The Gender Gap in Trust in Banks

Axelle Heyert [#]
University of Strasbourg

Laurent Weill [*]
EM Strasbourg Business School, University of Strasbourg

Abstract

This paper studies the relation between gender and trust in banks. We use individual data from the 7th wave of the World Values Survey covering 54 countries during the period 2017-2021. We find that women trust more banks than men on average worldwide. However there are cross-country differences in the gender gap in trust in banks, suggesting the influence of country factors. Exploring explanations for these findings, we find that having lived a banking crisis has a more detrimental impact on men than on women. This in turn favors higher trust in banks for women among individuals with an experience of a banking crisis. We further show that, at the country level, greater gender equality in the society and in financial inclusion increase the gender gap in trust in banks.

JEL Codes: D83, G21, J16.

Keywords: trust, gender, banking.

[#]Sciences Po Strasbourg, 7 rue de l'Ecarlate, CS 20024, 67082 Strasbourg, France. Email: aheyert@unistra.fr

[*]orcid.org/0000-0002-8630-1351. Sciences Po Strasbourg, 7 rue de l'Ecarlate, CS 20024, 67082 Strasbourg, France. Email: laurent.weill@unistra.fr

1. Introduction

Trust in banks is key for the effectiveness of the financial system. Such confidence fosters financial participation and enables banks to intermediate credit through the pooling of deposits and the distribution of loans. The Global Financial Crisis has notably highlighted how a raising distrust in the banking system can disrupt the financial system itself and severely damage the whole economy. Suspicion towards banks can trigger bank runs and lead to a financial crisis. Trust in banks thus supports financial development and is essential to financial stability by preventing bank failures. It is therefore of major importance to understand what shapes trust in banks.

One key question concerns the difference between genders in trust in banks. Identifying the determinants of trust in banks in various settings, a set of recent works has provided evidence about the influence of gender on trust in banks. Several works conclude to greater trust in banks for women relative to men. While Knell and Stix (2015) obtain this conclusion in a single-country analysis on Austria, Fungáčová, Hasan and Weill (2019) provide evidence of a gender gap in trust in banks in a cross-country study on the determinants of trust in banks. Fungáčová, Kerola and Weill (2022) confirm this finding in a cross-country work on the influence of experience of banking crises on trust in banks.

However a few studies find no difference in trust in banks between men and women like Fungáčová and Weill (2018) for China and Van der Cruijsen, de Haan and Jonker (2022) for the US and for the Netherlands. The study from Van der Cruijsen, de Haan and Roerink (2021) even concludes to greater trust in banks for men.

These findings raise major questions about the relation between gender and trust in banks. Why would men and women differ in trust in banks? Why would we see cross-country differences in the gender gap in trust in banks?

Our objective in this paper is therefore twofold. We first perform a worldwide investigation with up-to-date data to investigate any gender gap in trust in banks. We utilize data from the last wave of the World Values Survey implemented from 2017 to 2021. We check the existence of a global gender gap in trust in banks and of cross-country differences in this gap. A global gender gap can indeed hide differences across countries resulting from country characteristics.

We find evidence that globally women trust more banks than men. This general conclusion is however not at odds with studies showing no greater trust in banks for women.

Indeed, our analysis by country shows that the finding of greater trust in banks for women is only observed in 32 of the 53 countries of the sample.

We then investigate three broad hypotheses to explain the gender gap in trust in banks and its variations across countries. These three hypotheses are based on the literature about gender differences in economics and psychology.

The first hypothesis argues that women have greater trust in institutions than men. Gender differences in trust in banks can be the outcome of greater trust in all institutions, economic and political, within a society for women. In other words, the gender gap in trust in banks would not be bank-specific. McDermott and Jones (2022) provide theoretical foundations for this hypothesis by arguing that feminine personalities are more trustful towards the political system. It has also some empirical support in Fungáčová, Hasan and Weill (2019): in their cross-country work on the determinants of trust in banks, they assert that being a woman is strongly positively related with trust in banks but it is loosely related to relative trust in banks, defined as trust in banks relative to trust in institutions.

