely to recover a smaller fraction of their deposits if their bank does fail. Jointly, these two effects imply that when they learn about the SVB collapse, households perceive an increase in their expected potential loss from holding bank deposits of approximately 1-1.5% of their deposits. As later described, this treatment has the potential to trigger large deposit withdrawals.

Besides providing guidance about the potential deposit outflows after a large bank run, the SVB treatment also informs important debates in the literature on bank runs. First, the treatment does not provide any information about the reasons underpinning the bank run or SVB's fundamentals. The treatment effects thus provide novel evidence that a bank run on a major institution may act as a catalyst for other similar events, independent of banks' fundamentals, underscoring the potential for panic-driven runs. Second, the effect of the SVB treatment is driven by the response of insured depositors who account for the vast majority of the survey sample, which is representative of the U.S. population. This provides novel evidence that when depositors

become aware of distress episodes in the banking sector, they tend to withdraw deposits even if protected by deposit insurance, reflecting limited knowledge about FDIC insurance.

The survey is designed to also examine how households reallocate the funds withdrawn from their bank—an aspect that has not been studied so far in the literature because of data limitations in tracing households' portfolios. We address this issue using two methodological approaches. First, we use hypothetical questions asking households what share of deposits they would withdraw if their bank faced a certain probability of failing and how they would allocate these funds across different assets. Second, we ask survey participants after the information treatments how they would allocate a given monetary windfall, making it possible to examine the sensitivity of the allocation shares to the exogenous variation in the propensity to run generated by the information treatments. We find consistent results across both approaches. Specifically, people react to heightened bank risk by relocating deposit withdrawals from their primary bank to other banks and by increasing cash holdings, with a smaller fraction being used to purchase other financial assets. We find no evidence that concerns about bank deposits would induce households to increase holdings of crypto assets. Using elasticities from either approach, we estimate that learning about the SVB collapse would lead households to withdraw around 2-3% of their bank deposits. Considering that only about a third of the U.S. population knew about SVB, these results are remarkably consistent with actual deposit outflows from the U.S. banking sector in the days following SVB's collapse, equal to about 0.7%.

Our analysis also provides novel insights into whether concerns about bank deposits are likely to influence household consumption decisions. Worries regarding deposit safety could prompt people to withdraw funds and use them for durable purchases. Alternatively, they could amplify concerns about the economic outlook, leading to increased precautionary savings and discouraging consumption. The results suggest that the latter effect carries more weight, as people display a decreased propensity to buy a car when deposit risk perceptions increase. However, the quantitative magnitude of pass-through into spending is economically small.

The SVB treatment indicates that the failure of a big bank can lead to large deposit outflows from the banking system, even among insured depositors. Can policy communication do anything to contain these effects? Leveraging the three information treatments involving communication about policy or from policymakers, we can provide novel evidence on the extent to which policy communication can lean against panic-driven bank runs.

We find that informing households about the FDIC insurance reassures depositors, roughly counterbalancing the impact of the SVB information treatment. The FDIC information treatment works by reducing households' expected deposit losses in case of bank failure. However, it does

not reduce the perceived risk of bank failure, showing that households do not understand how deposit insurance can prevent runs by stabilizing the deposit base. The result that FDIC information can roughly offset the impact of news about SVB is reassuring for bank stability. However, we also observe that some people still expect considerable losses in case of bank failure even after being informed about the FDIC insurance. This raises concerns about the credibility of FDIC insurance or at least underscores the need for more in-depth communication about deposit insurance.

The analysis also provides encouraging evidence about the power of communication by the Federal Reserve in containing the risk of panic-driven bank runs. Informing people that the Fed expressed confidence in the stability of the banking system reduces households' propensity to run about as much as information about FDIC insurance. Hence, Fed communication emerges from the analysis as a potent tool in containing the risk of panic-driven bank runs, an aspect that has not been analyzed before in the literature. This result could not be taken for granted since households could also perceive public authorities' statements aimed at reassuring depositors as indicative of problems in the banking system. Notably, the transmission channels between the Fed and FDIC treatment are different. While the FDIC treatment reduces expected losses in case of bank failure, the Fed treatment reduces the perceived risk of bank failure. Thus, people do not mechanically adjust their propensity to run based on whether treatments convey good or negative messages about bank safety, but they understand and react to differences between the treatments.

Households' differentiated reactions to the information treatments are further highlighted by the results regarding the effect of President Biden's statement. Like the Fed, President Biden addressed the public to ensure that American deposits were safe. Yet, this treatment has a much narrower impact since it reassures only President Biden's electoral base. This result underscores the limits of political communication in the current highly polarized political environment.

Related literature: The paper is related to several strands of the literature on bank runs. A key question in this field of study is the extent to which bank runs are driven by concerns about bank fundamentals rather than panic effects, possibly triggered by the failure of other financial institutions. This debate goes back to studies investigating the origins of the Great Depression. Friedman and Schwartz (1963) argued that panic was the primary driver of bank failures in the early 1930s. Subsequent studies challenged this perspective, emphasizing that bank distress was largely associated with weak fundamentals (Wicker, 1980; Eugene, 1984; Saunders and Wilson, 1996; Calomiris and Mason, 1997; Calomiris and Mason, 2003).[1] Because the SVB information

[1] See Goldstein (2013) for a review of the empirical literature on fundamental versus panic-driven crises. This debate also relates to the question of whether depositors can exercise market discipline on banks and how this

treatment alerts survey participants about a large bank run but does not provide any information about the financial conditions of their own bank or the bank that suffered the run, our analytical approach offers a clean identification of the role of panic effects in contributing to bank runs.

Our work also complements the findings of studies that use depositor-level data to analyze depositors' reactions to bank distress, focusing on specific case studies (Davenport and McDill, 2006; Iyer and Puri, 2012; Iyer, Puri and Ryan, 2016; Brown, Guin and Morkoetter, 2020). These papers document considerable heterogeneity in how depositors respond to bank risk. For example, uninsured depositors tend to have a higher propensity to withdraw funds during bank runs than insured depositors. Yet, insured depositors withdraw funds too, at times playing a determinant role in the run.[2] Our analysis confirms the sensitivity of insured depositors to bank risk based on a representative sample of U.S. households rather than on specific case studies. Furthermore, our methodological approach provides a novel perspective on these issues because it examines how depositors react to the same information.[3] In contrast, the literature based on observational data cannot ascertain whether differences across depositors arise because of different knowledge about ongoing events or different sensitivity to the same set of news. For example, small depositors might be less responsive to bank risk not because they have confidence in deposit insurance but because they are less attentive to bank distress given less money at stake.

Our study also contributes to the literature on bank runs by adding novel perspectives on how to counter panic-driven bank runs. Theoretical contributions have highlighted the role of deposit insurance, capital requirements or other forms of regulation in preventing runs (Diamond and Dybvig, 1983; Goldstein and Pauzner, 2005; Egan et al., 2017). Our findings caution against treating insured deposits as insensitive to bank risk. Relatively few households know about the FDIC insurance and insured depositors increase their propensity to run when informed about SVB's collapse. Furthermore, our analysis underscores the potency of public communication by independent institutions, such as the Fed, in reassuring depositors during times of heightened uncertainty.

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depends on deposit insurance (Schumaker, 2000; Martinez Peria and Schmukler, 2001; Demirgüç-Kunt and Huizinga, 2004; Calomiris and Jaremski, 2019; Martin, Puri, and Ufier, forthcoming).

[2] Davenport and McDill (2006) document that the failure of Hamilton Bank in Florida involved larger outflows from insured than uninsured deposits. Table 1B in Iyer and Puri (2012) shows that during a bank run on a cooperative bank in India, almost 90 percent of the deposits experiencing withdrawals were insured.

[3] In this respect, our analysis shares similarities with studies that use laboratory experiments to examine the determinants of bank runs in a controlled environment, where participants are provided with specific information. See Kiss et al. (2022) for a recent review of this literature since the early contributions of Madiès (2006), Garratt and Keister (2009) and Schotter and Yorulmazer (2009). While laboratory experiments generally involve university students, we examine a representative sample of U.S. households. Furthermore, our analysis takes place in a real-world context, providing survey participants with truthful information about recent events in the banking sector.

The paper is also related to a growing literature that examines the reasons behind the financial fragility of SVB and other banks in the spring of 2023 against the backdrop of rapidly increasing interest rates. Jiang et al. (2023) and Drechsler et al. (2023) highlights SVB's reliance on uninsured deposits while Haddad et al. (2023) show that insured deposits can themselves trigger a run when interest rates are sufficiently high. More generally, these studies underscore the risks over-relying on the deposit franchise in hedging against interest rate risk, as also highlighted in Koont et al. (2024). Our results support these concerns by documenting that U.S. households generally consider that shifting bank would be easy and would do so for a relatively modest increase in the interest rate. However, we underscore that our study does not aim to explain the run on SVB. It instead leverages this event to assess the potential for additional bank runs and the role of public communication in containing them.

Finally, our methodological approach builds on the insights of a recent but rapidly growing literature that uses information provision experiments in household surveys to address macroeconomic questions. Several studies examine the determinants of household inflation expectations, among which information about past and current inflation (Armantier et al., 2016; Cavallo, Cruces and Perez-Truglia, 2017), monetary policy (Coibion, Gorodnichenko and Weber, 2022; Coibion et al., forthcoming; Coibion et al., 2023b), and fiscal variables (Coibion, Gorodnichenko and Weber, 2021; Grigoli and Sandri, 2024). Other papers focus on factors influencing household consumption, such as macroeconomic forecasts (Roth and Wohlfart, 2022), news about inflation (Coibion et al., 2023a), and the role of macroeconomic uncertainty (Coibion et al., 2024). Our study is the first to use information provision experiments to understand households' responses to bank risk and especially to public communication geared at containing the risk of bank runs.

The paper is structured as follows. Section 2 provides details about the survey and an overview of households' perceptions of deposit and bank risk. Section 3 analyzes the impact of the information treatments on households' propensity to withdraw deposits. Section 4 considers the implications for portfolio choices and consumption. Section 5 concludes.

2. Survey information and descriptive evidence

The survey was conducted by YouGov, a highly reputable international data analytics company, on a sample of 6,327 individuals in the U.S.. YouGov conducts surveys online based on a registered panel of over 22 million members. Survey participants were at least 18 years

old and were selected based on a host of different demographic and socioeconomic characteristics to ensure the national representativeness of the sample.

The survey was launched on April 28, 2023. Participants were invited to take the survey via email and could access the questionnaire only after entering their personal login credentials.[4] At no point in the survey were people informed about the purpose of the analysis. Participants were randomly allocated to either a control group of about 2,000 thousand individuals or one of 4 treatment groups of about 1,000 people each.[5] The sample size and the number of treatment arms reflect compromise between our budget constraints and desire to maximize statistical power.

2.1 The structure of the survey

The survey questionnaire is reported in Appendix A. All participants were presented with the same set of questions, independent of whether they were assigned to the control or one of the treatment groups. This helps address possible priming effects since different questions may nudge people to provide different answers. For example, asking people whether they know about President Biden's statement on the safety of the U.S. banking sector may lead people to suspect that the banking sector is confronting challenges and thus report heightened concerns about deposit safety. Or, conversely, this question may remind people about President Biden's statement and prompt participants to express lower concerns about deposits. In either case, by presenting this question to all survey participants and comparing the treated groups against the control group, the econometric analysis can control for these priming effects.

The survey started with a screening question to keep only individuals with at least one bank account. It then included several questions to elicit people's perceptions about the risk of bank failure and the safety of bank deposits. Among these, the key question for our analysis to assess the impact of the information treatments is:

> *Q6: How likely are you to withdraw some of your deposits in the next 12 months because of concerns that your bank may fail?*

People were asked to provide answers on a 10-point scale, ranging from "not at all likely" to "extremely likely". We interpret answers to this question as reflecting people's propensity to withdraw deposits because of concerns that the bank may fail. Hence, we will refer to this question as capturing people's "propensity to run". Participants were also asked about the probability in

[4] This is to ensure that only selected survey participants could access the survey and that they could take the survey only once. Survey respondents receive points from YouGov that can be converted into cash rewards.
[5] Appendix Table 1 confirms that the treatment group assignment is not predictable based on individual characteristics.

percentage terms that their bank would fail within 12 months. As discussed later in the analysis, we will leverage these questions to shed light on the channels behind people's propensity to run.

The survey proceeded by collecting information on people's portfolio allocation and their perceived costs to switching banks. Survey participants were then presented with hypothetical questions on how they would react if their bank faced a given probability of failure, randomly drawn on a grid between 1 and 50 percent. Participants were asked whether they would withdraw some deposits and, if so, how much; whether they would start using a different bank and, if so, which type; and how they would re-allocate their deposit withdrawals, if any.

