SUPPLEMENTARY ONLINE APPENDIX

to accompany

"THE IMPACT OF DEPOSIT INSURANCE ON DEPOSITOR BEHAVIOR DURING A CRISIS: A CONJOINT ANALYSIS APPROACH"

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S.1. Additional Details on Data Collection

Figure S1 summarizes the process of developing and pre-testing the base conjoint profile employed in our study and outlines subsequent data collection steps. A copy of the survey instrument with instructions to respondents is provided at the end of this appendix (see p. S−9).

We choose two-level manipulations for the deposit account attributes, rather than a more complex approach with three or five levels or with continuous values, primarily to keep the survey instrument at a reasonable length and to minimize the cognitive burden on respondents of having to simultaneously evaluate multiple deposit insurance characteristics in each account profile. Nevertheless, the number of possible profile combinations ($2^7 = 128$) remains infeasibly large. Thus, we use a fractional-factorial design to reduce the number of conjoint profiles to a more manageable number (namely, 8). This design assumes that each attribute is independent of every other predictor. The upside to doing so is that the potentially large number of profiles for each respondent to evaluate is significantly reduced. The downside is that it becomes difficult to assess interactions among the attributes. We implement the approach using the fractional-factorial design algorithm in the SPSS conjoint module. The resulting eight account profiles are shown in Table S1.

After conducting the survey, we re-sample the student population to ask a question aimed at eliciting students' knowledge of deposit insurance. The question is phrased as follows:

"Suppose there is deposit insurance with a \$100,000 limit and you have \$120,000 on deposit with your bank. What would happen to your deposit if your bank fails (that is, becomes insolvent)? Please circle the correct answer option from the following three:

a. My entire deposit will be lost.

b. Only part of my deposit may be lost.

c. None of my deposit will be lost."