The second hypothesis relies on the common finding of greater risk aversion of women (Bertrand, 2011; Croson and Gneezy, 2009). Women can thus be more influenced by financial instability than men in their confidence toward banks. We consider this hypothesis through two mechanisms. First, we investigate the influence of the occurrence of banking crises at the country level. There is evidence that the occurrence of a banking crisis leads to a deterioration of trust in banks (Sapienza and Zingales, 2012; Knell and Stix, 2015). Cross-country differences in the gender gap may be explained by the occurrence of a banking crisis affecting differently men and women. Second, we consider the gendered impact of having lived a banking crisis at the individual level. Fungáčová, Kerola and Weill (2022) have shown that having lived a banking crisis has a long-lasting detrimental influence on trust in banks. We can then expect that having lived a banking crisis leads to a greater reduction of trust in banks for women, since their greater risk aversion makes them more affected by financial instability. This hypothesis is however counterbalanced by the fact that women forgive more. In a meta-analysis about gender and forgiveness, Miller et al. (2008) have shown that women forgive more than men. As a consequence, women may forgive more banks of behaviors leading to banking crises.

The third hypothesis is based on the gender inequalities. Cross-country differences in trust in banks can be the outcome of cross-country differences in gender inequality. We take this hypothesis into account in two ways. On the one hand, gender inequality in financial inclusion can affect the gender gap in trust in banks. Being financially included means that the

individual has an experience with the banking system. It can consequently enhance trust in banks through a better knowledge and regular interactions, in line with the view that past experience favors trust (Coleman, 1990; Croson and Buchan, 1999). Greater financial inclusion of women can thus increase their trust in banks. On the other hand, greater gender inequality in the society can enhance the gender gap in trust in banks. The argument relies on the fact that discrimination against women deteriorates their social trust (Alesina and La Ferrara, 2002). A greater discrimination in the society is associated with lower access to banking services which results in lower trust in banks for women, in line with the view that trust is built on previous experience.

Our paper contributes primarily to two strands of research literature. First, it augments the empirical literature on the determinants of trust in banks. Former works in this strand have provided evidence on the relation between gender and trust in banks. However, no prior study has provided evidence about the cross-country differences and the potential explanations for a gender gap in trust in banks. Second, it adds to the debate about the gendered differences in economic behavior. There is large evidence about differences between men and women on characteristics of human behavior including notably risk aversion or attitude toward competition. We augment this literature by analyzing trust in banks, which has implications for the financial behavior of women.

The remainder of the paper is organized as follows. Section 2 describes the data. Section 3 presents the methodology. Section 4 presents the results. Section 6 concludes.

2. Data

Data used for the constitution of individual variables comes from the 7th wave of the World Values Survey (Haerpfer et al., 2022). The World Values Survey is an international research program, conducted almost every five years since 1981. It asks individuals social, economic, political and cultural questions about their perceptions of life. The 7th wave was conducted from 2017 to 2021, depending on the country. The sample used for the study gathers 75,606 observations from 54 countries. To measure trust in banks, we use the following question from the survey:

"Could you tell me how much confidence you have in banks: is it a great deal of confidence (1), quite a lot of confidence (2), not very much confidence (3) or none at all (4)?"

We define the dependent variable *Trust in banks* with the answers to this question. The responses have been recoded so that 1 reflects the lowest level of trust in banks whereas 4 stands for the highest level of trust in banks.

The key independent variable is the gender of the individual. It is measured with the dummy variable *Female* equal to 1 if the individual is a female, and 0 if the individual is a male. We add a set of individual and country control variables in line with former works explaining trust in banks (Fungáčová, Hasan and Weill, 2019; Fungáčová, Kerola and Weill, 2022). We consider the marital status with the dummy variable *Married* is a dummy variable, equal to 1 if the individual is married, and 0 otherwise. We take into account the age of the respondent in years with the variable *Age*. We account for education with the dummy variable *Education*, which equals 1 if the individual has at least completed a secondary education and 0 otherwise. Finally, we consider the income of the respondent: *Income* is accounted for the self-reported income decile of the respondent compared to the population of his country: 1 stands for the lowest decile, 10 for the highest one.