The survey then included questions aimed at assessing participants' knowledge about the information treatments. Participants were asked if they were familiar with the acronym SVB and provided with several options to choose from, including the correct answer, "a private bank", as well as the option to select "I don't know". Participants were also asked whether they were aware that the Federal Reserve and President Biden had recently expressed a position on the safety of the U.S. banking sector. People could answer "I don't know" or choose between different options, ranging from "banks are safe" to "banks are at a critical juncture". In addition, the survey required participants to type in the FDIC insurance limit for individually owned bank accounts.

Participants were then provided with the information treatments on standalone online screens. The four treatment groups were provided with one of these statements:

A. *Considering that a few weeks ago, Silicon Valley Bank (SVB), a U.S.$200bn bank, failed after experiencing a sudden bank run,*
B. *The FDIC (Federal Deposit Insurance Corporation) is an independent agency of the United States government that protects bank depositors if a bank fails. Considering that the FDIC insures individually owned deposits up to $250,000,*
C. *Considering that a few weeks ago, President Biden declared that "Americans can have confidence that the banking system is safe,"*
D. *Considering that a few weeks ago, the Federal Reserve (Fed) declared that "the U.S. banking system is sound and resilient,"*

followed by this sentence to alert people that they would be asked again about their views on bank and deposit risk:

> *we would like to ask you again about your perceptions that your bank may fail and your propensity to take out your bank deposits.*

To keep the structure of the survey fully symmetric across the treated and control groups, people in the control group were also presented with a standalone online screen which displayed only the last sentence above. Importantly, the treatments do *not* provide any information about SVB's fundamentals so that we can focus on people's reactions that are driven by panic considerations.

The survey then re-assessed people's propensity to withdraw deposits and their perceptions about the risk of bank failure. To identify the causal effect of the information treatments, the econometric analysis will examine how people in each treatment group revised answers to these questions relative to those provided earlier in the survey and compare these revisions against people in the control group.

To shed further light on the effects of the information treatments, the survey also asked respondents about their perceived recovery rate on deposits in case of bank failure, how they would invest a hypothetical financial windfall, and whether they thought it was a good time to buy durables goods, such as cars, major household items, or a house. Finally, the survey collected information about the type of bank that respondents used (e.g. national, state, credit union, etc), the reasons for using that bank, the number of years using the bank, their political affiliation, and a host of personal characteristics, among which age, income, education, and geographic location.

To ensure greater quality of the data, we impose a few restrictions throughout the analysis based on time stamps collected during the survey. Specifically, we drop respondents that spent very little time on the information treatment screens—generally less than one second—and were thus unlikely to have read the information treatments.[6] We also exclude respondents that completed the survey in less than 3 minutes or in more than an hour to remove people that rushed through the survey or were distracted by other tasks.

As described in Table 1, survey participants report using two banks on average, with those holding more than $250,000 in deposits being more likely to have multiple bank accounts. Households tend to use the same bank for nearly 14 years on average. About 35 percent of the respondents use national banks, while 40 percent rely primarily on credit unions or local banks. Regarding deposit balances, about 50 percent of households hold less than $10,000 in their banking accounts. This is consistent with the 2022 Survey of Consumer Finances (SCF) which reports a median value of $5,500 held in checking and savings accounts of U.S. households.[7] Regarding large depositors, 3.4% of our survey participants report balances above $250,000, compared to a share of 5.8% in the SCF. Note that deposit balances in excess of $250,000 are not protected by the FDIC insurance if the account is individually owned. FDIC coverage increases to $500,000 for joint accounts.

[6] Since the information statements are of different length, we do not impose a fixed time threshold for all of them. We instead drop respondents in the lowest 5 percentile of the distribution of time spent on the screen of each information treatment. Note that to preserve full symmetry between the control and treatment groups, we implement the same procedure also for people in the control group.

[7] Income information is also consistent between our data and the SCF. In 2022, the median income of U.S. families reported by the SCF reached $70,260. Our survey collects information about households' income in 15 brackets, with the median category being the one for people with income between $60,000 and $69,999.

Regarding other asset holdings, 43 percent of the survey respondents own stocks. This proportion is again in line with the SCF, according to which 52 percent of families own stocks when also including retirement accounts. The second most held asset class in our survey is bonds (29 percent of the respondents), followed by gold and commodities (21 percent) and cryptocurrencies (19 percent).

2.2 People's perceptions of deposit and bank risk

In this section, we review the answers provided by survey participants before the information treatments regarding their initial perceptions about bank risk and deposit safety. Our first finding is that respondents express a high degree of confidence in the safety of deposits. As reported in Table 2, more than 80 percent of respondents declare their bank deposits to be safe or very safe. Moreover, people's views about the safety of their bank have not deteriorated in recent months. Almost 60 percent of respondents report that their perceptions about the financial stability of their bank have remained unchanged. The rest of the respondents are roughly equally split between those that perceive an improvement in bank strength and those that perceive a worsening.

These results are striking given that the survey took place during a very turbulent time for the U.S. banking sector. Just a few weeks before the survey, the collapse of SVB and Signature Bank raised major concerns about the stability of the banking system. And while the survey was conducted, regulators took over First Republic Bank, marking the second-largest bank failure in U.S. history. Data from Google Trends (Appendix Figure 1) confirm that the survey took place when people's internet searches about bank runs and bank failures had reached historic highs, exceeding the levels during the 2008 financial crisis. What can explain the high degree of confidence in the safety of bank deposits observed in the survey?

A first hypothesis is that households could be reassured by the presence of FDIC insurance. After all, as previously discussed, the vast majority of deposit balances fall within the insurance limits. However, knowledge about deposit insurance is far from universal. As reported in Table 3, only one in four respondents knows the standard FDIC insurance limit for individually owned accounts. Furthermore, only 54% of depositors with insured balances below $250,000 expect to fully recover their deposits if their bank fails. The remaining share expects instead to suffer major losses, on average equal to 67% of their deposits.[8]

[8] The statistics about expected deposit losses in case of bank failure are computed based on the control group only since this question was asked after the information treatments.

Confidence in bank deposits may stem from several other considerations beyond deposit insurance. First, people may be uninformed about recent distress in the U.S. banking system. Or, conversely, they could be well informed (and reassured) by the U.S. authorities' public pronouncements regarding the safety of U.S. banks. The questions to assess the respondents' prior knowledge about the information treatments shed light on these issues. As reported in Table 3, only 35 percent of the respondents were aware that the acronym SVB referred to a private bank, suggesting that most of the depositors may not have known about recent events in the U.S. banking sector. The survey also reveals that only about 30 percent of respondents knew that the Fed and President Biden expressed confidence in the U.S. banking sector, although more than half of those who knew about SVB also knew about either the Fed's or Biden's statements supporting the banking system. Hence, most respondents seem to be unaware of the tensions brought about by SVB, but those who were aware were also informed about policy responses. Both factors should act to limit concerns about deposit safety.

Second, people's perceptions about the safety of their deposits may not be materially affected by adverse events occurring in other banks. Panel A of Figure 1 presents evidence consistent with this hypothesis showing that people tend to have more confidence in their bank than in the U.S. banking sector at large. For example, the median probability of a major national bank failing in the following 12 months is 25 percent according to respondents, against a much smaller 6 percent median probability of their own bank failing.[9] Therefore, news regarding financial distress in other banks may have limited impact on people's opinions about the safety of their own bank. We will directly test for this hypothesis later in the analysis by assessing the impact of the SVB information treatment on the respondents' perceptions about the risk to their own bank and their propensity to withdraw deposits.

Third, even if households have concerns about the stability of their bank, they may not worry much about the safety of their deposits if they think they can easily extract their money from the bank. Indeed, Panel B of Figure 1 provides evidence that the link between own bank stability and deposit risk is relatively weak: while there is a positive correlation across households in terms of the perceived probability of their own bank failing and the perceived riskiness of their deposits, that correlation is limited. Furthermore, four in five respondents report that it would be either "easy" or "very easy" to move their money to a different bank

[9] Average values across respondents paint a similar picture, being equal to 35 and 18 percent for the probability failure of a major versus personal bank, respectively. We note that respondents clearly overestimate the probability of bank failures. This is consistent with the fact that people tend to overestimate probabilities of rare events such as shark or terrorist attacks. See Kahneman (2013) for a detailed discussion of this phenomenon.

(Table 1). Nor would it take much for them to do so. On average they report that they would switch to a different bank if it offered them 1.7 percentage points more in interest. More generally, when respondents are asked about what factors are most important in the choice of their bank, safety is not one of their primary concerns, coming fifth after location, customer service, checking/savings account fees, and the range of banking services offered.

In the next section of the paper, we will re-examine these initial findings and their underlying drivers by estimating the causal effects of the information treatments on people's propensity to withdraw their deposits that we refer to as the "propensity to run". We note that answers to this question should be informed by people's perceptions about the risk that their bank may fail as well as by the expected recovery rate on deposits in case of bank failure. Figure 2 confirms that this holds true in our data. People's responses about their propensity to withdraw deposits are positively correlated with their perceptions about bank risk (Panel A) and negatively correlated with their expected recovery rates in case of bank failure (Panel B).[10] The analysis of the information treatment will shed light on the contribution of each of these two factors in influencing people's propensity to run.

Before we proceed, it is important to underscore that while the average banking customer is relatively confident in the safety of their deposits, there is significant cross-sectional variation in this perspective (Appendix Table 2). To explore differences across individuals, we regress the indicators of bank and deposit risk collected in the survey on a range of observable characteristics of the respondents.

The results are reported in Table 4. Several findings stand out. Respondents that have used their bank for longer tend to have more confidence in their bank, although—as intuitive—the length of the account tenure does not influence people's views about the broader banking sector. Interestingly, older people and those with higher education tend to have more confidence in their banks but less confidence in the overall banking sector. This is possibly because they believe they have developed sufficient experience or knowledge to select safer banks. Turning to economic variables, people with larger deposits (above $250,000) tend to be more anxious about banks while people with higher income are more at ease. These results are again intuitive given than people with larger deposits are more exposed to the consequences of

[10] Since the survey collected people's views about bank risk before and after the information treatment, Panel A correlates the pre-treatment propensity to run with the pre-treatment bank risk perception on the full sample of survey participants. Expectations about recovery rates were instead collected only after the treatment to reduce survey fatigue. Therefore, Panel B correlates the post-treatment propensity to run with the post-treatment expected recovery rates. In this case, we only consider people in the control group to ensure that the results are not driven by the effects of the information treatments.

bank distress while higher-income people can rely on their earnings to withstand possible deposit losses. Finally, we find some evidence that Democrats tend to be less concerned about the banking system in general, possibly reflecting stronger confidence in the government's ability to preserve financial stability under a Democratic administration.

3. Information treatment effects

In this section, we estimate the causal impact of the information treatments on people's propensity to run, that is to withdraw deposits because of concerns that their bank may fail. We first examine if information about SVB's collapse affects the willingness of households to withdraw deposits from their bank and the channels underlying this effect. We then assess if and to what extent different policy communications may push in the opposite direction by reassuring depositors. Finally, we differentiate the impact of the information treatments depending on people's prior knowledge of the treatments and political affiliation.

3.1 How does news about SVB's collapse affect households' propensity to run?

How does information about a bank run on a large financial institution affect households' willingness to hold deposits in their own bank? To answer this question, we leverage two key strengths of the survey design. First, participants were asked about their propensity to run both before and after the information treatments. This makes it possible to measure changes in the propensity to run at the individual level. Second, a control group of survey participants were presented with the same survey questionnaire but were not provided with any treatment information. This control group makes it possible to isolate changes in people's propensity to run triggered by the information treatments rather than other factors. For example, it is well known that people may change their responses during a survey because certain questions can generate cognitive associations that lead participants to reconsider their answers. The econometric analysis will control for these potential effects by comparing people in the treatment group against those in the control group, thereby allowing to obtain precise estimates for the information treatments.

Formally, we estimate the following regression

$$\Delta \mathrm{run}_i = \alpha + \sum_j \beta_j \, \mathbb{I}\left(i \in \mathrm{Treat}_j\right) + \xi X_i + \varepsilon_i \qquad (1)$$

where $\Delta \mathrm{run}_i$ denotes the change in the propensity to run of respondent i before and after treatment. The variable $\mathbb{I}\left(i \in \mathrm{Treat}_j\right)$ is an indicator variable that takes value one if respondent i belongs to treatment group $j = \{\mathrm{SVB}, \mathrm{FDIC}, \mathrm{Fed}, \mathrm{Biden}\}$ and zero otherwise. The vector X_i includes controls for demographic and socioeconomic characteristics—including gender, age, geographical area,

employment status, number of children, educational attainment, and income level—as well as the day in which respondent i took the survey. Equation (1) is estimated using survey weights.

