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Miguel Ampudia, Spyros Palligkinis

Trust and the household-bank relationship

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Household Finance and Consumption Network (HFCN)

This paper contains research conducted within the Household Finance and Consumption Network (HFCN). The HFCN consists of survey specialists, statisticians and economists from the ECB, the national central banks of the Eurosystem and a number of national statistical institutes.

The HFCN is chaired by Ioannis Ganoulis (ECB) and Oreste Tristani (ECB). Michael Haliassos (Goethe University Frankfurt), Tullio Jappelli (University of Naples Federico II) and Arthur Kennickell act as external consultants, and Juha Honkkila (ECB) and Jiri Slacalek (ECB) as Secretaries.

The HFCN collects household-level data on households' finances and consumption in the euro area through a harmonised survey. The HFCN aims at studying in depth the micro-level structural information on euro area households' assets and liabilities. The objectives of the network are:

1) understanding economic behaviour of individual households, developments in aggregate variables and the interactions between the two;
2) evaluating the impact of shocks, policies and institutional changes on household portfolios and other variables;
3) understanding the implications of heterogeneity for aggregate variables;
4) estimating choices of different households and their reaction to economic shocks;
5) building and calibrating realistic economic models incorporating heterogeneous agents;
6) gaining insights into issues such as monetary policy transmission and financial stability.

The refereeing process of this paper has been co-ordinated by a team composed of Pirmin Fessler (Oesterreichische Nationalbank), Michael Haliassos (Goethe University Frankfurt), Tullio Jappelli (University of Naples Federico II), Sébastien Pérez-Duarte (ECB), Jiri Slacalek (ECB), Federica Teppa (De Nederlandsche Bank) and Philip Vermeulen (ECB).

Abstract

We examine the role of trust in households' decisions to hold a bank account and to switch to a new bank. We explore Italian household-level data that contain restricted information on the banks that the households are doing business with, as well as measures of trust in the households' main bank and the banking sector. We find that households who distrust the banking sector are less likely to hold a bank account. Moreover, account holders are more likely to switch to a new main bank if they do not trust their current one. The estimated relationships persist over and above a range of socioeconomic variables.

JEL-codes: G21, G28, D14

Keywords: household finance, banking, trust.

Non-technical summary

We examine the role of trust in households' decisions to hold a bank account and to switch to a new bank. In a bank-based economy, nearly all households' financial decisions pass through a credit institution and, as a result, the effects of mistrust towards banks can potentially have important implications for household welfare and the functioning of the banking sector. We focus on two outcomes: first, the propensity of a household to remain unbanked and its relationship to trust in the banking sector, and second, the probability of a household that holds an account with a bank to switch to a new bank, as related to household's trust to its existing bank.

Using the Italian Survey on Household Income and Wealth (SHIW), we find that trust plays an important role both on the decision to enter in a contractual relationship with a bank and on the decision to switch from one financial institution to another. Households who report that they trust the banks by one point more in a 1-to-10 scale are 1.2% less likely to abstain from holding a bank account. When looking at "banked" households, an increase of trust in the main bank by 1 point in the 1-to-10 scale is associated with a decrease in the probability of bank switching that ranges from 1.9% to 2.3% (depending on the specification used). These effects are estimated over and above a wide set of household sociodemographic and economic characteristics that the survey allows us to control for. Also, these results are robust to an alternative definition of bank switching.

Although our results are plausible, they are far from trivial. Ampudia and Ehrmann (2017) find that remaining unbanked has detrimental effects for household welfare, and thus it is not a priori clear whether lack of trust in the banking sector is enough for a household to decide staying unbanked. It is therefore necessary to test it empirically. Similarly, not trusting the main bank might not automatically trigger a switch of banks. Kiser (2002) studies the switching behaviour of US households and finds that important switching and search costs may prevent households from switching, with 34.4% of the surveyed households declaring that they stay with their bank because it is too much trouble to switch. Moreover, deposit insurance, which in Italy is set at 100 thousand euro, could alleviate household concerns and make lack of trust inconsequential.

It is also important to bear in mind that the decisions of holding a bank account and of choosing a particular bank to operate with are not only relevant for the household, but of course they are also critical for the banks. Deposits from households constitute the main source of financing for euro area banks and in an environment of high competition, client attraction and retention they are of key importance for the success of banks' business.

1. Introduction

Trust plays a pivotal role in the economic decisions of households. In the words of Arrow (1972): "It can be plausibly argued that much of the economic backwardness in the world can be explained by the lack of mutual confidence". This mutual confidence, or trust, is crucial for informally conducted financial transactions among households, but also for their contract-based interactions with financial institutions and markets, given that the degree to which a contract can be enforced by law varies across markets, countries and agents.

Trust has been shown to be important for a wide range of economic outcomes. Guiso et al. (2004) show that in areas where social trust is high people are more likely to use checks, to have higher access to institutional credit and make less use of informal credit. Guiso et al. (2008) show that less trusting individuals are more reluctant to participate in the stock market, and that if they do participate they hold a smaller fraction of their financial wealth in stocks. Moreover, investors are more reactive to corporate announcements if their level of trust is high (Pevzner et al., 2013). El-Attar and Poschke (2011) relate trust to the choice between financial and real assets: households with less trust invest more in housing and less in financial assets, especially risky ones. This could potentially indicate that trust may drive not only limited stock market participation but also financial development more generally. In addition, it has been shown that higher levels of trust are related to lower probabilities of default and higher net worth (Jiang and Lim, 2016) and, at a broader level, trust has an impact on a country's stock market development (Ng et al., 2016) and on reducing macroeconomic volatility (Sagnier, 2013).

To our knowledge, this is the first paper to study the connection between trust and the type of relationship that households have with financial institutions. In a bank-based economy, nearly all household's financial decisions pass through a credit institution and, as a result, the effects of mistrust towards banks can potentially have important implications for household welfare and the functioning of the banking sector. We focus on two outcomes: first, the propensity of a household to remain unbanked and its relationship to trust in the banking sector, and second, the probability of a household that holds an account with a bank to switch to a new bank, as related to household's trust to its existing bank. Regarding unbanked households, Ampudia and Ehrmann (2017) report that financial inclusion, although usually thought of as a developing countries problem, is still an issue for the euro area and the US, where non-negligible pockets of households operate outside the formal financial sector. Regarding bank switching, Brunetti et al. (2016) study the behaviour of Italian households and find that households change banks often (a turnaround of a quarter of the total relationships every two years)

and that bank switching is strongly and positively correlated with both taking out and having paid off a mortgage.