At the country level, we adopt the four controls used by Fungáčová, Hasan and Weill (2019). *GDP per capita* corresponds to the log of the gross domestic product of the country, in thousands of current US dollars, divided by its mid-year population. Data is extracted from the World Development Indicators. For more reliability, the mean of the three years before the survey year has been taken. *Bank concentration* corresponds to the measure of the assets of the five largest banks as a share of the total commercial banking assets of the country. Like for *GDP per capita*, the mean of the three years before the survey year has been used for more accuracy. Data comes from the Global Financial Development Database. To take into consideration the current financial situation, we use the variable *Financial crisis*, a dummy variable equal to 1 if a financial crisis strikes the country within the five years before the interview year, and 0 otherwise. It gathers all types of financial crises: banking, currency, and sovereign debt crises. Crises have been identified with the Systemic Crisis Database II (Laeven and Valencia, 2020). *Financial crisis* is therefore built by the mean of financial crises' dates by country. *Deposit insurance* is measured with a dummy variable equal to 1 if the country has an

explicit deposit insurance scheme for its banks, and 0 otherwise. This variable is based on the data from the Deposit Insurance Database (Demirgüç-Kunt, Kane and Laeven, 2014).

Table 1 reports the descriptive statistics for all the variables. We observe that the mean answer for *Trust in banks* is 2.561. We have a balanced sample in terms of gender with 51.9% of women among respondents.

To investigate how gender influences trust in banks, we employ an ordered logit model in all estimations since the dependent variable is a discrete variable. We acknowledge the potential endogeneity concerns with these estimations. To address omitted variables bias, we saturate our regressions with extensive controls at the individual and the country level in all estimations. Reverse causality, in turn, is not a concern given our research question.

3. Is there a gender gap in trust in banks?

In this section, we investigate the existence of a gender gap in trust in banks. We seek to uncover whether a significant difference in trust in banks is observed between men and women at the global level and among the different countries.

First, we conduct a univariate analysis by country about the gender gap in trust in banks. This analysis provides us some insights about the observation of a gender gap in all countries. Table 2 reports the mean level in trust in banks by gender for all countries of the study. For the full sample, we observe that women have a degree of trust in banks significantly higher than men. This provides evidence for the existence of a global gender gap in the world in favor of women.

Concerning the gender gap by country, the difference in means between men and women is negative in 32 of the 53 countries, supporting a gender gap in favor of greater trust in banks for women in the majority of countries. This however indicates differences across countries: the difference is only significant for 17 of the 32 countries, including the US and China. Furthermore, the difference is not negative in 21 countries, meaning that men trust more banks in several countries.

Thus the analysis by country supports the view that a gender gap in trust in banks in favor of women is not universal. It therefore suggests the influence of country characteristics on the gender gap in trust in banks.

Second, we perform estimations on the full sample to examine whether the gender gap in trust in banks is observed worldwide. As explained earlier, it has been observed by Fungáčová, Hasan and Weill (2019) on the previous wave of the World Values Survey. We aim at checking whether this gender gap is still observed on the most recent available data, i.e. the last wave of the World Values Survey performed over the period 2017-2021.

Table 3 reports the estimations. We consider two different specifications of the set of control variables to test the sensitivity of the results. Column (1) includes only individual-level control variables while column (2) includes all control variables.

The key finding is the significantly positive coefficient for *Female* in both estimations. It confirms the existence of a global gender gap in trust in banks in favor of women. This finding is consistent with the conclusion from Fungáčová, Hasan and Weill (2019) on the previous wave from the World Values Survey

In addition to statistical significance, we can also investigate economic significance. To this end, we compute the marginal effects of the ordered logit regressions in Table 4. The marginal effects indicate the magnitude of the effect of each variable as a percentage point change in probability of falling within a particular outcome category. For more clarity, we only compute marginal effects for a positive level of trust in banks, that are "quite a lot" (coded 3) and "a great deal" (coded 4) of trust in banks. They measure the probability of a change of category from 2 to 3 and from 3 to 4. For the dummy variables, marginal effects are based on a change by one category. For other variables, marginal effects are based on a change in one standard deviation.

Let's consider the second specification including all controls. We observe that being a woman increases the probability of a response in category 4 by 0.6 percentage points on average, and raises the probability of having a positive trust in banks (categories 3 and 4) by 1.1 percentage points. As a comparison with the other individual-level variables, gender is economically less significant than marital status or education, but economically more significant than age and income.

Turning to the controls, we overall observe results in line with former literature for individual-level variables. Trust in banks decreases with age and with education and increases with income, as observed by Fungáčová, Hasan and Weill (2019). The variable *Married* is however significant and positive, meaning that married individuals trust more banks, while it was not significant in Fungáčová, Hasan and Weill (2019).