For now, our primary focus is on the coefficient β_{SVB}, which captures the average effect of the SVB information treatment on the propensity to run relative to the control group. Note that this coefficient measures the *total* effect of this information intervention. That is, we recover the combined effect from how individuals update higher-order beliefs (beliefs about other people's beliefs as well as probability that other people may run on a bank), beliefs about other variables (e.g., macroeconomic conditions, policy response), etc. In other words, β_{SVB} is a summary statistic for how information treatments map into the propensity to run. As a result, β_{SVB} should be of direct interest to policymakers.[11]

The regression estimates are reported in column (1) of Table 5. The key finding is that information about the SVB's collapse increases people's propensity to run. This result speaks directly to a prominent debate in the banking literature on the extent to which banking crises can originate from panic effects rather than being driven by weak bank fundamentals (recall that our information treatments do not provide any information about SVB's fundamentals). Our research design based on information provision experiments provides clear evidence that the collapse of an important bank can heighten depositors' concerns about the broader banking system, thereby increasing the risk of additional bank runs.

Regarding the economic magnitude of this effect, the question about the willingness to withdraw funds is qualitative in nature, so the coefficient estimates do not have an immediate quantitative interpretation.[12] However, by leveraging quantitative measures of households' risk perceptions and portfolio reallocation preferences later in the analysis, we will be able to estimate the size of deposit outflows triggered by an event like SVB and show that they closely match actual deposit outflows from the U.S. banking system in the days following SVB's collapse.

What makes households more likely to pull their deposits out of their bank when they find out about the SVB failure? In principle, the information treatment can operate via two distinct channels. The first is by altering people's perceptions about the risk that their bank may fail. The second is by changing their expectations of whether they will recover their deposits if their bank fails. The survey questionnaire was designed to shed light on the role of these mechanisms.

[11] To disentangle the channels of the response (e.g., first-order vs higher-order beliefs), one would need to introduce additional treatments that are more likely to create variation along a specific dimension. For example, Coibion et al. (2021) have a treatment arm where firms are informed about expectations of other firms to study how higher-order beliefs can affect pricing decisions of firms. We hope that future work will be able to assess which channels are particularly important in the context of bank runs.

[12] The SVB treatment increases people's propensity to run by 0.17 on a 10-point scale. The average pre-treatment propensity to withdraw deposits is 4.7 and the standard deviation of the distribution across people is 3.2.

To assess the relevance of the first channel, people were asked about their perceived probability (as a percent chance) that their bank could fail within a year before and after the treatment. This makes it possible to re-estimate equation (1) by using as the dependent variable the change in the reported probability of bank failure pre- and post-treatment. We report the results of this specification in column (2) of Table 5. While the coefficient is positive, it is not statistically significant. One interpretation, emphasizing the inability to reject the null, is that learning about SVB's failure does not lead households to view their bank as riskier. Another possibility, focusing more on the large standard errors, is that the cognitive demand to answering this probabilistic question is too much for some of the participants, thereby introducing excessive noise into the variable and leading to attenuation bias. Answering this question required individuals to be familiar with the concept of probability risk within a defined time frame—an understanding that might be challenging for individuals with lower levels of education. To test if the level of education affects the estimates, we report in column (3) the same specification estimated only on those individuals with at least some level of post high school education. Consistent with cognitive constraints being important, we now find a much larger and statistically significant coefficient. The implied magnitude of the treatment effect for high-educated individuals corresponds to an approximately 2 percentage point higher perceived risk of their own bank failing over the next 12 months. This represents about a 10 percent increase in the perceived probability of bank failure, a considerable effect.

The second channel through which households may become more willing to withdraw their deposits is if they foresee greater losses to their deposits conditional on their bank failing. To test whether the SVB information treatment also operates through this channel, the survey directly inquired about participants' views on whether they thought they would bear losses or get their deposits back if their bank failed. This question was posed after the information treatments, making it possible to assess the influence of the treatments on people's answers. To this end, we re-estimate equation (1) by using as the dependent variable the expected share of deposits lost if the respondent's bank were to fail (one minus recovery rate). Note that we did not inquire about people's expected losses conditional on bank failure before the information treatments. This was to limit cognitive strain and because we can proxy for people's pre-treatment expected losses in case of bank failure by controlling in the regression for the respondents' pre-treatment propensity to run and bank risk perceptions. Because the distribution of expected losses is somewhat bimodal (large masses at 0% and 100%), we also consider a specification in which the dependent variable is an indicator variable equal to one if the respondent expects to lose some of her deposits.

The regression estimates reported in column (4) of Table 5 use the expected loss as a share of deposits as a dependent variable and confirm that this channel is operating as well. We find that when households are informed about the collapse of SVB, they expect to lose more of their deposits if their bank fails. The magnitude of this effect is similar to that found for the first channel: a 3.3 percentage point increase in the expected fraction of deposits lost compared to an average expected deposit loss rate of 45 percent, so an approximately 7 percent increase in the loss rate (or equivalently a decline in the recovery rate). As documented in column (5), we find a similar result when we use an indicator variable for expecting to lose some deposits in case of bank failure.

To get a sense of the overall economic magnitude of the SVB treatment effect, we can consider how it affects people's expected losses on deposits due to a possible failure of their bank. Since the expected loss from bank failure is $\mathrm{E[L]} = \mathrm{Pr(BF)E(L|BF)}$ where $\mathrm{Pr(BF)}$ is the probability of bank failure and $\mathrm{E(L|BF)}$ is the expected loss conditional on a bank failure, the change in this expected loss is:

$$\mathrm{dE[L]} \approx \mathrm{dPr(BF)E(L|BF)} + \mathrm{Pr(BF)dE(L|BF)}$$

The change in the probability of bank failure from the treatment is 1-2% depending on whether we rely on the estimate across all individuals or those with post-high school education. The change in the expected loss conditional on bank failure is 3%. Given that the expected deposit loss rate conditional on a bank failure is 45% on average and the average perceived probability of bank failure is 18% (Table 2), we can estimate that the information treatment increased the expected losses from possible bank failure over the next year by 1-1.5% of household deposits. Since households view it as easy to switch across banks, this suggests that the treatment likely had an economically significant effect on households' willingness to switch banks on average. Furthermore, given the wide variation in how strongly different types of individuals responded to the treatment, there are likely many individuals for whom the treatment effects are significantly larger than this. Because banks need only a fraction of their depositors to run to become illiquid, our results are consistent with runs on banks spreading potentially quickly.

3.2 The effectiveness of policy communication

Given that news about the bank run on SVB can significantly change households' perceptions about the safety of their deposits, how successful are policy communications likely to be in counteracting these effects? To explore this question, we examine the effects of the other information treatments.

First, we report in column (1) of Table 5 the average effect of the policy treatments on households' propensity to run. The FDIC treatment—which involves telling people that individual deposits up to $250,000 are insured—reduces households' propensity to run. This effect is of the same order of magnitude as the SVB treatment in absolute value, suggesting that communication about FDIC coverage could potentially undo the effects of bad news about banking stability. Regarding the transmission channels of this treatment, FDIC information reduces the proportion of people that expect to suffer losses on deposits in case of bank failure (column 5). However, households do not seem to recognize the indirect effect of deposit insurance on reducing the risk of bank failure by preventing bank runs (Diamond and Dybvig, 1983). This is consistent with the evidence for limited levels of level-k thinking (and hence a limited role of higher-order beliefs on decisions) on the part of individuals (see e.g., Camerer 1997, Coibion et al. 2021). It is also worth noticing that, even after being informed about FDIC insurance, a considerable share of people, about 43%, still expect to experience losses in case their bank fails. This raises questions about the credibility of FDIC insurance or at least underscores the need for more comprehensive communication campaigns.

Turning to the Fed treatment, we find that informing people that the Federal Reserve believes that the banking system is sound can also largely offset the impact of the news about SVB. This finding was far from certain since people could have interpreted attempts by public officials to reassure depositors as alarming, being indicative of distress in the banking sector. Interestingly, also Fed communication has a similar impact as FDIC communication, it operates through different channels. Households now reduce the risk of bank failures, especially when we consider individuals with higher education, but do not revise their expected losses in case their bank does fail. These results suggest that households largely understand the primary mechanisms through which Fed and FDIC policies operate.

In contrast with the effectiveness of the FDIC and Fed treatments, the statement from President Biden has no discernible effect on the average willingness to run of households. We also do not detect any effects of the Biden treatment on either the risk of bank failures or on the expected deposit losses. These results indicates that the source of the message about financial market stability is important, with the Federal Reserve having more credibility on this issue than top political leaders.

3.3 The role of prior beliefs and political affiliation

Why would communication about bank stability from Biden have so little effect compared to equivalent statements from the Federal Reserve? One possibility is that they differ in how

known they were ahead of the survey. Information that is already known by agents should have little effect on beliefs. A second possibility is that the statements are not viewed as equally credible. In this section, we focus on the potential importance of prior beliefs and political preferences in explaining differences in treatment effects.

As discussed in Haaland et al. (2022), controlling for prior beliefs is also a critical step to ensure that the results reflect genuine changes in people's perceptions triggered by the information treatments, rather than emotional reactions or survey demand effects. For example, survey participants may react to information about the SVB collapse by reporting greater concerns about deposit and bank risk because they think this is what the survey administrators expect.[13] By differentiating respondents depending on their prior knowledge of SVB, we can check whether revisions in the propensity to run are stronger among those who did not know about SVB. This would indicate that survey participants are truthfully responding to the information content of the treatment rather than mechanically altering their answers.

We also allow the effects of the Biden information treatment to differ depending on the respondents' political affiliation. To this end, we estimate the following equation:

$$\begin{aligned}\Delta \text{run}_i = \alpha + \sum_j \left(\beta_t + \gamma_j K_{i,j}\right) \times \mathbb{I}\left(i \in \text{Treat}_j\right) + \sum_j \kappa_j K_{i,j} \\ + \left(\beta_B^P + \gamma_B^P K_{i,\text{Biden}}\right) \times \mathbb{I}(i \in \text{Treat}_{\text{Biden}}) * P_i + \delta P_i + \xi X_i + \varepsilon_i\end{aligned} \quad (2)$$

The variable $K_{i,j}$ captures the degree of knowledge of respondent i about the information treatment j. Specifically, the variable $K_{i,SVB}$ is a dummy that takes value one for people that knew that SVB was a private bank and zero otherwise. To capture the degree of knowledge about the Fed's statement, the variable $K_{i,Fed}$ is a dummy that takes value one for people that thought that the Fed said that banks were safe or that it was too early to say; and value zero for people that had no knowledge about the Fed's pronouncement or thought it said that banks were at a critical juncture. The same approach is followed to construct the dummy $K_{i,Biden}$ to assess the degree of knowledge about President Biden's statement. To measure the degree of knowledge about the FDIC, the variable $K_{i,FDIC}$ corresponds to the respondents' beliefs about the FDIC insured limit.[14] Finally, the dummy P_i captures the political affiliation of the survey respondents.

Table 6 reports the regression estimates and Figure 3 illustrates the impact of each information treatment on the propensity to run conditional on people's prior knowledge. To

[13] It is worth underscoring that concerns about demand effects are much more muted in the context of online surveys, as used for our analysis, relative to in-person surveys (de Quidt et al., 2018). In the latter case, the physical presence of an interviewer places additional pressures on people to provide answers that may seem more consistent with the interviewer's expectations.

[14] We winsorize the reported insurance limits at 2.5 million USD to prevent a few outliers—possibly because people accidentally typed an extra zero—from driving the results.

facilitate comparison with the average treatment effects on the general population, column (1) reports the estimates from Table 5. In column (2), we expand the regression specification by including the interactions between the treatment dummies and people's prior knowledge indicators. In this case, the coefficients on the standalone treatment dummies—denoted with β_j in equation (2)—capture the treatment effects on people with no prior knowledge of the information provided.

Focusing first on these coefficients, the estimates confirm previous findings based on the general survey population. Namely, the SVB, FDIC, and Fed treatments affect people with no prior knowledge of these treatments in the expected direction. Information about SVB increases the propensity to run while the FDIC and Fed treatments operate in the opposite direction. The point estimates also corroborate earlier findings that the FDIC and Fed treatments can quantitatively offset the impact of news about SVB. Thus, public communication by central banks and information about deposit insurance emerge from the analysis as powerful tools to contain—in fact, fully offset—the panic effects arising from the collapse of a large bank.

Finally, we observe that the estimated effects of the information treatment on people with no prior knowledge are about twice as large relative to the effects estimated over the entire sample reported in column (1). This implies that the treatment effects have a weaker effect on people with prior knowledge. This is consistent with Bayesian learning in which beliefs adapt to new information. For those who had prior knowledge, the treatments did not provide new information and therefore should not alter beliefs. In contrast, for those who were less informed, more weight is assigned to the new information.

Indeed, the coefficient estimates on the interactions between the treatment dummies and the prior knowledge indicators—denoted with γ_j in regression (2)—reveal that the information treatments are generally ineffective on people with prior knowledge. The coefficient on the SVB interaction is negative and of similar magnitude to the treatment effect on people without prior knowledge. As shown in Panel A of Figure 3, this implies that the SVB treatment has no impact on people that knew about this event beforehand.