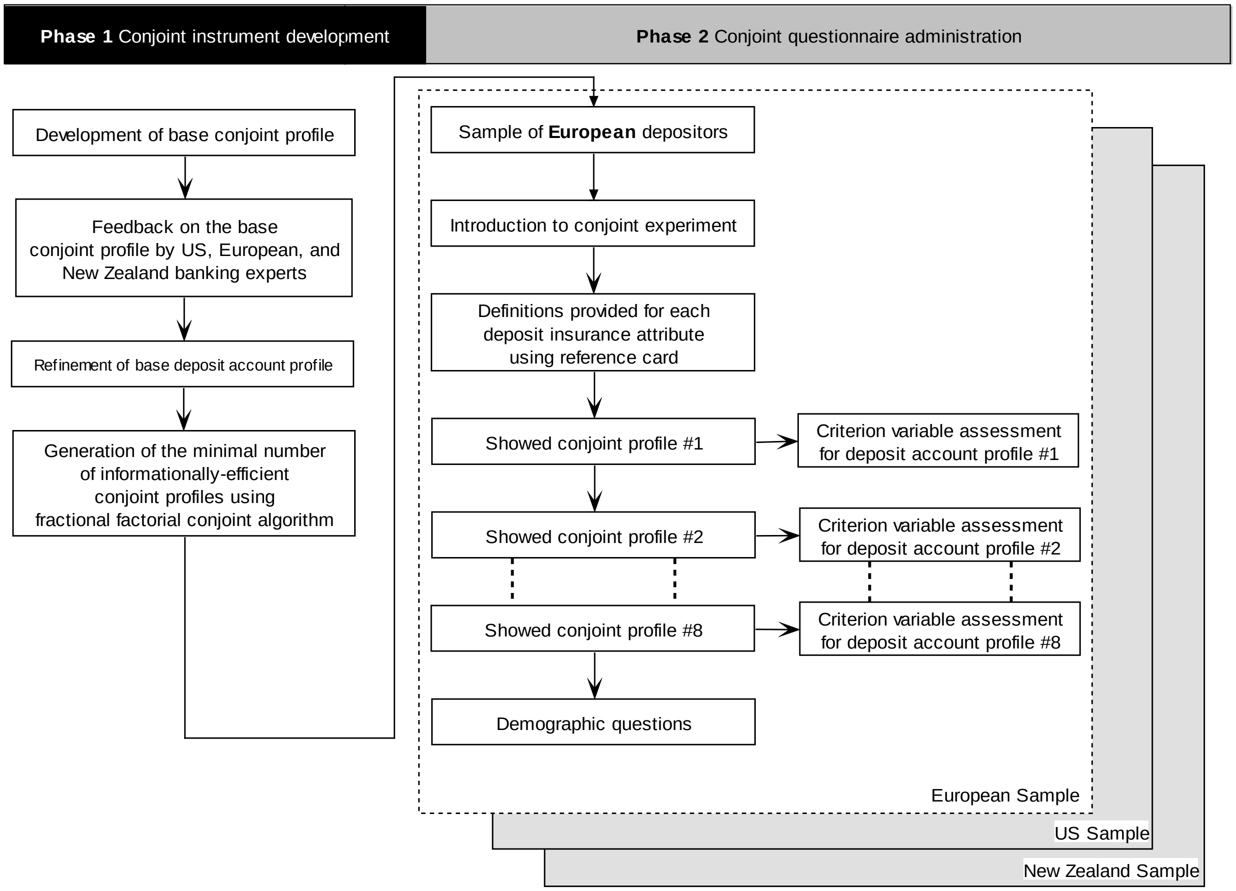

Fig. S1 Data collection overview

S.2. Additional Details on the Econometric Approach

Here, we specify assumptions imposed on the unobserved components of the econometric model, derive the likelihood contribution, and outline the estimation approach. To begin, we do two things. First, to avoid notational overload, we collect several explanatory variables into a single vector $\boldsymbol{q}_{ij} = \left[D_i, \boldsymbol{p}_j', D_i \cdot \boldsymbol{p}_j'\right]$, define coefficient vectors $\widetilde{\boldsymbol{\alpha}}_\pi = [\theta_\pi, \boldsymbol{\alpha}_\pi', \boldsymbol{\beta}_\pi']'$ and $\widetilde{\boldsymbol{\alpha}}_w = [\theta_w, \boldsymbol{\alpha}_w', \boldsymbol{\beta}_w']'$, and rewrite Eqs. (1) and (2) in the paper as:

$$\pi_{ij}^* = \boldsymbol{q}_{ij}' \cdot \widetilde{\boldsymbol{\alpha}}_\pi + \boldsymbol{z}_{Ai}' \cdot \boldsymbol{\gamma}_\pi + \boldsymbol{x}_i' \cdot \boldsymbol{\kappa}_\pi + \lambda_{\pi i} + \epsilon_{\pi ij}, \tag{1$'$}$$

$$w_{ij}^* = \boldsymbol{q}_{ij}' \cdot \widetilde{\boldsymbol{\alpha}}_w + \boldsymbol{z}_{Bi}' \cdot \boldsymbol{\gamma}_w + \boldsymbol{x}_i' \cdot \boldsymbol{\kappa}_w + \pi_{ij}^* \cdot \delta_{wi} + \lambda_{wi} + \epsilon_{wij}. \tag{2$'$}$$

Denoting by π_{ij} the respondent i's observed answer to the interest premium question for account profile j, we link π_{ij} to π_{ij}^* as follows: $\pi_{ij} = k$ if and only if $\pi_{ij}^* \in (\mu_k, \mu_{k+1}]$ for $k = 1,2,\ldots,9$, where $\mu_1 < \mu_2 < \ldots < \mu_{10}$ are "thresholds" on the latent variable scale. Here, μ_1 and μ_{10} are set to

Table S1
Account profiles in the survey instrument

Profile Attribute	Account Profile							
	1	2	3	4	5	6	7	8
Coverage limit	$50,000	$250,000	$250,000	$50,000	$50,000	$50,000	$250,000	$250,000
Deposit size	Above limit	Above limit	Above limit	Above limit	At or below limit	At or below limit	At or below limit	At or below limit
Guaranteed payout percentage	75%	100%	75%	100%	75%	100%	75%	100%
Deposit insurance premium type	Flat-rate	Flat-rate	Risk-adjusted	Risk-adjusted	Flat-rate	Risk-adjusted	Risk-adjusted	Flat-rate
Bank contributes to insurance fund	Yes	No	No	Yes	No	No	Yes	Yes
Insurance system membership	Compulsory	Voluntary	Compulsory	Voluntary	Voluntary	Compulsory	Voluntary	Compulsory
Capital buffer level	Above average	Above average	At or below average	At or below average	At or below average	Above average	Above average	At or below average

Notes. This table describes the eight hypothetical bank account profiles used in the survey instrument. Each profile has seven attributes. Each attribute has two levels. The profiles are generated using a conjoint algorithm implemented in SPSS 11.5.

$-\infty$ and $+\infty$ respectively, and μ_2 is normalized to zero for identification reasons. The other seven thresholds, μ_3 through μ_9, are estimated. Next, denoting by w_{ij} the respondent i's observed answer to the deposit withdrawal question for profile j, we specify that the respondent selects a particular answer category if w_{ij}^* falls within a ±5% interval centered at the percentage defining the category. For example, w_{ij} is "30%" if w_{ij}^* is between 25 and 35 (%). Formally, $w_{ij} = l$ if and only if $w_{ij}^* \in (\nu_l, \nu_{l+1}]$ for l = 1,2,…,11, where the thresholds $\nu_1 = -\infty, \nu_l = 10\cdot(l - 1) - 5$ for l = 2,3,…,11, and $\nu_{12} = +\infty$ (these thresholds are set to specific values rather than estimated). We note that the coefficients in Eq. (1′) are specified on the latent variable scale; their estimates can only be interpreted qualitatively. By contrast, the estimates of the coefficients in Eq. (2′) may be interpreted quantitatively: they measure changes in the percentage of deposit to be withdrawn.