Interestingly, we observe different results for the country controls than Fungáčová, Hasan and Weill (2019) on the 6th wave of the World Values Survey. Like this previous work, we find a negative impact of the occurrence of a financial crisis with the negative and significant coefficient for *Financial crisis*. But we also observe a significantly negative coefficient for *GDP per capita, Bank concentration,* and *Deposit insurance*, whereas Fungáčová, Hasan and Weill (2019) conclude to no significant impact of these three variables on trust in banks. This difference in the results may be the outcome of the different period of study or the differences in the country composition of the sample, since both waves do not include the same set of countries.

We can nonetheless explain these findings. The negative influence of the deposit insurance scheme on trust in banks may come from the fact that its presence can be interpreted by individuals as evidence that banks should be regulated as they take much risk and are not trustworthy enough.[1] The detrimental impact of bank concentration can come from the view that greater bank concentration is associated with larger banks more secretive because they are more difficult to monitor and regulate, and more likely to be too big to fail associated with moral hazard behavior. The negative sign for GDP per capita can be explained by its link with financial deepening: high-income countries have more prolonged downfalls after the occurrence of a banking crisis (Wilms, Swank and de Haan, 2018). Since the breakdown lasts longer, individuals are more impacted by the crisis and likely more prone to lose trust in banks.

4. Explaining the gender gap in trust in banks

Having established a gender gap in trust in banks, we examine the relevance of three broad explanations in this section: the gender gap in trust in banks as an outcome of a gender gap in all institutions, the influence of greater risk aversion and forgiveness for women, and the impact of gender inequalities.

[1] Prean and Stix (2011) find that raising deposit insurance fosters trust in banks in a study on Croatia. This finding differs from ours, but it has been observed in times of financial crisis where households can value more deposit insurance.

4.1 A gender gap in trust in all institutions?

The first potential explanation is that women have greater trust than men in all institutions of the society. What we consider as a gender gap in trust in banks can be a gender gap in trust in all economic and political institutions.

This hypothesis has some empirical and theoretical ground. On the empirical side, Fungáčová, Hasan and Weill (2019) find differences in the influence of gender on trust in banks and on trust in banks relative to trust in institutions in their cross-country analysis of the determinants of trust in banks. Being a woman is significantly and positively related to trust in banks in all estimations. However, the positive coefficient is rarely significant when explaining trust in banks relative to trust in institutions.

On the theoretical side, McDermott and Jones (2022) observe that personality is socially influenced and particularly by gender norms. The personality of an individual is gendered, since some qualities or behaviors are associated with one gender. McDermott and Jones (2022) then distinguish feminine and masculine personalities, based on what is considered as desirable in society for men and women. Feminine personalities have a communal aspect: they have a more social-oriented behavior and look for harmony in relationships. In comparison, masculinity is thought with agentic traits, instrumental motivation, and is more aggressive and independent (Bakan, 1966). They find that feminine personalities trust more governmental institutions.

To test this hypothesis, we examine whether gender exerts an influence on relative trust in banks, defined as the difference between trust in banks and trust in institutions. To measure trust in institutions, we follow the approach from Fungáčová, Hasan and Weill (2019) and adopt trust in courts as the indicator of trust in institutions. This choice is motivated by the fact that the judicial system is a fundamental institution of the society guaranteeing the enforcement of the rules. The use of trust in the government or in any political institution could be misleading since it can be influenced by the political preferences of the respondents. We create the variable *Relative trust in banks*, defined by the difference between *Trust in banks* and *Trust in courts*. *Trust in courts* is an ordinal variable equal to 1 for the lowest level of trust, and to 4 for the highest level of trust in courts. Such as *Trust in banks,* it is based on the answers of the World Values Survey Wave 7, which have been recoded in the same manner as *Trust in banks*:

> *"Could you tell me how much confidence you have in courts: is it a great deal of confidence (1), quite a lot of confidence (2), not very much confidence (3) or none at all (4)?"*

We have shown above that *Female* is significantly negative when explaining *Trust in banks*, supporting the view that women trust more banks than men. If *Female* is not significant anymore when explaining *Relative trust in banks*, this would mean that *Female* has no impact on the difference between trust in banks and trust in institutions.

Table 5 reports the estimations. We still find a significant and positive coefficient for *Female*. As a consequence, we conclude that women trust more banks in absolute terms and in relative terms with regard to institutions. Thus, we do not support the hypothesis that higher trust in banks for women would not be different than for trust toward other institutions. In a nutshell, greater trust in banks for women is bank-specific.