Panel C illustrates the same pattern for the Fed treatment. This treatment reduces the propensity to run among people who did not know the Fed had expressed confidence in the banking sector but has no effects on individuals who were already aware of this information. Shifting focus to the FDIC treatment, Panel B shows that its effectiveness is contingent upon individuals' initial perceptions of insurance limits, with a greater impact observed among those with lower expectations. Specifically, the FDIC treatment has a large impact—offsetting news about SVB—

among individuals who initially perceived insurance limits to be very low or non-existent. But it has no statistically significant effect on people who already thought insurance limits were high.

These findings consistently demonstrate that the magnitude of the estimated effects is strongly influenced by individuals' prior knowledge of the information treatments. As discussed earlier, this is a crucial result that confirms the success of our survey design approach in eliciting authentic responses to the information treatments. It also implies that the estimates in Table 5 should be viewed as lower bounds on the effects of news about a banking failure on households' perceived risk of banking and their willingness to run.

The results in column (2) show that even when we differentiate people based on their prior knowledge of President Biden's statement, this information treatment continues to have statistically insignificant effects. In column (3), we thus further expand the regression to include interaction terms for the Biden treatment with a dummy capturing non-Democrat voters. As illustrated in Panel D of Figure 3, the results show that the Biden treatment tends to reduce people's propensity to run only among Democrat voters that had no prior knowledge of President Biden's statement. This treatment has no statistically significant effect on any other category. Therefore, communication by political leaders—even if holding top positions in government—emerges from the analysis as being considerably less effective in influencing public perceptions of bank risk than communication by non-political institutions, such as central banks. This finding is consistent with the literature documenting that voters with their party in power have more favorable views on the economic outlook (e.g., Bartels 2002, Kamdar and Ray 2020, Coibion, Gorodnichenko and Weber 2020).

4. Implications for portfolio allocation and consumption choices

So far, we have found that information treatments tend to alter people's perceptions about deposit safety and thus their propensity to withdraw funds. How large could these withdrawals be? And how would people re-allocate this money? To address the questions, we use two methodological approaches. We first examine the responses of survey participants to hypothetical questions asking how they would react if their bank faced a given failure risk. We then use an instrumental variable approach to capture how exogenous variation in the perceived safety of deposits triggered by the information treatments affects people's investment choices. Using the latter approach, we will also examine the impact of deposit risk on consumption choices.

4.1 Hypothetical bank failure scenario

Before receiving the information treatments, survey participants were presented with a hypothetical scenario asking how they would react if their bank faced an imminent risk of failing. More precisely, participants were asked regarding their propensity to take deposits out and the share of deposits they would withdraw if their bank faced a certain probability of failing within 3 months. Additionally, participants were asked whether they would start using a new bank and how they would allocate the funds withdrawn. The probability of failure was randomized across participants, taking values between 1, 5, 10, 15, 20, 25, and 50 percent. Hypothetical questions have been shown to be a simple way to study causal effects without resorting to RCTs while often reaching the same conclusions as those stemming from exogenous information treatments (Mei and Stantcheva, 2022; Kumar, Gorodnichenko and Coibion, 2023). In addition, they can allow for studying effects on outcomes that are not easily observed in RCTs.

To examine the effects of bank risk on deposit withdrawals, we regress the share of deposits that people would withdraw if their bank were at risk of failing over the hypothetical bank failure probability (*BFP*). The regression controls for the respondents' prior beliefs about the probability of bank failure as well as for their individual characteristics included in the vector X_{i}. We find that a higher risk of bank failure triggers on average larger deposit withdrawals.[15] The regression coefficient is highly statistically significant. An increase in the probability of bank failure of 10 percentage points leads to an increase in the share of deposits withdrawn of 4.7 percentage points. There is no analogous estimate of this elasticity in prior work that we know of. Earlier papers have studied the connection between runs on banks and deposit outflows in many contexts, such as in emerging economies (Levy-Yeyati, Martinez Peria and Schmukler, 2010), in the Great Depression (Blickle, Brunnermeier and Luck, 2022), or in the Great Recession (Martin, Puri, and Ufier, forthcoming) exploiting detailed data on deposit flows. However, this line of work cannot identify the elasticity above because of lack of data on the bank failure risk perceived by households.

This elasticity provides some guidance as to the overall effect of learning about SVB on household deposits. The average effect of the SVB treatment on households' perceived probability of their own bank failing is 1-2 percentage points, depending on which estimate in Table 5 is used. This translates into a 0.5-1 percentage point change in deposits coming from

[15] The regression results are reported in Appendix Table 3. We also consider a specification where the dependent variable is an indicator for people that withdraw deposits from the banks to have sense of the extensive margins. We find that a higher risk of bank failure increases the proportion of depositors withdrawing money from the bank.

the first channel, capturing deposit withdrawals due to the increased probability of bank failure. We also know that the second channel that drives deposit withdrawals, namely the change in expected deposit losses conditional on the bank failing, is of the same order of magnitude in terms of effects on total expected losses from holding deposits as the first channel, so the impact on deposit outflows from that channel should be similar. Hence, the SVB treatment likely leads people to withdraw approximately 2-3 percent of deposits from their bank.

For respondents that declared they would take at least some deposits out if their bank faced an imminent risk of failure, the survey included a follow-up question asking which type of alternative bank—credit union, local, state, national, online—they would choose to possibly redeposit a portion of the withdrawn funds. As illustrated in Panel A of Figure 4, half of the respondents would choose the same type of bank that they currently use. We also see a tendency for people to move from larger banks to credit unions. The share of respondents that would start using credit unions increases from 18 to 28 percent. In contrast, the share of people using state or national banks declines from 49 to 37 percent. These results are consistent with data gathered in the survey before the information treatments, showing that credit unions are generally considered safer banks. Panel B of Figure 4 shows indeed that depositors at credit unions report a lower propensity to run, that is to withdraw money because of concerns about bank risk.

Besides estimating the extent of deposit withdrawals in response to heightened bank risk, we can also shed light on how households would *reallocate* these funds across different financial instruments and asset classes. To this end, the survey questionnaire gathered information about the different ways in which withdrawn deposits could be held. These options included deposits into other banks, cash, stocks, bonds, gold, cryptocurrencies, real estate, and debt repayments. Based on these answers, we can assess the impact of bank risk on people's desired portfolio allocations. To do so, we construct the hypothetical portfolio share in asset class a, $\text{port}_{\text{i,a}}^{\text{hyp}}$, that respondent i would hold if her bank were exposed to the hypothetical bank failure probability BFP_{i} indicated in the survey question. We then examine how the portfolio shares vary with the level of bank risk by estimating the following regression:

$$\text{port}_{\text{i,a}}^{\text{hyp}} = \alpha_{\text{a}} + \beta_{\text{a}}\, BFP_{\text{i}} + \gamma_{\text{a}}\, \text{port}_{\text{i,a}}^{\text{pre}} + \delta BFP_{i}^{pre} + \xi_{\text{a}} \text{X}_{\text{i}} + \varepsilon_{\text{i,a}} \qquad (3)$$

where X_{i} denotes the set of individual controls used in previous regression specifications and BFP_{i}^{pre} is the individual's prior belief of the risk their bank could fail over the next 12 months. In the initial sections of the questionnaire, participants were also asked about the allocation of their savings across various financial assets. Hence, when considering financial assets, the regression also controls for people's initial portfolio shares, $\text{port}_{\text{i,a}}^{\text{pre}}$.

Table 7 reports the estimates of β_a for each type of asset. An increase in bank risk triggers deposit outflows that are mostly transferred into other banks or held in cash. Specifically, column (2) shows again that a hypothetical increase of 10 percentage points in the probability of bank failure leads to a 4.7 percentage reduction in deposits. However, one-third of the deposits withdrawn from the primary bank would be reallocated to different banks, as households try to diversify deposit holdings across different institutions. Of the remaining two-thirds of the withdrawn deposits, about 65% would be held in the form of cash. The remaining 35% would be split between paying off debt and purchasing other assets such as stocks, gold, and real estate. We find no evidence that people would respond to heightened bank risk by increasing holdings of cryptocurrencies, suggesting that cryptocurrencies are not seen as a viable alternative to deposits in case of bank distress. This interpretation is consistent with surveys (e.g., Weber et al. 2023) documenting that households perceive cryptocurrency as highly risky.

These results provide novel evidence on how own-bank failure risk affects the portfolio decisions of households, allowing us to quantify not just the extent to which households would like to withdraw deposits from their primary bank, but also how they would tend to reallocate those withdrawals across different assets, including depositing funds into other banks. However, as shown in section 3, a higher risk of their own bank failing is not the only channel through which news about other banks failing may induce withdrawals by households. We therefore turn to a broader analysis of how the willingness to run might affect the portfolio and spending decisions of households.

4.2 Instrumental variable approach

In this section, we revisit the results on the implications of deposit risk for portfolio allocation by exploiting the exogenous variation in the propensity to withdraw deposits generated by the information treatments. After being presented with the information treatments, survey participants were asked how they would allocate a $10,000 windfall across deposits, cash, bonds, stock, gold, and crypto assets. We focus on a potential windfall because actual portfolios tend to adjust only gradually to new information (Giglio et al. 2021). To understand whether concerns about deposit safety influence portfolios, we regress the windfall share, $\text{port}_{i,a}^{\text{win}}$, allocated to asset class a by survey respondent i on her post-treatment propensity to run, $\text{run}_i^{\text{post}}$:

$$\text{port}_{i,a}^{\text{win}} = \alpha_a + \beta_a \, \text{run}_i^{\text{post}} + \gamma_a \, \text{run}_i^{\text{pre}} + \delta_a \, \text{port}_{i,a}^{\text{pre}} + \xi_a X_i + \varepsilon_{i,a} \qquad (4)$$

The regression also controls for the pre-treatment propensity to run, $\text{run}_i^{\text{pre}}$, the initial pre-treatment portfolio allocation, $\text{port}_{i,a}^{\text{pre}}$, and our usual set of individual controls X_i.

To identify the causal effects of deposit risk on portfolio allocation, we instrument the post-treatment propensity to run with the information treatments by estimating this first-stage regression specification:

$$\text{run}_i^{post} = \alpha_a + \sum_j \beta_{j,a}\, \mathbb{I}(i \in \text{Treat}_j) + \gamma_a\, \text{run}_i^{pre} + \delta_a\, \text{port}_{i,a}^{pre} + \xi_a X_i + \varepsilon_{i,a} \qquad (5)$$

By doing so, we exploit the exogenous variation in the propensity to run triggered by the information treatment. This is a critical step of the analysis because the relationship between the respondents' propensity to run and their preferred portfolio allocation could otherwise be driven by omitted factors.

Table 8 reports the regression estimates for equation (4). The *F*-statistics of the first-stage regressions indicate that the instruments are weak. Therefore, we estimate the equation with the continuously updated (CUE) GMM estimator and provide confidence intervals (in square brackets) and *p*-values (in the last row of the table) that are robust to weak instruments (Stock, Wright and Yogo 2002). The results are consistent with the earlier findings based on respondents' answers to the hypothetical risk of their bank failing. Namely, heightened concerns about deposits prompt people to reduce their portfolio share invested in bank deposits (column 1) and increase cash holdings (column 2).[16] We still find no evidence that people would tilt their portfolio towards cryptocurrencies in response to heightened concerns about deposits.

Regarding the magnitudes of the deposit outflows, our estimates imply that the collapse of SVB—which generates an increase in uninformed people's propensity to run by 0.32 points (Table 6)—would trigger a drop in the marginal willingness to hold deposits of about 2.5 percentage points. The latter applies to total deposits across all banks, so deposits in the main bank could fall by significantly more if households reallocate some of those deposits to other banks, as found in Table 7. Our estimates are remarkably close to actual deposit outflows from the U.S. banking sector observed in the immediate aftermath of the SVB collapse. Considering that only about a third of our survey participants knew about SVB (Table 3), our results imply deposit outflows equal to about 0.8 percent. In comparison, weekly data on U.S. commercial banks' deposits recorded a decline of 0.75 percent in the days following SVB's collapse.[17]

[16] Note that the survey questionnaire asked people how they would allocate a $10,000 windfall across financial asset classes, without providing the options to invest these funds in real estate or repay debt as was done instead in the hypothetical scenario about the risk of bank failure. Hence, compared to Table 7, the results in Table 8 suggest that if people are not provided with real estate investment and debt repayment options, they tend to further increase cash holdings, broadly offsetting the reduction in deposits.

[17] Weekly data on seasonally-adjusted commercial bank deposits collected by the Federal reserve show a declined from 17,553 billion on March 8 to 17,442 billion on March 15, 2023.

