Legal Risks and Social Bonds: How does information about risks affect the willingness to grant a third-party loan guarantee?

Elisabeth Beckmann[*], Söhnke Bergmann[†], Christa Hainz[‡], Sarah Kiesl-Reiter[§]

July 23, 2025

Abstract

Loan guarantees can enhance access to credit, but serving as a private guarantor may also increase financial vulnerability. We examine, through a randomized information experiment in the UK, how providing information about the legal ramifications and risks of loan guarantees affects individuals' willingness to act as guarantors. We find that providing information about legal risks reduces the willingness to guarantee loans, with stronger effects for larger loan amounts. Social preferences influence individuals' willingness to act as guarantors. Information about legal ramifications increases the willingness to grant a guarantee among altruists but decreases it among those high in positive reciprocity. While information about the UK default rate reduces willingness, individuals are less likely to update their expectations for someone they know personally, indicating in-group bias.

JEL classification: D14, G41, G51, G53
Keywords: Third-party loan guarantees, Survey experiment, Social preferences, Loan-default expectations

[*]Oesterreichische Nationalbank, Email: elisabeth.beckmann@oenb.at.
[†]Oesterreichische Nationalbank, Email: soehnke.bergmann@oenb.at.
[‡]ifo Institute, Email: hainz@ifo.de.
[§]former ifo Institute, Email: sarah.kiesl-reiter@finanztip.de.

We received ethics approval from the Ethics Commission, Department of Economics, University of Munich in December 2021. We thank Tabea Bucher-Koenen, Francesco Feri, Melanie Koch, Lukas Menkhoff, Justus Meyer, Panu Poutvaara, Christopher Roth, Helmut Stix, Jette Weinel, and seminar participants at the *Bank of England* for useful suggestions. We gratefully acknowledge financial support from the Think Forward Initiative. The opinions are those of the authors and do not necessarily reflect the official viewpoint of the Oesterreichische Nationalbank or the Eurosystem.

1 Introduction

Third-party loan guarantees are an ancient concept, with evidence from Mesopotamian texts showing individuals assuming responsibility for others' debts, a practice later formalized in Roman law.[1] Third-party loan guarantees remain prevalent in many countries to this day.[2] They have advantages for the borrower in facilitating access to credit and potentially reducing the interest rates on credit. The bank gains loan security allowing it to demand repayment of the outstanding loan amount including interest from the guarantor should the borrower default. Guarantors, however, may not be aware of the legal and financial obligations they take on when granting a loan guarantee, because it does not involve a financial transaction at the time of contracting. Both the empirical evidence regarding their prevalence and the academic literature on credit guarantees remain extremely limited in household finance.

In this paper, we shed light on this underexplored aspect of household finance, which may play a significant role for household indebtedness and financial vulnerability. We focus on the UK as a case study due to its relatively typical credit market for an advanced economy, where credit guarantees are common, yet individuals may remain vulnerable due to limited financial knowledge. In the UK, almost every tenth adult has experience in acting as a loan guarantor (YouGov, 2021).[3] Moreover, loan guarantees are especially widespread in the high-cost credit market (FCA, 2017). In 2016, the FCA introduced amendments to guarantor lending to strengthen consumer protections. Key changes aimed at (i) improving affordability assessments requiring lenders to conduct stricter checks on both borrowers and guarantors (ii) raising guarantor awareness (iii) ensuring fair treatment of borrowers (iv) monitoring interest and fees. In June 2022, the FCA fined the guarantor loan provider TFS £811,900 for insufficient affordability checks on 3,150 guarantors.[4]

We examine the causal impact of informing individuals about the legal implications of loan guarantees and the borrower's expected default rate on their willingness to act as guarantors in a survey-based experiment.[5] We analyze how providing information about the risks associated with acting as a third-party loan guarantor influences individuals' willingness to take on such a

[1] See `https://max-eup2012.mpipriv.de/index.php/Suretyship_(Ius_Commune)`

[2] In Germany, about three percent of over-indebted individuals cite guarantee-related issues as the primary cause of their indebtedness (Creditreform Wirtschaftsforschung, 2020). In Poland, four percent of adults acted as guarantors, with eleven percent of these loans in arrears (BIK, 2018). In North Macedonia, seven percent of the adult population served as guarantors in 2019 (OeNB Euro Survey).

[3] Our results show that by fall 2022 17% of adults had at some point in their life acted as a guarantor for a loans (see Table A2)

[4] FCA fines TFS

[5] The pre-analysis plan was registered with the AEA RCT Registry before the start of the field phase on October 10, 2022 (AEARCTR-0010193), `https://www.socialscienceregistry.org/trials/10193`.

role. We also explore how the strength of this effect varies with individuals' social preferences,[6] as well as with their expectations about borrower default and how those expectations are updated in response to new information.

The setting of the study is a randomized controlled trial with a total of 5,384 interviews, conducted online in the UK from 13 October 2022 to 14 November 2022 and from 20 February 2023 to 17 March 2023. The sample is randomly divided into four different groups, a control group, a salience treatment group, and two salience-and-information treatment groups. Respondents in the treatment groups receive information about the legal ramifications of loan guarantees, about loan default, and about the so-called in-group bias in assessing individuals who are close to them. In-group bias here refers to the tendency for individuals to perceive those they know personally, such as friends or family members, as less likely to default and more trustworthy compared to the average person in their country.

We find that providing individuals with information about both the legal ramifications and risks of loan guarantees significantly reduces their willingness to act as guarantors, with the effect becoming stronger as the loan amount increases. Altruistic individuals are more likely to guarantee loans when informed about legal consequences, while those with high positive reciprocity become less likely. Additionally, individuals with high positive reciprocity and those confronted with large loan amounts display greater variation in their willingness to act as guarantors. People who underestimate default risk are more willing to guarantee; providing actual UK default rates reduces this willingness on average, but not among those evaluating someone they personally know. Information leads to belief updating, especially when initial beliefs deviate from actual rates. However, belief updating is weaker when assessing familiar borrowers, suggesting in-group bias reduces responsiveness to new information.

We contribute to the literature on household debt, and in particular to the research that examines which factors can lead to over-indebtedness and vulnerability. In the U.S. (especially prior to the Global Financial Crisis) and in other advanced economies, the overall debt burden among households increased significantly (Christelis et al., 2021; Mian and Sufi, 2011). Zinman (2015) identifies a range of potential drivers for the increase in the overall debt burden of households including greater credit availability, intensified loan product marketing, rising housing prices, and shifts in demographic structure. He also emphasizes that widespread household decision-making inefficiencies raise important questions about the limited reach and quality of the advisory market for household liabilities.

[6]We follow Falk et al. (2018) and define social preferences as individuals' tendencies to value the welfare of others in decision-making processes. These preferences include behaviors such as altruism, reciprocity, and trust, which shape interactions within social and economic contexts.

Keys et al. (2022) emphasize the role of financial literacy and individual risk preferences in mitigating financial distress. Financially literate individuals borrow less (Stango and Zinman, 2009), avoid high-cost debt and costly mortgages (Almenberg et al., 2020; Disney and Gathergood, 2013; Lusardi and Tufano, 2015), and are less likely to default on sub-prime loans (Gerardi et al., 2013). Understanding the risks of financial products, such as mortgages or foreign-currency loans, is linked to better financial outcomes (Beckmann and Stix, 2015; Gathergood and Weber, 2017; Van Ooijen and van Rooij, 2016). Beckmann et al. (2022) introduce the concept of guarantee literacy and show in IV regressions that adults with higher guarantee literacy are less likely to have provided guarantees.

Our paper is most closely related to Angrisani et al. (2023); Lusardi et al. (2020) and Grohmann et al. (2024). The former two focus on older adults' debt behavior and show that recent generations of older adults are entering retirement with higher debt levels than those before them (Lusardi et al., 2020). Surprisingly, older individuals with greater cognitive ability than their peers are taking on more debt—potentially increasing their financial fragility (Angrisani et al., 2023). Potential guarantors tend to be older individuals who have accumulated sufficient wealth to act in that role. Acting as a guarantor—without a solid understanding of the terms and potential consequences—may be another factor contributing to the financial vulnerability of older individuals.

Grohmann et al. (2024) also use an experimental setting to identify a causal effect on behavior: They examine how overconfidence influences borrowing decisions. They exogenously manipulate overconfidence in income expectations and demonstrate that such biased expectations—specifically, overestimating future income—lead to increased borrowing. While their study is conducted in a laboratory setting, our experiment is purely informational. Nevertheless, it also demonstrates that cognitive biases can influence behavior in ways that may increase financial vulnerability.

Our paper also relates to the literature on social networks (see Jackson et al. (2017) for an overview), particularly regarding how social norms, sanctions, and network structures help sustain informal risk sharing. Currarini and Mengel (2016) investigate the interplay between homophily and in-group bias in a laboratory setting, highlighting the significant welfare implications of these phenomena. Their results indicate that although homophily is not driven by anticipated in-group bias, the degree to which in-group bias manifests is contingent on whether the environment allows homophily to operate. In the context of credit guarantees, homophily is presumed to manifest as a relevant behavioral pattern, while in-group bias is considered an additional factor whose influence we exogenously vary within the randomized control trial setting.

Research on loan guarantees has predominantly focused on credit access for firms, where government-backed guarantees lower interest rates and facilitate credit access for borrowers (Bachas et al., 2021; De Blasio et al., 2018). Especially for small business loans guarantees are very common (De Haas and Millone, 2020). To the best of our knowledge, research on the provision of loan guarantees by individuals remains largely underexplored.

The remainder of the paper is organized as follows: Section 2 introduces the research questions and outlines the experimental design in detail. Section 3 specifies how the data was collected and provides details on experimental integrity. In Section 4, we present the hypotheses and empirical strategy. We present our results in Section 5 and discuss the robustness of our results in Section 6. Section 7 concludes.

2 Experimental design

2.1 Conceptual framework for loan guarantees

One can describe the risk of granting a guarantee as perceived by person i in terms of expected loss:

$$E(Loss)_i = K_i * E(LGD)_i * E(PD)_i * (EAD) \tag{1}$$

where the expected loss $E(Loss)_i$ of person i is determined by the person's knowledge about the contingent liability involved in granting a guarantee K_i, and – given they have such a knowledge – the guarantor's expected loss given default $E(LGD)_i$, the guarantor's expectation about the probability that the borrower defaults on the loan $E(PD)_i$ and the exposure at default (EAD). Note that loss given default and probability of default are subjective to person i, whereas EAD is given in the survey question.

K_i is an indicator equal to 1 if individual i understands that granting a guarantee is a contingent liability, i.e., they understand that they are liable for repaying a certain amount of money (strictly larger than 0) in case of loan default of the borrower, and 0 otherwise. If a person has no knowledge about the contingent liability (i.e., $K_i = 0$), the expected loss $E(Loss)_i$ is equal to 0.

Given a person understands that granting a guarantee is a contingent liability, the person's expected loss depends further on (i) the subjective expectation about the loss given default $E(LGD)_i$ (which might – due to a lack of knowledge – deviate from the true/actual loss given default, which is equal to the outstanding loan amount plus interest rates), and (ii) the

subjective probability that the borrower defaults $E(PD)_i$ (ranging between 0% and 100%), (iii) the exposure at default EAD.

If $E(PD)$ is 0, it follows that the $E(Loss)$ is equal to 0. The higher the $E(PD)$ and the $E(LGD)$, the higher the $E(Loss)$.

2.2 Treatment groups and information provision

In our experiment, we introduce exogenous variation in three components, K, $E(LGD)$, and $E(PD)$. Respondents are randomly assigned with equal probability to one of the following groups:

1. Control group, C
2. Treatment groups
   - 2.1 Salience, S
   - 2.2 Salience and Information 1, $I_{K,LGD}$
   - 2.3 Salience and Information 2, $I_{K,LGD,PD}$

Respondents in the different groups differ both in the survey questions they will be asked and the information they will be provided with.

In Table 1, we provide an overview of the "stages" of the survey information-provision experiment and which group is included in which stage. Below, we describe the stages in detail.

Table 1: Information-provision experiment

Stage		C	S	$I_{K,LGD}$	$I_{K,LGD,PD}$
(1)	Elicit name of borrower	✓	✓	✓	✓
(2)	Elicit (prior) expectations about default of borrower and of people in the UK	–	✓	✓	✓
(3)	Provide information about legal ramifications	–	–	✓	✓
(4)	Provide information about default rate in the UK and in-group bias	–	–	–	✓
(5)	Measure behavior of granting a guarantee for borrower	✓	✓	✓	✓
(6)	Elicit (posterior) expectations about default of borrower and of people in the UK	✓	✓	✓	✓
(7)	Gather background information about borrower	✓	✓	✓	✓
(8)	Elicit trust in provided information	–	–	✓	✓

2.3 Eliciting name of borrower

In **stage (1)**, which applies to *all* experimental groups, we elicit the name of a person that the respondent knows well, and who might ask the respondent for help in financial matters:

> *For the following questions, please think of a person that you know well and who would ask you for help in financial matters. Please write down the person's first name or a nickname. Please do not provide the surname.*

In the following, we will refer to this potential borrower in need of a loan guarantee as "borrower."

2.4 Eliciting loan-default expectations

In **stage (2)**, which applies only to our treatment groups, we elicit respondents' expectations about the likelihood that (i) the borrower and (ii) people in the UK would default on a bank loan. With this treatment, we prime respondents to think about the possibility that bank loans might not get repaid by the borrower. Respondents in the control group are not asked any expectations questions, but proceed directly with the outcome questions.

We save the answer to the question in the previous stage and ask:

> *Let's now think about retail bank loans to* ***private individuals*** *in the UK. There are borrowers who repay their loans, others struggle with loan repayments, and some borrowers do not repay, i.e., default on their loan. What is the likelihood, expressed in percent, that* [name from stage (1)] *would default on a loan?*

We further ask:

> *What do you think is the likelihood, expressed in percent, that individuals in the UK default on their bank loans? If you do not have an exact answer, please try to provide an estimate.*

2.5 Information treatment: Legal ramifications

In **stage (3)**, which only applies to the salience-and-information treatment groups, we provide the different groups with objective information about the risks associated with loan guarantees. Respondents in the control and salience treatment group do not receive any information and proceed directly with the outcome questions.

Respondents in the treatment groups $I_{K,LGD}$ and $I_{K,LGD,PD}$ are informed about the contingent liability of guarantees and the extent of the liability. We introduce exogenous variation in K and $E(LGD)$:

> *Loans can be secured by a third-party guarantee. Legally, by signing a guarantee, a guarantor promises to repay the loan including interest to the bank if the borrower defaults.*

2.6 Information treatment: Default rate and in-group bias

In addition to the information presented above, respondents in the treatment group $I_{K,LGD,PD}$ are informed about the loan default rate in the UK and the so-called in-group bias (**stage (4)**). We introduce exogenous variation in K, $E(LGD)$, and $E(PD)$. Information about loan default rates in the UK might have no effect on respondents, as they may assume that people they know well are "better" borrowers, and therefore less likely to default on a loan, a phenomenon for which we found empirical evidence in an earlier survey. We therefore also provide respondents with information about this in-group bias.

> *According to the Financial Conduct Authority, the percentage of private individuals who default on their loans is 12 percent in the UK. This means that one in eight borrowers default on their loans. You said that you think the percentage is [insert respondent's stated prior expectations].*
>
> *A 2020 YouGov survey shows that the vast majority of people think their relatives and friends are much less likely to default on a loan than the average person in the UK. The tendency to have far too good an opinion of your relatives and friends is one example of what psychology calls "in-group bias."*

2.7 Measuring willingness to act as guarantor for a borrower

In **stage (5)**, which again applies to *all* experimental groups, we proceed with our outcome questions:

> *Now suppose that [name from stage (1)] asks you to act as guarantor for a bank loan. How likely is it that you agree to act as guarantor for this bank loan when the loan amount is: (a) £10,000, (b) £5,000, (c) £150,000. Please tick a box on the scale from 0 to 100, where 0 means "no, certainly not," and 100 equals "yes, absolutely certain."*

2.8 Eliciting post-treatment loan-default expectations

In **stage (6)**, which applies to *all* experimental groups, we elicit posterior treatment expectations. Doing so allows us to study how the provision of objective information (see $I_{K,LGD,PD}$) causes respondents to update their expectations about loan defaults of the potential borrower and about people in the UK, and how this information affects the decision to grant a loan guarantee, indirectly via respondents adjusting their expectations about the probability of a loan default.