Given the role trust has been showed to play in households' financial decisions it is only natural to ask ourselves how it affects their relationship to banks. In the context of the household-bank relationship, the trust a household places in its bank can be understood in two different ways. First, trust can refer to the subjective probability the household assigns to the bank behaving in an honest way, abstaining from hidden charges and ambiguous terms that the households perceive as cheating. Second, trust can be related to the financial health of the institution, with households trusting that the bank will not default and that their savings are not at risk.

We use the Italian Survey on Household Income and Wealth (SHIW), which collects information on wealth, income and consumption for a representative sample of the Italian population. Unique to this survey is the collection of the names of the banks the household has relationships with[4], as well as measures of households' trust in their main bank and the banking sector in general. We exploit this information in order to study the association of trust with our two outcomes of the household-bank relationship. We find that trust plays an important role both in the decision to enter in a contractual relationship with a bank and in the decision to switch from one financial institution to another. Households who report that they trust the banks by one point more in a 1-to-10 scale are 1.2% less likely to abstain from holding a bank account. When looking at "banked" households, an increase of trust in the main bank by 1 point in the 1-to-10 scale is associated with a decrease in the probability of bank switching that ranges from 1.9% to 2.3% (depending on the specification used). These effects are estimated over and above a wide set of household sociodemographic and economic characteristics that the survey allows us to control for. Also, these results are robust to an alternative definition of bank switching.

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[4] This specific information is unavailable to the general public for research purposes. It was provided on a strictly confidential and experimental basis for this specific research project carried out within the ECB Household Finance and Consumption Network.

Moreover, deposit insurance, which in Italy is set at 100 thousand euro, could alleviate household concerns and make lack of trust inconsequential.[5]

On a final note, it is clear that the decisions of holding a bank account and of choosing a particular bank to operate with are not only relevant for the household, but of course they are critical for the banks too. Deposits from households constitute the main source of financing for euro area banks and in an environment of high competition, client attraction and retention are crucial for the success of banks' business.

2. Data and Methodology

The Banca d'Italia's Survey of Household Income and Wealth (SHIW) collects information on assets, liabilities, income, consumption and sociodemographic characteristics for a representative sample of the Italian population. The survey is conducted since the 1960s, generally with a frequency of 2 years in between waves.[6] Apart from common variables collected in each wave of the survey (referring to the broad categories outlined above), most waves contain one-off specific modules which collect information on very diverse topics related to household finance, such as expectations on future events, attitudes towards institutions, risk aversion, etc. The 2010 wave contains a specific module in which the household is asked about the degree of trust towards different persons/institutions. This paper uses data from the SHIW 2010 and 2012 waves.

In the survey, households are asked whether they hold an account (current or savings) with a bank or the post office.[7] Table 1 shows descriptive statistics for the number of unbanked households, along with a set of characteristics for the households in our sample. More than 8% of Italian households were unbanked at the time of the survey. This number is high compared to the euro area numbers (3.5% of unbanked households) and more in line with what we see in the US (7% of unbanked households in 2010).

-Insert Table 1 here-

In both waves, the household is also asked to name all the banks with which it does any business, and to specify which one is considered as its "main bank". The analysis in this paper draws on data unavailable to the general public for research purposes, which were provided on a strictly confidential and

[5] Still, Bartiloro (2011) studies the 2008 wave of SHIW and finds that the majority of Italian households are not aware of deposit insurance, while Brown et al. (2013) find that deposit insurance does not affect the switching behaviour of Swiss households.

[6] See Banca d'Italia (2015) for more information. Since 2010 the survey is also part of the broader Eurosystem Household Finance and Consumption Survey, see Household Finance and Consumption Network (2013a, b).

[7] In this study we treat the post office as a bank, given that post office accounts are very popular in Italy.

experimental basis for this specific research project carried out within the ECB Household Finance and Consumption Network; these data cannot be used for any purposes other than this research project. Since banks are identified by their name, we can track the changes in the household-bank relationships between the two waves as well as complement the bank information with balance sheet data. Using this information, we construct a "switch" variable as follows. We consider a household switches bank if the main bank declared in 2010 is no longer used in 2012 and exclude cases where the household appears to switch because the 2010 main bank has been acquired by the 2012 one. In Table 1 we find that around 21% of households switch their main bank between the years 2010 and 2012. This number is in line to those reported by Brunetti et. al (2016), who also use SHIW for the 2006-2012 period.

Finally, our definition of switching is rather restrictive. Later in the paper, we run a robustness check applying a more lenient definition, where we consider as switching cases in which the main bank declared in 2012 is simply different from the main bank declared in 2010 (under this alternative definition a household who switches bank can still be using the services of his former main bank, but this one is not the main bank anymore).

2.1. Measuring trust

We take advantage of a specific module which was added to the 2010 SHIW in order to measure the level of households' trust in their banks. The specific question households were asked is the following: "*Do you trust your main bank, i.e. [bank name]? Please assign a score of 1 to 10, where 1 means "I don't trust it at all" and 10 means "I trust it completely" and the intermediate scores serve to graduate your response".* In addition, the household is also asked about trust in the banking sector: "*Could you please indicate your degree of trust in the banks?"*, and generalised trust: "*Generally speaking, would you say that you can trust most people or that you can never be too careful in dealing with people?"*. [8]

-Insert Figure 1 here-

Figure 1 shows the distribution of the measures of trust in banks and trust in the main bank. In general, households' level of trust towards their main bank is quite high[9]. The mean is 7.46, the mode is 8 and less than 5% of households respond with a value lower than 5. In comparison, trust in the banking sector is much lower, having a mean of 5.76 with a mode of 6, as households tend to trust their main

[8] The specific phrasing of the question and the answer point scale have been already tested and used in other surveys such as the World Values Survey (Guiso et al, 2008). See also Sapienza et al. (2013) for a deeper discussion on how this question measures trust.

[9] Note that trust in banks, as noted by Knell and Stix (2015), varies with economic conditions. These authors show that trust in the banking sector declined substantially during the recent financial crisis.

bank (which is also their choice) more than the banking sector as a whole. The degree of correlation between trust in the main bank and trust in the banking sector is rather low (0.38).

To put these values into perspective, Figure 2 compares the distributions of the two variables to that of generalised trust. Mean generalised trust is 5.81 and the mode is 7, which means that it is slightly higher than trust in the banking sector, while the two measures have very low correlation. Moreover, both distributions, as opposed to the one of trust in the main bank, display some sort of fat left tail: 10% of households declare not to trust at all other people. Also, generalised trust displays substantially lower levels than trust in the main bank and it is worth mentioning that the degree of correlation between the trust in the main bank and trust in general is practically 0.