4.3 Effects on durable goods purchases

Portfolio rebalancing effects need not be the only channel through which bank risk affects household decision-making. The fact that overall deposit drawdowns are broadly matched by an increase in cash holdings, for example, suggests that deposit risk generates strong precautionary motives. To further explore this aspect, we examine the implications of deposit risk for purchases of durable goods. In principle, deposit risk has ambiguous effects on the purchase of durable goods. Households may react to concerns about the safety of their deposits by opting to invest their savings in durable items, such as real estate or a new car. Alternatively, they may associate deposit risk with a deterioration of the economic outlook, calling for restraining consumer spending.

To shed light on these competing hypotheses, the survey questionnaire asked participants whether it was a good time to buy a car, major household items, or a house. These questions were asked after the information treatments, so we can examine whether the exogenous variation in the respondents' propensity to run triggered by the treatments influences their consumption plans, which help predict actual consumer spending (e.g., Carroll, Fuhrer, and Wilcox 1994). To this end, for each good category g, we construct a binary variable, $\text{buy}_{i,g}^{post}$, taking value 1 for respondents that declare it is a good time to buy and value 0 for those who are not sure or think it is not a good time to buy. We then regress this variable over the pre- and post-treatment propensity to run:

$$\text{buy}_{i,g}^{post} = \alpha_g + \beta_g \, \text{run}_{i,g}^{post} + \gamma_g \, \text{run}_i^{pre} + \xi_g X_i + \varepsilon_{i,g} \qquad (6)$$

We instrument the post-treatment propensity to run using the information treatments. The first-stage regression is given by:

$$\text{run}_{i,g}^{post} = \alpha_g + \sum_j \beta_{j,g} * \mathbb{I}\left(i \in \text{Treat}_j\right) + \gamma_g \, \text{run}_i^{pre} + \xi_g X_i + \varepsilon_{i,g} \qquad (7)$$

Table 9 reports the regression estimates for equation (6) using the CUE GMM estimator and providing confidence intervals (in square brackets) and *p*-values (in the last row of the table) that are robust to weak instruments. The negative coefficient on the post-treatment propensity to run in column 1 shows that heightened concerns about deposit risk make households less inclined to buy new cars. The point estimates remain negative also in the case of major household items and house purchases, although they do not reach statistical significance. These results thus suggest that deposit risk tends to strengthen precautionary motives and deter spending on durables.

Quantitatively, however, this channel appears to be quite small. News about SVB may reduce people's propensity to buy cars by only 0.03 points on a 2-point scale, which suggests that even if bank risk leads to significant deposit withdrawals by households, the associated uncertainty and portfolio rebalancing by itself is unlikely to translate into large effects on spending.

5. Conclusion

In this paper, we have used information provision experiments in a representative survey of U.S. households to study whether depositors increase their propensity to withdraw deposits when they learn about a bank run on an important financial institution. We show that news about the SVB's collapse makes households more willing to withdraw deposits from their bank, because they both perceive a higher risk that their bank may fail and expect to suffer large losses on deposits if their bank does fail. Notably, news about SVB trigger withdrawals also by insured depositors, partly reflecting limited knowledge about FDIC insurance.

Through a combination of hypothetical questions and exogenous variation created by the information treatments, we show that the heightened banking risk associated with learning about the SVB failure leads households to primarily reallocate their deposits across new banks and increase cash holdings. We find no evidence that bank risk increases households' propensity to hold cryptocurrencies and very modest effects on durable goods spending. Besides providing a rich qualitative characterization of depositors' reactions to news about a major bank collapse, the analysis also sheds light on their magnitudes. We find that the failure of a large bank like SVB can trigger outflows equal to about 2.5 percent of total deposits across the banking sector if households are informed about the event. However, we also document that households are generally poorly informed about distress events in the banking sector, even those as significant as SVB's collapse, thus limiting the potential for deposit outflows.

These results speak to an important literature on bank runs. Unlike prior work, our approach allows us to estimate directly how much deposits are likely to respond to changes in perceived bank risk, which can help discipline models of bank runs and guide banking supervision questions at a time in which bank runs have returned to the limelight. We also document heterogeneity in these elasticities with some individuals being more sensitive to bank risk in terms of withdrawing deposits than others. Because bank runs may take on a life of their own once they are started, more work should be done in understanding the extent to which a small group of highly sensitive depositors may, through their actions, spur less sensitive depositors to also begin withdrawing their deposits.

In interpreting our results, it is important to consider that our analysis is based on a representative sample of U.S. households, who generally hold small deposits well within the FDIC insurance limits. More research is warranted to better characterize the behavior of very larger depositors, including corporations, although there are indications that our results could apply quite generally. Furthermore, there is little evidence that corporate depositors behave all that differently from retail ones. For example, Boyle et al. (2022) find that the crisis-response of finance professionals in terms of deposits does not differ substantively from non-finance professionals.

Importantly, our information treatments also provide novel evidence about the role policy communication in countering bank runs. We find that because knowledge about FDIC insurance remains limited, providing more information about this insurance system can considerably reduce households' desire to withdraw deposits, by lowering the expected losses on deposits in case of bank failure. Communication from the Federal Reserve is also powerful in reducing the propensity to withdraw deposits by making households less worried about the risk of their bank failing. These results suggest that communication about FDIC insurance and by respected policymakers that successfully reaches retail depositors can effectively contain— in fact, potentially fully offset— the pressures on deposits that may arise during times of crisis. But reaching these retail depositors may be a challenge in era where they are already bombarded with information of all kinds.

Our results also highlight another challenge related to the role of public communication in countering panic-driven deposit runs. Specifically, messages from political leaders seem to resonate only with their electoral base. In times of crisis, bipartisan communication may become increasingly important to ensure that all individuals not only hear the message of financial stability but also believe in it.

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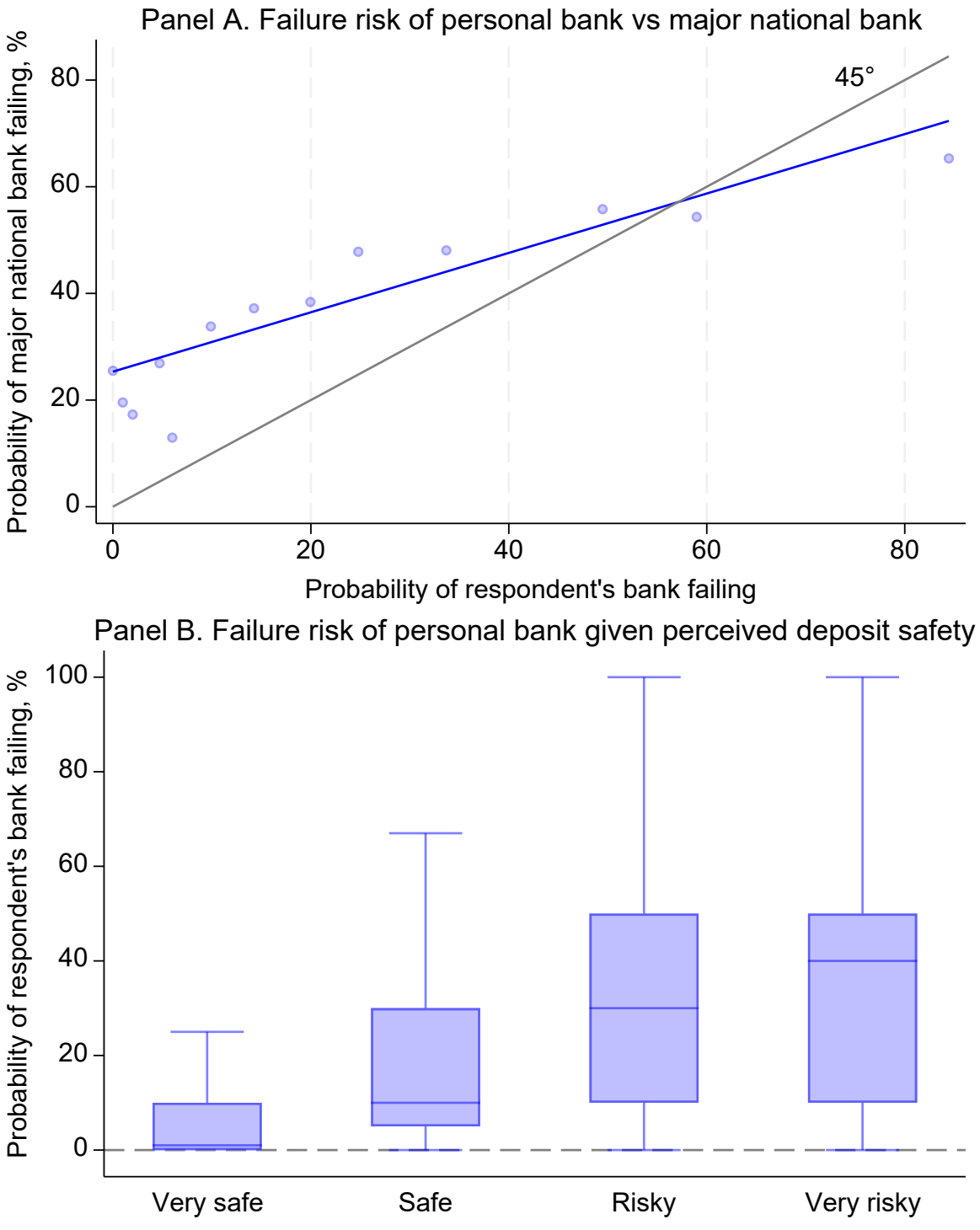
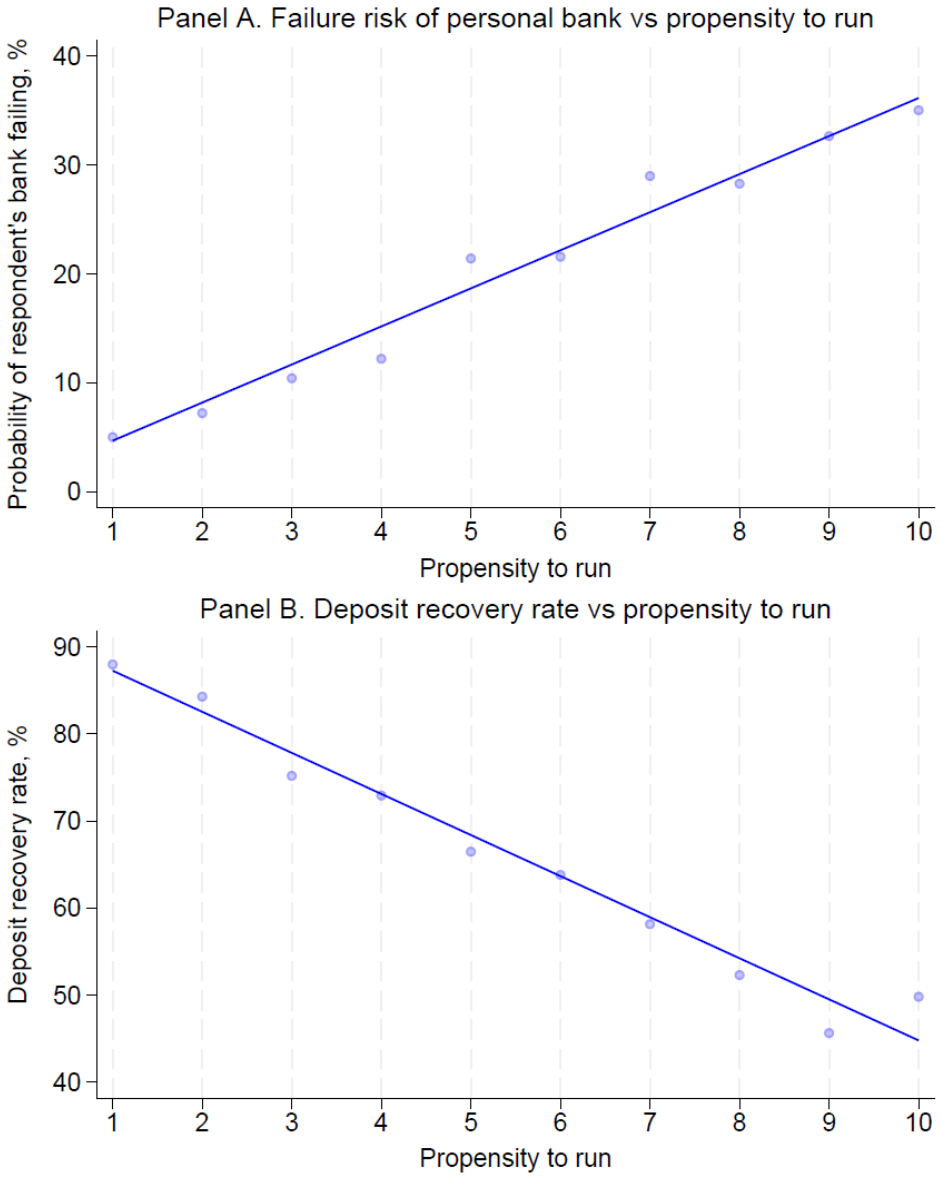
Figure 1. Perceived risk of bank failure