> *What do you think is the likelihood, expressed in percent, that the following people do not repay, i.e., default on their bank loan? (a) [Name from stage (1)], (b) Individuals in the UK in general.*

3 Data

Our population of interest are adults, living in the UK, who take financial decisions and manage their own finances. The sample is randomly drawn from two large online panels (Respondi and Bilendi) provided by the survey company *talk online*. Quotas for socio-demographic categories were used to ensure that the sample is representative of the target population in terms of age, gender, and region of residence (see Table A3).[7]

Respondents were not informed that they are participating in an information-provision experiment survey, or which treatment condition they are being assigned. Respondents are rewarded through a points-based incentive system, where the points awarded depend on the length of the questionnaire. The median duration for completing the survey was 11 minutes, the average duration was 16 minutes. The survey was administered to 5,198 respondents from 13 October 2022 to 14 November 2022 and a further 3,051 respondents from 20 February 2023 to 17 March 2023.

The randomization of samples into three different treatment groups (S, $I_{K,LGD}$, $I_{K,LGD,PD}$) and a control group (C) was carried out on the net sample using monads, a concept from functional programming and category theory, to structure and control the selection process in a mathematically consistent and modular manner.

[7] Given that the survey was conducted online, our quota sample does not include adults who do not use the internet. However, according to the 2021 UK census, 92.1% of adults were internet users. The percentage is lower for adults aged 75 years and older at 54%. These older citizens, while possibly willing to grant a guarantee, however, should in fact not be eligible to act as guarantor for a bank loan. Therefore, we believe that under-sampling the older population will not limit the informational content and the external validity of our results.

3.1 Questionnaire structure and definition of variables

We study one primary outcome variable: Willingness to act as a guarantor for a bank loan of (i) £5,000, or (ii) £10,000, or (iii) £150,000. We consider the following secondary outcome variables: 1) Willingness to act as a guarantor for rental payments and 2) Willingness to lend money of (i) £5,000, or (ii) £10,000, or (iii) £150,000. The outcomes are measured in percent on a scale from 0 to 100. The order of amounts is randomized in the questionnaire. Table A1 provides a description of all variables used in our empirical analysis, along with the corresponding question wording. Table A2 provides summary statistics for all variables used in the analysis by treatment groups.

The questionnaire is structured around the information experiment design (see Table 1). The first section provides an introduction to the survey and information about data protection. The second section elicits age, gender and the region of residence. In the third, the questionnaire includes questions about social preferences following the standard questionnaire of Falk et al. (2018) (see also Table A1). Then, the questionnaire includes the experiment as described in Table 1. After the experiment, we elicit information about respondents' financial decision making in the past including whether they ever acted as a guarantor before. We include questions on respondents' general financial literacy based on the "Big Three" questions introduced by Lusardi and Mitchell (2008). We also elicit financial literacy regarding third-party loan guarantees. In the final section, respondents are asked about the size of their household, their marital status, whether they have children and were born in the UK. This questionnaire section also elicits employment status and highest educational attainment, personal and household income as well as indicators of wealth.

3.2 Experimental integrity and data quality

To ensure high data quality and correct randomization, we conducted various quality checks. First, following our pre-analysis plan, we investigate whether the survey was completed by inattentive respondents. "Inattention" is defined as completing the interview in less than 10% of the median response time. However, there are no individuals conducting the survey faster than 10% of the median response time and thus, we do not drop any individuals. We do not impute missing data. "Don't-know" responses are treated as missing data in the main analysis.

Second, respondents had the opportunity to provide open-ended feedback in their own words at the end. Reviewing this feedback after the survey was completed in November 2022, we realized that respondents who completed the survey on certain smartphones indicated in their feedback that they had difficulty viewing the full response scale for some questions. As our

main outcome of interest is measured on a scale from 0 to 100, we decided to conduct a further survey wave where this technical issue was successfully resolved. To be absolutely certain, that respondents would be able to view the full scale, in the second survey wave we included a test question before the start of the survey. Both the data from the first and second survey wave contain paradata on the type of device respondents used to complete the survey. For our baseline results, we only use data from the first wave by respondents who completed the survey on laptops or tablets and merge this data with the second wave where we include laptop, tablet, and smartphone respondents. Throughout the text, we will refer to this combined data set as the "baseline" data. This means, in our baseline results, we do not include a total of 2,863 smartphone respondents who completed the survey between 13 October 2022 to 14 November 2022. Both waves applied quotas for age, gender and region of residence. As we drop the smartphone respondents from the first wave, we calibrate weights to ensure the combined sample from both waves is representative of age, gender and region. Re-estimating regressions based on the full sample from wave one and wave two, i.e., including the 2,863 smartphone respondents shows that our results are robust.

Third, we conduct balance checks on the socio-demographic characteristics (age, gender, education, and labor market status). Table 2 shows that all groups are balanced. The sample size of all groups is approximately even and the individuals do not differ largely in their observable characteristics such as gender, age, household size, marriage status, number of children, education, employment status or income. Compared to the control group, the treatment groups do not differ significantly in terms of gender, age, marital status, education, employment status, and income. There are significant differences in terms of household size (a metric not included in the quota sample) and in the relationship (familial or otherwise) between the respondent and the person they have in mind as a potential borrower (see Tables A4 to A6). The test for joint significance is not statistically significant indicating successful randomization (Table A7).

Table 2: Covariate balance

	Treatment group			
	S	$I_{K,LGD}$	$I_{K,LGD,PD}$	C
N	1,368 (25.4%)	1,339 (24.9%)	1,345 (25.0%)	1,332 (24.7%)
a) *Sociodempgraphics*				
Female	0.506 (0.500)	0.497 (0.500)	0.498 (0.500)	0.522 (0.500)
Age	44.24 (14.252)	44.34 (14.157)	43.54 (14.423)	43.27 (14.241)
Household Size	2.667 (1.290)	2.704 (1.350)	2.819 (1.404)	2.728 (1.395)
Married	0.543 (0.498)	0.528 (0.499)	0.548 (0.498)	0.529 (0.499)
Number of children	2.061 (1.207)	2.051 (1.181)	2.042 (1.173)	2.033 (1.181)
b) *Education*				
Low	0.018 (0.131)	0.010 (0.102)	0.009 (0.094)	0.010 (0.098)
Medium	0.430 (0.495)	0.430 (0.495)	0.447 (0.497)	0.419 (0.494)
High	0.553 (0.497)	0.559 (0.497)	0.544 (0.498)	0.571 (0.495)
c) *Employment Status*				
Employed	0.589 (0.492)	0.597 (0.491)	0.585 (0.493)	0.590 (0.492)
Self Employed	0.100 (0.300)	0.105 (0.306)	0.094 (0.293)	0.095 (0.294)
Unemployed	0.045 (0.206)	0.049 (0.215)	0.047 (0.211)	0.042 (0.201)
Student	0.034 (0.180)	0.030 (0.170)	0.045 (0.208)	0.041 (0.199)
d) *Income*				
Personal Income: Low	0.444 (0.497)	0.438 (0.496)	0.440 (0.497)	0.447 (0.497)
Personal Income: Medium	0.432 (0.496)	0.414 (0.493)	0.404 (0.491)	0.411 (0.492)
Personal Income: High	0.124 (0.329)	0.148 (0.355)	0.156 (0.363)	0.141 (0.348)
Household Income: Low	0.403 (0.491)	0.409 (0.492)	0.406 (0.491)	0.408 (0.492)
Household Income: Medium	0.460 (0.499)	0.437 (0.496)	0.431 (0.495)	0.440 (0.497)
Household Income: High	0.087 (0.282)	0.096 (0.295)	0.104 (0.305)	0.104 (0.305)
e) *Relationship to Borrower*				
Partner	0.175 (0.380)	0.168 (0.374)	0.178 (0.383)	0.170 (0.376)
Parent	0.135 (0.341)	0.128 (0.335)	0.149 (0.357)	0.132 (0.339)
Child	0.078 (0.269)	0.078 (0.268)	0.059 (0.237)	0.076 (0.265)
Sibling	0.106 (0.308)	0.111 (0.314)	0.098 (0.298)	0.124 (0.330)
Relative	0.079 (0.270)	0.084 (0.277)	0.097 (0.296)	0.076 (0.265)
Friend	0.408 (0.492)	0.415 (0.493)	0.398 (0.490)	0.402 (0.491)
Other	0.018 (0.134)	0.016 (0.127)	0.020 (0.140)	0.020 (0.138)

Notes: The table shows the weighted sample means and standard deviations (in parentheses) of the respective variables across treatment groups. Table A1 provides a definition of all variables.

Fourth, in order to limit noise caused by variables with minimal variation, we examine whether there are any outcomes for which 97% of observations have the same value within the relevant sample following McKenzie (2012). For none of the outcomes, there is such little variation as described above, i.e., for none of the outcome variables, underlying values are identical for 97% or more of the sample. Therefore, we do not omit any outcomes from the analysis.

4 Empirical strategy

This section describes our hypotheses and the estimation method. We test the following hypotheses, differentiating between average and heterogeneous treatment effects.

Average treatment effect

H1: Individuals who receive some form of treatment (salience and/or information) are less willing to grant a loan guarantee.

H2: Receiving both, salience and information treatments, reduces individuals' willingness to grant such a guarantee more strongly than only receiving the salience treatment.

Heterogeneous treatment effect: Social preferences

H3: The effect of salience and/or information treatments on a person's willingness to grant a loan guarantee varies with the level of social preferences: The more pronounced a person's prosocial preferences (i.e., the higher a person's level of altruism, positive reciprocity, and trust) and the lower the level of negative reciprocity, the smaller the negative effect.

Heterogeneous treatment effect: Loan-default expectations

H4: When comparing the treatment S with the treatment $I_{K,LGD,PD}$, the effect of the $I_{K,LGD,PD}$ treatment on a person's willingness to grant a loan guarantee varies with individuals' pre-treatment expectations about the default rate of the borrower: The lower the prior expected rate of default of the borrower (relative to the factual UK loan-default rate), the larger the negative effect.

H4.1: The further the prior expectations about UK loan default are from the factual UK loan default rate, the stronger the updating of posterior expectations.

4.1 Estimation of average treatment effect

We estimate the causal effects of the treatments using the following regression model:

$$y_i = \alpha_0 + \sum_j \alpha_{1j} T_i^j + \delta X_i + \epsilon_i \ , \ with \ j \in \{S, I_{K,LGD}, I_{K,LGD,PD}\} \tag{2}$$

where y_i is the outcome variable of interest, and T^S, $T^{I_{K,LGD}}$, and $T^{I_{K,LGD,PD}}$ are treatment indicators equal to 1 if respondent i received the respective treatment. Respondents in the control group C constitute the reference group. X_i is a vector of control variables, and ϵ_i is the error term. α_{1j} are estimates of the average treatment effects. We also estimate the pooled treatment effect using the following regression model:

$$y_i = \alpha_0 + \alpha_1 T_i + \delta X_i + \epsilon_i \tag{3}$$

where T_i is a treatment indicator equal to 1 if respondent i received one of the treatments T^S, $T^{I_{K,LGD}}$, or $T^{I_{K,LGD,PD}}$. We estimate linear probability models using OLS and, alternatively, Tobit models that account for the fact that the dependent variables range from 0 to 100.

4.2 Estimation of heterogeneous treatment effects

We further analyze whether treatment effects are heterogeneous across individuals.

Heterogeneity by Social Preferences

First, we analyze whether treatment effects are heterogeneous across individuals with different social preferences. We measure social preferences following Falk et al. (2018) to capture the following preferences: (i) altruism, (ii) positive reciprocity, (iii) trust, and (iv) negative reciprocity. We compute a measure for each preference taking into account weights for each survey question, as suggested by Falk et al. (2018). The higher the measure, the more pronounced the respective preference for an individual. Similar to Falk et al. (2018), we come up with one single *prosociality* variable by computing the first principal component of altruism, positive reciprocity, and trust. To analyze whether treatment effects are heterogeneous across individuals with different social preferences, we run regression models of the following form:

$$y_i = \beta_0 + \beta_1 T_i + \beta_2 T_i * Preference_i + \beta_3 Preference_i + \delta X_i + \epsilon_i \tag{4}$$

where y_i is the outcome variable of interest, and T_i is a treatment indicator equal to 1 if respondent i received one of the treatments T^S, $T^{I_{K,LGD}}$, or $T^{I_{K,LGD,PD}}$. $Preference_i$ represents one specific preference measure (altruism, positive reciprocity, trust, negative reciprocity, or prosociality). The coefficient of interest is β_2.

Heterogeneity by Loan-Default Expectations

Second, we analyze whether treatment effects are heterogeneous across individuals with different prior expectations. For this purpose, we restrict the sample to the experimental groups S, $I_{K,LGD}$ and $I_{K,LGD,PD}$. We analyze whether the effect is stronger when prior expectations regarding the default rate of the borrower deviate further from the factual UK loan default rate, using the following regression model:

$$y_i = \gamma_0 + \sum_j \gamma_{1j} T_i^j + \sum_j \gamma_{2j} T_i^j * PerceptionGap^b + \gamma_3 PerceptionGap^b + \delta X_i + \epsilon_i,$$
$$\text{with } j \in \{I_{K,LGD}, I_{K,LGD,PD}\}. \quad (5)$$

where y_i is the outcome variable of interest, and T^j is a treatment indicator equal to 1 if respondent i received the respective treatment. $PerceptionGap_i^b$ is the difference between the factual UK loan default rate and respondent i's prior expectation about the default rate of the borrower. Respondents in the treatment group S constitute the reference group. X_i is a vector of control variables, and ϵ_i is the error term. γ_2 informs us if the effect of the treatment $I_{K,LGD,PD}$ varies with an individual's pre-treatment expectations of the default rate of the borrower.

4.3 Expectation Updating

To study to which extent respondents update their expectations about the default rates of people in the UK towards the signal they received in the $T^{I_{K,LGD,PD}}$ treatment, we use the following regression model:

$$Updating_i^c = \alpha_0 + \alpha_1 T_i^{I_{K,LGD,PD}} * PerceptionGap_i{}^c + \alpha_2 T_i^{I_{K,LGD,PD}} + \alpha_3 PerceptionGap_i{}^c + \delta X_i + \epsilon_i \quad (6)$$

where $Updating_i^c$ is defined as the difference between respondent i's posterior and prior expectations about the UK loan-default rate. $PerceptionGap_i^c$ is the difference between the factual UK loan default rate (i.e., the true signal) and respondents' prior expectations about the UK loan default rate. The reference group is S. α_1 is the coefficient of interest, capturing the extent of expectation updating in the $I_{K,LGD,PD}$ group, in addition to any updating in the groups that do not receive any information on the UK loan default rate (S).
In addition, we study whether respondents use the information on the UK loan-default rate to update their expectations about the default rate of the borrower:

$$Updating_i^b = \alpha_0 + \alpha_1 T_i^{I_{K,LGD,PD}} * PerceptionGap_i{}^b + \alpha_2 T_i^{I_{K,LGD,PD}} + \alpha_3 PerceptionGap_i{}^b + \delta X_i + \epsilon_i \quad (7)$$

where $Updating_i^b$ is defined as the difference between respondent i's posterior and prior expectations about the loan-default rate of the borrower. $PerceptionGap_i^b$ is the difference between the factual UK loan default rate (i.e., the true signal) and respondents' prior expectations about the loan default rate of the borrower. The reference group is S.

5 Results

We find that providing individuals with information about the legal ramifications and risks associated with third-party guarantees for a loan significantly reduces their willingness to act as guarantors. Below, we describe the results and the nuances of which information is particularly important and for whom in detail.