-Insert Figure 2 here-

We next investigate what determines trust. To this end, we regress the two trust measures related to banks on a series of household characteristics and on variables containing the type of relationship established between the household and the bank. Being self-employed is correlated with a lower trust in households' main bank, which might be explained by the more complex relationship these households need to establish with their banks, and which may involve cases when the bank rejects some of the households' requests. It seems that households in the lowest income quintile exhibit lower trust, but the effect is only significant for the comparison with the 3rd income quintile. This is also the case for the poorest households in terms of financial wealth. No other of the household characteristics included in our regression matters. Regarding the type of the relationship established, households who trade securities, make mortgage payments, or pay their utility bills through the bank trust their bank more. This is also the case for those households who declare that they use their bank for "other services". Maybe more surprising is that the length of the relationship between the household and the bank is not correlated with trust. We are better able to explain trust in the banking sector (the R-squared is substantially higher, 0.263 compared to 0.110 of the first regression), for which the measures of income, real wealth and financial wealth play significant role. Even more interesting is the fact that the risk aversion coefficient is negative and highly significant. More risk-averse households trust less the banking sector in general, but the effect was not significant for trust in their main bank. It seems that these risk-averse households perform an active search to find a bank of their trust.

In addition, the specification includes a dummy variable that captures financial literacy. The variable takes a value of 1 for households that give correct answers in 3 questions that measure knowledge regarding the types of mortgage contracts, inflation and portfolio diversification.[10] If a household gives

[10] See the Appendix for the questions that were used.

at least one wrong answer, the financial literacy dummy takes a value of 0. In Table 1 we report that 31.5% of the households in our sample answer all the questions correctly. Also, we include a dummy variable on whether the household was a discouraged borrower, i.e. on whether in the year of the interview it did not apply for debt because of fear of being rejected. We find that financial literacy is not related to either trust measure. Discouraged borrowers, however, are more likely to distrust their main bank than the average household.

-Insert Table 2 here-

The trust households have in their bank is also influenced by characteristics of the bank. In order to study these effects we add bank characteristics to the regressions we have shown in Table 2. We add one bank characteristic at a time due to the limited number of banks in the sample. Table 3 shows the coefficient attached to the bank characteristic in each regression. From these results we can see that households place a higher trust on banks which are profitable (measured by their Return On Assets), which have lower NPL ratios and which rely more on deposits for their funding. The promotion efforts made by the bank, proxied by the marketing expense ratio (marketing expenses over total assets), do not show a significant coefficient. Also, trust does not seem to be related to the corporate structure of the bank, as our results on dummies for commercial, cooperative and savings banks are all insignificant. Finally, households trust less listed banks (significant at the 5% level), a result which might result counterintuitive, especially since size does not seem to play a role.

-Insert Table 3 here-

Our discussion so far has focused on trust measures and their relationship with the characteristics of households and their relationship to their main bank. The remainder of the paper discusses the association of trust with the decision to hold a bank account and, for bank account holders, to switch to a new bank.

3. Results

3.1. Trust in banks and propensity to hold a bank account

We examine the relationship between households' trust in banks in 2010 and the propensity to hold a bank account in the same year, by estimating the following probit regression:

$$\Pr(Has\ account_i = 1) = \Phi(a + \beta\ BanksTrust_i + \gamma X_i + u_i\ )$$

Vector X_i includes household-level characteristics, namely, household income, real and financial wealth, variables that capture household composition (household size and occurrence of a couple), as well as

occupational status, age, education and risk aversion of the household head. Regional dummies are also included. The regression is cross-sectional and all variables are measured in 2010. We use robust standard errors and apply survey weights. The choice of control variables is motivated by the stark differences we find between banked and unbanked households along these characteristics. In particular, the two groups of households differ greatly on their income, wealth, work status, education and financial literacy (see Table 4). Overall, the picture presented here, i.e. that unbanked households are poorer and less educated, is consistent with previous existing evidence[11].

-Insert Table 4 here-

Table 5, column 1, presents the marginal effects of the probit regression. We find that households who report that they trust the banks by one point more (in the 1 to 10 scale explained above) are 1.2% less likely to abstain from holding a bank account, a percentage that corresponds to 14.2% of the unconditional probability (8.4%). The economic significance of this magnitude is large, especially taking into account how costly being unbanked can be (see Ampudia and Ehrmann, 2017). Also, the effects of the control variables are reasonable and tell us how bank and unbanked households differ: households with higher income and financial wealth are more likely to hold a bank account, and the same holds for the retired, who presumably need the account to receive their pension. The highest category of financial wealth is actually omitted from the regression, since it perfectly predicts occurrence of a bank account. Living in a couple reduces the likelihood of being unbanked, while it doesn't seem that age plays a role. Education also matters, more educated households are less likely to be unbanked. In Table 5, column 2, the specification also includes the financial literacy and the discouraged borrower dummy, while column 3 adds generalised trust. All three variables have insignificant estimates and our results on trust remain practically unchanged.

-Insert Table 5 here-

We further explore to what extent the relationship between the propensity to be unbanked and trust in banks is different for areas with different prevalence of unbanked households. We break the sample into three groups, labelled as *low*, *medium*, and *high unbanked regions*, which are chosen so that their sample sizes are comparable (936, 879 and 1062 observations, respectively). In practice, the low regions have less than 4% of unbanked households, while medium regions have 4-10% and high regions have higher than 10%, respectively. In Table 6 we extend the probit regression of Table 5, column 2, by adding two interaction terms between the trust in banks on the one hand and the low and medium unbanked

[11] See Rhine and Greene (2013) and Ampudia and Ehrmann (2017).

regions on the other. We find that the relationship exists for all three subgroups, but is stronger for regions with lower fraction of unbanked households, both in an economic and in a statistical sense.

-Insert Table 6 here-

Interestingly, the pattern we observe is the opposite from the one that Georgarakos and Pasini (2011) report for stock market participation among older households in the euro area. In their paper, the authors find that (regional) trust matters more for countries with low levels of participation in the stock market. This difference may point to separate roles that the two financial instruments are fulfilling: bank accounts are less useful in regions where less people use them, potentially making trust considerations a rather second-order effect. In regions where holding an account is the norm, trust in the banking sector becomes operational. For stock market participation, however, trust may be particularly important in environments of low participation where informal sources of information are rather scarce. It contributes to alleviating information barriers and decreasing the subjective perception of being cheated (Guiso et al, 2008).