Second, we specify that the error-term vector $(\epsilon_{\pi ij}, \epsilon_{wij})'$ is conditionally independent and identically distributed (i.i.d.) across i and j as a normal random vector:

$$\begin{pmatrix} \epsilon_{\pi ij} \\ \epsilon_{wij} \end{pmatrix} | \lambda_{\pi i}, \lambda_{wi}, D_i, \boldsymbol{p}_1, \dots, \boldsymbol{p}_8, \boldsymbol{x}_i, \boldsymbol{z}_{Ai}, \boldsymbol{z}_{Bi} \sim i.i.d.\, N\left(\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 & \rho_{\pi w}\sigma_w \\ \rho_{\pi w}\sigma_w & \sigma_w^2 \end{pmatrix}\right), \quad \text{(S.1)}$$

where $\rho_{\pi w}$ is the correlation coefficient ($|\rho_{\pi w}| < 1$) and $\sigma_w > 0$ is the standard deviation of ϵ_{wij}. The standard deviation of $\epsilon_{\pi ij}$ is normalized to one for identification reasons, because the interest premium responses are ordered categorical (see Maddala, 1983). In contrast, since the deposit withdrawal responses are interval-type, the standard deviation of ϵ_{wij}, σ_w, can be estimated. Since $\epsilon_{\pi ij}$ and ϵ_{wij} may be driven by the same unobserved respondent- and profile-specific factors (e.g., perceptions of respondent i regarding the description of profile j), we allow these error terms to be potentially correlated (i.e., $\rho_{\pi w} \neq 0$).

We substitute Eq. (1′) into Eq. (2′) to obtain a reduced-form system:

$$\pi_{ij}^* = \boldsymbol{q}_{ij}'\widetilde{\boldsymbol{\alpha}}_\pi + \boldsymbol{z}_{Ai}'\boldsymbol{\gamma}_\pi + \boldsymbol{x}_i'\boldsymbol{\kappa}_\pi + \lambda_{\pi i} + u_{\pi ij}, \quad \text{(S.2)}$$

$$w_{ij}^* = \boldsymbol{q}_{ij}'(\widetilde{\boldsymbol{\alpha}}_w + \widetilde{\boldsymbol{\alpha}}_\pi\delta_{wi}) + \boldsymbol{z}_{Ai}'\boldsymbol{\gamma}_\pi\delta_{wi} + \boldsymbol{z}_{Bi}'\boldsymbol{\gamma}_w + \boldsymbol{x}_i'(\boldsymbol{\kappa}_w + \boldsymbol{\kappa}_\pi\delta_{wi}) + \lambda_{wi} + \lambda_{\pi i}\delta_{wi} + u_{wij}, \quad \text{(S.3)}$$

where $u_{\pi ij} = \epsilon_{\pi ij}$ and $u_{wij} = \epsilon_{\pi ij}\delta_{wi} + \epsilon_{wij}$. Eq. (S.1) implies that the error-term vector $(u_{\pi ij}, u_{wij})'$ is a normal random vector:

$$\begin{pmatrix} u_{\pi ij} \\ u_{wij} \end{pmatrix} | \lambda_{\pi i}, \lambda_{wi}, D_i, \boldsymbol{p}_1, \dots, \boldsymbol{p}_8, \boldsymbol{x}_i, \boldsymbol{z}_{Ai}, \boldsymbol{z}_{Bi} \sim$$

$$N\left(\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 & \delta_{wi} + \rho_{\pi w}\sigma_w \\ \delta_{wi} + \rho_{\pi w}\sigma_w & \delta_{wi}^2 + 2\rho_{\pi w}\sigma_w\delta_{wi} + \sigma_w^2 \end{pmatrix}\right). \quad \text{(S.4)}$$

The respondent-specific terms $\lambda_{\pi i}$ and λ_{wi} are modeled as random effects. In particular, we specify that each of the λ's is conditionally i.i.d. across i as a normal random variable:

$$\lambda_{mi}|D_i, \boldsymbol{p}_1, \dots, \boldsymbol{p}_8, \boldsymbol{x}_i, \boldsymbol{z}_{Ai}, \boldsymbol{z}_{Bi} \sim i.i.d. N(0, \omega_m^2), \tag{S.5}$$

where $\omega_m > 0$ is the standard deviation and $m = \pi, w$. We estimate the standard deviations ω_π and ω_w rather than the individual λ's. Statistically significant estimates of the ω's would indicate the existence of dependence of the unobserved determinants of a respondent's interest premium and deposit withdrawal responses across the eight account profiles. In our model, it is not feasible to specify the individual λ's as fixed effects and estimate them consistently, because the number of parameters to estimate would be increasing in the number of respondents. Also, we do not allow for $\lambda_{\pi i}$ and λ_{wi} to be correlated with each other, since a preliminary analysis showed that such a correlation could not be separately identified.

We collect all model parameters to estimate in a vector $\boldsymbol{\Phi}$:

$$\boldsymbol{\Phi} = (\widetilde{\boldsymbol{\alpha}}'_\pi, \boldsymbol{\gamma}'_\pi, \boldsymbol{\kappa}'_\pi, \widetilde{\boldsymbol{\alpha}}'_w, \boldsymbol{\gamma}'_w, \boldsymbol{\kappa}'_w, \delta_w, \Delta_w, \mu_3, \mu_4, \dots, \mu_9, \sigma_w, \rho_{\pi w}, \omega_\pi, \omega_w)'. \tag{S.6}$$