5.1 Average treatment effect

How does information about legal ramifications and risk affect willingness to act as guarantor? Table 3 indicates that asking questions about loan default expectations *per se* does not affect respondents' willingness to act as guarantor: The *Salience* treatment (S) is insignificant, irrespective of loan amounts. Therefore, we partially reject our first hypothesis - the salience treatment alone does not suffice to reduce individuals' willingness to act as guarantor. However, there are significant effects on the willingness to act as guarantor for the *salience-and-information* treatment groups: Individuals who received information about the legal ramifications of loan guarantees ($I_{K,LGD}$) are on average 2.6 percentage points (4.6%) less likely to act as a guarantor for £5,000, however, this effect is only significant at the 10% level. The probability to act as guarantor significantly shrinks for £10,000 by 3.1 percentage points (6.1%) and by 5.2 percentage points (13.9%) for £150,000 on average compared to the control group. The effect is stronger when individuals are provided with information about legal ramifications of loan guarantees and information about loan default rates as well as information about the in-group bias ($I_{K,LGD,PD}$). Here, individuals are on average 3 (£5,000 loan), 3.7 (£10,000 loan) and 5.7 (£150,000 loan) percentage points (5.2%, 7.2% and 15.5%) less likely to act as a guarantor in comparison to the control group. The variation in effects again is statistically significant across the different regression specifications (1)-(3) with varying loan amounts as dependent variables.

Table 3: Average treatment effect

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.296	0.061	−0.655
	(1.411)	(1.403)	(1.373)
$I_{K,LGD}$	−2.647*	−3.104**	−5.155***
	(1.423)	(1.408)	(1.353)
$I_{K,LGD,PD}$	−2.985**	−3.671***	−5.743***
	(1.401)	(1.387)	(1.334)
Control mean	57.5	51.3	37.1
adj. R-squared	0.001	0.002	0.005
N	5,384	5,384	5,384

Notes: Estimates are obtained from OLS regressions with robust standard errors. Table A8 shows the average treatment effect based on tobit estimations.* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The average treatment effect size and significance does not change when including control variables for sociodemographic and socioeconomic characteristics of individuals (Table A9). Again, the information treatment effect is stronger for individuals who receive information about default rates in the UK and the in-group bias in addition to receiving information about legal ramifications ($I_{K,LGD,PD}$). Furthermore, the findings consistently indicate that the effect becomes more pronounced as the loan amount increases. Regarding sociodemographic characteristics, Table A9 shows that the willingness to act as guarantor for a bank loan decreases with age. Further, the results indicate that married, female and respondents with higher personal or household income are on average more willing to act as a guarantor.

We further find that pooling all treatments (S, $I_{K,LGD}$ and $I_{K,LGD,PD}$) still shows a reduced willingness to act as guarantor with the effect being stronger the higher the amount (Table 4).

Table 4: Average treatment effect: Treatments (S, $I_{K,LGD}$ and $I_{K,LGD,PD}$) pooled

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
Treatment (pooled)	−1.966*	−2.223**	−3.831***
	(1.143)	(1.132)	(1.105)
Constant	57.498***	51.296***	37.137***
	(0.982)	(0.971)	(0.956)
Control mean	57.5	51.3	37.1
adj. R-squared	0.000	0.000	0.002
N	5,384	5,384	5,384

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

This pooled effect is ameliorated by the salience group (S) as shown in Table A10. Importantly, the results are robust to controlling for the relationship between the hypothetical guarantor and borrower (Table A11) showing that respondents are most likely to act as guarantors for parents or partners and less willing to do so for siblings other relatives or friends. Results are also robust to controlling for the respondents' financial experience with guarantees and borrowing (Table A12). In summary, we find that individuals who receive some form of information regarding legal ramifications and risks of loan guarantees are less willing to grant a loan guarantee. Simply being asked to think about loan default rates does not affect the willingness to act as guarantor. The more information individuals receive—such as loan default rates and in-group bias in addition to legal ramifications—the greater the reduction in their willingness to provide a guarantee, compared to receiving only information about the legal consequences of loan guarantees.

5.2 Heterogeneity by Social Preferences

Next, we investigate whether the treatment effects are heterogeneous across individuals with different social preferences. Table A13 shows that social preferences are balanced across treatment groups. Table A14 shows how the different aspects of social preferences are correlated. The sign and size of correlations we find are remarkably similar to those presented in Falk et al. (2018).

First, we investigate how social preferences affect the willingness to grant guarantees irrespective of the information treatment (Table 5). As expected, the results also indicate that individuals with higher positive reciprocity, trust and altruism are more likely to act as a guarantor for a bank loan. These effects increase with loan amounts for altruism and trust, but become slightly weaker for positive reciprocity with decreasing loan amounts. A one standard-deviation increase in a person's altruism increases the probability that individuals are willing to act as guarantor for a loan of £5,000 by 2.3 percentage points. The effect for altruism increases with loan amounts to 5 percentage points for a loan of £150,000. As such it is higher than the effect of trust (4 percentage points) and positive reciprocity (1.6 percentage points). The effect of positive reciprocity decreases with loan amounts from 5.5 percentage points (£5,000) to 1.6 percentage points (£150,000). The coefficient of trust is fairly stable across loan amounts. The positive coefficient for negative reciprocity is surprising at first sight. However, if a person has a strong tendency toward negative reciprocity, borrowers might anticipate that defaulting on a loan will provoke retaliation. This perceived threat can discourage the borrower from defaulting in the first place, making the guarantor more willing to step in. Furthermore, a person with high negative reciprocity may come across as

someone who values fairness and strictly enforces agreements, increasing their trustworthiness for banks. And, people with high negative reciprocity might feel a personal duty to ensure fair exchanges.

Regarding the information treatments, Table 5 shows that when controlling for social preferences the effect of providing information about legal ramifications ($I_{K,LGD}$) becomes slightly stronger: The probability of acting as a guarantor is reduced by 3.3 (£5,000), 3.8 (£10,000) and 6 (£150,000) percentage points respectively depending on loan amounts. The effect of additionally providing information on loan default rates and in-group bias also becomes slightly stronger reducing the willingness to act as guarantor by 3.6 (£5,000), 4.3 (£10,000) and 6.4 (£150,000) percentage points respectively.

Table 5: Heterogeneous treatment effect: Social preferences

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.398	−0.076	−0.815
	(1.378)	(1.373)	(1.341)
$I_{K,LGD}$	−3.330**	−3.842***	−5.978***
	(1.399)	(1.385)	(1.319)
$I_{K,LGD,PD}$	−3.575***	−4.285***	−6.417***
	(1.373)	(1.360)	(1.300)
Altruism (std)	2.348***	2.881***	4.963***
	(0.496)	(0.490)	(0.499)
Positive Reciprocity (std)	5.496***	4.633***	1.645***
	(0.513)	(0.503)	(0.481)
Trust (std)	3.836***	3.892***	4.017***
	(0.519)	(0.515)	(0.490)
Negative Reciprocity (std)	0.435	1.463***	3.307***
	(0.484)	(0.480)	(0.470)
Control mean	57.5	51.3	37.1
adj. R-squared	0.046	0.044	0.056
N	5,378	5,378	5,378

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

We then investigate whether receiving information about legal ramifications and risks of loan guarantees has a different effect on individuals depending on their social preferences. We investigate these heterogeneities jointly in one specification (see Table 6), as a combined indicator of prosociality (Table A15), but also separately for each dimension of social preferences (see Tables A28 to A31).

Table 6: Heterogeneous treatment effect: Social preferences

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.404	−0.079	−0.868
	(1.372)	(1.366)	(1.337)
$I_{K,LGD}$	−3.062**	−3.521**	−5.641***
	(1.401)	(1.385)	(1.315)
$I_{K,LGD,PD}$	−3.486**	−4.164***	−6.351***
	(1.370)	(1.355)	(1.296)
Altruism (std)	0.724	1.090	3.995***
	(1.122)	(1.081)	(1.068)
S × Altruism (std)	0.648	0.560	0.045
	(1.469)	(1.436)	(1.437)
$I_{K,LGD}$ × Altruism (std)	3.265**	3.890***	3.395**
	(1.484)	(1.462)	(1.447)
$I_{K,LGD,PD}$ × Altruism (std)	2.402*	2.622*	0.718
	(1.441)	(1.392)	(1.415)
Positive Reciprocity (std)	5.206***	4.688***	2.476***
	(1.011)	(0.968)	(0.933)
S × Positive Reciprocity (std)	3.071**	2.822**	2.045
	(1.409)	(1.366)	(1.339)
$I_{K,LGD}$ × Positive Reciprocity (std)	−0.792	−1.714	−3.537***
	(1.499)	(1.457)	(1.362)
$I_{K,LGD,PD}$ × Positive Reciprocity (std)	−1.432	−1.696	−2.315*
	(1.417)	(1.384)	(1.326)
Trust (std)	4.462***	4.239***	5.307***
	(1.030)	(1.012)	(0.969)
S × Trust (std)	−1.996	−1.507	−2.097
	(1.433)	(1.430)	(1.379)
$I_{K,LGD}$ × Trust (std)	−1.462	−0.816	−2.087
	(1.488)	(1.465)	(1.390)
$I_{K,LGD,PD}$ × Trust (std)	0.953	0.911	−0.969
	(1.471)	(1.450)	(1.370)
Negative Reciprocity (std)	−0.272	0.578	2.310**
	(0.953)	(0.951)	(0.952)
S × Negative Reciprocity (std)	0.447	0.709	0.783
	(1.356)	(1.354)	(1.356)
$I_{K,LGD}$ × Negative Reciprocity (std)	0.951	1.159	1.282
	(1.381)	(1.367)	(1.322)
$I_{K,LGD,PD}$ × Negative Reciprocity (std)	1.220	1.447	1.672
	(1.339)	(1.331)	(1.316)
Control mean	57.5	51.3	37.1
adj. R-squared	0.048	0.047	0.059
N	5,378	5,378	5,378

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. All social preferences are included as continuous variable and interacted with treatment

It is remarkable how stable the heterogeneous effects of the treatment are, depending on the extent of social preferences. The results show that a person with a high level of altruism who is aware of the legal consequences ($I_{K,LGD}$) of loan guarantees is more likely to act as a guarantor compared to someone equally altruistic but uninformed about these legal consequences (C). There are several possible explanations for this effect: First, knowing the legal implications might make the guarantor feel a stronger moral obligation to uphold their commitment. At the same time, lack of legal knowledge could make the uninformed altruist hesitant due to uncertainty about potential personal costs. In contrast, an informed altruist, even if aware of potential risks, might feel more in control and thus more confident in their

decision. Individuals are 1.2 percentage points less likely to act as guarantors for a £5,000 loan when they receive information about legal obligations and loss given default, as well as information about default risk and in-group bias ($I_{K,LGD,PD}\times$ Altruism). This effect is observed in comparison to individuals who are only informed about legal obligations and loss given default ($I_{K,LGD}\times$ Altruism).

We do not find that the treatments have heterogeneous effects depending on a person's level of trust (see Table 6). However, for persons with high positive reciprocity, we do find that for large loan amounts— £150,000— the willingness to act as guarantor significantly decreases (3.5 percentage points) for those who are made aware of the legal consequences of loan guarantees compared to those who do not receive this information ($I_{K,LGD}\times$Positive Reciprocity). Similarly, those with high positive reciprocity who are informed about the default rate in the UK and in-group bias ($I_{K,LGD}\times$Positive Reciprocity) are 2.3 percentage points less likely to act as guarantor for a loan of £150,000 compared to those with a similar level of positive reciprocity but not in possession of this information. Several psychological and economic mechanisms could explain this: Awareness of the asymmetry in reciprocity—being a suitable guarantor for a borrower often implies that the borrower is unlikely to reciprocate in the same way and in fact likely is not eligible to do so. Additionally, understanding the legal consequences highlights that reciprocity in this context involves substantial financial and legal risks. Uninformed individuals may base their decisions more on social norms and personal trust, whereas those aware of the legal implications may shift from a social perspective to a legal one. This shift leads them to view loan guarantees not as a simple favor but as a formal, high-stakes financial commitment enforced by law rather than goodwill. Regarding the constructed single measure for social preferences, we see that individuals with a 1-standard-deviation higher level of prosociality are on average 6.3 percentage points more likely to act as a guarantor for a loan of £5,000 and 6.8 percentage points more likely to act as guarantor for a loan of £150,000 (Table A15). For the overall indicator of social preference—prosociality—we do not find that there is a heterogeneous effect of the information treatments for individuals with higher levels of prosociality.

5.3 Heterogeneity by Loan-Default Expectations

As described in Section 2.1, the risk of granting a guarantee can be described in terms of expected loss, which is determined *inter alia* by the guarantor's expectation about the probability that the borrower defaults on the loan. When contrasting the S treatment with the $I_{K,LGD,PD}$ treatment, the effect of the $I_{K,LGD,PD}$ treatment on a person's willingness to act as a guarantor is shaped by their pre-treatment expectations of the borrower's default prob-

ability. Our hypothesis is that individuals who initially expect a lower default rate for the borrower (compared to the actual UK default rate) experience a larger negative effect (H4). To analyze this effect, the sample is restricted to the groups S and $I_{K,LGD,PD}$—the groups who receive questions about loan default. Figure A1 shows that, on average, respondents perceive the loan default risk for the UK to be higher than that of the potential borrower they have in mind during the experiment. While the perceived default rate for the UK is generally overestimated, the perceived default rate for the individual borrower is below the actual UK average, making it, on average, also unrealistic. We calculate the Perception Gap as the difference between respondents' prior expectations about the default rate of the borrower and the FCA 12% default rate, which respondents in the $I_{K,LGD,PD}$ group are informed about during the information treatment. That means the larger the perception gap, the more respondents "overestimate" the default rate, i.e., the default rate of the borrower is assessed higher than the UK loan-default rate of 12%. A negative perception gap indicates that respondents "underestimated" the default rate. We calculate the perception gap for the salience group (S) and the legal-information treatment group ($I_{K,LGD}$), who were not informed about the 12% UK default rate, and the treatment group ($I_{K,LGD,PD}$), who received this information. For the S and $I_{K,LGD}$ group, the perception gap reflects an implicit discrepancy between their prior belief about the borrower and the actual UK default rate, but they are not made aware of it. In contrast, respondents in the $I_{K,LGD,PD}$ group are explicitly informed of the 12% default rate, making them subsequently aware of the gap between their expectations and the actual rate default rate in the UK. We find that individuals who perceive the default rate of borrowers to be higher than the actual default rate in the UK are less likely to be willing to act as a guarantor for a bank loan and vice versa. For example, a respondent who thinks that the default rate of the borrower is 15 percent is 0.9 percentage points less likely to act as a guarantor of £5,000 (perception gap of 3 percentage points $\times$ -0.307). We, again, find that on average individuals in the $I_{K,LGD,PD}$ group are less likely to act as a guarantor for a bank loan. However, we do not find that information about the UK default rate and in-group bias has a differing impact based on the perception gap. In other words, there is no evidence of a heterogeneous treatment effect depending on individuals' prior expectations of the borrower's default risk.

Table 7: Heterogeneous treatment effect: Loan default expectations

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
$I_{K,LGD}$	−2.184	−3.086**	−4.639***
	(1.443)	(1.447)	(1.408)
$I_{K,LGD,PD}$	−3.120**	−4.133***	−5.383***
	(1.421)	(1.422)	(1.379)
Perception Gap	−0.307***	−0.276***	−0.116***
	(0.040)	(0.040)	(0.040)
$I_{K,LGD}$ × Perception Gap	0.006	0.020	0.043
	(0.055)	(0.055)	(0.053)
$I_{K,LGD,PD}$ × Perception Gap	0.048	0.047	0.057
	(0.057)	(0.057)	(0.055)
Control mean	54.5	47.6	31.4
adj. R-squared	0.041	0.033	0.007
N	4,052	4,052	4,052

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

5.3.1 Updating of Loan-Default Expectations

Next, we examine whether individuals adjust their beliefs more when their initial expectations about loan default deviate further from the actual UK default rate. We investigate the updating behavior of individuals about default rates in the UK and whether individuals use the information on UK-loan-default rate to update their expectation about the default rate of the borrower. Figure 1 is a bin scatter of prior default expectations plotted on the x-axis and posterior expectations plotted on the y-axis. The left panel shows prior beliefs and posterior expectations for the UK; the right panel shows prior and posterior expectations for the borrower. The blue and red scatterplots represent respondents who did not receive any information about the UK default rate or in-group bias. The green scatterplots represent respondent who do receive information that the default rate in the UK was 12% on average for 2015-2018 according to the FCA. They are also informed about the in-group bias. If there were no difference between the prior and posterior estimates of the default rate, the points would lie on the 45-degree line. This should approximately be the case for the blue and red scatterplots, as there was no signal suggesting that the estimates needed to be updated. Upon examining the figure, it is clear that this is roughly the case. Furthermore, we can see that there are respondents who provide unrealistically high values, both for their prior and posterior estimates. What is particularly interesting, however, is the observation of the green scatterplot for the UK in the lower-left quadrant. These respondents are informed that the default rate in the UK is 12% and adjust their estimates accordingly. This means that the green points move toward a horizontal line at the 12% level on the y-axis. Even respondents

who start with very high prior beliefs adjust them downward. Put differently, all the points in the green scatterplot for the UK lie below the 45-degree line, when the prior was above 12%. The image is very different in the right panel. Here, the updating is much less pronounced. The green scatterplot is much more similar to the red and blue scatterplots. This suggests that when it comes to a person they know well and would support as a guarantor, respondents do not believe this individual aligns with the UK average. Therefore, the information about the UK default rate is less important. The difference between the left and right panels can be interpreted as evidence of in-group bias.