We furthermore observe that the influence of the other individual variables strongly differs when comparing relative trust in banks to trust in banks. Gender is the only individual variable with the same impact on trust in banks and on relative trust in banks. This conclusion is of utmost interest: it strengthens the finding that greater trust of banks for women is not driven by greater trust in all institutions for women. Undoubtedly, women have a particularly high degree of trust in banks relative to men.

Age and *Income*, respectively significantly negative and positive when explaining trust in banks, are not significant when explaining relative trust in banks. In other words, older people trust less banks while richer individuals trust more banks, but only relative to institutions. It indicates that age and income tend to have the same impact on trust in banks and on trust in institutions.

Interestingly the sign is reversed for *Married* and *Education*. *Education* is significantly negative when explaining trust in banks but significantly positive when explaining relative trust in banks. It thus indicates that educated people do not trust banks in absolute terms but they trust more banks than institutions. The opposite is observed for *Married* which turns from significantly positive to significantly negative. So being married makes you trust more banks but less than institutions in general.

We nonetheless find that country variables have overall the same impact on relative trust in banks than on relative trust in banks. Three of the four country controls are still significantly negative, indicating they affect negatively trust in banks in absolute terms and in relative terms. Only *Deposit insurance* has a different sign: while it is significantly negative when explaining trust in banks, it is significantly positive when explaining relative trust in banks. In other words, greater deposit insurance exerts a specific detrimental impact on trust in banks but it is perceived positively for trust in institution.

To sum up, we find clear evidence that the gender differences in trust in banks are bank-specific. We do not support the explanation of gender differences in trust in banks as the only outcome of gender differences in trust in institutions. Women have a particular trust toward banks in comparison to men.

4.2 Differences in risk aversion and forgiveness

The second potential explanation we investigate is that differences in risk aversion can affect differences in trust in banks. There is huge theoretical and empirical evidence supporting the finding that women are more risk averse than men (Barber and Odean, 2001; Croson and Gneezy, 2009). We can therefore wonder whether financial instability affects gendered differences in trust in banks. Greater risk aversion of women should lead to greater distrust toward banks for women in troubled times for banks.

We test this hypothesis in two complementary ways. We first investigate the occurrence of a recent financial crisis which provides evidence on the short-term impact of financial instability. This brings information about a potential determinant of cross-country differences in the gender gap in trust in banks. We then consider how having lived a banking crisis in life can have a long-lasting influence on trust in banks, which informs about a potential determinant of the global gender gap in trust in banks.

First, we test whether the occurrence of a recent financial crisis leads to a higher deterioration of trust in banks for women than men. This investigation accords with the greater risk aversion of women who would react more to greater financial instability. Hence, the current occurrence of a banking crisis could explain cross-country differences in the gender gap in trust in banks since countries differ on this feature.

To test this hypothesis, we investigate whether *Financial crisis* has a different impact on women and men. Table 6 reports the two ordered logit models realized for women and men. To compare the effect of a recent financial crisis on trust in banks for men and women, we compute a chi-square test.

We first observe that *Financial crisis* is significantly negative for men and for women. In other words, the finding that the occurrence of a financial crisis reduces trust in banks is observed for both men and women. However the key finding concerns the difference between men and women for this negative impact. Even if the coefficient for *Financial crisis* is higher in absolute terms for women than for men, we do not observe a significant difference between both coefficients according to the chi-square test. Therefore, we do not find support that the

occurrence of a financial crisis would hurt more trust in banks for women than for men. The gender gap in trust in banks is not thereby lower in case of financial instability.

Second, we test whether the experience of a banking crisis exerts a different impact on trust in banks for both genders. We can expect that having lived a banking crisis has a more detrimental impact on trust in banks for women than for men. This hypothesis is supported by the finding from Fungáčová, Kerola and Weill (2022) that the experience of a banking crisis has a long-lasting detrimental influence on trust in banks. This finding combined with greater risk aversion of women suggests that the long-term impact of a banking crisis could be stronger for women.

However, risk aversion is not the only characteristic with gender differences: forgiveness is another one. As summarized in the meta-analysis about gender and forgiveness from Miller et al. (2008), a large bunch of studies concludes that women forgive more than men. If women trust more after a positive experience, they tend to trust also more after a negative one. As explained by Haselhuhn et al. (2015) in a repeated trust game, women are less likely to lose trust and more likely to restore trust after a breach in trust. This indicates that women forgive more after a trust violation. Gilligan (1994) explains that women would be motivated to preserve relationships, which facilitates the maintenance and restoration of trust in others after a trust violation. Therefore, women can forgive more banks than men even after having lived a banking crisis. As a consequence, this event in life may have a lower detrimental impact on women.