The likelihood contribution of respondent i, denoted as $L_i(\boldsymbol{\Phi})$, is the joint probability of all of the respondent's interest premium and deposit withdrawal responses (there are 16 such responses in total per respondent), conditional on the respondent's prior exposure to deposit insurance, attributes of the profiles, and respondent's background characteristics and risk preferences:

$$L_i(\boldsymbol{\Phi}) = \Pr[(\pi_{i1}, w_{i1}), \dots, (\pi_{i8}, w_{i8})|D_i, \boldsymbol{p}_1, \dots, \boldsymbol{p}_8, \boldsymbol{x}_i, \boldsymbol{z}_{Ai}, \boldsymbol{z}_{Bi}; \boldsymbol{\Phi}]. \tag{S.7}$$

Eq. (S.1) implies that conditional on the random effects $\lambda_{\pi i}$ and λ_{wi}, the random vector $\left(\pi^*_{ij}, w^*_{ij}\right)'$ is independent across j. Thus, $L_i(\boldsymbol{\Phi})$ in Eq. (S.7) can be expressed as:

$$\begin{gathered} L_i(\boldsymbol{\Phi}) = \iint \Pr[(\pi_{i1}, w_{i1}), \dots, (\pi_{i8}, w_{i8})|\lambda_{\pi i}, \lambda_{wi}, D_i, \boldsymbol{p}_1, \dots, \boldsymbol{p}_8, \boldsymbol{x}_i, \boldsymbol{z}_{Ai}, \boldsymbol{z}_{Bi}; \boldsymbol{\Phi}] \times \\ dF(\lambda_{\pi i}, \lambda_{wi}|D_i, \boldsymbol{p}_1, \dots, \boldsymbol{p}_8, \boldsymbol{x}_i, \boldsymbol{z}_{Ai}, \boldsymbol{z}_{Bi}; \boldsymbol{\Phi}) = \\ \iint \prod_{j=1}^{8} \Pr\left[\left(\pi_{ij}, w_{ij}\right)\middle|\lambda_{\pi i}, \lambda_{wi}, D_i, \boldsymbol{p}_1, \dots, \boldsymbol{p}_8, \boldsymbol{x}_i, \boldsymbol{z}_{Ai}, \boldsymbol{z}_{Bi}; \boldsymbol{\Phi}\right] \times \\ dF(\lambda_{\pi i}, \lambda_{wi}|D_i, \boldsymbol{p}_1, \dots, \boldsymbol{p}_8, \boldsymbol{x}_i, \boldsymbol{z}_{Ai}, \boldsymbol{z}_{Bi}; \boldsymbol{\Phi}), \end{gathered} \tag{S.8}$$

where $F(\lambda_{\pi i}, \lambda_{wi}|\cdot)$ is the joint cumulative distribution function of the random effects, as implied by Eq. (S.5). Here, $dF(\lambda_{\pi i}, \lambda_{wi}|\cdot) = \frac{1}{2\pi\omega_\pi\omega_w} \cdot \exp\left(-\frac{1}{2} \cdot \left[\frac{\lambda_{\pi i}^2}{\omega_\pi^2} + \frac{\lambda_{wi}^2}{\omega_w^2}\right]\right) \cdot d\lambda_{\pi i} d\lambda_{wi}$. We numerically evaluate the double integral in Eq. (S.8) using a quadrature method.

To express the conditional probability $\Pr\left[\left(\pi_{ij}, w_{ij}\right)\middle|\lambda_{\pi i}, \lambda_{wi}, \cdot\right]$ in Eq. (S.8), we apply the reduced-form Eqs. (S.2) and (S.3) and equations linking π_{ij} to π^*_{ij} and w_{ij} to w^*_{ij}:

$$\Pr\left[\left(\pi_{ij}, w_{ij}\right)\middle|\lambda_{\pi i}, \lambda_{wi}, \cdot\right] = \Pr[\mu_{\pi_{ij}} < \pi^*_{ij} \le \mu_{\pi_{ij}+1}, \nu_{w_{ij}} < w^*_{ij} \le \nu_{w_{ij}+1}|\lambda_{\pi i}, \lambda_{wi}, \cdot] =$$