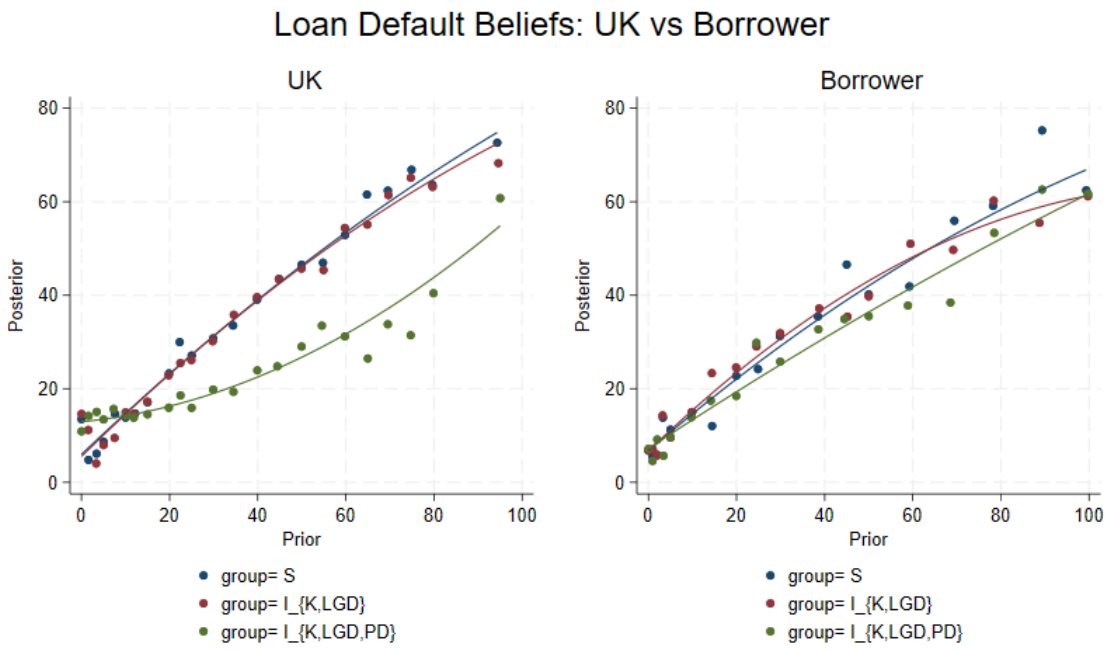

Figure 1: Updating of loan default expectations of borrower and UK

When we take a closer look at this graphical representation in a regression analysis, we find an effect of the treatment on individuals' updating behavior regarding the UK-loan-default rate (Table 8). Individuals who are in the $I_{K,LGD,PD}$ group update their expectation more strongly than individuals from the $I_{K,LGD}$ group. Individuals who deviate more strongly from the real default rate are on average also more likely to update their expectations. This effect is even stronger, when they are assigned to the $I_{K,LGD,PD}$ group. However, individuals assigned to the $I_{K,LGD,PD}$ group do not update their expectations about the borrower's loan default rate significantly differently from those in the group who did not receive information about the UK loan default rate. It is striking that there seems to be no large difference in the expectation updating of individuals when it comes to the borrower. However, when it

comes to the expectation updating about the UK-loan-default rate, individuals who received the treatment about the default rate seem to update their expectation towards the received signal. We cannot definitively show that this difference in updating is actually due to in-group bias, but it seems likely that in-group bias is a factor explaining the difference in updating between the UK and the individual borrower. In robustness checks, we examine whether this effect changes depending on factors such as the respondent's relationship with the potential borrower, or whether the respondents perceive the information as trustworthy.

Table 8: Updating of loan default expectations

	Expectation Updating	
	Updating UK	Updating Borrower
	(1)	(2)
$I_{K,LGD}$	−0.100	0.113
	(0.725)	(0.698)
$I_{K,LGD,PD}$	−2.560***	−0.817
	(0.728)	(0.664)
Perception Gap of Default Rate in UK	−0.247***	
	(0.024)	
$I_{K,LGD}$ × Perception Gap of Default Rate in UK	−0.001	
	(0.036)	
$I_{K,LGD,PD}$ × Perception Gap of Default Rate in UK	−0.399***	
	(0.039)	
Perception Gap of Default Rate of Borrower		−0.344***
		(0.030)
$I_{K,LGD}$ × Perception Gap of Default Rate of Borrower		−0.049
		(0.044)
$I_{K,LGD,PD}$ × Perception Gap of Default Rate of Borrower		−0.069
		(0.044)
Control mean	0.4	1.0
adj. R-squared	0.334	0.215
N	4,052	4,052

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

6 Robustness Analysis

To test the reliability of our results, we conduct a large number of robustness checks: On the one hand, placebo checks, where we examine alternative outcomes that should not be affected by the treatment to the same extent. On the other hand, econometric checks, where we vary the sample, estimation method, and variable definition. Finally, we conduct regressions incorporating additional control variables to address omitted variable bias and examine their impact on the willingness to provide a guarantee.

6.1 Placebo Analysis: Effect of treatment on informal lending and rental payment guarantees

First, we analyze whether receiving information about the legal ramification of loan guarantees, about the default rate of borrowers in the UK and about the concept of in-group bias has an effect on other, related outcomes: The willingness to grant an informal loan and the willingness to act as guarantor for rental payments. While the information about legal ramifications of loan guarantees should not affect the willingness to provide an informal loan, it might have an effect on the willingness to act as guarantor for rental payments. The information about loan default rates and in-group bias might reduce the willingness to lend money and possibly also the willingness to act as guarantor for rental payments.

Table 9 presents results. We find that the information about loan default rates and in-group bias ($I_{K,LGD,PD}$) has a negative effect on the willingness to grant an informal loan of £150,000. We do not find an effect for smaller amounts and for either the salience treatment (S) or the legal ramifications treatment ($I_{K,LGD,PD}$). We do find, however, that respondents who are informed about loan default rates and in-group bias are less likely (at the 10% level) to be willing to act as guarantor for rental payments. These results remain stable when we control for sociodemographic and socioeconomic characteristics of individuals (Table A18).

Table 9: Robustness analysis: Treatment effect on informal loan and acting as guarantor for rental payments

	Willingness to grant an informal loan of			Willingness to grant rental payments
	£5,000	£10,000	£150,000	
	(1)	(2)	(3)	(4)
S	1.557	2.192	−0.217	−0.865
	(1.443)	(1.397)	(1.278)	(1.431)
$I_{K,LGD}$	0.553	0.598	−1.115	−2.278
	(1.443)	(1.405)	(1.275)	(1.437)
$I_{K,LGD,PD}$	1.160	0.469	−3.069**	−2.419*
	(1.419)	(1.378)	(1.243)	(1.402)
Control mean	48.6	39.8	24.8	51.7
adj. R-squared	−0.000	−0.000	0.001	0.000
N	5,384	5,384	5,384	5,384

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

6.2 Robustness analysis: Multiple hypothesis testing

Considering we study alternative outcomes, we adjust our estimators for multiple hypothesis testing. We repeat estimations for the average treatment effect presented in Tables 3 and 9 and adjust the p-values following List et al. (2019) and Anderson (2008). This adjustment helps control the expected proportion of false rejections (type I errors). By using sharpened q-values, the method ensures that the likelihood of falsely rejecting any null hypothesis is controlled,

making the results more reliable when multiple hypotheses are tested simultaneously. Table 10 presents results. We find that regarding the willingness to act as a guarantor, our results are robust for higher amounts, but become insignificant or marginally significant for loans up to £10,000. Regarding alternative outcomes, only the effect of the $I_{K,LGD,PD}$ treatment remains marginally significant for an informal loan of £150,000. Overall, these results align with our main findings. Information on the legal ramifications of loan guarantees, default risk, and in-group bias is particularly significant for deciding whether or not to grant a guarantee for high loan amounts. The higher the loan amount, the more pronounced the effect of the treatment.

Table 10: Robustness analysis: Multiple hypothesis test

	Willingness to...						
	act as guarantor for a bank loan of			grant informal loan			act as guarantor for rental payments
	£5,000	£10,000	£150,000	£5,000	£10,000	£150,000	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
S	−0.296	0.061	−0.655	1.557	2.192	−0.217	−0.865
p-value	(0.834)	(0.965)	(0.633)	(0.281)	(0.117)	(0.865)	(0.545)
sharpened q-value	[0.908]	[1.000]	[0.813]	[0.390]	[0.213]	[0.908]	[0.750]
$I_{K,LGD}$	−2.647	−3.104	−5.155	0.553	0.598	−1.115	−2.278
p-value	(0.063)	(0.028)	(0.000)	(0.701)	(0.670)	(0.382)	(0.113)
sharpened q-value	[0.156]	[0.104]	[0.002]	[0.813]	[0.813]	[0.538]	[0.213]
$I_{K,LGD,PD}$	−2.985	−3.671	−5.743	1.160	0.469	−3.069	−2.419
p-value	(0.033)	(0.008)	(0.000)	(0.414)	(0.734)	(0.014)	(0.085)
sharpened q-value	[0.104]	[0.055]	[0.001]	[0.539]	[0.813]	[0.065]	[0.189]

Notes: Estimates are obtained from OLS regressions with robust standard errors.

6.3 Robustness analysis: Alternative sample and model specifications

To ensure our results are not driven by the display error and our subsequent decision to drop respondents for the baseline (see Section 3.2) we repeat estimations including the smartphone users from the first wave. Table A19 repeats the regression presented in Table 3 - the results are not affected by our decision to drop observations that might have been affected by incorrect display of the scales. We also investigate whether very quick or very slow responses or the overall duration of the interview drives results. Tables A21 to A23 show this is not the case. Although the sampling is based on quota sampling, we also check that repeating regressions including weights does not affect our results (Table A24). As we explain in Section 3.1, the question about guarantee literacy is asked after the treatment. For treatment groups, therefore, this question does not provide an indicator how much people know about guarantees. For the control group, results show that only about 50% of individuals are aware of the obligations a loan guarantor takes on (see Table A26). Still, this mix of guarantee literate and illiterate individuals in the control group may create noise in the regressions. We, therefore,

check that our results hold when controlling for respondents' financial literacy (Table A25) and for their knowledge about loan guarantees (Table A27).

The results on social preferences are particularly relevant to our experiment, as social preferences are a key factor driving the willingness to provide a guarantee (see Table 5). We test whether these results, and especially whether the heterogeneous effect of the treatments depending on the extent of different aspects of social preferences, hold when using alternative specifications. In the first step, we include the social preference dimensions individually (Tables A28 to A31). Next, we include the social preference dimensions together but exclude one aspect at a time (Tables A32 to A35). Finally, we define social preferences as binary, based on being above or below the midpoint of the scale (see Table A36). None of these adjustments substantially alter our main result.

The results regarding the assessment of default risk are also robust in alternative specifications. When we define the perception gap as a binary variable, the main result (a significant effect of the gap *per se*, but no heterogeneous effect) remains unchanged. The results are also robust in alternative specifications with additional control variables. The results on updating are similarly robust when we control for sociodemographic characteristics.

7 Conclusion

Our paper examines the impact of providing information about the legal risks and consequences of loan guarantees, as well as loan default rates and in-group bias, on individuals' willingness to act as guarantors in a randomized information experiment. We find that informing individuals about the legal implications of loan guarantees significantly reduces their likelihood of being willing to grant a guarantee, with the effect becoming stronger as the loan amount increases. Specifically, individuals informed about the legal risks are 2.6 percentage points less likely to act as a guarantor for a £5,000 loan, with this effect growing to 5.1 percentage points for a £150,000 loan. This reduction is even more pronounced when combined with information about loan default rates and in-group bias, with the likelihood of acting as a guarantor decreasing by 2.9 percentage points for a £5,000 loan and 5.7 percentage points for a £150,000 loan.

Social preferences such as altruism, positive and negative reciprocity, and trust also influence individuals' willingness to act as guarantors. Altruistic individuals are more likely to act as guarantors when informed about legal consequences, while those with high positive reciprocity become less likely to do so when made aware of these risks. The effect of the information

treatments on willingness to guarantee loans are stronger for individuals with high positive reciprocity and large loan amounts.

Furthermore, individuals who expect a higher default rate are generally less willing to act as guarantors for a loan. We also find that individuals who received information about the UK's default rate are more likely to update their expectations—particularly if their initial beliefs deviated from the actual rate. However, the willingness to act as a guarantor is shaped by expectations, and here, an important distinction must be made between expectations of the average default rate in the country and the expected default risk of someone the respondent personally knows and would consider guaranteeing a loan for. While expectations about the national default rate can be influenced by neutral information, this is not the case for expectations concerning the default risk of a known acquaintance and potential borrower. When it comes to individuals they might consider supporting as guarantors, people's tendency to update their expectations is less pronounced, suggesting that in-group bias plays a significant role in their willingness to grant a guarantee. In this context, in-group bias proves stronger than information about average default rates. Since individuals most often act as guarantors for people they know, in-group bias becomes a key factor that may lead to misjudgments. And, simply providing information about the concept of in-group bias does not suffice to overcome its effects.

It is generally recognized that lending or borrowing money from a friend may put individual financial security and well-being at risk and may even strain and endanger the relationship itself. However, third-party loan guarantees are often not approached with the same level of caution. Because offering a loan guarantee does not involve an immediate financial transaction at the time of agreement, guarantors are often unaware of the associated risks and potential consequences. Consumer protection agencies are beginning to focus on this issue. Our findings suggest several directions that could support policymakers in the future. First, providing individuals with clear information about the legal implications and risks associated with acting as loan guarantors can significantly reduce their willingness to offer guarantees, particularly for larger loan amounts. Policymakers might consider developing targeted financial education programs that specifically address the risks of loan guarantees. Such programs could be particularly beneficial for individuals in vulnerable groups who might be less aware of the potential financial consequences of guaranteeing loans. These programs could focus on the legal ramifications and raising awareness about default rates. Our results also suggest that, given the influence of social preferences such as altruism and reciprocity on the willingness to act as guarantors, policies that simply provide information about social biases, like in-group bias, are unlikely to change behavior. When provided with information about default

rates in the country, individuals do not update their beliefs about people they know well, indicating that personal connections may override general risk information. Policies that provide generalized information about default rates may be effective in improving financial decision-making in more formal settings. However, in personal contexts, such as acting as a guarantor for a friend or family member, stronger regulatory measures may be needed to protect individuals from taking on excessive risk.

References

Almenberg, J., Lusardi, A., Säve-Söderbergh, J., and Vestman, R. (2020). Attitudes toward debt and debt behavior. The Scandinavian Journal of Economics.

Anderson, M. L. (2008). Multiple Inference and Gender Differences in the Effects of Early Intervention: A Reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects. Journal of the American Statistical Association, 103(484):1481–1495.

Angrisani, M., Burke, J., and Kapteyn, A. (2023). Cognitive ability, cognitive aging, and debt accumulation. Journal of Banking & Finance, 148:106747.

Bachas, N., Kim, O. S., and Yannelis, C. (2021). Loan guarantees and credit supply. Journal of Financial Economics, 139(3):872–894.

Beckmann, E., Hainz, C., and Reiter, S. (2022). Third-Party Loan Guarantees: Measuring Literacy and its Effect on Financial Decisions (Elisabeth Beckmann, Christa Hainz, Sarah Reiter). OeNB Working Paper, 237.

Beckmann, E. and Stix, H. (2015). Foreign currency borrowing and knowledge about exchange rate risk. Journal of Economic Behavior & Organization, 112:1–16.