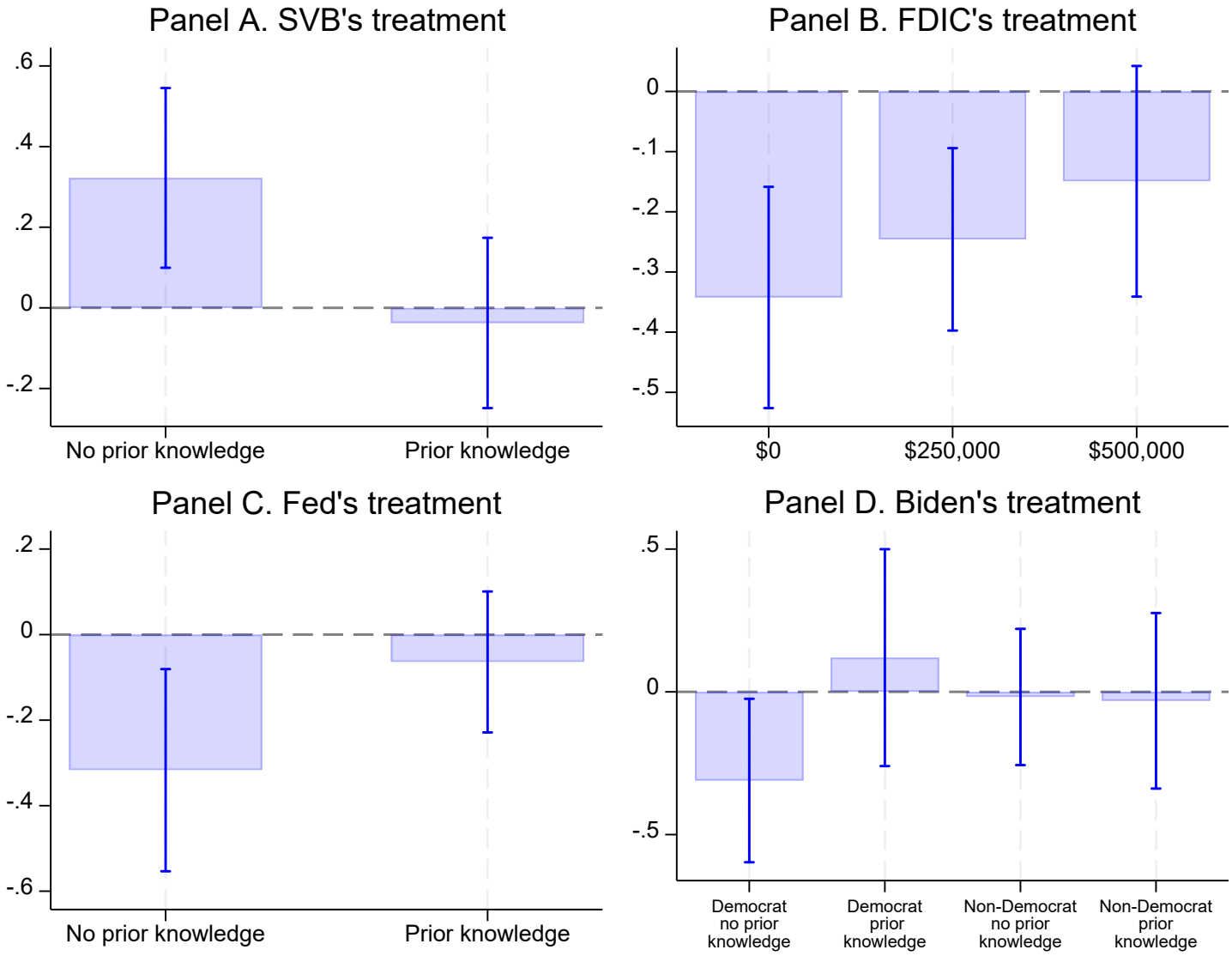
Notes: Panel A presents a binscatter for questions eliciting information about the safety of the banking system vs the respondent's bank. Panel B shows the distribution of subjective probabilities of personal bank failure across qualitative responses about the safety of the personal bank.

Figure 2. Propensity to run



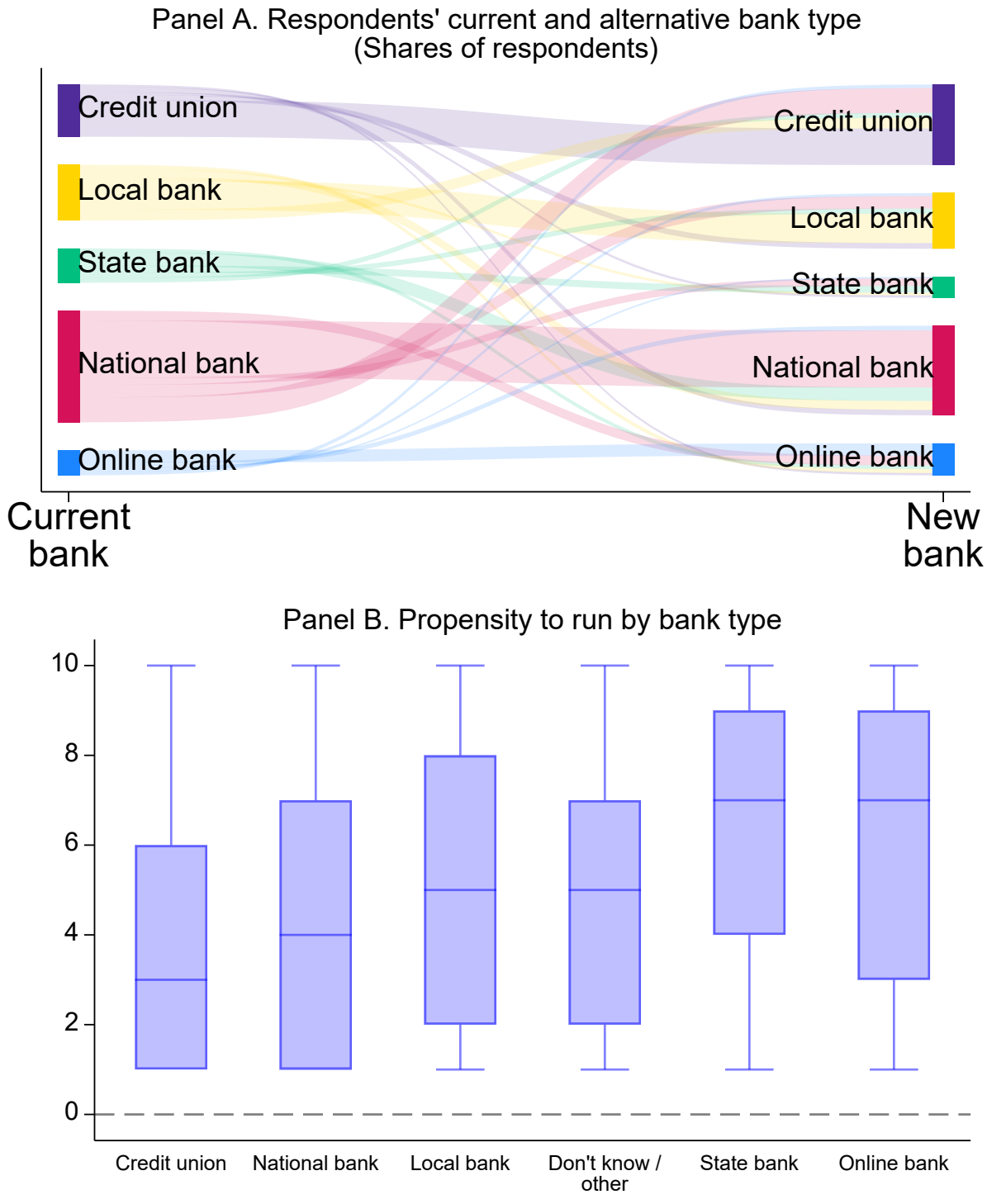
Notes: Panel A presents a binscatter for questions about the subjective estimate of propensity to run (1 [not at all likely] to 10 [extremely likely] scale) and the subjective probability of failure for the respondent's personal bank. Panel B presents a binscatter for questions about the subjective estimate of propensity to run (1 [not at all likely] to 10 [extremely likely] scale) and the subjective estimate of how much money (deposit) is going be recovered if the respondent's personal bank fails.

Figure 3. Treatment effects given prior knowledge and political orientation



Notes: The figure visualizes the treatment effects reported in Table 6. The bars show the point estimates. The whiskers show the 90 percent confidence intervals.

Figure 4. Bank types and depositors' risk perceptions



Notes: Panel A shows how respondents would reallocate their banking in response to a hypothetical change in the probability of their personal bank's failure. Panel B shows the distribution of propensity to tun (1 [not at all likely] to 10 [extremely likely] scale) by bank type.

Table 1. Respondents' financial information

	Percentage of respondents (or average values where indicated)				
	Full sample	Up to high school education	Post high school education	Deposits < $250k	Deposits > $250k
Bank deposits					
Number of banks with deposit accounts (average)	1.9	2.1	1.9	1.9	2.6
Number of years using current primary bank (average)	13.9	11.7	15.6	14.0	12.5
Typical deposit amount in primary bank					
< $10,000	50.4	52.3	49.0	52.2	
$10,000 - $40,000	29.5	31.2	28.3	30.6	
$40,000 - $100,000	11.3	10.4	12.0	11.7	
$100,000 - $250,000	5.4	3.6	6.6	5.6	
> 250,000	3.4	2.4	4.1		100.0
Primary bank type					
Credit Union	19.6	17.1	21.4	19.8	14.4
Local bank	20.8	24.7	17.9	21.1	13.6
State bank	10.0	12.8	7.9	9.9	13.5
National bank	35.6	28.4	40.9	35.4	36.7
Online bank	8.7	9.8	7.9	8.6	13.1
Other or don't know	5.3	7.2	4.0	5.2	8.8
Reason to use bank					
Convenient location	47.7	44.9	49.7	48.4	29.9
Customer service	36.2	33.3	38.3	36.8	23.9
Low account fees	37.1	30.2	42.1	37.7	24.1
Multiple banking services	31.3	30.0	32.3	31.2	39.4
Safer than other banks	25.2	24.5	25.7	24.9	26.4
Fraud and identity theft protection	22.0	22.1	21.9	21.4	31.1
Low ATM fees	22.9	20.4	24.7	22.7	30.3
Better interest rates	19.0	20.6	17.9	18.5	34.6
Wealth management services	8.6	9.3	8.1	8.0	25.8
Work well for my business	11.8	13.2	10.7	11.3	26.5
Other	7.9	5.8	9.4	8.1	3.5
Bank switching costs					
How easy to change bank?					
Easy or very easy	77.8	80.0	76.2	77.4	86.4
Difficult or very difficult	22.2	20.0	23.8	22.6	13.6
Interest rate differential to switch bank (average)	1.7	1.3	2.0	1.9	1.9
Portfolio allocation					
Respondents with investments in					
Stocks	42.6	32.2	50.2	41.7	71.0
Bonds	28.6	25.3	30.9	27.8	51.8
Gold/commodities	20.9	22.4	19.8	19.8	51.9
Cryptocurrencies	19.1	21.0	17.7	18.0	50.0
Portfolio shares (average)					
Bank deposits	65.0	72.3	59.8	65.8	41.9
Cash	8.8	8.7	8.9	8.6	14.9
Stocks	14.3	7.7	19.1	14.3	14.9
Bonds	5.2	4.1	6.0	5.1	9.0
Gold/commodities	3.2	3.3	3.1	3.0	7.4
Cryptocurrencies	3.4	3.9	3.1	3.1	11.8

Notes: Survey participants could select multiple reasons to use their bank. Hence, the sum of the percentages across answer categories exceeds 100. Since the question about the reasons to use banks was posed at the end of the survey, hence after the information treatments, the results are based considering only the control group to ensure that the results are not affected by the information treatments. Standard deviations for non-indicator variables are reported in Appendix Table 2.