$$\Pr[\mu_{\pi_{ij}} < \boldsymbol{q}'_{ij}\widetilde{\boldsymbol{\alpha}}_\pi + \boldsymbol{z}'_{Ai}\boldsymbol{\gamma}_\pi + \boldsymbol{x}'_i\boldsymbol{\kappa}_\pi + \lambda_{\pi i} + u_{\pi ij} \leq \mu_{\pi_{ij}+1}, \nu_{w_{ij}} < \boldsymbol{q}'_{ij}(\widetilde{\boldsymbol{\alpha}}_w + \widetilde{\boldsymbol{\alpha}}_\pi\delta_{wi}) + \boldsymbol{z}'_{Ai}\boldsymbol{\gamma}_\pi\delta_{wi} + \boldsymbol{z}'_{Bi}\boldsymbol{\gamma}_w + \boldsymbol{x}'_i(\boldsymbol{\kappa}_w + \boldsymbol{\kappa}_\pi\delta_{wi}) + \lambda_{wi} + \lambda_{\pi i}\delta_{wi} + u_{wij} \leq \nu_{w_{ij}+1}|\lambda_{\pi i}, \lambda_{wi}, \cdot] = \Pr[u_{\pi ij} \in (\mu_{\pi_{ij}} - \boldsymbol{q}'_{ij}\widetilde{\boldsymbol{\alpha}}_\pi - \boldsymbol{z}'_{Ai}\boldsymbol{\gamma}_\pi - \boldsymbol{x}'_i\boldsymbol{\kappa}_\pi - \lambda_{\pi i}, \mu_{\pi_{ij}+1} - \boldsymbol{q}'_{ij}\widetilde{\boldsymbol{\alpha}}_\pi - \boldsymbol{z}'_{Ai}\boldsymbol{\gamma}_\pi - \boldsymbol{x}'_i\boldsymbol{\kappa}_\pi - \lambda_{\pi i}], u_{wij} \in (\nu_{w_{ij}} - \boldsymbol{q}'_{ij}(\widetilde{\boldsymbol{\alpha}}_w + \widetilde{\boldsymbol{\alpha}}_\pi\delta_{wi}) - \boldsymbol{z}'_{Ai}\boldsymbol{\gamma}_\pi\delta_{wi} - \boldsymbol{z}'_{Bi}\boldsymbol{\gamma}_w - \boldsymbol{x}'_i(\boldsymbol{\kappa}_w + \boldsymbol{\kappa}_\pi\delta_{wi}) - \lambda_{wi} - \lambda_{\pi i}\delta_{wi}, \nu_{w_{ij}+1} - \boldsymbol{q}'_{ij}(\widetilde{\boldsymbol{\alpha}}_w + \widetilde{\boldsymbol{\alpha}}_\pi\delta_{wi}) - \boldsymbol{z}'_{Ai}\boldsymbol{\gamma}_\pi\delta_{wi} - \boldsymbol{z}'_{Bi}\boldsymbol{\gamma}_w - \boldsymbol{x}'_i(\boldsymbol{\kappa}_w + \boldsymbol{\kappa}_\pi\delta_{wi}) - \lambda_{wi} - \lambda_{\pi i}\delta_{wi}]|\lambda_{\pi i}, \lambda_{wi}, \cdot]. \tag{S.9}$$

The expression $\Pr[u_{\pi ij} \in (\cdot,\cdot], u_{wij} \in (\cdot,\cdot]|\lambda_{\pi i}, \lambda_{wi}, \cdot]$ in Eq. (S.9) defines a rectangular region of integration for the bivariate normal probability density function of $u_{\pi ij}$ and u_{wij}, as implied by Eq. (S.4). We evaluate it numerically using a known algorithm (see Genz, 2004).

Eq. (S.9) is applicable when neither the interest premium response, nor the deposit withdrawal response of respondent i for profile j is missing. Such cases (i.e., $\pi_{ij} \neq$ -1 and $w_{ij} \neq$ -1) comprise the predominant majority of respondent-profile records (namely, 2,717 cases out of 2,792 respondent-profile records in total, or 97.31% of the total). When only the interest premium response is missing (i.e., π_{ij} = -1, but $w_{ij} \neq$ -1; there are 45 such cases, or 1.61% of the total), the conditional probability described by Eq. (S.9) takes the following special form:

$$\Pr\left[w_{ij}|\lambda_{\pi i}, \lambda_{wi}, \cdot\right] = \Pr[u_{wij} \in (\nu_{w_{ij}} - \boldsymbol{q}'_{ij}(\widetilde{\boldsymbol{\alpha}}_w + \widetilde{\boldsymbol{\alpha}}_\pi\delta_{wi}) - \boldsymbol{z}'_{Ai}\boldsymbol{\gamma}_\pi\delta_{wi} - \boldsymbol{z}'_{Bi}\boldsymbol{\gamma}_w - \boldsymbol{x}'_i(\boldsymbol{\kappa}_w + \boldsymbol{\kappa}_\pi\delta_{wi}) - \lambda_{wi} - \lambda_{\pi i}\delta_{wi}, \nu_{w_{ij}+1} - \boldsymbol{q}'_{ij}(\widetilde{\boldsymbol{\alpha}}_w + \widetilde{\boldsymbol{\alpha}}_\pi\delta_{wi}) - \boldsymbol{z}'_{Ai}\boldsymbol{\gamma}_\pi\delta_{wi} - \boldsymbol{z}'_{Bi}\boldsymbol{\gamma}_w - \boldsymbol{x}'_i(\boldsymbol{\kappa}_w + \boldsymbol{\kappa}_\pi\delta_{wi}) - \lambda_{wi} - \lambda_{\pi i}\delta_{wi}]|\lambda_{\pi i}, \lambda_{wi}, \cdot]. \tag{S.10}$$

Eq. (S.10) defines an interval of integration for the probability density function of a normal random variable $u_{wij}|\lambda_{\pi i}, \lambda_{wi}, \cdot \sim N(0, \delta_{wi}^2 + 2\rho_{\pi w}\sigma_w\delta_{wi} + \sigma_w^2)$. In turn, when only the deposit withdrawal response is missing (i.e., w_{ij} = -1, but $\pi_{ij} \neq$ -1; there are 14 such cases, or 0.50% of the total), the conditional probability becomes:

$$\Pr\left[\pi_{ij}|\lambda_{\pi i}, \lambda_{wi}, \cdot\right] = \Pr[u_{\pi ij} \in (\mu_{\pi_{ij}} - \boldsymbol{q}'_{ij}\widetilde{\boldsymbol{\alpha}}_\pi - \boldsymbol{z}'_{Ai}\boldsymbol{\gamma}_\pi - \boldsymbol{x}'_i\boldsymbol{\kappa}_\pi - \lambda_{\pi i}, \mu_{\pi_{ij}+1} - \boldsymbol{q}'_{ij}\widetilde{\boldsymbol{\alpha}}_\pi - \boldsymbol{z}'_{Ai}\boldsymbol{\gamma}_\pi - \boldsymbol{x}'_i\boldsymbol{\kappa}_\pi - \lambda_{\pi i}]|\lambda_{\pi i}, \lambda_{wi}, \cdot]. \tag{S.11}$$