BIK (2018). Poręczyciele w odwrocie (translated: Guarantors in the background). Retrieved from `https://media.bik.pl/informacje-prasowe/388223/bik-poreczyciele-w-odwrocie` (2020, April 12).

Christelis, D., Ehrmann, M., and Georgarakos, D. (2021). Exploring differences in household debt across the united states and euro area countries. Journal of Money, Credit and Banking, 53(2-3):477–501.

Creditreform Wirtschaftsforschung (2020). SchuldnerAtlas Deutschland 2020. Überschuldung von Verbrauchern. Retrieved from `https://www.boniversum.de/studien/schuldneratlas/` (2020, December 10).

Currarini, S. and Mengel, F. (2016). Identity, homophily and in-group bias. European Economic Review, 90:40–55.

De Blasio, G., De Mitri, S., D'Ignazio, A., Finaldi Russo, P., and Stoppani, L. (2018). Public guarantees to SME borrowing. A RDD evaluation. Journal of Banking & Finance, 96:73–86.

De Haas, R. and Millone, M. (2020). The impact of information sharing on the use of collateral versus guarantees. World Bank Economic Review, 34(Supplement):14–19.

Disney, R. and Gathergood, J. (2013). Financial literacy and consumer credit portfolios. Journal of Banking & Finance, 37(7):2246–2254.

Falk, A., Becker, A., Dohmen, T., Enke, B., Huffman, D., and Sunde, U. (2018). Global Evidence on Economic Preferences*. The Quarterly Journal of Economics, 133(4):1645–1692.

FCA (2017). High-cost credit review technical annex 1: Credit Reference Agency (CRA) data analysis of UK personal debt. Retrieved from https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiy-cyGiuroAhXKiqQKHQBZDyQQFjAAegQIBBAB&url=https%3A%2F%2Fwww.fca.org.uk%2Fpublication%2Ffeedback%2Ffs17-02-technical-annex.pdf&usg=AOvVaw2T3nJQk2zoefEcABBlqzDY (2020, April 12).

Gathergood, J. and Weber, J. (2017). Financial literacy, present bias and alternative mortgage products. Journal of Banking & Finance, 78:58–83.

Gerardi, K., Goette, L., and Meier, S. (2013). Numerical ability predicts mortgage default. Proceedings of the National Academy of Sciences, 110(28):11267–11271.

Grohmann, A., Menkhoff, L., Merkle, C., and Schmacker, R. (2024). Earn more tomorrow: Overconfidence, income expectations, and consumer indebtedness. Journal of Money, Credit and Banking.

Jackson, M. O., Rogers, B. W., and Zenou, Y. (2017). The economic consequences of social-network structure. Journal of Economic Literature, 55(1):49–95.

Keys, B. J., Mahoney, N., and Yang, H. (2022). What Determines Consumer Financial Distress? Place- and Person-Based Factors. The Review of Financial Studies, 36(1):42–69.

List, J., Shaikh, A., and Xu, Y. (2019). Multiple hypothesis testing in experimental economics. Experimental Economics, 22(4):773–793.

Lusardi, A. and Mitchell, O. S. (2008). Planning and financial literacy: How do women fare? The American Economic Review, 98(2):413–417.

Lusardi, A., Mitchell, O. S., and Oggero, N. (2020). Debt and Financial Vulnerability on the Verge of Retirement. Journal of Money, Credit and Banking, 52(5):1005–1034.

Lusardi, A. and Tufano, P. (2015). Debt literacy, financial experiences, and overindebtedness. Journal of Pension Economics and Finance, 14(4):332–368.

McKenzie, D. (2012). A pre-analysis plan checklist. Development impact blog, World Bank.

Mian, A. and Sufi, A. (2011). House prices, home equity–based borrowing, and the us household leverage crisis. American Economic Review, 101(5):2132–2156.

Stango, V. and Zinman, J. (2009). Exponential growth bias and household finance. The Journal of Finance, 64(6):2807–2849.

Van Ooijen, R. and van Rooij, M. C. (2016). Mortgage risks, debt literacy and financial advice. Journal of Banking & Finance, 72:201–217.

YouGov (2021). Informal financial networks. Survey commissioned by ifo Institute, unpublished.

Zinman, J. (2015). Household debt: Facts, puzzles, theories, and policies. Annual Review of Economics, 7(Volume 7, 2015):251–276.

Appendix

Appendix: Data and experimental integrity

Table A1: Description of variables

Label	Description
a) *Sociodemographics*	
Female	= 1 if female, and 0 otherwise
Age	Age of respondent
Household Size	Household Size the respondent is living in
Married	= 1 if married, and 0 otherwise
Number of children	Number of children
Education: Low	=1 if the respondent has primary education, 0 otherwise
Education: Medium	=1 if the respondent has lower secondary, upper secondary, or post secondary non tertiary education, 0 otherwise
Education: High	=1 if the respondent has first or second stage of tertiary education, 0 otherwise
Self Employed	=1 if the respondent is self employed
Unemployed	=1 if the respondent is unemployed
Personal Income: Low	=1 if the net personal income is included in the first tercile, and 0 otherwise. Sample values are used to construct terciles
Personal Income: Medium	=1 if the net personal income is included in the second tercile, and 0 otherwise. Sample values are used to construct terciles
Personal Income: High	=1 if the net personal income is included in the third tercile, and 0 otherwise. Sample values are used to construct terciles
Household Income: Low	=1 if the net household income is included in the first tercile, and 0 otherwise. Sample values are used to construct terciles
Household Income: Medium	=1 if the net household income is included in the second tercile, and 0 otherwise. Sample values are used to construct terciles
Household Income: High	=1 if the net household income is included in the third tercile, and 0 otherwise. Sample values are used to construct terciles
Partner	=1 if respondent stated partner as borrower, 0 otherwise
Parent	=1 if respondent stated parent as borrower, 0 otherwise
Child	=1 if respondent stated child as borrower, 0 otherwise
Sibling	=1 if respondent stated sibling as borrower, 0 otherwise
Relative	=1 if respondent stated relative as borrower, 0 otherwise
Friend	=1 if respondent stated friend as borrower, 0 otherwise
Other	=1 if respondent stated other as borrower, 0 otherwise
b) *Social Preferences*	
Altruism (std)	calculated standardized altruism of respondent (following Falk et al. (2018))
Trust (std)	calculated standardized trust of respondent (following Falk et al. (2018))
Positive Reciprocity (std)	calculated standardized positive reciprocity of respondent (following Falk et al. (2018))
Negative Reciprocity (std)	calculated standardized negative reciprocity of respondent (following Falk et al. (2018))
Prosociality	calculated prosocialty of respondent (following Falk et al. (2018))
High Altruism	=1 if standardized altruism of respondent is higher than calculated median
High Trust	=1 if standardized trust of respondent is higher than calculated median
High Positive Reciprocity	=1 if standardized high reciprocity of respondent is higher than calculated median
High Negative Reciprocity	=1 if standardized negative reciprocity of respondent is higher than calculated median
High Prosociality	=1 if prosocialty of respondent is higher than calculated median
c) *Financial Literacy*	
Legal obligation guarantee	=1 if correct answer to survey question on legal obligation as guarantor, 0 otherwise
Repayment guarantee	=1 if correct answer to survey question on guarantees, 0 otherwise
Interest rates	=1 if correct answer to survey question on interest rates, 0 otherwise
Inflation	=1 if correct answer to survey question on inflation, 0 otherwise
Risk diversification	=1 if correct answer to survey question on risk diversification, 0 otherwise
Financial literacy score	Sum of correct answers out of survey questions on interest rates, inflation and risk diversification
Finlit: Big Three Correct	=1 if correct answers to survey questions on interest rates, inflation and risk diversification, 0 otherwise
d) *Financial Experience as Guarantor*	
Ever had Guarantor	=1 if respondent has ever taken out a loan for which someone else has been acting as a guarantor, 0 otherwise
Ever been Guarantor	=1 if respondent has ever acted as a guarantor for someone else's loan, 0 otherwise
Currently Guarantor	=1 if respondent is currently acting as a guarantor for someone else's loan, 0 otherwise
e) *Expectations and Updating*	
Perception Gap UK	calculated gap between expected default rate on loans in UK and actual loan default rate
Perception Gap Borrower	calculated gap between expected default rate on loans of borrower and actual loan default rate
f) *Other*	
Duration based on spent time	Time needed by respondent to complete survey
Device	Device type used by respondent (mobile, tablet, laptop)

Notes: The table shows a detailed description of all variables used.

Table A2: Summary statistics

	Min	Max	N	S	IK_LGD	IK_LGD_PD	C	Total
a) *Sociodemographics*								
Female	0	1	8249	0.54 (0.50)	0.52 (0.50)	0.52 (0.50)	0.54 (0.50)	0.53 (0.50)
Age	18	69	8243	42.59 (13.91)	43.02 (13.78)	41.94 (13.91)	42.16 (13.63)	42.43 (13.81)
Household Size	1	10	8249	2.77 (1.33)	2.79 (1.40)	2.87 (1.40)	2.82 (1.41)	2.81 (1.39)
Married	0	1	8247	0.55 (0.50)	0.55 (0.50)	0.55 (0.50)	0.54 (0.50)	0.55 (0.50)
Number of Children	1	6	8249	2.11 (1.20)	2.10 (1.19)	2.08 (1.17)	2.10 (1.19)	2.10 (1.19)
Education Low	0	1	8247	0.02 (0.14)	0.01 (0.11)	0.01 (0.11)	0.02 (0.13)	0.02 (0.12)
Education Medium	0	1	8247	0.43 (0.49)	0.43 (0.50)	0.43 (0.50)	0.41 (0.49)	0.42 (0.49)
Education High	0	1	8247	0.55 (0.50)	0.56 (0.50)	0.56 (0.50)	0.58 (0.49)	0.56 (0.50)
Self Employed	0	1	8249	0.09 (0.29)	0.09 (0.29)	0.10 (0.29)	0.09 (0.29)	0.09 (0.29)
Unemployed	0	1	8249	0.05 (0.21)	0.04 (0.20)	0.05 (0.21)	0.05 (0.21)	0.05 (0.21)
Personal Income Low	0	1	8244	0.43 (0.49)	0.43 (0.50)	0.44 (0.50)	0.44 (0.50)	0.44 (0.50)
Personal Income Medium	0	1	8244	0.44 (0.50)	0.43 (0.49)	0.41 (0.49)	0.41 (0.49)	0.42 (0.49)
Personal Income High	0	1	8244	0.14 (0.34)	0.14 (0.35)	0.15 (0.36)	0.15 (0.35)	0.14 (0.35)
Household Income Low	0	1	8240	0.53 (0.50)	0.53 (0.50)	0.53 (0.50)	0.55 (0.50)	0.54 (0.50)
Household Income Medium	0	1	8240	0.38 (0.48)	0.38 (0.49)	0.38 (0.48)	0.36 (0.48)	0.37 (0.48)
Household Income High	0	1	8240	0.09 (0.29)	0.09 (0.29)	0.09 (0.29)	0.09 (0.28)	0.09 (0.29)
Partner	0	1	8249	0.19 (0.39)	0.18 (0.39)	0.18 (0.38)	0.18 (0.38)	0.18 (0.39)
Parent	0	1	8249	0.13 (0.34)	0.13 (0.34)	0.15 (0.36)	0.13 (0.34)	0.14 (0.34)
Child	0	1	8249	0.07 (0.26)	0.07 (0.26)	0.06 (0.24)	0.08 (0.26)	0.07 (0.26)
Sibling	0	1	8249	0.11 (0.31)	0.11 (0.31)	0.10 (0.31)	0.12 (0.33)	0.11 (0.32)
Relative	0	1	8249	0.09 (0.28)	0.08 (0.28)	0.10 (0.30)	0.08 (0.28)	0.09 (0.29)
Friend	0	1	8249	0.39 (0.49)	0.40 (0.49)	0.39 (0.49)	0.39 (0.49)	0.39 (0.49)
Other	0	1	8249	0.01 (0.12)	0.01 (0.12)	0.02 (0.13)	0.02 (0.14)	0.02 (0.13)
b) *Social Preferences*								
Altruism (std)	-1	5	8233	-0.01 (1.02)	0.00 (0.99)	-0.00 (0.99)	0.01 (1.00)	-0.00 (1.00)
Trust (std)	-2	2	8249	-0.01 (1.00)	0.02 (0.98)	0.03 (1.00)	-0.04 (1.02)	-0.00 (1.00)
Positive Reciprocity (std)	-5	2	8249	-0.01 (1.01)	0.02 (0.99)	0.00 (1.00)	-0.01 (1.01)	0.00 (1.00)
Negative Reciprocity (std)	-2	2	8249	-0.01 (1.00)	0.02 (1.02)	-0.01 (1.00)	-0.01 (0.99)	0.00 (1.00)
Prosociality (std)	-4	5	8233	-0.02 (1.14)	0.02 (1.15)	0.02 (1.15)	-0.03 (1.18)	0.00 (1.16)
High Altruism	0	1	8249	0.49 (0.50)	0.50 (0.50)	0.50 (0.50)	0.49 (0.50)	0.49 (0.50)
High Trust	0	1	8249	0.40 (0.49)	0.40 (0.49)	0.41 (0.49)	0.39 (0.49)	0.40 (0.49)
High Positive Reciprocity	0	1	8249	0.48 (0.50)	0.49 (0.50)	0.49 (0.50)	0.48 (0.50)	0.48 (0.50)
High Negative Reciprocity	0	1	8249	0.49 (0.50)	0.51 (0.50)	0.48 (0.50)	0.50 (0.50)	0.49 (0.50)
High Prosociality	0	1	8249	0.50 (0.50)	0.51 (0.50)	0.51 (0.50)	0.49 (0.50)	0.50 (0.50)
c) *Financial Literacy*								
Legal obligation guarantee	0	1	8164	0.49 (0.50)	0.55 (0.50)	0.53 (0.50)	0.48 (0.50)	0.51 (0.50)
Repayment guarantee	0	1	8151	0.59 (0.49)	0.63 (0.48)	0.64 (0.48)	0.59 (0.49)	0.61 (0.49)
Interest rates	0	1	8136	0.70 (0.46)	0.70 (0.46)	0.70 (0.46)	0.70 (0.46)	0.70 (0.46)
Inflation	0	1	8137	0.52 (0.50)	0.54 (0.50)	0.55 (0.50)	0.54 (0.50)	0.54 (0.50)
Risk diversification	0	1	8138	0.32 (0.47)	0.31 (0.46)	0.33 (0.47)	0.31 (0.46)	0.32 (0.47)
Financial literacy score	0	5	8023	2.63 (1.59)	2.75 (1.58)	2.77 (1.58)	2.65 (1.57)	2.70 (1.58)
Big Three Correct	0	1	8249	0.20 (0.40)	0.19 (0.40)	0.20 (0.40)	0.19 (0.40)	0.20 (0.40)
d) *Financial Experience as Guarantor*								
Ever had Guarantor	0	1	8247	0.11 (0.31)	0.13 (0.33)	0.12 (0.33)	0.11 (0.31)	0.12 (0.32)
Ever been Guarantor	0	1	8249	0.17 (0.37)	0.17 (0.38)	0.17 (0.38)	0.16 (0.37)	0.17 (0.37)
Currently Guarantor	0	1	8249	0.05 (0.23)	0.06 (0.23)	0.05 (0.23)	0.05 (0.23)	0.05 (0.23)
e) *Expectations and Updating*								
Perception Gap UK	-12	88	6178	19.71 (22.15)	19.40 (21.80)	20.03 (22.39)	.	19.71 (22.11)
Perception Gap Borrower	-12	88	6178	5.72 (26.83)	6.24 (27.61)	5.53 (26.83)	.	5.83 (27.09)
Updating UK	-100	100	6178	0.07 (15.13)	-0.14 (15.21)	-10.50 (21.52)	.	-3.49 (18.20)
Updating Borrower	-100	100	6178	1.25 (21.47)	1.07 (22.93)	-0.19 (22.25)	.	0.71 (22.23)
f) *Other*								
duration based on spent time	2	717	8249	15.61 (25.46)	15.63 (18.84)	15.70 (17.12)	15.07 (21.38)	15.50 (20.95)
Device	1	3	8249	1.54 (0.54)	1.56 (0.56)	1.54 (0.56)	1.53 (0.55)	1.54 (0.56)

Notes: The table shows the (unweighted) sample means and standard deviations (in parentheses) of the respective variables. Total refers to the entire sample of observations, without distinguishing between treatment groups.