To test how having lived a banking crisis influences trust in banks, we create the variable *Banking crisis lived*, a dummy variable equal to one if the individual has lived a banking crisis in her/his life, and zero otherwise. To construct this variable, we use the age of the respondent provided in World Values Survey and combine this information with data on banking crises obtained in the Systemic Banking Crises Database II (Laeven and Valencia, 2020). Here again, we investigate the gendered effect of *Banking crisis lived* by performing two ordered logit models, one for each gender. Table 7 reports the results.

We find that *Banking crisis lived* is significant and negative for both genders. This first result accords with the finding from Fungáčová, Kerola and Weill (2022) that having lived a banking crisis deteriorates trust in banks. However *Banking crisis lived* is significantly lower for men than for women. In other words, having lived a banking crisis has a more detrimental impact on men than on women. We interpret this result by the fact that women forgive more banks than men after the experience of a banking crisis in the life.

This result is of major interest since it provides an explanation for the gender gap in trust in banks. The experience of a banking crisis in the life deteriorates more trust in banks for men than for women. As a consequence, experiences of banking crises would have a long-lasting impact on individuals which generates a gender gap in trust in banks.

4.3 The influence of gender inequalities

The third hypothesis is based on the gender inequalities. Cross-country differences in trust in banks can be the outcome of cross-country differences in gender inequality. We consider two forms of gender inequality to examine this potential explanation: gender inequality in the society, and gender inequality in financial inclusion.

We first consider gender inequality in the society. Former literature has shown that equality is a determinant of interpersonal trust: while income equality is correlated with a high level of interpersonal trust (Wang and Gordon, 2011), gender equality favors interpersonal trust (Cho, 2016). This effect can be explained by the fact that equality relies on the fair treatment of individuals, meaning the absence of discrimination, which positively affects the interpersonal trust within one society (Alesina and La Ferrara, 2002; Bjornskov, 2007). Therefore gender inequality can affect trust of women as a whole in the economy but it can also have a more straightforward impact on trust in banks for women. Greater discrimination against women can be accompanied with lower access to banking services for women. As a consequence, women can have lower trust in banks than men since trust is strengthened by previous experience. We then test the hypothesis that greater gender inequality in the society should come along with lower gender gap in trust in banks.

We measure gender inequality in the society with the variable *Gender inequality* corresponding to the Gender Inequality Index computed by the Human Development Reports (United Nations Development Programme, 2020). This index represents a composite measure reflecting inequality in achievement between women and men in three dimensions: health, empowerment, and economic status. The higher the index, the higher the level of gender inequality in the country. The mean of the three years before the survey year has been used.

We perform ordered logit estimations for women and men and check whether there is a significant difference of *Gender inequality* with a chi-square test. We use the standard set of control variables with the exception of *GDP per capita*. Because of the high correlation between *Gender inequality* and *GDP per capita* (-0.807), we drop this latter variable. Table 8 reports the estimations.

We document that higher gender equality in the society reduces trust in banks for men and women: *Gender inequality* is significantly positive for both genders. This indicates that higher gender equality would bring higher trust in banks for all individuals.

The key question is however about the potential gendered effect of gender inequality on trust in banks. We observe that *Gender inequality* has a significantly stronger impact on trust in banks for men relative to women. Cross-country differences in gender equality can thus explain cross-country differences in the gender gap in trust in banks. An improvement in gender equality reduces more trust in banks for men than for women, and thus leads to an increase of the gender gap in trust in banks in favor of women.

We turn to gender inequality in financial inclusion. There is large evidence around the world about gender inequality in financial inclusion: the gender gap in account ownership globally was 7 percentage points from 2011 to 2017 (Demirgüc-Kunt et al., 2018). Being financially included means having a bank account in the broad definition of financial inclusion we adopt in our work. It therefore creates interactions with banks, which affect the degree of confidence in the bank.