Eq. (S.11) defines an interval of integration for the density function of a standard normal random variable $u_{\pi ij}|\lambda_{\pi i}, \lambda_{wi}, \cdot \sim N(0,1)$. When both responses are missing (π_{ij} = -1 and w_{ij} = -1; there are 16 such cases, or 0.57% of the total), we set the conditional probability equal to one.

The expressions derived here provide formulas to compute the likelihood contribution for every respondent in the sample. Assuming that the data across different respondents are i.i.d., the model parameters can be estimated by the maximum likelihood method:

$$\widehat{\boldsymbol{\Phi}}_{MLE} = \arg\max_{\boldsymbol{\Phi}} \sum_{i=1}^{n} \ln L_i(\boldsymbol{\Phi}). \tag{S.12}$$

The variance-covariance matrix of $\widehat{\boldsymbol{\Phi}}_{\boldsymbol{MLE}}$ is calculated by the BHHH method (Berndt et al., 1974). To ensure that the constraints imposed on the parameters hold, we re-parameterize the model prior to estimation, and obtain standard errors of the original parameters by the delta method. Statistical inference is performed using conventional techniques (see Greene, 2012, Ch. 14).

S.3. Specification and Goodness-of-Fit Tests

To check our empirical specification, we perform several post-estimation tests. First, recall that responses to the Risk Tolerance Statement are not included among the explanatory variables in the deposit withdrawal equation, i.e., the vector $\boldsymbol{z}_{Ai}$ does not appear on the right hand side of Eq. (2) in the paper. If the exclusion were invalid, the model would be misspecified and our estimates would be inconsistent. This exclusion restriction is a source of identification, and we can exploit the over-identification property to implement diagnostic testing using the Lagrange multiplier (LM) test suggested by Hausman (1983). Under the null hypothesis of this test, the true coefficient on $\boldsymbol{z}_{Ai}$ in Eq. (2) in the paper is zero. We perform several LM tests corresponding to different subsets of the variables in $\boldsymbol{z}_{Ai}$, and the resulting *p*-values range from 0.24 to 0.91. Thus, the null hypothesis is not rejected.[1]

Second, recall that responses to the Risk Tradeoff Statement are not included among the explanatory variables in the interest premium equation, i.e., the vector $\boldsymbol{z}_{Bi}$ does not appear on the right hand side of Eq. (1) in the paper. The approach here is analogous to that for testing the exclusion of $\boldsymbol{z}_{Ai}$, except that only one LM test is now required.[2] We compute a test statistic value of 3.82 with a p-value of 0.43. Hence, the null is not rejected at any conventional significance level, which provides further support for the chosen model specification.

In summary, even though these post-estimation tests are purely diagnostic, and as such cannot provide definitive proof of the validity of the imposed restrictions, the results obtained are consistent with the chosen empirical specification.

To assess the in-sample goodness-of-fit of our model, we compare actual and predicted

[1] If the entire vector $\boldsymbol{z}_{Ai}$ were included in Eq. (2) in the paper, the model would be unidentified and an LM test could not be implemented (Hausman, 1983). Thus, we test for the validity of excluding a proper subset of the variables comprising $\boldsymbol{z}_{Ai}$. Since there are several such subsets, this testing procedure requires us to perform several LM tests. Given the inherent limitations of such a procedure, evidence from this testing should be taken as suggestive only.
[2] Note that our model would still be identified even if the entire vector $\boldsymbol{z}_{Bi}$ were included in Eq. (1) in the paper.

distributions of responses for three threshold withdrawal percentages: 10%, 20%, and 30%. For each threshold, we calculate the proportion of respondents predicted to choose to withdraw less than that amount and then compare it to the proportion of respondents who actually say they will withdraw less than this amount. Differences between the two are tested for statistical significance using χ^2 tests (Bartoszyński and Niewiadomska-Bugaj, 1996, p. 758). The results appear in Table S2. For the full sample, and for the newly-insured and historically-insured subsamples, the actual and the predicted distributions are similar; in no case are we able to reject the null hypothesis of a good model fit to the data.