Table A3: Comparison of target population and sample

	United Kingdom	Baseline	Wave 1	Wave 2
Female 18-34	16.94%	22.75%	23.6%	28.43%
Female 35-49	16.05%	15.41%	16.39%	17.86%
Female 50-69	17.43%	12.70%	10.52%	12.35%
Male 18-34	17.00%	10.89%	10.43%	12.45%
Male 35-49	15.71%	16.19%	15.2%	17.3%
Male 50-69	16.86%	22.06%	23.87%	11.62%

Notes: The table shows weighted descriptive statistics for age and gender and compares them with the actual population figures from the UK. See section 3 for a description of the Baseline.

Table A4: Covariate Balance: T-test S versus C

Variable	**Mean** S	**Mean** C	**P-Value**
Female	0.540	0.540	0.971
Male	0.456	0.454	0.896
Age	42.592	42.156	0.308
HH Size	2.780	8.908	0.310
Married	0.553	0.539	0.361
Children	2.106	2.100	0.881
Low Educ	0.019	0.016	0.482
Middle Educ	0.427	0.409	0.233
High Educ	0.554	0.575	0.170
Self Employed	0.092	0.092	0.941
Unemployed	0.047	0.047	0.931
Pers Low Income	0.426	0.439	0.402
Pers Middle Income	0.436	0.413	0.137
Pers High Income	0.137	0.147	0.361
HH Low Income	0.533	0.553	0.178
HH Middle Income	0.376	0.358	0.239
HH High Income	0.091	0.088	0.718
Stated Partner	0.190	0.177	0.257
Stated Parent	0.133	0.129	0.696
Stated Child	0.074	0.076	0.800
Stated Sibling	0.110	0.124	0.169
Stated Relative	0.086	0.085	0.883
Stated Friend	0.391	0.390	0.938
Stated Other	0.015	0.019	0.331

Notes: The table presents the sample means for both the treatment S and control C groups, along with the p-value from a t-test comparing the two groups for each variable.

Table A5: Covariate balance: T-test $I_{K,LGD}$ versus C

Variable	**Mean** $I_{K,LGD}$	**Mean** C	**P-Value**
Female	0.525	0.540	0.315
Male	0.470	0.454	0.301
Age	43.018	42.156	0.043
HH Size	2.879	8.908	0.319
Married	0.550	0.539	0.447
Children	2.098	2.100	0.968
Low Educ	0.013	0.016	0.368
Middle Educ	0.432	0.409	0.124
High Educ	0.555	0.575	0.188
Self Employed	0.089	0.092	0.738
Unemployed	0.043	0.047	0.472
Pers Low Income	0.434	0.439	0.708
Pers Middle Income	0.426	0.413	0.396
Pers High Income	0.140	0.147	0.506
HH Low Income	0.529	0.553	0.109
HH Middle Income	0.381	0.358	0.131
HH High Income	0.090	0.088	0.808
Stated Partner	0.184	0.177	0.554
Stated Parent	0.132	0.129	0.741
Stated Child	0.075	0.076	0.891
Stated Sibling	0.111	0.124	0.210
Stated Relative	0.084	0.085	0.945
Stated Friend	0.399	0.390	0.555
Stated Other	0.014	0.019	0.228

Notes: The table presents the sample means for both the treatment $I_{K,LGD}$ and control C groups, along with the p-value from a t-test comparing the two groups for each variable.

Table A6: Covariate balance: T-test $I_{K,LGD,PD}$ versus C

Variable	**Mean** $I_{K,LGD,PD}$	**Mean** C	**P-Value**
Female	0.525	0.540	0.317
Male	0.471	0.454	0.276
Age	41.940	42.156	0.614
HH Size	2.872	8.908	0.321
Married	0.550	0.539	0.465
Children	2.076	2.100	0.523
Low Educ	0.013	0.016	0.468
Middle Educ	0.429	0.409	0.193
High Educ	0.558	0.575	0.263
Self Employed	0.095	0.092	0.756
Unemployed	0.048	0.047	0.975
Pers Low Income	0.441	0.439	0.906
Pers Middle Income	0.409	0.413	0.773
Pers High Income	0.150	0.147	0.816
HH Low Income	0.531	0.553	0.147
HH Middle Income	0.376	0.358	0.232
HH High Income	0.093	0.088	0.607
Stated Partner	0.178	0.177	0.925
Stated Parent	0.149	0.129	0.063
Stated Child	0.061	0.076	0.065
Stated Sibling	0.105	0.124	0.059
Stated Relative	0.103	0.085	0.043
Stated Friend	0.386	0.390	0.764
Stated Other	0.018	0.019	0.867

Notes: The table presents the sample means for both the treatment $I_{K,LGD,PD}$ and control C groups, along with the p-value from a t-test comparing the two groups for each variable.

Table A7: Test for joint significance

	Treatment Status
	(1)
Female	0.0
	(0.0)
Age	−0.0
	(0.0)
Household Size	0.0
	(0.0)
Married	−0.0
	(0.0)
Number of children	−0.0
	(0.0)
Education: Medium	0.3*
	(0.2)
Education: High	0.3*
	(0.2)
Self Employed	−0.0
	(0.1)
Unemployed	−0.0
	(0.1)
Student	0.1
	(0.1)
Personal Income: Medium	−0.0
	(0.0)
Personal Income: High	0.1*
	(0.1)
Household Income: Medium	−0.1
	(0.0)
Household Income: High	−0.1
	(0.1)
adj. R-squared	0.001
N	5,372

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Appendix: Results

Table A8: Average treatment effect based on Tobit estimation

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	0.375	0.219	−1.759
	(1.840)	(1.834)	(1.968)
$I_{K,LGD}$	−3.039	−4.555**	−8.223***
	(1.850)	(1.846)	(1.986)
$I_{K,LGD,PD}$	−3.346*	−4.707**	−8.565***
	(1.844)	(1.841)	(1.982)
Log Likelihood	−22931.4	−22812.0	−20698.7
Chi-Squared	6.805	13.316	29.549
Pseudo R-squared	.0001	.0003	.0007
N	5384	5384	5384

Notes: Estimates are obtained from Tobit estimation. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A9: Average treatment effect including sociodemographic controls

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.422	−0.014	0.017
	(1.552)	(1.548)	(1.518)
$I_{K,LGD}$	−2.405	−2.160	−3.675**
	(1.547)	(1.535)	(1.499)
$I_{K,LGD,PD}$	−2.758*	−3.266**	−6.141***
	(1.537)	(1.525)	(1.475)
Female	2.531**	2.312**	3.134***
	(1.182)	(1.175)	(1.132)
Married	3.880***	5.089***	5.979***
	(1.306)	(1.304)	(1.260)
Age	−0.101*	−0.154***	−0.386***
	(0.055)	(0.055)	(0.052)
Household Size	−0.569	−0.942*	−0.398
	(0.498)	(0.490)	(0.483)
Number of children	0.365	0.483	0.979
	(0.656)	(0.655)	(0.646)
Education Low (ref.)			
Middle	−4.478	−5.680	−9.113**
	(3.919)	(4.078)	(4.511)
High	−0.270	−2.969	−8.774*
	(3.869)	(4.044)	(4.483)
Employed (ref.)			
Self Employed	3.412**	3.290*	2.201
	(1.724)	(1.714)	(1.625)
Unemployed	−0.999	0.326	3.779
	(2.469)	(2.383)	(2.324)
Student	4.315	2.317	1.997
	(2.729)	(2.672)	(2.605)
Personal Income Low (ref.)			
Middle	6.185***	6.794***	5.047***
	(1.409)	(1.402)	(1.327)
High	10.029***	13.040***	13.952***
	(2.058)	(2.059)	(2.018)
Household Income Low (ref.)			
Middle	3.744***	2.593*	2.121
	(1.367)	(1.370)	(1.312)
High	7.527***	6.013***	4.903**
	(2.222)	(2.229)	(2.188)
Control mean	57.5	51.3	37.1
adj. R-squared	0.034	0.038	0.056
N	4,149	4,149	4,149

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A10: Average treatment effect: Treatments ($I_{K,LGD}$ and $I_{K,LGD,PD}$) pooled

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
Salience	−0.296	0.061	−0.655
	(1.411)	(1.403)	(1.373)
Information	−2.817**	−3.388***	−5.450***
	(1.216)	(1.203)	(1.166)
Control mean	57.5	51.3	37.1
adj. R-squared	0.001	0.002	0.005
N	5,384	5,384	5,384

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A11: Average treatment effect including controls for relationship to potential borrower

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.504	−0.129	−0.132
	(1.488)	(1.487)	(1.474)
$I_{K,LGD}$	−2.457	−2.214	−3.734**
	(1.499)	(1.487)	(1.468)
$I_{K,LGD,PD}$	−2.999**	−3.582**	−6.458***
	(1.491)	(1.478)	(1.442)
Female	−0.463	−0.783	0.418
	(1.160)	(1.147)	(1.112)
Married	2.582**	3.910***	4.699***
	(1.296)	(1.292)	(1.254)
Age	0.023	−0.027	−0.274***
	(0.054)	(0.054)	(0.051)
Household Size	−0.636	−0.998**	−0.391
	(0.492)	(0.481)	(0.477)
Number of children	−0.172	−0.090	0.459
	(0.649)	(0.646)	(0.644)
Education Low (ref.)			
Middle	−3.074	−4.288	−7.979*
	(4.288)	(4.190)	(4.465)
High	1.609	−1.081	−7.142
	(4.245)	(4.161)	(4.442)
Employed (ref.)			
Self Employed	3.427**	3.236**	2.086
	(1.653)	(1.632)	(1.586)
Unemployed	−1.100	0.070	3.429
	(2.413)	(2.320)	(2.302)
Student	4.562*	2.383	2.085
	(2.634)	(2.590)	(2.506)
Personal Income Low (ref.)			
Middle	5.108***	5.733***	4.124***
	(1.359)	(1.347)	(1.282)
High	10.296***	13.349***	14.238***
	(1.994)	(1.977)	(1.944)
Household Income Low (ref.)			
Middle	3.554***	2.454*	2.045
	(1.311)	(1.309)	(1.265)
High	8.121***	6.556***	5.337**
	(2.143)	(2.132)	(2.104)
Stated Name: Partner (ref)			
Parent	4.917***	6.580***	3.795*
	(1.785)	(1.822)	(1.956)
Child	−2.023	−1.285	−1.216
	(2.566)	(2.612)	(2.594)
Sibling	−3.939**	−4.069**	−5.624***
	(1.993)	(2.029)	(2.081)
Relative	−8.780***	−8.203***	−7.867***
	(2.321)	(2.333)	(2.311)
Friend	−18.030***	−18.289***	−17.365***
	(1.535)	(1.535)	(1.547)
Other	−37.880***	−33.064***	−23.902***
	(4.262)	(4.334)	(3.826)
Control mean	57.5	51.3	37.1
adj. R-squared	0.102	0.109	0.112
N	4,148	4,148	4,148

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A12: Average treatment effect including controls for financial experience

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.388	0.024	0.061
	(1.544)	(1.538)	(1.501)
$I_{K,LGD}$	−2.515	−2.282	−3.794**
	(1.540)	(1.527)	(1.483)
$I_{K,LGD,PD}$	−2.857*	−3.386**	−6.300***
	(1.528)	(1.515)	(1.456)
Ever had Guarantor	5.989***	6.349***	5.021**
	(1.837)	(1.858)	(1.991)
Ever been Guarantor	9.389***	9.705***	10.476***
	(1.754)	(1.790)	(1.809)
Currently Guarantor	−3.996*	−1.597	8.316***
	(2.216)	(2.261)	(2.449)
Female	3.216***	3.108***	4.251***
	(1.180)	(1.171)	(1.120)
Married	3.153**	4.235***	4.754***
	(1.301)	(1.295)	(1.247)
Age	−0.075	−0.118**	−0.317***
	(0.056)	(0.055)	(0.052)
Household Size	−0.550	−0.921*	−0.369
	(0.492)	(0.482)	(0.474)
Number of children	−0.173	−0.133	0.150
	(0.656)	(0.654)	(0.644)
Education Low (ref.)			
Middle	−2.698	−3.651	−6.345
	(3.823)	(3.994)	(4.428)
High	1.270	−1.170	−6.152
	(3.770)	(3.959)	(4.400)
Employed (ref.)			
Self Employed	2.782	2.518	0.967
	(1.725)	(1.718)	(1.620)
Unemployed	−1.276	0.008	3.350
	(2.451)	(2.363)	(2.329)
Student	4.185	2.227	2.076
	(2.707)	(2.640)	(2.577)
Personal Income Low (ref.)			
Middle	5.552***	6.065***	4.043***
	(1.403)	(1.395)	(1.317)
High	8.283***	10.975***	10.955***
	(2.065)	(2.065)	(2.009)
Household Income Low (ref.)			
Middle	3.877***	2.739**	2.288*
	(1.358)	(1.360)	(1.300)
High	7.092***	5.503**	4.192*
	(2.202)	(2.203)	(2.145)
Control mean	57.5	51.3	37.1
adj. R-squared	0.046	0.052	0.083
N	4,149	4,149	4,149

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A13: Covariate balance: Social preferences

	Treatment group			
	\$ S\$	$I_{K,LGD}$	$I_{K,LGD,PD}$	\$ C\$
N	1,368 (25.4%)	1,339 (24.9%)	1,345 (25.0%)	1,332 (24.7%)
Altruism (std.)	-0.065 (0.975)	-0.051 (0.922)	-0.017 (0.979)	-0.073 (0.882)
Trust (std.)	-0.013 (1.024)	0.055 (0.992)	0.050 (1.016)	-0.022 (1.009)
Positive Reciprocity (std.)	0.011 (1.007)	0.053 (0.971)	0.039 (0.992)	0.006 (0.985)
Negative Reciprocity (std.)	0.031 (1.032)	0.085 (1.037)	0.023 (1.037)	0.008 (0.998)
Prosociality	-0.042 (1.131)	0.032 (1.128)	0.040 (1.156)	-0.053 (1.099)

Table A14: Correlation of social preferences

	Positive Reciprocity (std)	Negative Reciprocity (std)	Trust (std)	Altruism (std)
Positive Reciprocity (std)	1.000			
Negative Reciprocity (std)	-0.060	1.000		
Trust (std)	0.156	-0.004	1.000	
Altruism (std)	0.161	0.069	0.183	1.000

Table A15: Heterogeneous treatment effect: Prosociality

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.364	−0.006	−0.742
	(1.382)	(1.378)	(1.349)
$I_{K,LGD}$	−3.225**	−3.667***	−5.759***
	(1.400)	(1.387)	(1.332)
$I_{K,LGD,PD}$	−3.605***	−4.268***	−6.326***
	(1.373)	(1.362)	(1.311)
Prosociality (std)	6.267***	5.990***	6.829***
	(0.909)	(0.893)	(0.849)
S × Prosociality (std)	0.690	0.844	−0.074
	(1.238)	(1.221)	(1.190)
$I_{K,LGD}$ × Prosociality (std)	0.268	0.510	−1.439
	(1.241)	(1.219)	(1.194)
$I_{K,LGD,PD}$ × Prosociality (std)	0.904	0.930	−1.359
	(1.203)	(1.185)	(1.172)
Control mean	57.5	51.3	37.1
adj. R-squared	0.043	0.042	0.043
N	5,378	5,378	5,378