Additionally, we also explore the possibility that the effect of trust varies depending on the education level of the household. The more educated and more literate might have a better understanding of the risks they face when establishing a particular relationship with a bank. Table 7 shows that the effect of trust is particularly important for low educated people. It seems that more educated people are able to make a more objective assessment of the costs and benefits of making use of the banking system, and put this in front of their own higher or lower trust they have in the banking system.

-Insert Table 7 here-

3.2. Trust in main bank and probability of switching

For households that already hold a bank account, the probability of switching to a new bank depends on their trust in their current main bank, but also on their trust in the banking sector as a whole. A household that does not trust its bank so much but trusts the banking sector even less does not have an incentive to switch to a new bank. In conrast, a household that really trusts its main bank may have the incentive to switch if it trusts other banks even more. In order to capture this effect, we include both variables in our regressions and study their relationship to the probability of switching banks.

Our unit of observation is household i, whose main bank in 2010 is bank b. We examine the relationship between, on the one hand, households' trust in bank b and trust in banks in general in 2010

and, on the other hand, bank switching between the 2010 and the 2012 wave of SHIW. To this end, we estimate probit regressions, for which the most general specification is the following:

$$\Pr(Switch_{i,b,12} = 1) = \Phi(a + \beta_1 MainBankTrust_{i,b,10} + \beta_2 BanksTrust_{i,10} + \gamma X_{i,10} + \delta Z_{i,b,10} + \zeta B_{b,10} + u_{i,b})$$

As above, vector $X_{i,10}$ includes household-level characteristics. Variables $Z_{i,b,10}$ are household-bank relationship dummies, capturing e.g. whether the household uses the bank to pay its utility bills or its rent. Finally, bank-level fixed effects $B_{b,10}$ capture the average propensity of households to switch away from bank b. The regressions are cross-sectional and all variables are measured in 2010. We cluster standard errors at the bank level and apply survey weights.

Table 8 presents the marginal effects from the estimations of three specifications that are nested in the equation above. In column 1, we control for household characteristics $X_{i,10}$ only, whereas in column 2 we also include bank fixed effects $B_{b,10}$. Finally, column 3 includes the relationship dummies $Z_{i,b,0}$ as well. Depending on the specification, an increase of main bank trust by 1 point in the 1-to-10 scale is associated with a decrease in the probability of bank switching that ranges from 1.9% to 2.3%, roughly corresponding to 10% of the unconditional probability of switching for the period 2010-2012. The relationship between switching and trust in the banking sector is positive but it is not significant in any specification.

-Insert Table 8 here-

We find that households of the highest income quintile are somewhat less likely to switch banks. Also, more risk averse households are less likely to switch, since they are put off by the inevitable uncertainty that such a change entails. Household wealth and characteristics, as well as demographics do not appear to be very important at the cross-section. Turning to the relationship variables of column 3, we find that the duration of current relationship is negatively associated with the probability to switch, and the same is true for banks from which the household has obtained consumer credit. Finally, having a portfolio management account in 2010 is positively related to switching to a new bank in 2012 in a way that is economically quite important. This result contradicts the findings of Brunetti et al. (2016), who use a SHIW panel from 2002 to 2012 and report a negative relationship. A source of this effect maybe the timing of our survey, given that between 2010 and 2012, the FTSE MIB Index lost approximately 20% of its value. Finally, regional differences and bank-specific effects are substantial and it is therefore

important to stress that the association we find exists over and above all those aforementioned variables.

3.3. Switching: robustness checks

In this section we explore the robustness of our baseline results on switching. First, we address the concern that the trust measures, and in particular trust in the main bank, may be a proxy for financial literacy or for the perceived financial constraints of households. We add our financial literacy variable to the regressions, as well as the dummy that captures discouraged borrowers. In Table 9, panel A, we find that our baseline results are not affected by including these variables. InTable 9, panel B, we employ a different definition of bank switching, where households change main bank, but do not necessarily quit the old main bank completely. This definition is in line with Brunetti et al. (2016) and makes our regressions more comparable to theirs. We find that the estimated marginal effects are somewhat weaker than the ones we report in our baseline, but the difference is not statistically significant. Finally, in Table 9, panel C, we control for the bank fixed effects of the bank that the household will have in 2012. The estimates decrease in size, but the results are qualitatively similar.

-Insert Table 9 here-

4. Conclusions

Trust is a necessary condition for economic transactions and relationships and existing research has manifested its importance in areas such as stock market participation, investment in real assets and borrowing. This paper shows that trust matters for households' decision to hold a bank account, as well as for their choice of the bank they are doing business with. Lower trust in the banking sector in general is related to a lower probability of having a bank account, which results in higher levels of financial exclusion. Lower trust in the main bank a household operates with is related to a higher probability of switching banks. This result holds after controlling for a wide set of observable household and bank relationship characteristics.

On top of this, we also unveil some other interesting factors which play a role in the household-bank relationship. For example, self-employed households are more prone to be unbanked compare with similar employed households. Also, more risk-averse households trust less the banking sector in general but they do not show differences with respect to other households in the trust to their main bank. This

result suggests that these kind of households perform a more intense search in order to find a bank of their trust.

To the extent that the results presented in this paper reflect causal relationships, they imply that lack of trust can have adverse effects on financial inclusion and may make households who hold bank accounts more likely to pay the important costs that are related to bank switching. Moreover, they have implications for banks competition, but also for financial stability. Building a trusting relationship with their clients, banks are rewarded by stable funding. Also, from a sectoral perspective, low trust can have implications in case of stress, potentially leading to bank runs. Although the period we examine contains no such run, the results can still be interpreted as a lower bound of potential withdrawals. It is therefore beneficial for the economy as a whole that banks individually foster their clients' trust, but also that public policies geared towards this goal are effectively communicated.

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Appendix: Financial Literacy variables

Understanding of mortgage types

Q: Which of the following types of mortgage do you think would allow you from the very start to fix the maximum amount and number of instalments to be paid before the debt is extinguished?

1. Floating-rate mortgage
2. Fixed-rate mortgage
3. Floating-rate mortgage with fixed instalments
4. Don't know
5. No answer

Understanding of inflation

Q: Imagine leaving 1,000 euros in a current account that pays 1% interest and has no charges. Imagine that inflation is running at 2%. Do you think that if you withdraw the money in a year's time you will be able to buy the same amount of goods as if you spent the 1,000 euros today?