Table S2
Actual and predicted incidence of deposit withdrawal responses

Withdrawal Percentage	Full Sample		Subsample: $D_i = 0$		Subsample: $D_i = 1$	
	Actual	Predicted	Actual	Predicted	Actual	Predicted
< 10%	0.23	0.21	0.25	0.22	0.20	0.19
≥ 10%	0.77	0.79	0.75	0.78	0.80	0.81
	χ^2=0.67, p=0.41		χ^2=0.77, p=0.38		χ^2=0.03, p=0.87	
< 20%	0.30	0.31	0.32	0.32	0.27	0.28
≥ 20%	0.70	0.69	0.68	0.68	0.73	0.72
	χ^2=0.10, p=0.74		χ^2=0.01, p=0.91		χ^2=0.17, p=0.68	
< 30%	0.41	0.42	0.43	0.43	0.39	0.39
≥ 30%	0.59	0.58	0.57	0.57	0.61	0.61
	χ^2=0.03, p=0.86		χ^2=0.02, p=0.90		χ^2=0.01, p=0.91	

Notes. This table presents actual and predicted incidence of responses to the deposit withdrawal question. "Actual incidence" refers to the fraction of actual responses indicating a specified withdrawal percentage (e.g., < 10%), averaged across the eight account profiles. "Predicted incidence" refers to the corresponding fraction predicted by our model. The χ^2 statistics and associated p-values (denoted as "p") refer to tests of the hypothesis that the actual and predicted distributions of the responses are the same. D_i = 0 (1) if respondent i's home country does (does not) have explicit deposit insurance.

References

Bartoszyński, R., and M. Niewiadomska-Bugaj. 1996. *Probability and Statistical Inference*. New York: John Wiley and Sons.

Berndt, E.K., B.H. Hall, R.E. Hall, and J.A. Hausman. 1974. "Estimation and Inference in Nonlinear Structural Models." *Annals of Economic and Social Measurement* 3/4: 653–665.

Genz, A. 2004. "Numerical Computation of Rectangular Bivariate and Trivariate Normal and *t* Probabilities." *Statistics and Computing* 14: 251–260.

Greene, W.H. 2012. *Econometric Analysis.* 7th ed. Upper Saddle River, NJ: Prentice Hall.

Maddala, G.S. 1983. *Limited-Dependent and Qualitative Variables in Econometrics*. Cambridge, UK: Cambridge University Press.

Deposit Insurance Survey

INSTRUCTIONS: The purpose of this survey is to understand how deposit insurance characteristics affect bank depositor behavior when a financial crisis or shock occurs.

Assume that one of the two largest banks in your country has just failed (e.g., Citibank in the US). You will be presented with a series of 8 scenarios (in the form of tables). As an account holder of an interest-bearing account in a different bank, please consider EACH scenario by evaluating your bank and its deposit insurance characteristics. Then answer the TWO questions that follow about how you would react as a depositor (circle **shaded boxes)**. Use the information provided in the tables and your own experience and knowledge to evaluate each scenario. The enclosed reference card provides deposit insurance characteristic definitions.

In the scenarios that follow, assume that:

- We use the term "bank" to refer to any depository institution covered under the country's deposit insurance system
- Each deposit account is at least partially covered by deposit insurance
- You have no deposits at another bank
- While its assets are diversified, your bank is not considered "too big to fail"
- The bank has no additional debt obligations that would need to be repaid before stockholders are paid in case of bank liquidation ("subordinated debt").
- The bank has no outstanding "preferred" shares that would get priority over common shares in case of bank liquidation.
- There is no risk that the nation's deposit insuring agency will fail
- Any failed bank would be closed promptly
- The bank is domestically owned with no direct government ownership
- There have been no bank failures that resulted in deposit freezes in the past 100 years in the country.

The entire exercise will take 10-15 minutes. Your participation is greatly appreciated. YOUR CONFIDENTIALITY IS GUARANTEED.

REFERENCE CARD

Deposit insurance/bank system characteristic	Definition
Coverage limit	Maximum amount of your deposited funds that you can claim from the deposit insurer if your bank fails.
Your deposit amount	The size of your account relative to the maximum amount insured
Guaranteed payout %	Percentage of your deposit that will be guaranteed if your bank fails.
Deposit insurance premium type	Whether your bank's premium paid to the deposit insurer is either tied to the bank's riskiness or at a flat rate regardless of bank risk.
Bank contributes to insurance fund	Whether or not your bank contributes to insurance fund to be used to pay out failed bank depositors
Insurance fund membership by banks	Whether your bank's membership in deposit insurance fund is voluntary or compulsory
Bank capital buffer level	Level of the bank's capital relative to that required by deposit insurance agency

Account Profile # 1 of 8

↓ **Circle responses below** ↓

Coverage limit	**$50,000**
Your deposit amount	**Above limit**
Guaranteed payout %	**75%**
Deposit insurance premium type	**Flat-rate**
Bank contributes to insurance fund	**Yes**
Insurance fund membership by banks	**Compulsory**
Bank capital buffer level	**Above avg**

→

On hearing about the news of the shock to the financial system, what percentage of your deposit are you likely to immediately withdraw?

0%	10	20	30	40	50	60	70	80	90	100%

Compared to competing financial institutions, I would expect an annualized interest rate for this account to be…

Significantly lower	1	2	3	4	5	6	7	8	9	Significantly higher

Account Profile # 2 of 8

Coverage limit	**$250,000**
Your deposit amount	**Above limit**
Guaranteed payout %	**100%**
Deposit insurance premium type	**Flat-rate**
Bank contributes to insurance fund	**No**
Insurance fund membership by banks	**Voluntary**
Bank capital buffer level	**Above avg**

→

On hearing about the news of the shock to the financial system, what percentage of your deposit are you likely to immediately withdraw?