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

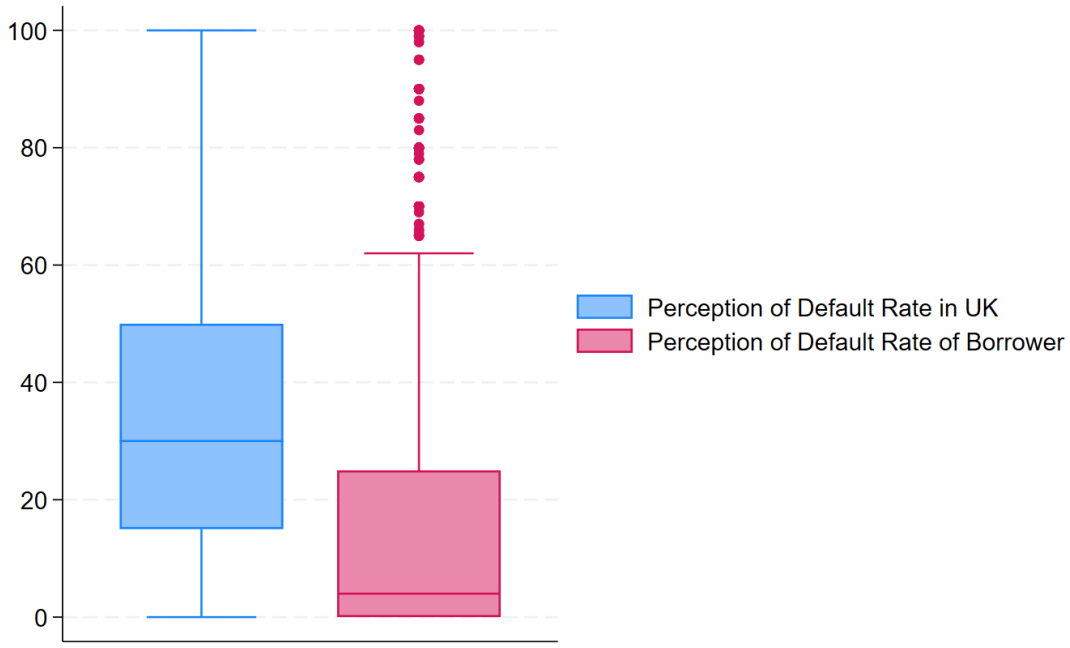

Figure A1: Expectations of default for UK and borrower

Table A16: Heterogeneous treatment effect: Perception gap (positive)

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
$I_{K,LGD}$	−2.048	−3.494**	−5.689***
	(1.738)	(1.746)	(1.696)
$I_{K,LGD,PD}$	−3.582**	−4.710***	−6.121***
	(1.710)	(1.714)	(1.654)
Positive Perception Gap	−17.079***	−16.261***	−7.803***
	(2.093)	(2.081)	(2.063)
$I_{K,LGD}$ × Positive Perception Gap	−0.550	1.499	4.095
	(2.961)	(2.932)	(2.846)
$I_{K,LGD,PD}$ × Positive Perception Gap	2.485	2.812	3.316
	(2.934)	(2.898)	(2.840)
Control mean	54.5	47.6	31.4
adj. R-squared	0.041	0.034	0.008
N	4,052	4,052	4,052

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A17: Expectation updating with sociodemographic controls

	Expectation Updating	
	Updating UK	Updating Borrower
	(1)	(2)
$I_{K,LGD}$	0.171	0.179
	(0.823)	(0.795)
$I_{K,LGD,PD}$	−2.149***	−1.037
	(0.802)	(0.753)
Perception Gap of Default Rate in UK	−0.250***	
	(0.027)	
$I_{K,LGD}$ × Perception Gap of Default Rate in UK	−0.009	
	(0.040)	
$I_{K,LGD,PD}$ × Perception Gap of Default Rate in UK	−0.403***	
	(0.043)	
Female	0.439	−1.155
	(0.583)	(0.748)
Married	−0.517	−0.449
	(0.608)	(0.813)
Age	−0.037	−0.023
	(0.024)	(0.034)
Household Size	0.234	0.342
	(0.252)	(0.358)
Number of children	0.388	0.379
	(0.298)	(0.459)
Education Low (ref.)		
Middle	2.126	−2.415
	(1.720)	(2.980)
High	1.567	−2.575
	(1.692)	(2.962)
Employed (ref.)		
Self Employed	−0.975	−0.365
	(0.854)	(1.034)
Unemployed	−0.259	1.548
	(1.294)	(1.672)
Student	−1.924	0.146
	(1.527)	(2.111)
Personal Income Low (ref.)		
Middle	0.478	−0.991
	(0.699)	(0.888)
High	0.409	0.586
	(0.945)	(1.261)
Household Income Low (ref.)		
Middle	−1.612***	−0.358
	(0.625)	(0.863)
High	0.478	0.793
	(1.109)	(1.509)
Perception Gap of Default Rate of Borrower		−0.362***
		(0.034)
$I_{K,LGD}$ × Perception Gap of Default Rate of Borrower		−0.059
		(0.051)
$I_{K,LGD,PD}$ × Perception Gap of Default Rate of Borrower		−0.063
		(0.050)
Control mean	0.4	1.0
adj. R-squared	0.338	0.228
N	3,127	3,127

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Appendix: Robustness analysis

Table A18: Robustness: Alternative outcomes with sociodemographic controls

	Willingness to grant an informal loan of			Willingness to grant rental payments
	£5,000	£10,000	£150,000	
	(1)	(2)	(3)	(4)
S	1.009	1.652	−0.421	−1.094
	(1.582)	(1.530)	(1.402)	(1.571)
$I_{K,LGD}$	0.928	1.275	−0.208	−1.608
	(1.571)	(1.532)	(1.420)	(1.561)
$I_{K,LGD,PD}$	1.420	0.639	−3.975***	−2.508
	(1.551)	(1.509)	(1.367)	(1.542)
Female	2.738**	1.215	−0.007	3.330***
	(1.189)	(1.168)	(1.062)	(1.191)
Married	4.329***	5.626***	5.610***	3.572***
	(1.327)	(1.304)	(1.186)	(1.320)
Age	−0.064	−0.144***	−0.516***	−0.303***
	(0.056)	(0.054)	(0.047)	(0.055)
Household Size	0.087	0.059	−0.270	−0.761
	(0.517)	(0.494)	(0.476)	(0.515)
Number of children	0.274	0.541	1.906***	1.282*
	(0.678)	(0.665)	(0.626)	(0.674)
Education Low (ref.)				
Middle	−12.663***	−13.746***	−17.286***	−8.509**
	(4.172)	(4.476)	(5.000)	(3.977)
High	−10.235**	−12.857***	−17.993***	−5.542
	(4.134)	(4.442)	(4.979)	(3.933)
Employed (ref.)				
Self Employed	5.915***	5.348***	3.962***	2.144
	(1.727)	(1.699)	(1.516)	(1.717)
Unemployed	1.766	2.024	5.950***	0.547
	(2.533)	(2.419)	(2.257)	(2.464)
Student	0.026	−0.374	−1.429	3.571
	(2.725)	(2.620)	(2.456)	(2.740)
Personal Income Low (ref.)				
Middle	7.253***	7.007***	5.406***	7.663***
	(1.424)	(1.374)	(1.208)	(1.424)
High	15.231***	16.526***	15.409***	11.746***
	(2.084)	(2.042)	(1.887)	(2.071)
Household Income Low (ref.)				
Middle	2.185	1.657	−1.801	2.972**
	(1.395)	(1.348)	(1.208)	(1.393)
High	8.748***	9.579***	5.348**	6.324***
	(2.249)	(2.233)	(2.120)	(2.252)
Control mean	48.6	39.8	24.8	51.7
adj. R-squared	0.047	0.058	0.076	0.041
N	4,149	4,149	4,149	4,149

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A19: Robustness: Including observations from wave 1 completed on smartphones

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.512	0.086	−1.036
	(1.104)	(1.107)	(1.107)
$I_{K,LGD}$	−4.276***	−4.030***	−5.645***
	(1.114)	(1.113)	(1.091)
$I_{K,LGD,PD}$	−4.676***	−5.281***	−6.997***
	(1.099)	(1.100)	(1.077)
Control mean	57.5	51.3	37.1
adj. R-squared	0.003	0.004	0.007
N	8,248	8,248	8,249

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
Regression including the observations which had possibly problems displaying the questions correctly

Table A20: Robustness: Including controls for device on which survey was completed

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.465	−0.054	−0.026
	(1.550)	(1.546)	(1.516)
$I_{K,LGD}$	−2.468	−2.211	−3.710**
	(1.547)	(1.536)	(1.497)
$I_{K,LGD,PD}$	−2.750*	−3.259**	−6.133***
	(1.534)	(1.523)	(1.472)
Female	3.036**	2.767**	3.583***
	(1.187)	(1.181)	(1.141)
Married	4.149***	5.339***	6.252***
	(1.307)	(1.305)	(1.263)
Age	−0.115**	−0.166***	−0.393***
	(0.056)	(0.055)	(0.052)
Household Size	−0.561	−0.935*	−0.391
	(0.496)	(0.489)	(0.483)
Number of children	0.421	0.529	1.009
	(0.655)	(0.654)	(0.648)
Education Low (ref.)			
Middle	−5.150	−6.286	−9.708**
	(4.009)	(4.113)	(4.550)
High	−1.147	−3.757	−9.541**
	(3.968)	(4.085)	(4.524)
Employed (ref.)			
Self Employed	3.212*	3.118*	2.058
	(1.725)	(1.717)	(1.628)
Unemployed	−1.032	0.303	3.775
	(2.470)	(2.385)	(2.327)
Student	3.945	1.989	1.691
	(2.724)	(2.665)	(2.602)
Personal Income Low (ref.)			
Middle	6.258***	6.855***	5.094***
	(1.406)	(1.399)	(1.323)
High	9.869***	12.886***	13.772***
	(2.057)	(2.059)	(2.015)
Household Income Low (ref.)			
Middle	3.485**	2.359*	1.888
	(1.369)	(1.372)	(1.316)
High	7.457***	5.949***	4.836**
	(2.226)	(2.233)	(2.187)
Device Mobile (ref.)			
PC	4.052***	3.615***	3.446***
	(1.377)	(1.366)	(1.317)
Tablet	−0.739	−1.354	−3.578
	(3.186)	(3.155)	(2.784)
Control mean	57.5	51.3	37.1
adj. R-squared	0.036	0.040	0.058
N	4,149	4,149	4,149

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A21: Robustness: Excluding fast and slow interviews: p1p99

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.450	−0.087	−0.686
	(1.431)	(1.422)	(1.390)
$I_{K,LGD}$	−2.651*	−3.028**	−5.028***
	(1.435)	(1.421)	(1.363)
$I_{K,LGD,PD}$	−2.941**	−3.581**	−5.641***
	(1.414)	(1.400)	(1.345)
Control mean	57.5	51.2	36.9
adj. R-squared	0.001	0.001	0.005
N	5,317	5,317	5,317

Notes: Estimates are obtained from OLS regressions with robust standard errors and exclude all observations, that were in the fastest and slowest percentile. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A22: Robustness: Excluding fast and slow interviews: p2p98

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.388	−0.040	−0.782
	(1.448)	(1.440)	(1.406)
$I_{K,LGD}$	−2.645*	−3.085**	−5.091***
	(1.450)	(1.434)	(1.375)
$I_{K,LGD,PD}$	−3.106**	−3.753***	−5.872***
	(1.429)	(1.415)	(1.357)
Control mean	57.5	51.2	36.8
adj. R-squared	0.001	0.002	0.005
N	5,228	5,228	5,228

Notes: Estimates are obtained from OLS regressions with robust standard errors and exclude all observations which were in the two fastest and slowest percentiles. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A23: Robustness: Including controls for duration

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.451	−0.039	−0.000
	(1.552)	(1.548)	(1.518)
$I_{K,LGD}$	−2.417	−2.170	−3.682**
	(1.546)	(1.535)	(1.498)
$I_{K,LGD,PD}$	−2.774*	−3.280**	−6.151***
	(1.536)	(1.525)	(1.475)
duration based on spent time	0.029	0.025	0.017
	(0.024)	(0.022)	(0.023)
Female	2.518**	2.301*	3.126***
	(1.181)	(1.175)	(1.132)
Married	3.879***	5.087***	5.978***
	(1.306)	(1.304)	(1.260)
Age	−0.101*	−0.154***	−0.385***
	(0.055)	(0.055)	(0.052)
Household Size	−0.585	−0.955*	−0.408
	(0.497)	(0.490)	(0.483)
Number of children	0.380	0.496	0.988
	(0.656)	(0.654)	(0.646)
Education Low (ref.)			
Middle	−3.989	−5.254	−8.820*
	(3.975)	(4.128)	(4.550)
High	0.203	−2.557	−8.490*
	(3.921)	(4.091)	(4.521)
Employed (ref.)			
Self Employed	3.371*	3.255*	2.177
	(1.722)	(1.715)	(1.624)
Unemployed	−1.027	0.302	3.762
	(2.472)	(2.386)	(2.327)
Student	4.350	2.348	2.018
	(2.734)	(2.676)	(2.607)
Personal Income Low (ref.)			
Middle	6.186***	6.794***	5.047***
	(1.408)	(1.402)	(1.327)
High	9.981***	12.998***	13.923***
	(2.057)	(2.058)	(2.018)
Household Income Low (ref.)			
Middle	3.689***	2.545*	2.089
	(1.367)	(1.371)	(1.314)
High	7.520***	6.007***	4.900**
	(2.223)	(2.230)	(2.187)
Control mean	57.5	51.3	37.1
adj. R-squared	0.034	0.038	0.056
N	4,149	4,149	4,149

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A24: Robustness: Including weights

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	0.255	0.572	−0.644
	(1.491)	(1.480)	(1.444)
$I_{K,LGD}$	−2.262	−2.816*	−5.465***
	(1.485)	(1.474)	(1.399)
$I_{K,LGD,PD}$	−2.596*	−3.215**	−5.560***
	(1.476)	(1.460)	(1.393)
Control mean	57.5	51.3	37.1
adj. R-squared	0.001	0.002	0.005
N	5,384	5,384	5,384

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A25: Robustness: Including financial literacy score as a control

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	0.012	0.250	0.159
	(1.563)	(1.565)	(1.524)
$I_{K,LGD}$	−2.683*	−2.299	−3.358**
	(1.563)	(1.556)	(1.502)
$I_{K,LGD,PD}$	−3.237**	−3.552**	−5.791***
	(1.549)	(1.545)	(1.477)
Financial Literacy Score	2.019***	0.690*	−3.070***
	(0.359)	(0.359)	(0.341)
Female	2.658**	2.237*	2.471**
	(1.192)	(1.190)	(1.141)
Married	4.444***	5.536***	5.562***
	(1.322)	(1.326)	(1.278)
Age	−0.181***	−0.181***	−0.270***
	(0.058)	(0.058)	(0.054)
Household Size	−0.550	−1.000*	−0.601
	(0.518)	(0.513)	(0.500)
Number of children	0.589	0.564	0.755
	(0.669)	(0.671)	(0.654)
Education Low (ref.)			
Middle	−4.303	−4.804	−6.342
	(3.884)	(4.077)	(4.408)
High	−1.316	−2.608	−4.434
	(3.840)	(4.053)	(4.393)
Employed (ref.)			
Self Employed	3.945**	3.595**	1.968
	(1.731)	(1.730)	(1.635)
Unemployed	−0.290	0.881	3.420
	(2.535)	(2.458)	(2.386)
Student	3.170	2.007	3.696
	(2.725)	(2.691)	(2.622)
Personal Income Low (ref.)			
Middle	5.693***	6.593***	5.400***
	(1.426)	(1.425)	(1.331)
High	10.203***	13.231***	13.747***
	(2.072)	(2.086)	(2.042)
Household Income Low (ref.)			
Middle	2.972**	2.211	3.136**
	(1.378)	(1.390)	(1.326)
High	7.637***	6.590***	6.574***
	(2.230)	(2.250)	(2.221)
Control mean	57.5	51.3	37.1
adj. R-squared	0.041	0.039	0.074
N	4,057	4,057	4,057

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A26: Guarantor literacy by treatment group

	Treatment group			
	S	$I_{K,LGD}$	$I_{K,LGD,PD}$	C
N	1,368 (25.4%)	1,339 (24.9%)	1,345 (25.0%)	1,332 (24.7%)
Legal obligation guarantee	0.511 (0.500)	0.578 (0.494)	0.566 (0.496)	0.500 (0.500)
Repayment guarantee	0.599 (0.490)	0.660 (0.474)	0.654 (0.476)	0.608 (0.488)