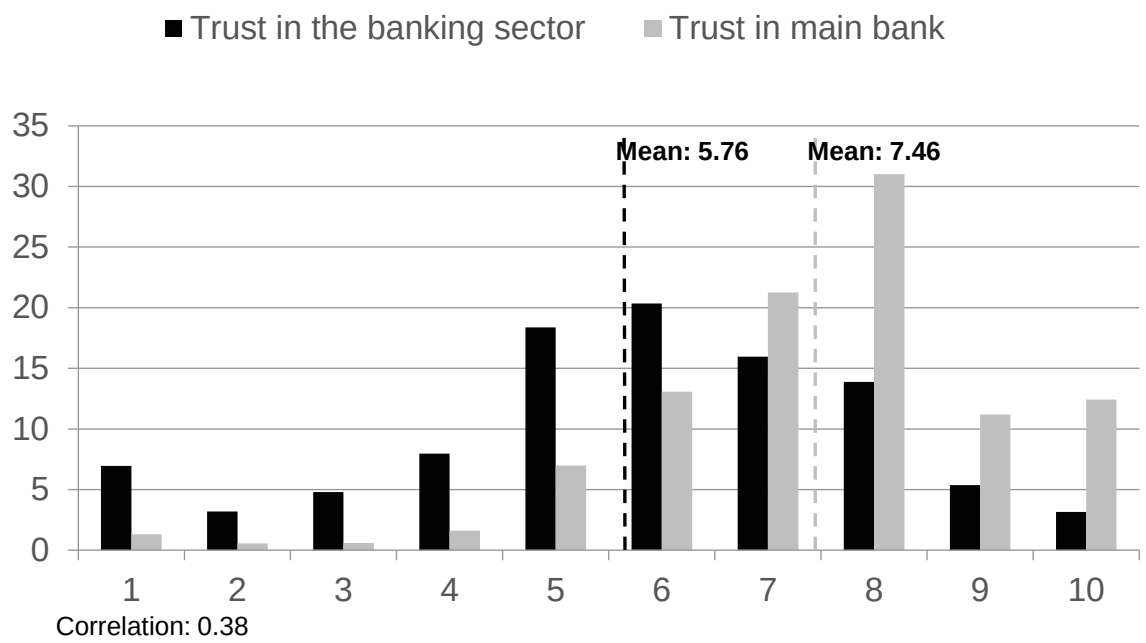
1. Yes
2. No, I will be able to buy less
3. No, I will be able to buy more
4. Don't know
5. No answer

Understanding of diversification

Q: Which of the following investment strategies do you think entails the greatest risk of losing your capital?

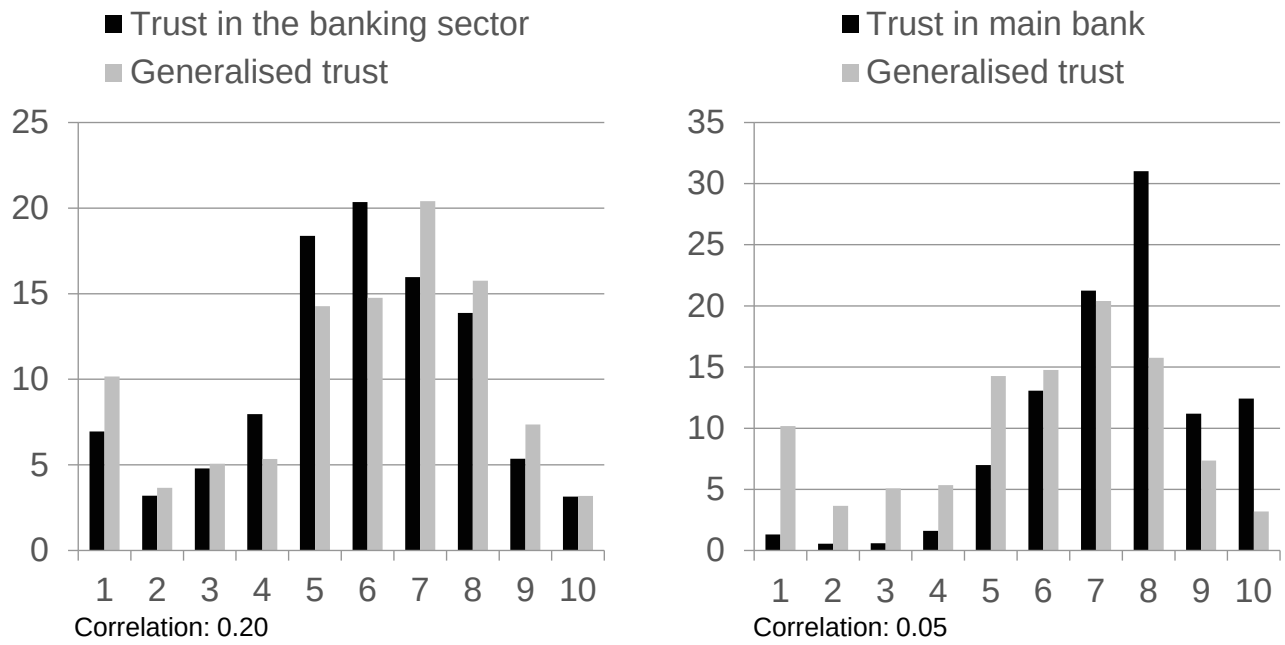
1. Investing in the shares of a single company
2. Investing in the shares of more than one company
3. Don't know
4. No answer

Figure 1: Trust in main bank and trust in the banking sector



Notes: The figure shows the distribution of answers to the questions phrased in section 2.1 of the paper. A value of 10 corresponds to the highest value of trust and a value of 1 corresponds to the lowest value of trust. Source: SHIW

Figure 2: Comparison to generalised trust



Notes: The figure shows the distribution of answers to the questions phrased in section 2.1 of the paper. A value of 10 corresponds to the highest value of trust and a value of 1 corresponds to the lowest value of trust. Source: SHIW

Table 1: Descriptive statistics (full sample)

	Mean	Std.Dev.	Min	Max
Unbanked	0.084	0.278	0	1
Switch	0.206	0.405	0	1
Income (euros)	33154	23706	-1000	587784
Real wealth (euros)	246691	496606	-52000	2.6*10^7
Financial wealth (euros)	28062	104755	-150000	4830000
Employee	0.395	0.489	0	1
Self employed	0.107	0.309	0	1
Retired	0.386	0.487	0	1
Married	0.622	0.485	0	1
Household size	2.53	1.28	1	12
Age	56.11	16.25	18	99
Education: lower secondary school	0.277	0.448	0	1
Education: vocational school	0.087	0.282	0	1
Education: upper secondary school	0.281	0.499	0	1
Education: college	0.124	0.330	0	1
Risk aversion	3.435	0.734	1	4
Financial Literacy	0.315	0.465	0	1
Knowledge of mortgage types	0.586	0.493	0	1
Knowledge of inflation	0.696	0.460	0	1
Knowledge of diversification	0.519	0.500	0	1
Discouraged borrower	0.039	0.194	0	1

Source: Survey on Household Income and Wealth (SHIW).