0%	10	20	30	40	50	60	70	80	90	100%

Compared to competing financial institutions, I would expect an annualized interest rate for this account to be…

Significantly lower	1	2	3	4	5	6	7	8	9	Significantly higher

Account Profile # 3 of 8

Coverage limit	**$250,000**
Your deposit amount	**Above limit**
Guaranteed payout %	**75%**
Deposit insurance premium type	**Risk-adjusted**
Bank contributes to insurance fund	**No**
Insurance fund membership by banks	**Compulsory**
Bank capital buffer level	**Below avg**

→

On hearing about the news of the shock to the financial system, what percentage of your deposit are you likely to immediately withdraw?

0%	10	20	30	40	50	60	70	80	90	100%

Compared to competing financial institutions, I would expect an annualized interest rate for this account to be…

Significantly lower	1	2	3	4	5	6	7	8	9	Significantly higher

Account Profile # 4 of 8

Coverage limit	**$50,000**
Your deposit amount	**Above limit**
Guaranteed payout %	**100%**
Deposit insurance premium type	**Risk-adjusted**
Bank contributes to insurance fund	**Yes**
Insurance fund membership by banks	**Voluntary**
Bank capital buffer level	**Below avg**

→

On hearing about the news of the shock to the financial system, what percentage of your deposit are you likely to immediately withdraw?

0%	10	20	30	40	50	60	70	80	90	100%

Compared to competing financial institutions, I would expect an annualized interest rate for this account to be…

Significantly lower	1	2	3	4	5	6	7	8	9	Significantly higher

Account Profile # 5 of 8

Coverage limit	**$50,000**
Your deposit amount	**At or below limit**
Guaranteed payout %	**75%**
Deposit insurance premium type	**Flat-rate**
Bank contributes to insurance fund	**No**
Insurance fund membership by banks	**Voluntary**
Bank capital buffer level	**Below avg**

→

On hearing about the news of the shock to the financial system, what percentage of your deposit are you likely to immediately withdraw?

0%	10	20	30	40	50	60	70	80	90	100%

Compared to competing financial institutions, I would expect an annualized interest rate for this account to be…

Significantly lower	1	2	3	4	5	6	7	8	9	Significantly higher

Account Profile # 6 of 8

Coverage limit	**$50,000**
Your deposit amount	**At or below limit**
Guaranteed payout %	**100%**
Deposit insurance premium type	**Risk-adjusted**
Bank contributes to insurance fund	**No**
Insurance fund membership by banks	**Compulsory**
Bank capital buffer level	**Above avg**

→

On hearing about the news of the shock to the financial system, what percentage of your deposit are you likely to immediately withdraw?

0%	10	20	30	40	50	60	70	80	90	100%

Compared to competing financial institutions, I would expect an annualized interest rate for this account to be…

Significantly lower	1	2	3	4	5	6	7	8	9	Significantly higher

Account Profile # 7 of 8

Coverage limit	**$250,000**
Your deposit amount	**At or below limit**
Guaranteed payout %	**75%**
Deposit insurance premium type	**Risk-adjusted**
Bank contributes to insurance fund	**Yes**
Insurance fund membership by banks	**Voluntary**
Bank capital buffer level	**Above avg**

→

On hearing about the news of the shock to the financial system, what percentage of your deposit are you likely to immediately withdraw?

0%	10	20	30	40	50	60	70	80	90	100%

Compared to competing financial institutions, I would expect an annualized interest rate for this account to be…

Significantly lower	1	2	3	4	5	6	7	8	9	Significantly higher

Account Profile # 8 of 8

Coverage limit	**$250,000**
Your deposit amount	**At or below limit**
Guaranteed payout %	**100%**
Deposit insurance premium type	**Flat-rate**
Bank contributes to insurance fund	**Yes**
Insurance fund membership by banks	**Compulsory**
Bank capital buffer level	**Below avg**

→

On hearing about the news of the shock to the financial system, what percentage of your deposit are you likely to immediately withdraw?

0%	10	20	30	40	50	60	70	80	90	100%

Compared to competing financial institutions, I would expect an annualized interest rate for this account to be…

Significantly lower	1	2	3	4	5	6	7	8	9	Significantly higher

1. **Name your home country**:__________
2. **Your age** (☑ one)**?** ☐20-30 ☐31-40 ☐41-50 ☐50+
3. **Your gender** (☑ one)**?** ☐ Male ☐ Female
4. **Do you currently have a bank deposit account** (☑ one)**?** ☐ Yes ☐ No
5. ***If Yes*, how long have you had the account** (☑ one)**?** ☐ Less than 1 year ☐ 2-5 years ☐ 5+ years
6. **How many other relationships (example – loan) with your bank** (☑ one)**?** ☐1 ☐2 ☐3 ☐4 ☐5+
7. **Did you open the account on the advice of another bank customer** (☑ one)**?** ☐ Yes ☐ No

①=Strongly Disagree	②=Disagree	③=somewhat disagree	④=Neither	⑤=somewhat agree	⑥= agree	⑦= Strongly Agree

I am willing to take high financial risks in order to realize higher average yields	1	2	3	4	5	6	7
I like taking big financial risks	1	2	3	4	5	6	7
I usually view myself as a risk taker	1	2	3	4	5	6	7

Thank You