Table A27: Robustness: Including indicator of guarantee literacy as a control

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.075	0.143	0.177
	(1.560)	(1.558)	(1.521)
$I_{K,LGD}$	−2.953*	−2.415	−3.193**
	(1.554)	(1.546)	(1.497)
$I_{K,LGD,PD}$	−3.252**	−3.497**	−5.531***
	(1.546)	(1.538)	(1.475)
Legal obligation guarantee	0.801	−1.417	−5.926***
	(1.312)	(1.307)	(1.278)
Repayment guarantee	4.774***	2.879**	−3.999***
	(1.297)	(1.292)	(1.277)
Female	2.332**	2.156*	3.390***
	(1.187)	(1.184)	(1.133)
Married	4.267***	5.316***	5.618***
	(1.316)	(1.317)	(1.272)
Age	−0.150***	−0.167***	−0.306***
	(0.057)	(0.056)	(0.053)
Household Size	−0.511	−0.977*	−0.543
	(0.511)	(0.506)	(0.496)
Number of children	0.409	0.518	0.893
	(0.664)	(0.666)	(0.651)
Education Low (ref.)			
Middle	−3.490	−4.573	−7.351*
	(3.878)	(4.048)	(4.426)
High	0.028	−2.084	−6.120
	(3.827)	(4.015)	(4.402)
Employed (ref.)			
Self Employed	3.685**	3.401**	1.714
	(1.726)	(1.724)	(1.636)
Unemployed	−0.469	0.639	2.814
	(2.517)	(2.440)	(2.363)
Student	3.460	1.996	2.445
	(2.723)	(2.684)	(2.610)
Personal Income Low (ref.)			
Middle	5.854***	6.564***	4.896***
	(1.415)	(1.413)	(1.326)
High	10.284***	13.033***	13.174***
	(2.063)	(2.076)	(2.037)
Household Income Low (ref.)			
Middle	3.181**	2.437*	2.736**
	(1.371)	(1.380)	(1.320)
High	7.630***	6.408***	5.587**
	(2.219)	(2.238)	(2.214)
Control mean	57.5	51.3	37.1
adj. R-squared	0.038	0.039	0.070
N	4,101	4,101	4,101

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A28: Altruism (continuous)

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.644	−0.304	−0.579
	(1.753)	(1.735)	(1.665)
$I_{K,LGD}$	−4.895***	−5.727***	−7.051***
	(1.777)	(1.750)	(1.642)
$I_{K,LGD,PD}$	−4.932***	−5.799***	−6.485***
	(1.758)	(1.732)	(1.632)
Altruism	0.035**	0.039**	0.081***
	(0.016)	(0.016)	(0.016)
S × Altruism	0.007	0.007	−0.003
	(0.022)	(0.022)	(0.022)
$I_{K,LGD}$ × Altruism	0.048**	0.056***	0.038*
	(0.021)	(0.021)	(0.021)
$I_{K,LGD,PD}$ × Altruism	0.038*	0.042**	0.009
	(0.021)	(0.020)	(0.021)
Control mean	57.5	51.3	37.1
adj. R-squared	0.012	0.016	0.033
N	5,378	5,378	5,378

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A29: Positive reciprocity (continuous)

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−12.909**	−11.800*	−8.513
	(6.368)	(6.147)	(6.019)
$I_{K,LGD}$	−0.788	1.952	8.870
	(6.740)	(6.549)	(6.185)
$I_{K,LGD,PD}$	1.917	2.466	5.827
	(6.425)	(6.255)	(6.006)
Positive Reciprocity	4.411***	3.977***	2.619***
	(0.727)	(0.701)	(0.682)
S × Positive Reciprocity	2.014**	1.894*	1.255
	(1.010)	(0.985)	(0.978)
$I_{K,LGD}$ × Positive Reciprocity	−0.340	−0.843	−2.252**
	(1.066)	(1.043)	(0.993)
$I_{K,LGD,PD}$ × Positive Reciprocity	−0.812	−1.005	−1.860*
	(1.024)	(1.005)	(0.970)
Control mean	57.5	51.3	37.1
adj. R-squared	0.031	0.025	0.013
N	5,384	5,384	5,384

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A30: Trust (continuous)

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	3.316	2.654	3.812
	(3.664)	(3.598)	(3.386)
$I_{K,LGD}$	−0.719	−2.577	−0.968
	(3.798)	(3.682)	(3.419)
$I_{K,LGD,PD}$	−6.482*	−7.112*	−4.041
	(3.736)	(3.637)	(3.345)
Trust	2.230***	2.128***	2.611***
	(0.417)	(0.411)	(0.393)
$S \times$ Trust	−0.657	−0.474	−0.812
	(0.591)	(0.588)	(0.567)
$I_{K,LGD} \times$ Trust	−0.408	−0.160	−0.814
	(0.603)	(0.594)	(0.567)
$I_{K,LGD,PD} \times$ Trust	0.544	0.537	−0.376
	(0.591)	(0.584)	(0.556)
Control mean	57.5	51.3	37.1
adj. R-squared	0.020	0.021	0.026
N	5,384	5,384	5,384

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A31: Negative reciprocity (continuous)

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−1.132	−1.296	−2.153
	(2.957)	(2.937)	(2.903)
$I_{K,LGD}$	−4.742	−5.836*	−8.611***
	(3.016)	(3.003)	(2.856)
$I_{K,LGD,PD}$	−5.657*	−6.863**	−9.396***
	(2.935)	(2.908)	(2.833)
Negative Reciprocity	−0.294	0.087	0.944**
	(0.409)	(0.407)	(0.414)
$S \times$ Negative Reciprocity	0.198	0.314	0.336
	(0.583)	(0.580)	(0.586)
$I_{K,LGD} \times$ Negative Reciprocity	0.485	0.613	0.741
	(0.586)	(0.582)	(0.572)
$I_{K,LGD,PD} \times$ Negative Reciprocity	0.627	0.745	0.846
	(0.574)	(0.570)	(0.571)
Control mean	57.5	51.3	37.1
adj. R-squared	0.000	0.002	0.015
N	5,384	5,384	5,384

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A32: Heterogeneous treatment effect: Social preferences w/o altruism

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.434	−0.093	−0.858
	(1.375)	(1.371)	(1.345)
$I_{K,LGD}$	−3.277**	−3.788***	−5.861***
	(1.408)	(1.395)	(1.330)
$I_{K,LGD,PD}$	−3.545***	−4.213***	−6.225***
	(1.374)	(1.361)	(1.305)
Trust (std)	4.563***	4.390***	5.855***
	(1.013)	(0.995)	(0.955)
S × Trust (std)	−1.919	−1.436	−2.154
	(1.416)	(1.411)	(1.366)
$I_{K,LGD}$ × Trust (std)	−0.878	−0.121	−1.377
	(1.466)	(1.441)	(1.377)
$I_{K,LGD,PD}$ × Trust (std)	1.531	1.570	−0.481
	(1.442)	(1.421)	(1.351)
Positive Reciprocity (std)	5.272***	4.787***	2.860***
	(1.002)	(0.963)	(0.928)
S × Positive Reciprocity (std)	3.170**	2.925**	2.131
	(1.395)	(1.356)	(1.332)
$I_{K,LGD}$ × Positive Reciprocity (std)	−0.172	−0.952	−2.652*
	(1.475)	(1.436)	(1.353)
$I_{K,LGD,PD}$ × Positive Reciprocity (std)	−1.210	−1.459	−2.283*
	(1.408)	(1.380)	(1.325)
Negative Reciprocity (std)	−0.234	0.634	2.511***
	(0.950)	(0.948)	(0.955)
S × Negative Reciprocity (std)	0.535	0.817	0.892
	(1.348)	(1.346)	(1.360)
$I_{K,LGD}$ × Negative Reciprocity (std)	1.250	1.517	1.704
	(1.377)	(1.365)	(1.335)
$I_{K,LGD,PD}$ × Negative Reciprocity (std)	1.457	1.721	1.898
	(1.338)	(1.329)	(1.324)
Control mean	57.5	51.3	37.1
adj. R-squared	0.044	0.041	0.042
N	5,384	5,384	5,384

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A33: Heterogeneous treatment effect: Social preferences w/o positive reciprocity

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.328	−0.009	−0.819
	(1.399)	(1.390)	(1.349)
$I_{K,LGD}$	−2.868**	−3.415**	−5.765***
	(1.414)	(1.397)	(1.322)
$I_{K,LGD,PD}$	−3.457**	−4.152***	−6.396***
	(1.384)	(1.367)	(1.302)
Altruism (std)	1.409	1.707	4.320***
	(1.122)	(1.086)	(1.066)
S × Altruism (std)	0.978	0.864	0.274
	(1.511)	(1.473)	(1.454)
$I_{K,LGD}$ × Altruism (std)	3.492**	3.888***	2.850**
	(1.475)	(1.451)	(1.431)
$I_{K,LGD,PD}$ × Altruism (std)	2.084	2.296*	0.408
	(1.442)	(1.394)	(1.411)
Trust (std)	5.171***	4.877***	5.643***
	(1.028)	(1.012)	(0.965)
S × Trust (std)	−1.715	−1.247	−1.893
	(1.448)	(1.440)	(1.377)
$I_{K,LGD}$ × Trust (std)	−1.704	−1.139	−2.536*
	(1.485)	(1.461)	(1.382)
$I_{K,LGD,PD}$ × Trust (std)	0.732	0.660	−1.285
	(1.465)	(1.445)	(1.359)
Negative Reciprocity (std)	−0.758	0.140	2.079**
	(0.958)	(0.954)	(0.950)
S × Negative Reciprocity (std)	0.389	0.652	0.717
	(1.377)	(1.369)	(1.361)
$I_{K,LGD}$ × Negative Reciprocity (std)	1.040	1.329	1.609
	(1.378)	(1.363)	(1.319)
$I_{K,LGD,PD}$ × Negative Reciprocity (std)	1.374	1.622	1.889
	(1.341)	(1.331)	(1.315)
Control mean	57.5	51.3	37.1
adj. R-squared	0.026	0.030	0.055
N	5,378	5,378	5,378

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A34: Heterogeneous treatment effect: Social preferences w/o trust

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.375	−0.054	−0.836
	(1.380)	(1.373)	(1.347)
$I_{K,LGD}$	−2.834**	−3.269**	−5.391***
	(1.405)	(1.390)	(1.323)
$I_{K,LGD,PD}$	−3.177**	−3.870***	−6.086***
	(1.379)	(1.363)	(1.308)
Altruism (std)	1.510	1.837*	4.929***
	(1.126)	(1.083)	(1.072)
S × Altruism (std)	0.186	0.172	−0.468
	(1.472)	(1.436)	(1.444)
$I_{K,LGD}$ × Altruism (std)	3.065**	3.811***	3.089**
	(1.475)	(1.448)	(1.436)
$I_{K,LGD,PD}$ × Altruism (std)	2.884**	3.081**	0.799
	(1.438)	(1.387)	(1.412)
Positive Reciprocity (std)	5.845***	5.294***	3.235***
	(1.015)	(0.974)	(0.941)
S × Positive Reciprocity (std)	2.738*	2.554*	1.683
	(1.408)	(1.365)	(1.343)
$I_{K,LGD}$ × Positive Reciprocity (std)	−1.095	−1.937	−3.935***
	(1.497)	(1.458)	(1.366)
$I_{K,LGD,PD}$ × Positive Reciprocity (std)	−1.362	−1.628	−2.507*
	(1.423)	(1.390)	(1.328)
Negative Reciprocity (std)	−0.243	0.605	2.344**
	(0.966)	(0.964)	(0.972)
S × Negative Reciprocity (std)	0.383	0.642	0.703
	(1.370)	(1.368)	(1.376)
$I_{K,LGD}$ × Negative Reciprocity (std)	0.802	0.995	1.118
	(1.397)	(1.387)	(1.342)
$I_{K,LGD,PD}$ × Negative Reciprocity (std)	1.068	1.303	1.540
	(1.359)	(1.351)	(1.340)
Control mean	57.5	51.3	37.1
adj. R-squared	0.037	0.036	0.047
N	5,378	5,378	5,378

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A35: Heterogeneous treatment effect: Social preferences w/o negative reciprocity

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−0.395	−0.041	−0.787
	(1.369)	(1.364)	(1.340)
$I_{K,LGD}$	−2.992**	−3.358**	−5.317***
	(1.391)	(1.375)	(1.315)
$I_{K,LGD,PD}$	−3.455**	−4.113***	−6.264***
	(1.367)	(1.352)	(1.299)
Altruism (std)	0.707	1.126	4.139***
	(1.117)	(1.081)	(1.076)
S × Altruism (std)	0.679	0.629	0.154
	(1.460)	(1.434)	(1.455)
$I_{K,LGD}$ × Altruism (std)	3.357**	4.044***	3.644**
	(1.475)	(1.453)	(1.446)
$I_{K,LGD,PD}$ × Altruism (std)	2.519*	2.799**	0.992
	(1.436)	(1.393)	(1.441)
Positive Reciprocity (std)	5.233***	4.630***	2.245**
	(1.004)	(0.961)	(0.933)
S × Positive Reciprocity (std)	3.031**	2.788**	2.057
	(1.402)	(1.362)	(1.344)
$I_{K,LGD}$ × Positive Reciprocity (std)	−0.893	−1.845	−3.696***
	(1.491)	(1.452)	(1.364)
$I_{K,LGD,PD}$ × Positive Reciprocity (std)	−1.553	−1.838	−2.477*
	(1.410)	(1.377)	(1.326)
Trust (std)	4.461***	4.243***	5.321***
	(1.029)	(1.011)	(0.970)
S × Trust (std)	−1.997	−1.530	−2.159
	(1.433)	(1.432)	(1.384)
$I_{K,LGD}$ × Trust (std)	−1.491	−0.899	−2.266
	(1.489)	(1.466)	(1.393)
$I_{K,LGD,PD}$ × Trust (std)	0.931	0.857	−1.083
	(1.470)	(1.450)	(1.375)
Control mean	57.5	51.3	37.1
adj. R-squared	0.048	0.046	0.051
N	5,378	5,378	5,378

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A36: Heterogeneous treatment effect: Social preferences (dichotomous)

	Willingness to act as guarantor for a bank loan of		
	£5,000	£10,000	£150,000
	(1)	(2)	(3)
S	−2.254	−2.332	−2.855
	(2.892)	(2.806)	(2.638)
$I_{K,LGD}$	−2.969	−2.683	−5.771**
	(2.985)	(2.932)	(2.695)
$I_{K,LGD,PD}$	−5.309*	−6.184**	−6.807***
	(2.902)	(2.822)	(2.605)
altruism_high=1	7.258***	7.539***	7.250***
	(1.975)	(1.956)	(1.946)
S × altruism_high=1	−3.636	−4.356	−1.953
	(2.841)	(2.822)	(2.789)
$I_{K,LGD}$ × altruism_high=1	0.965	0.498	2.303
	(2.887)	(2.864)	(2.732)
$I_{K,LGD,PD}$ × altruism_high=1	−0.120	−0.204	1.338
	(2.847)	(2.814)	(2.704)
positive_reciprocity_high=1	3.480*	3.063	0.840
	(1.990)	(1.961)	(1.940)
S × positive_reciprocity_high=1	8.998***	9.054***	6.506**
	(2.850)	(2.827)	(2.780)
$I_{K,LGD}$ × positive_reciprocity_high=1	1.652	−0.068	−2.776
	(2.907)	(2.874)	(2.735)
$I_{K,LGD,PD}$ × positive_reciprocity_high=1	2.211	2.102	−0.590
	(2.841)	(2.802)	(2.690)
trust_high=1	9.461***	8.965***	9.867***
	(1.965)	(1.970)	(1.975)
S × trust_high=1	−3.223	−1.711	−2.763
	(2.823)	(2.837)	(2.819)
$I_{K,LGD}$ × trust_high=1	−6.054**	−5.831**	−4.363
	(2.865)	(2.869)	(2.772)
$I_{K,LGD,PD}$ × trust_high=1	−1.180	−0.827	−3.252
	(2.827)	(2.823)	(2.741)
negative_reciprocity_high=1	−1.772	−0.197	3.258*
	(1.947)	(1.924)	(1.887)
S × negative_reciprocity_high=1	0.762	1.045	1.763
	(2.783)	(2.765)	(2.707)
$I_{K,LGD}$ × negative_reciprocity_high=1	2.264	2.709	4.350
	(2.836)	(2.810)	(2.677)
$I_{K,LGD,PD}$ × negative_reciprocity_high=1	2.497	2.811	3.192
	(2.777)	(2.746)	(2.630)
Control mean	57.5	51.3	37.1
adj. R-squared	0.033	0.032	0.038
N	5,384	5,384	5,384

Notes: Estimates are obtained from OLS regressions with robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.