Table 2. Pre-treatment risk perceptions

	Percentage of respondents (or average/median values where indicated)				
	Full sample	Up to high school education	Post high school education	Deposits < $250k	Deposits > $250k
Risk perceptions about personal bank					
Perceived safety of personal deposits					
Very safe or safe	84.7	80.5	87.7	84.6	85.3
Risky or very risky	15.3	19.5	12.3	15.4	14.7
Change in bank risk perceptions in recent months					
No change	59.4	52.6	64.4	60.4	27.6
Safer than before	19.1	26.1	13.9	18.3	41.9
Less safe than before	21.5	21.3	21.7	21.3	30.4
Probability of personal bank failing within a year (average/median)	17.6 / 6	20.9 / 10	15.2 / 5	17.3 / 5	27.8 / 16
Propensity to withdraw deposits (average/median)	4.7 / 4	5.4 / 6	4.1 / 3	4.6 / 4	6.6 / 8
Expected recovery share on deposits if bank fails (average/median)	69.3 /100	63.9 / 80	73.3 / 100	69.6 / 100	57.2 / 60
Risk perceptions about the U.S. banking sector					
Perceived safety of deposits in U.S. banks					
Very safe or safe	77.6	76.4	78.4	77.6	74.3
Risky or very risky	22.4	23.6	21.6	22.4	25.7
Probability of major bank failing within a year (average/median)	35.1 / 25	32.8 / 25	36.8/ 30	35.2 / 26	35.2 / 26
Sources of bank risk					
General financial crisis	36.4	33.8	38.2	36.5	31.8
Recession	36.7	37.1	36.4	37.1	24.8
Bad investments	32.8	28.7	35.7	32.8	27.4
Sudden decline in the value of bank assets	31.3	27.0	34.3	31.2	33.0
Too many customers asking for their money back	28.4	26.6	29.7	28.5	25.7
Bad loans	25.9	25.3	26.4	25.9	25.1
Fed raising interest rates	23.3	23.0	23.6	23.5	21.8
Lack of credit from the Fed	15.3	16.6	14.4	15.0	27.2
Lack of credit from other financial institutions	10.8	13.6	8.7	10.4	21.1

Notes: Survey participants could select up to 3 sources of bank risk. Hence, the sum of the percentages across answer categories exceeds 100. The expected recovery share on deposits if bank fails is computed based on the control group since this question is asked after the information treatments.

Table 3. Prior knowledge of the information treatments

	Percentage of respondents		Percentage of respondents
SVB's acronym		**FDIC standard deposit insurance**	
A private bank	35.2	< $250,000	25.2
Other options	18.4	$250,000	23.3
I don't know	46.4	>$250,000	2.0
		I don't know	49.5
Fed's assessment of U.S. banks		**President Biden's assessment of U.S. banks**	
Banks are sound	22.1	Banks are safe	29.3
Too early to say	11.3	Too early to say	8.2
Banks are at a critical juncture	13.4	Banks are at a critical juncture	13.2
I don't know	53.2	I don't know	49.3

Table 4. Bank and deposit risk perceptions across individuals

	Personal bank				Banking system	
	Propensity to run	Deposit risk	Bank risk	Expected loss	Deposit risk	Bank risk
	(1)	(2)	(3)	(4)	(5)	(6)
Years with account	-0.82***	-0.08***	-4.37***	-0.27	-0.02	1.68
	(0.11)	(0.03)	(0.80)	(2.43)	(0.03)	(1.12)
Female	-0.14	0.01	0.07	2.14	0.05*	-0.86
	(0.09)	(0.03)	(0.72)	(2.13)	(0.03)	(0.94)
Age	-0.06***	-0.01***	-0.26***	-0.54***	-0.00	0.08**
	(0.00)	(0.00)	(0.03)	(0.09)	(0.00)	(0.04)
Post high-school education	-0.58***	-0.04	-2.29***	-2.49	0.06*	3.39***
	(0.11)	(0.03)	(0.85)	(2.47)	(0.03)	(1.13)
Income above 80k	-0.12	-0.07***	-0.59	-2.98	-0.14***	-0.74
	(0.09)	(0.03)	(0.72)	(2.12)	(0.03)	(0.99)
Deposits above 250k	1.67***	0.00	10.06***	13.86***	-0.00	2.54
	(0.23)	(0.06)	(2.15)	(5.28)	(0.07)	(2.41)
Democrat	0.11	-0.09***	1.89**	0.38	-0.19***	-4.82***
	(0.10)	(0.03)	(0.83)	(2.49)	(0.03)	(1.09)
Republican	0.34***	-0.02	2.15**	3.07	-0.00	1.13
	(0.11)	(0.03)	(0.87)	(2.64)	(0.03)	(1.22)
Observations	5,078	5,080	5,071	1,676	5,077	5,068
R^2	0.24	0.07	0.10	0.10	0.04	0.03

Notes: All regressions use sampling weights and include controls for employment status, geographical area, day fixed effects, and a constant. The regressions in columns (4) uses only survey participants in the control group since it is based on a question that was asked after the provision of the information treatments. Robust standard errors are in parentheses. ***, **,* denote statistical significance at 1, 5, and 10 percent levels.

Table 5. Average treatment effects

	Change in propensity to run	Change in perceived bank risk		Expected loss (percent) if the bank fails	1= Expected loss if the bank fails
	Full sample	Full sample	Post high school education	Full sample	Full sample
	(1)	(2)	(3)	(4)	(5)
T = SVB	0.17**	0.82	2.29***	3.33*	0.04**
	(0.08)	(0.81)	(0.88)	(1.70)	(0.02)
T = FDIC	-0.15*	0.07	0.07	-2.12	-0.04**
	(0.08)	(0.84)	(0.90)	(1.65)	(0.02)
T = Fed	-0.17**	-1.49*	-2.36***	2.22	0.01
	(0.08)	(0.87)	(0.91)	(1.68)	(0.02)
T = Biden	0.09	-0.08	-0.33	-0.55	0.01
	(0.08)	(0.81)	(0.91)	(1.63)	(0.02)
Estimation	OLS	OLS	OLS	OLS	Probit
Observations	5,617	5,601	3,791	5,615	5,609
R^2	0.01	0.02	0.02	0.10	

Notes: All regressions use sampling weights and include controls for age, age squared, gender, education, income, employment status, political affiliation, geographical area, and day fixed effects. Column (5) reports the marginal effects of a probit model where the dependent variable is a dummy that takes value of 1 to denote respondents that expect to suffer losses on their deposits if their bank fails. Robust standard errors are in parentheses. ***, **,* denote statistical significance at 1, 5, and 10 percent levels.

Table 6. Treatment effects given prior knowledge and political affiliation

	Change in propensity to run		
	(1)	(2)	(3)
T = SVB	0.17**	0.32**	0.32**
	(0.08)	(0.14)	(0.14)
T = FDIC	-0.15*	-0.34***	-0.34***
	(0.08)	(0.11)	(0.11)
T = Fed	-0.17**	-0.31**	-0.32**
	(0.08)	(0.14)	(0.14)
T = Biden	0.09	-0.13	-0.31*
	(0.08)	(0.12)	(0.17)
T = SVB × prior knowledge SVB		-0.35**	-0.36**
		(0.18)	(0.18)
T = FDIC × prior beliefs FDIC insurance limits		0.04	0.04
		(0.03)	(0.03)
T = Fed × prior knowledge Fed		0.25	0.25
		(0.17)	(0.17)
T = Biden × prior knowledge Biden		0.15	0.43
		(0.18)	(0.29)
T = Biden × non-democrat			0.29
			(0.22)
T = Biden × prior knowledge Biden × non-democrat			-0.44
			(0.37)
Observations	5,617	2,931	2,931
R-squared	0.01	0.03	0.03

Notes: All regressions use sampling weights and include controls for age, age squared, gender, education, income, employment status, political affiliation, geographical area, day fixed effects, and a constant. The regressions in columns (2) and (3) also control for each treatment's knowledge indicators. Column (3) also includes a non-Democrat dummy. Robust standard errors are in parentheses. ***, **,* denote statistical significance at 1, 5, and 10 percent levels.

Table 7. Portfolio re-allocation given hypothetical bank failure risk

VARIABLES	Deposits			Other assets						
	Total deposits	Primary bank	Other bank	Cash	Bonds	Stocks	Gold	Crypto	Real estate	Debt repaym.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Bank failure probability (BFP)	-0.31***	-0.47***	0.15***	0.20***	0.01*	0.02**	0.01*	0.01	0.03***	0.05***
	(0.04)	(0.04)	(0.02)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Control for actual portfolio share	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	No
Observations	5,053	5,061	5,061	5,053	5,053	5,053	5,053	5,053	5,061	5,061
R-squared	0.05	0.05	0.04	0.09	0.11	0.09	0.09	0.14	0.05	0.02

Notes: All regressions use sampling weights and include controls for years with bank account, age, gender, education, income, employment status, political affiliation, geographical area, and day fixed effects, and a constant. Robust standard errors are in parentheses. ***, **,* denote statistical significance at 1, 5, and 10 percent levels.

Table 8. Portfolio reallocation triggered by deposit risk

	Deposits	Cash	Bonds	Stocks	Gold	Crypto
	(1)	(2)	(3)	(4)	(5)	(6)
Post-T propensity to run	-7.82**	7.75**	2.41*	0.30	-2.39	-1.74
	(3.83)	(3.79)	(1.38)	(1.91)	(1.96)	(1.18)
	[-16.33,-0.98]	[1.27,15.95]	[0.02, 5.52]	[-4.01, 4.84]	[-6.54, 0.92]	[-4.37, 0.30]
Observations	5,565	5,565	5,565	5,565	5,565	5,565
1st stage F-stat	6.352	6.383	6.388	6.653	6.139	6.431
p-value (weak IV robust)	0.061	0.050	0.098	0.903	0.234	0.160

Notes: The regressions are estimated using CUE GMM. The post-treatment propensity to run is instrumented with the information treatments. The 90 percent confidence interval robust to weak IV is reported in square brackets. p-value (weak IV robust) is the p-value for the coefficient on the endogenous variable robust to weak IV. Inference robust to weak IV is based on conditional likelihood estimation. All regressions use sampling weights and include controls for age, age squared, gender, education, income, employment status, political affiliation, geographical area, and day fixed effects, and a constant. Robust standard errors are in parentheses. ***, **,* denote statistical significance at 1, 5, and 10 percent levels.

Table 9. Changes in durable purchases triggered by deposit risk

	Car	Major household appliance	House
	(1)	(2)	(3)
Post-T propensity to run	-0.096*	-0.059	-0.064
	(0.051)	(0.053)	(0.048)
	[-0.208, -0.015]	[-0.172, 0.035]	[-0.168, 0.017]
Observations	5,599	5,597	5,598
1st stage F-stat	6.632	6.566	6.591
p-value (weak IV robust)	0.050	0.299	0.197

Notes: The regressions are estimated using CUE GMM. The dependent variable takes value 1 if respondents declare that this is a good time to buy and zero otherwise. Post-treatment propensity to run is instrumented with the information treatments. All regressions use sampling weights and include controls for age, age squared, gender, education, income, employment status, political affiliation, geographical area, and day fixed effects. Robust standard errors are in parentheses. ***, **,* denote statistical significance at 1, 5, and 10 percent levels.

Online Appendix

Appendix A. Survey questionnaire

Question to ensure that survey participants have at least one bank account

1. How many banks do you have checking or savings accounts in? Please type in a number
   - _____

Perceptions of bank risk and propensity to withdraw deposits

2. How safe do you think it is to deposit money into your bank?
   - *4-point scale from "Very risky" to "Very safe"*

3. How safe do you think it is to deposit money into American banks in general?
   - *4-point scale from "Very risky" to "Very safe"*

4. If you had to put a probability on the possibility of **your bank** failing in the next 12 months, what would that probability be?
   - _____ *%*

5. If you had to put a probability on the possibility **of at least one of the major national U.S. banks** failing in the next 12 months, what would that probability be?
   - _____ *%*

6. How likely are you to withdraw some of your deposits in the next 12 months because of concerns that your bank may fail?
   - *10-point scale from "Not at all Likely" to "Extremely likely"*

7. Has your perception of the financial stability of your bank changed in recent months?
   - *No*
   - *Yes, I think my bank is safer than before*
   - *Yes, I think my bank is less safe than before*

8. What do you think are the main sources of risk that could cause your bank to fail in the next few months? Please choose a maximum of 3. [Answer categories are randomized]
   - *Too many customers asking for their money back*
   - *Giving out too many bad loans*
   - *Lack of available credit from the Federal Reserve*
   - *Lack of available credit from other financial institutions*
   - *Sudden declines in the value of assets held by the bank*
   - *Bad investments by the bank*
   - *General financial crisis*
   - *Federal Reserve raising interest rates*
   - *Recession*

Financial position and portfolio allocation

9. When thinking about the combined amount that you keep in your checking and savings account in your primary bank in a typical month, is the amount:
   - *Usually less than $10,000*
   - *Usually between $10,000 and $20,000*
   - *Usually between $20,000 and $40,000*
   - *Usually between $40,000 and $100,000*
   - *Usually between $100,000 and $250,000*
   - *Usually between $250,000 and $500,000*
   - *Usually above $500,000*

10. Do you have financial investments beyond your checking and savings account?
    - *Yes*
    - *No*

11. [If Q10 is Yes] Please describe how your investment portfolio is broadly allocated across:
    - *Cash:* _____%
    - *Checking/savings:* _____%
    - *Stocks:* _____%
    - *Bonds:* _____%
    - *Gold/commodities* _____%
    - *Cryptocurrency* _____%

    Please type in numbers that add to 100

Bank switching costs

12. How easy do you think would it be for you to change banks?
    - *4-point scale from "Very difficult" to "Very easy"*