Table 2: Determinants of trust in main bank and the banking sector

	Trust in main bank			Trust in banking sector		
Income: 80th-60th	0.055		(0.057)	0.178	**	(0.089)
Income: 60th-40th	0.222	***	(0.088)	0.230	**	(0.115)
Income: 40th-20th	0.181		(0.125)	0.569	***	(0.130)
Income: top 20th	0.222		(0.155)	0.505	*	(0.267)
Net real wealth: 80th-60th	0.008		(0.070)	-0.293	*	(0.150)
Net real wealth: 60th-40th	-0.078		(0.059)	-0.260		(0.166)
Net real wealth: 40th-20th	0.003		(0.069)	-0.369	*	(0.189)
Net real wealth: top 20th	-0.142		(0.091)	-0.709	***	(0.208)
Net fin. wealth: 80th-60th	0.329	***	(0.084)	0.660	***	(0.203)
Net fin. wealth: 60th-40th	0.213	**	(0.093)	0.532	***	(0.141)
Net fin. wealth: 40th-20th	0.181	*	(0.104)	0.401	*	(0.223)
Net fin. wealth: top 20th	0.044		(0.109)	0.349	*	(0.209)
Occ. Status: Employee	-0.025		(0.126)	-0.173		(0.207)
Occ. Status: Self-employed	-0.313	***	(0.079)	-0.551	**	(0.237)
Occ. Status: Retired	0.130		(0.106)	-0.031		(0.217)
Couple	-0.032		(0.066)	-0.137		(0.120)
Household size	-0.033		(0.038)	0.022		(0.046)
age	0.000		(0.003)	0.002		(0.006)
Education:lower secondary	0.033		(0.105)	-0.110		(0.154)
Education:vocational	-0.077		(0.110)	0.018		(0.266)
Education:upper secondary	-0.051		(0.104)	-0.212		(0.247)
Education:college	-0.054		(0.146)	0.076		(0.204)
Risk aversion	-0.079	*	(0.044)	-0.261	***	(0.070)
Discouraged borrower	-0.395	***	(0.133)	-0.387		(0.553)
Financial literacy	-0.023		(0.078)	-0.034	**	(0.103)
Relationship dummies	YES			YES		
Region dummies	YES			YES		
City size dummies	YES			YES		
Bank dummies	YES			YES		
Obs.	6,669			3,207		
R-squared	0.129			0.286		

Table 2: Determinants of trust in main bank and the banking sector (continued)

	Trust in main bank			Trust in banking sector		
payment of utility bills	0.326	***	(0.061)	0.381	***	(0.128)
payment of rent	-0.022		(0.107)	-0.141		(0.103)
payment of credit card	-0.065		(0.097)	-0.321	**	(0.143)
mortgage payments	0.205	**	(0.090)	0.218	*	(0.129)
crediting of salary/pension	0.084		(0.087)	0.082		(0.212)
custody and settlement	0.143		(0.099)	-0.173		(0.125)
trading of securities	0.387	***	(0.124)	0.403		(0.268)
insurance policies	-0.077		(0.184)	-0.131		(0.220)
consumer credit	0.250		(0.156)	0.092		(0.273)
Indiv. portf. management	-0.453		(0.359)	-0.177		(0.433)
online transaction services	-0.039		(0.172)	-0.162		(0.302)
online information services	0.020		(0.162)	-0.817	***	(0.262)
Other services	0.614	***	(0.163)	0.081		(0.328)
Relationship duration	-0.038		(0.030)	0.120	*	(0.067)
Household characteristics	YES			YES		
Region dummies	YES			YES		
City size dummies	YES			YES		
Bank dummies	YES			YES		
Obs.	6,669			3,207		
R-squared	0.129			0.286		

Notes: Dependent variables are the answers to the questions phrased in section 2.1 of the questionnaire. Population weights and robust standard errors are applied. Standard errors in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01. Source: SHIW.

Table 3: Determinants of trust in main bank and bank characteristics

	Est.		Std.Err.	Household Observations	Bank Observations
total assets (log)	-0.016		(0.028)	5,647	61
ROA	0.387	***	(0.117)	5,333	43
funding ratio	1.043	***	(0.225)	5,647	61
NPL ratio	-5.414	***	(1.560)	5,208	39
marketing expenses ratio	-276.2		(319.5)	5,333	43
commercial	0.019		(0.131)	5,647	61
cooperative	-0.023		(0.132)	5,647	61
savings	0.115		(0.153)	5,885	61
foreign-owned	-0.204		(0.129)	5,647	63
listed	-0.264	**	(0.124)	5,647	61

Notes: Coefficients from regressions of trust in main bank measure on each bank characteristic separately. Population weights and robust standard errors are applied. Standard errors in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01. Source: SHIW.

Table 4: Descriptive statistics for banked and unbanked households

	Unbanked		Banked	
	Mean	**Std.Dev.**	**Mean**	**Std.Dev.**
Income (euros)	13792	8428	34524	24233
Real wealth (euros)	65866	114926	255830	494150
Financial wealth (euros)	114	3157	29320	108341
Employee	0.233	0.423	0.396	0.489
Self employed	0.063	0.243	0.113	0.317
Retired	0.406	0.491	0.384	0.486
Married	0.461	0.499	0.640	0.480
Household size	2.319	1.426	2.552	1.260
Age	57.6	19.0	55.8	16.1
Education: up to primary school	0.535	0.499	0.230	0.421
Education: lower secondary school	0.311	0.463	0.273	0.446
Education: vocational school	0.045	0.208	0.090	0.286
Education: upper secondary school	0.085	0.279	0.284	0.451
Education: college	0.024	0.152	0.122	0.328
Risk aversion	3.426	0.800	3.285	0.789
Financial Literacy	0.163	0.370	0.330	0.470
Knowledge of mortgage types	0.378	0.485	0.606	0.489
Knowledge of inflation	0.480	0.500	0.716	0.451
Knowledge of diversification	0.296	0.457	0.539	0.498
Discouraged borrower	0.058	0.235	0.038	0.190

Notes: Unbanked is the sample of households who do not hold any type of bank account. Banked is the sample of households who hold some type of bank account. Source: SHIW.