13. What interest rate do you currently earn on your bank deposits?
    - _____ %
    - *Not sure*

14. What interest rate should another bank pay for you to move your deposits there?
    - _____ %
    - *Not sure*

Hypothetical scenario – risk of bank failure

15. If you thought that there was a [randomize 1%, 5%, 10%, 15%, 20%, 25%, 50%] probability that your bank might fail in the next 3 months, how would you likely react?
    a. *I would not change anything in my banking decisions.*
    b. *I would take some of my money out of the bank but keep using my bank for regular banking activities.*

c. *I would take some of my money out of the bank and start using another bank for regular banking activities.*
d. *I would move all of my money to a new bank.*
e. *I would take all of my money out of the banking system.*

16. [If Q15 is b or c] What fraction of your money do you think you would take out of your current bank?
    - _____ *%*

17. [If Q15 is b-d] If you were to move your money to a new bank, what would your new bank most likely be? [Answer categories are randomized]
    - *A local bank*
    - *A statewide bank*
    - *A national bank*
    - *A credit union*
    - *An online bank*
    - *Other*

18. [If Q15 is b-e] How would you allocate the money you take out of your bank across the following categories:
    - *cash:* _____*%*
    - *other banks:* _____*%*
    - *real estate:* _____*%*
    - *stocks:* _____*%*
    - *bonds:* _____*%*
    - *gold:* _____*%*
    - *cryptocurrency:* _____*%*
    - *paying off debt:* _____*%*

    Please type in numbers that add to 100

Prior beliefs about the information treatments[18]

19. What dollar amount of individually owned bank deposits at a bank do you think is insured, if any, by the Federal government?
    - _____
    - *Not sure*

20. In recent weeks, there has been talk in the media about developments at SVB. Do you know what is SVB? [Answer categories are randomized]
    - *A government agency*
    - *A private bank*
    - *An investment platform for Bitcoins*

[18] The order of these questions varies slightly across treatment groups to ensure that people are asked about their knowledge of the information treatment they are presented with right before the information is provided. For example, the question assessing people's knowledge about SVB is move last people in this section for people that are treated with information about SVB.

- *A hedge fund*
- *A pension fund*
- *I don't know.*

21. Do you know if President Biden has expressed a position on the safety of the U.S. banking sector in recent weeks?
    - *No, I don't know.*
    - *Yes, he said that the banking sector is at a critical juncture.*
    - *Yes, he said that it is too early to assess the soundness of the banking sector.*
    - *Yes, he said that the banking sector is safe.*

22. Do you know if the Federal Reserve (Fed) has expressed a position on the safety of the U.S. banking sector in recent weeks?
    - *No, I don't know.*
    - *Yes, the Fed said that the banking sector is at a critical juncture.*
    - *Yes, the Fed said that it is too early to assess the soundness of the banking sector.*
    - *Yes, the Fed said that the banking sector is sound.*

Information treatments

A. Considering that a few weeks ago, Silicon Valley Bank (SVB), a U.S.$200bn bank, failed after experiencing a sudden bank run, …
B. The FDIC (Federal Deposit Insurance Corporation) is an independent agency of the United States government that protects bank depositors if a bank fails. Considering that the FDIC insures individually owned deposits up to $250,000, …
C. Considering that a few weeks ago, President Biden declared that "Americans can have confidence that the banking system is safe," …
D. Considering that a few weeks ago, the Federal Reserve (Fed) declared that "the U.S. banking system is sound and resilient," …

… We would like to ask you again about your perceptions that your bank may fail and your propensity to take out your bank deposits.

Post-treatment risk perceptions and propensity to withdraw deposits

23. If you had to put a probability on the possibility of your bank failing by the end of the year, what would that probability be?
    - _____ *%*

24. How likely are you to withdraw some of your bank deposits by the end of the year because of concerns that your bank may fail?
    - *10-point scale from "Not likely at all" to "Extremely Likely"*

Perceptions about deposit recovery rates if bank fails

25. If your bank were to fail, what do you think would happen to the money you keep in your checking and/or savings account?

a. I would lose all the money
b. I would get some of the money back
c. I would get all the money back

26. [if Q25 is b] Approximately what fraction of your money would you expect to recover if your bank failed?
    - _____ *%*

Hypothetical scenario – lottery win

27. If you unexpectedly received $10,000, how would you allocate it across the following forms:
    - _____ *Cash*
    - _____ *Checking/saving*
    - _____ *Stocks*
    - _____ *Bonds*
    - _____ *Gold*
    - _____ *Cryptocurrency*

    Please type in numbers that add to 100

Background banking information

28. Is your primary bank a: [Answer categories are randomized]
    - *Local bank*
    - *State bank*
    - *National bank*
    - *Credit union*
    - *Online bank*
    - *Other*
    - *Don't know*

29. Why do you choose to use your primary bank rather than other banks? Please select all that apply or rank [Answer categories are randomized]
    - *Low fees on checking or savings accounts*
    - *Low ATM fees*
    - *Convenient location*
    - *Better interest rates on savings account*
    - *They offer multiple banking services that I use*
    - *Wealth management services*
    - *It's safer than other banks*
    - *Customer service*
    - *Fraud and identity theft protection*
    - *They work well for my business*
    - *Other, please specify:* _____

30. How long have you used your primary bank? Please type in the number of years

- _____

Propensity to purchase durable goods

31. Do you think now is a good or bad time to buy a new vehicle (car, pickup, van or SUV)?
    - *Good*
    - *Bad*
    - *I don't know*

32. Do you think now is a good or bad time to buy major household items (furniture, appliances)?
    - *Good*
    - *Bad*
    - *I don't know*

33. Do you think now is a good or bad time to buy a house?
    - *Good*
    - *Bad*
    - *I don't know*

Political affiliation

34. Generally speaking, do you think of yourself as a…?
    - *Democrat*
    - *Republican*
    - *Independent*
    - *Other, please specify:* _____
    - *Not sure*

Appendix B. Additional figures and tables

Appendix Table 1. Predictability of assignment to treatment groups

	F-statistic	p-value
	(1)	(2)
SVB	0.487	0.996
FDIC	0.754	0.859
Fed	0.921	0.607
Biden	0.875	0.685

Notes: The table reports the F-statistic and associated p-value for the joint statistical significance of the regression coefficients in $\mathbb{I}(i \in Treat_j) = \alpha + \xi \boldsymbol{X}_i + \varepsilon_i$, where i and j denotes the survey respondent and treatment assignment, and $\boldsymbol{X}_i$ is a vector of individual characteristics including age, age squared, education, income, employment status, political affiliation, geographical area, and day fixed effects. All regressions use sampling weights.

Appendix Table 2. Respondents' financial information and pre-treatment risk perceptions, standard deviation

	Standard deviation				
	Full sample	Up to high school education	Post high school education	Deposits < $250k	Deposits > $250k
Bank deposits					
Number of banks with deposit accounts	2.7	3.6	1.9	2.7	2.0
Number of years using current primary bank	12.1	11.7	12.2	12.1	11.8
Bank switching costs					
Interest rate differential to switch bank	11.3	12.0	10.8	10.7	10.7
Portfolio allocation					
Portfolio shares					
Bank deposits	39.4	37.8	39.6	39.2	37.2
Cash	16.4	17.4	15.7	16.3	18.2
Stocks	23.8	15.9	27.2	24.0	17.3
Bonds	11.1	9.1	12.4	11.1	12.0
Gold/commodities	7.9	7.4	8.3	7.8	10.0
Cryptocurrencies	9.2	9.3	9.1	8.6	17.2
Risk perceptions about personal bank					
Probability of personal bank failing within a year	23.2	24.9	21.5	22.9	28.7
Propensity to withdraw deposits because of bank risk	3.2	3.2	3.1	3.2	3.3
Expected recovery share on deposits if bank fails	39.7	40.7	38.4	39.7	38.5
Risk perceptions about the U.S. banking sector					
Probability of major national bank failing within a year	30.6	29.1	31.6	30.6	30.6

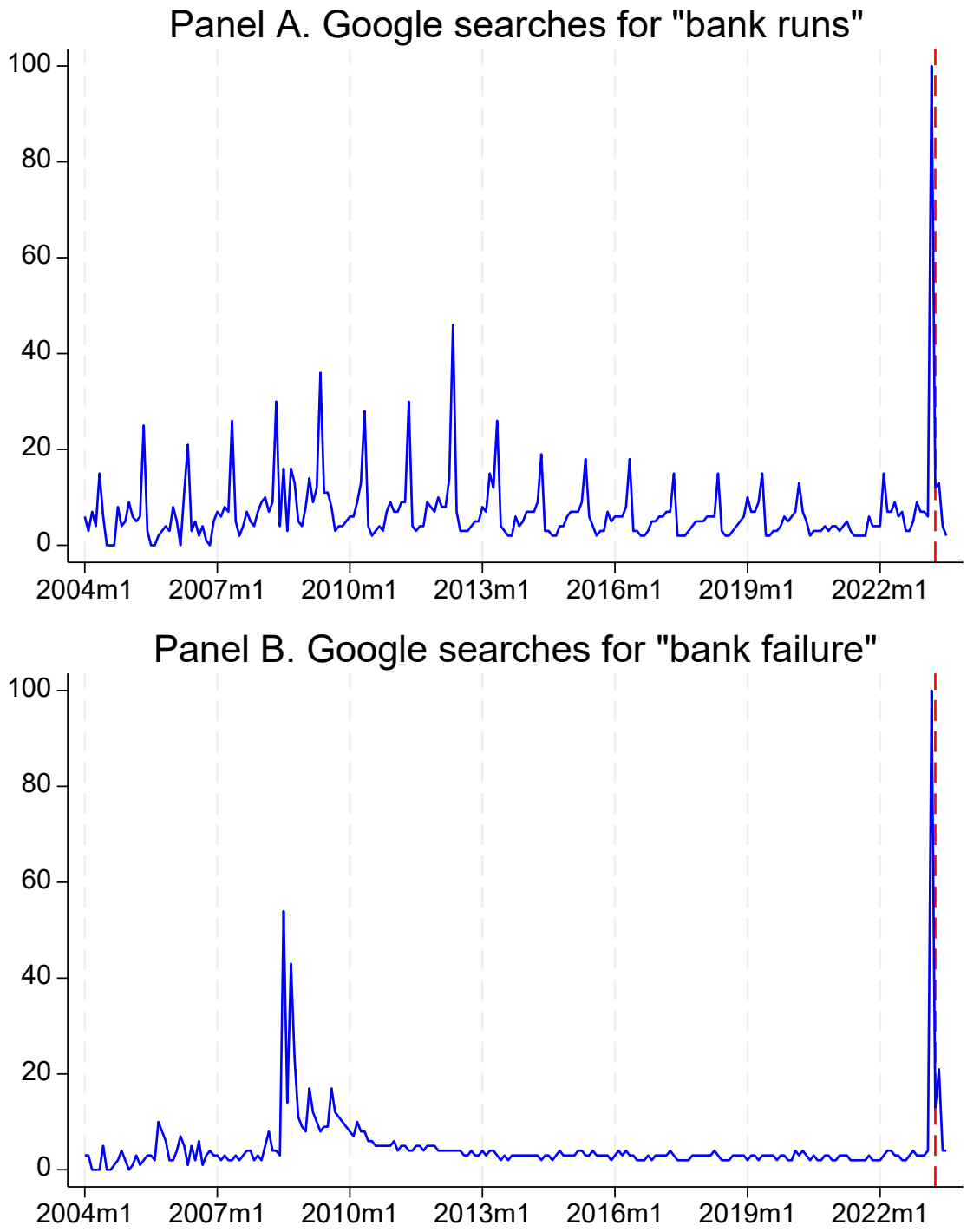
Notes: The table reports standard deviations for non-indictor variables listed in Table 1. The expected recovery share on deposits if bank fails is computed on the sample of households in the control group.

Appendix Table 3. Deposit withdrawals given hypothetical bank failure risk

	Share of deposits withdrawn	1 = people withdrawing deposits
	(1)	(2)
Bank failure probability (BFP)	0.47***	0.47***
	(0.04)	(0.05)
Observations	5,061	5,061
R-squared	0.05	
Estimation	OLS	Probit

Notes: The regression in column (1) is estimated with OLS where the dependent variable is the share of deposits (in percent) a respondent would withdraw in response to a provided hypothetical probability of bank failure. The regression in column (2) is estimated with a probit model where the dependent variable takes value one if the respondent declares that she would withdraw some or all her deposits and zero if she would not withdraw any funds; the reported coefficients are the marginal effects multiplied by 100. All regressions use sampling weights and include controls for age, age squared, gender, education, income, employment status, political affiliation, geographical area, day fixed effects, and a constant. Robust standard errors are in parentheses. ***, **,* denote statistical significance at 1, 5, and 10 percent levels.

Appendix Figure 1. Public attention to banking sector's problems



Notes: The figures show time series for Google searches for specific word combinations. Numbers represent searches relative to the highest point on the chart, normalized to 100. The vertical red line denotes the time when the survey was conducted.