Table 5: Trust in banks and propensity to be unbanked (marginal effects)

	(1)			(2)			(3)		
	Est.		Std.Err.	Est.		Std.Err.	Est.		Std.Err.
Trust in banks	-0.012	***	(0.003)	-0.011	***	(0.003)	-0.011	***	(0.003)
Generalised trust							0.000		(0.003)
Income: 20th-40th	-0.069	***	(0.014)	-0.066	***	(0.015)	-0.066	***	(0.015)
Income: 40th -60th	-0.105	***	(0.021)	-0.105	***	(0.021)	-0.105	***	(0.021)
Income: 60th -80th	-0.121	***	(0.023)	-0.120	***	(0.024)	-0.120	***	(0.024)
Income: above 80th	-0.131	***	(0.045)	-0.118	***	(0.045)	-0.118	***	(0.045)
Net real wealth: 20th -40th	-0.015		(0.015)	-0.014		(0.015)	-0.014		(0.015)
Net real wealth: 40th -60th	-0.032	*	(0.018)	-0.031	*	(0.019)	-0.031	*	(0.019)
Net real wealth: 60th -80th	-0.029		(0.028)	-0.030		(0.029)	-0.030		(0.029)
Net real wealth: above 80th	0.017		(0.028)	0.024		(0.029)	0.024		(0.028)
Net fin. wealth: 20th -40th	0.079	***	(0.024)	0.098	***	(0.030)	0.098	***	(0.030)
Net fin. wealth: 40th -60th	-0.156	***	(0.041)	-0.138	***	(0.045)	-0.138	***	(0.045)
Net fin. wealth: 60th -80th	-0.083	**	(0.036)	-0.065		(0.041)	-0.065		(0.041)
Net fin. wealth: above 80th							0.000		
Occ. Status: Employee	-0.036	**	(0.019)	-0.040	**	(0.020)	-0.040	**	(0.020)
Occ. Status: Self-employed	-0.024		(0.024)	-0.022		(0.024)	-0.022		(0.025)
Occ. Status: Retired	-0.075	***	(0.020)	-0.072	***	(0.021)	-0.072	***	(0.021)
Couple	-0.035	***	(0.015)	-0.032	**	(0.015)	-0.032	**	(0.015)
Household size	0.014	**	(0.006)	0.014	**	(0.006)	0.014	**	(0.006)
age	0.001		(0.001)	0.001		(0.001)	0.001		(0.001)
Education:lower secondary	-0.061	***	(0.015)	-0.056	***	(0.015)	-0.056	***	(0.015)
Education:vocational	-0.035		(0.024)	-0.027		(0.025)	-0.027		(0.025)
Education:upper secondary	-0.120	***	(0.022)	-0.111	***	(0.023)	-0.111	***	(0.023)
Education:college	-0.085	**	(0.037)	-0.081	**	(0.038)	-0.081	**	(0.037)
Risk aversion	-0.004		(0.008)	-0.002		(0.008)	-0.002		(0.008)
Discouraged borrower				0.035		(0.033)	0.035		(0.033)
Financial literacy				-0.008		(0.015)	-0.008		(0.015)
Region dummies	YES			YES			YES		
City size dummies	YES			YES			YES		
Obs.	2,877			2,735			2,735		
Pseudo R-squared	0.460			0.463			0.463		

Notes: Marginal effects of a probit regression. Population weights and robust standard errors are applied. The top financial wealth quintile is excluded, because its members always hold a bank account. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Source: Survey on Household Income and Wealth (SHIW).

Table 6: Trust in banks and propensity to be unbanked for areas with low, medium and high fractions of unbanked households (marginal effects)

Panel A: Probit coefficients			
	Est.		Std.Err.
Trust in banks	-0.032		(0.034)
Trust in banks × Medium unbanked regions	-0.080		(0.059)
Trust in banks × Low unbanked regions	-0.262	***	(0.065)
Household characteristics	YES		
Region and city size dummies	YES		
Panel B: Marginal effects of trust per region			
	Est.		Std.Err.
Low unbanked region	-0.016	***	(0.003)
Medium unbanked region	-0.009	**	(0.004)
High unbanked region	-0.006		(0.006)
Obs.	2,735		
Pseudo R-squared	0.470		

Notes: Population weights and robust standard errors are applied.
Standard errors in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01. Source: SHIW.

Table 7: Trust in banks and propensity to be unbanked for different educational backgrounds

Panel A: Probit coefficients			
	Est.		Std.Err.
Trust in banks	-0.175	***	(0.036)
Trust in banks × lower secondary	0.101	*	(0.057)
Trust in banks ×vocational	0.136		(0.096)
Trust in banks ×upper secondary	0.302	***	(0.075)
Trust in banks ×college	0.109		(0.335)
Household characteristics	YES		
Region and city size dummies	YES		
Panel B: Marginal effects of trust by education category			
	Est.		Std.Err.
Up to primary	-0.028	***	(0.005)
lower secondary	-0.008		(0.005)
vocational	-0.004		(0.010)
upper secondary	0.005	*	(0.003)
college	-0.003		(0.005)
Obs.	2,735		
Pseudo R-squared	0.471		

Notes: Population weights and robust standard errors are applied.
Standard errors in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01. Source: SHIW.

Table 8: Bank trust and bank switching (marginal effects)

	(1)			(2)			(3)		
	Est.		Std.Err.	Est.		Std.Err.	Est.		Std.Err.
Trust in main bank	-0.023	***	(0.006)	-0.020	***	(0.007)	-0.019	***	(0.006)
Trust in banking sector	0.012		(0.007)	0.006		(0.006)	0.007		(0.006)
Income: 20th-40th	-0.023	***	(0.006)	-0.009		(0.053)	-0.018		(0.049)
Income: 40th -60th	0.012	*	(0.007)	-0.073		(0.053)	-0.071		(0.047)
Income: 60th -80th	-0.032		(0.057)	-0.097	**	(0.047)	-0.084	**	(0.041)
Income: above 80th	-0.061		(0.057)	-0.083	*	(0.044)	-0.078		(0.048)
Net real wealth: 20th -40th	-0.106	*	(0.056)	0.098	***	(0.037)	0.094	***	(0.030)
Net real wealth: 40th -60th	-0.111	**	(0.053)	0.006		(0.044)	0.015		(0.034)
Net real wealth: 60th -80th	0.127	***	(0.045)	0.038		(0.042)	0.049		(0.035)
Net real wealth: above 80th	0.051		(0.057)	0.010		(0.035)	0.006		(0.031)
Net fin. wealth: 20th -40th	0.083	*	(0.046)	0.029		(0.029)	0.019		(0.034)
Net fin. wealth: 40th -60th	0.031		(0.039)	-0.015		(0.030)	-0.016		(0.032)
Net fin. wealth: 60th -80th	0.037		(0.028)	-0.078	***	(0.026)	-0.080	***	(0.026)
Net fin. wealth: above 80th	-0.030		(0.030)	-0.017		(0.043)	-0.042		(0.048)
Occ. Status: Employee	-0.073	***	(0.026)	0.019		(0.049)	0.010		(0.052)
Occ. Status: Self-employed	-0.019		(0.043)	-0.032		(0.054)	-0.032		(0.057)
Occ. Status: Retired	0.034		(0.048)	-0.034		(0.043)	-0.048		(0.049)
Couple	0.002		(0.058)	0.009		(0.024)	-0.005		(0.027)
Household size	-0.029		(0.045)	-0.004		(0.009)	0.000		(0.009)
age	0.004		(0.024)	0.001		(0.001)	0.002		(0.001)
Education:lower secondary	0.006		(0.010)	-0.012		(0.030)	-0.006		(0.028)
Education:vocational	0.001		(0.001)	-0.020		(0.033)	-0.021		(0.035)
Education:upper secondary	0.003		(0.033)	0.051		(0.031)	0.050		(0.032)
Education:college	-0.020		(0.037)	0.029		(0.039)	0.020		(0.033)
Risk aversion	0.092	**	(0.038)	-0.027	*	(0.015)	-0.023	*	(0.013)
Region dummies	YES			YES			YES		
Bank dummies	NO			YES			YES		
Relationship dummies	NO			NO			YES		
Obs.	1,957			1,878			1,835		
Pseudo R-squared	0.114			0.205			0.229		

Table 8 (continued): Bank trust and bank switching (marginal effects)

	(1)			(2)			(3)		
	Est.		Std.Err.	Est.		Std.Err.	Est.		Std.Err.
Trust in main bank	-0.023	***	(0.006)	-0.020	***	(0.007)	-0.019	***	(0.006)
Trust in banking sector	0.012		(0.007)	0.006		(0.006)	0.007		(0.006)
payment of utility bills							-0.012		(0.024)
payment of rent							0.038		(0.037)
payment of credit card							0.037		(0.024)
mortgage payments							-0.042		(0.036)
crediting of salary/pension							0.016		(0.035)
custody and settlement							-0.028		(0.035)
trading of securities							-0.020		(0.044)
insurance policies							-0.042		(0.055)
consumer credit							-0.107	***	(0.040)
Indiv. portf. management							0.248	**	(0.095)
online transaction services							-0.025		(0.038)
online information services							-0.019		(0.040)
Other services							0.005		(0.053)
Relationship duration							-0.033	***	(0.008)
Region dummies	YES			YES			YES		
Bank dummies	NO			YES			YES		
Household characteristics	YES			YES			YES		
Obs.	1,957			1,878			1,835		
Pseudo R-squared	0.114			0.205			0.229		

Notes: Marginal effects of probit regressions. Population weights and robust standard errors are applied. Standard errors in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01. Source: SHIW.

Table 9: Bank trust and bank switching - robustness checks (marginal effects)

Panel A: Controlling for financial literacy and discouraged borrowers

	(1)			(2)			(3)		
	Est.		Std.Err.	Est.		Std.Err.	Est.		Std.Err.
Trust in main bank	-0.028	***	(0.007)	-0.024	***	(0.007)	-0.022	***	(0.007)
Trust in banks	0.013	*	(0.007)	0.008		(0.007)	0.009		(0.006)
Discouraged borrower	0.014		(0.066)	0.008		(0.064)	0.029		(0.061)
Financial literacy	0.017		(0.031)	0.021		(0.031)	0.029		(0.032)
Household characteristics	YES			YES			YES		
Region and city size dummies	YES			YES			YES		
Bank dummies	NO			YES			YES		
Relationship dummies	NO			NO			YES		
Obs.	1,865			1,767			1,727		
Pseudo R-squared	0.117			0.205			0.234		

Panel B: Switching of main bank (alternative definition)

	(1)			(2)			(3)		
	Est.		Std.Err.	Est.		Std.Err.	Est.		Std.Err.
Trust in main bank	-0.025	***	(0.008)	-0.021	***	(0.008)	-0.022	***	(0.008)
Trust in banks	0.014		(0.010)	0.006		(0.009)	0.009		(0.009)
Household characteristics	YES			YES			YES		
Region and city size dummies	YES			YES			YES		
Bank dummies	NO			YES			YES		
Relationship dummies	NO			NO			YES		
Obs.	1,957			1,886			1,843		
Pseudo R-squared	0.084			0.154			0.172		

Panel C: Controlling for new bank fixed effects

	(1)			(2)			(3)		
	Est.		Std.Err.	Est.		Std.Err.	Est.		Std.Err.
Trust in main bank	-0.019	***	(0.005)	-0.016	***	(0.004)	-0.015	***	(0.005)
Trust in banks	0.008		(0.005)	0.002		(0.004)	0.003		(0.004)
Household characteristics	YES			YES			YES		
Region and city size dummies	YES			YES			YES		
Bank dummies (current & new)	NO			YES			YES		
Relationship dummies	NO			NO			YES		
Obs.	1,850			1,781			1,740		
Pseudo R-squared	0.191			0.300			0.330		

Notes: In Panel A a household is considered discouraged if in the year of the interview it did not apply for debt because of fear of being rejected. Panel B uses a different definition of bank switching, where households change main bank, but do not necessarily quit the old main bank completely. Coefficients and marginal effects of probit regressions. Population weights and robust standard errors are applied. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Source: SHIW.

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Miguel Ampudia
European Central Bank, Frankfurt am Main, Germany; email: miguel.ampudia@ecb.europa.eu

Spyros Palligkinis
European Central Bank, Frankfurt am Main, Germany; email: spyros.palligkinis@ecb.europa.eu

Postal address 60640 Frankfurt am Main, Germany
Telephone +49 69 1344 0
Website www.ecb.europa.eu

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