In line with the view that past experience influences trust (Coleman, 1990), we expect that greater gender equality in financial inclusion increases gender gap in trust in banks by strengthening trust in banks for women. We measure gender gap in financial inclusion with the variable *Female to male ratio* following Perrin and Weill (2022). It corresponds to the female to male financial inclusion ratio: it equals the percentage of females with an account in a financial institution divided by the percentage of males with an account in a financial institution. Data stems from the Global Findex database (Demirgüç-Kunt et al., 2018). This survey on financial inclusion has been done in 2011, 2014, 2017, and 2021. So we do not use a mean over three years but consider only 2017, i.e. the year related to the values of trust in banks.

We redo ordered logit regressions by including *Female to male ratio* for men and for women. Since *Female to male ratio* is quite correlated with *GDP per capita* (0.418), we test two specifications of the set of explaining variables: with and without *GDP per capita*. We display the estimations in Table 9.

We observe that *Female to male ratio* is significantly positive in both specifications for women and for men. Therefore, greater financial inclusion of women relative to men enhances trust in banks for women and for men. This result is of interest in normative terms since it supports the view that reducing the gender gap in financial inclusion can benefit to trust in banks for all individuals whatever their gender in an economy.

Nonetheless the beneficial effect is significantly stronger for women than for men. It indicates that reducing the gender gap in financial inclusion has a more beneficial impact on trust in banks for women than for men. This finding accords with the hypothesis that being financially included favors the trust in banks through the experience.

This finding can thus explain cross-country differences in the gender gap in trust in banks. Countries with lower gender gap in financial inclusion should have all other things equal greater gender gap in trust in banks.

5. Conclusion

This paper studies the relation between gender and trust in banks in a cross-country framework. We first investigate the existence of a gender gap in trust in banks worldwide. We find that women trust more banks than men in the world. However the analysis by country shows that the gender gap in trust in banks is not observed in all countries. Both these findings raise questions on the explanations for the global gender gap and the cross-country differences in trust in banks.

We test three explanations for these findings. First, we check whether the gender gap in trust in banks can be explained by the fact that women trust more all institutions, economic and political, within a society. We find no support for this hypothesis: women trust more banks in relative terms with regard to institutions. We thus conclude that greater trust in banks for women is bank-specific.

Second, we test whether differences in risk aversion and in forgiveness can explain the gender gap in trust in banks and its cross-country differences. We do not find support that the occurrence of a recent financial crisis would have a more detrimental effect on women. We however show that having lived a banking crisis has a more detrimental impact on men than on women. We interpret this result by the greater forgiveness of women after the experience of a banking crisis in the life.

Third, we investigate whether cross-country differences in gender inequality generate cross-country differences in trust in banks. We find evidence in favor of this hypothesis. Greater gender equality in the society and in financial inclusion both increase the gender gap in trust in banks in favor of women.

We can thus summarize our findings for the explanations of the gender gap in trust in banks as follows. On the one hand, our key finding to explain the gender gap in trust in banks in favor of women is the influence of having lived a banking crisis. It has a higher and more long-lasting detrimental effect on men than women, because of greater forgiveness for women. On the other hand, we explain cross-country differences in the gender gap in trust in banks by cross-country differences in gender inequalities. More equal countries favor the emergence of the gender gap.

References

Alesina, A., and La Ferrara, E. (2002). Who Trusts Others? Journal of Public Economics 85(2), 207–234.

Bakan, D. (1966). The Duality of Human Existence. Chicago: Rand McNally.

Barber, B. M., and Odean, T. (2001). Boys will be Boys: Gender, Overconfidence, and Common Stock Investment. The Quarterly Journal of Economics 116(1), 261–292.

Bertrand, M. (2011). New Perspectives on Gender. In: Ashenfelter, O., Card, D. (Eds.), Handbook of Labor Economics vol. 4B, 1543–1590

Bjørnskov, C. (2007). Determinants of Generalized Trust: A Cross-Country Comparison. Public Choice 130(1–2), 1–21.

Cho, S.-Y. (2016). Does Gender Equality Promote Social Trust? An Empirical Analysis. World Development 88, 175–187.

Coleman, J. (1990). Foundations of Social Theory. Harvard University Press.

Croson, R., and Buchan, N. (1999). Gender and Culture: International Experimental Evidence from Trust Games. American Economic Review 89(2), 386–391.

Croson, R., and Gneezy, U. (2009). Gender Differences in Preferences. Journal of Economic Literature 47(2), 448–474.

Demirgüç-Kunt, A., Kane, E., and Laeven, L. (2014). Deposit Insurance Database (Policy Research Working Paper No. 6934). World Bank.

Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., and Hess, J. (2018). The Global Findex 2017: Measuring Financial Inclusion and the Fintech Revolution. World Bank.

Fungáčová, Z., Hasan, I., and Weill, L. (2019). Trust in Banks. Journal of Economic Behavior and Organization 157, 452–476.

Fungáčová, Z., Kerola, E., and Weill, L. (2022). Does Experience of Banking Crises Affect Trust in Banks? Journal of Financial Services Research 62, 61-90.

Fungáčová, Z., and Weill, L. (2018). Trusting Banks in China. Pacific Economic Review 23, 2, 131-149.

Gilligan, C. (1994). In a Different Voice: Women's Conceptions of Self and of Morality. New York: Garland Publishing.

Haerpfer, C., Inglehart, R., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano, J., Lagos, M., Norris, P., Ponarin, E., and Puranen, B. (2022). World Values Survey: Round Seven - Country-Pooled Datafile Version 4.0. Madrid, Spain and Vienna, Austria: JD Systems Institute and WVSA Secretariat.

Haselhuhn, M. P., Kennedy, J. A., Kray, L. J., Van Zant, A. B., and Schweitzer, M. E. (2015). Gender Differences in Trust Dynamics: Women Trust more than Men Following a Trust Violation. Journal of Experimental Social Psychology 56, 104–109.

Jansen, D.-J., Mosch, R. H. J., and van der Cruijsen, C. A. B. (2015). When Does the General Public Lose Trust in Banks? Journal of Financial Services Research 48(2), 127–141.

Knell, M., and Stix, H. (2015). Trust in Banks during Normal and Crisis Times-Evidence from Survey Data. Economica 82, 995–1020.

Laeven, L., and Valencia, F. (2020). Systemic Banking Crises Database II. IMF Economic Review 68(2), 307–361.

McDermott, M. L., and Jones, D. R. (2022). Gender, Sex, and Trust in Government. Politics and Gender 18, 297-320.

Miller, A., Worthington, E., and McDaniel, M. (2008). Gender and Forgiveness: A Meta–Analytic Review and Research Agenda. Journal of Social and Clinical Psychology 27(8), 843–876.

Perrin, C., and Weill, L. (2022). No Man, No Cry? Gender Equality in Access to Credit and Financial Stability. Finance Research Letters 102694.

Prean, N., and Stix, H. (2011). The Effect of Raising Deposit Insurance Coverage in Times of Financial Crisis – Evidence from Croatian Microdata, Economic Systems 35(4), 496-511.

Sapienza, P., and Zingales, L. (2012). A Trust Crisis. International Review of Finance 12(2), 123–131.

United Nations Development Programme. (2020). Gender Inequality Index. Human Development Reports. https://hdr.undp.org/en/indicators/68606

van der Cruijsen, C., de Haan, J., and Jonker, N. (2022). Has the COVID-19 pandemic affected public trust? Evidence for the US and the Netherlands. Journal of Economic Behavior and Organization 200, 1010-1024.

van der Cruijsen, C., de Haan; J. and Roerink R. (2021). Financial Knowledge and Trust in Financial Institutions. Journal of Consumer Affairs 55(2), 680-714.

van der Cruijsen, C., de Haan; J. and Roerink R. (2022). Trust in Financial Institutions. Journal of Economic Surveys (forthcoming).

Wang, L., and Gordon, P. (2011). Trust and Institutions: A Multilevel Analysis. The Journal of Socio-Economics 40(5), 583–593.

Wilms, P., Swank, J., and de Haan, J. (2018). Determinants of the Real Impact of Banking Crises: A Review and New Evidence. The North American Journal of Economics and Finance 43, 54–70.

Table 1.
Descriptive statistics

The table reports the descriptive statistics for the variables employed in this study.

Variable	N	Mean	Standard dev.
Dependent variables			
Trust in banks	75,606	2.561	0.927
Relative trust in banks	73,655	0.003	1.034
Independent variables			
Individual-level variables			
Female	75,606	0.519	0.500
Married	75,606	0.570	0.495
Age	75,606	42.293	16.060
Education	75,606	0.820	0.384
Income	75,606	4.830	2.062
Banking crisis lived	75,606	0.619	0.486
Country-level variables			
GDP per capita	75,606	8.915	1.214
Bank concentration	75,606	76.058	18.299
Financial crisis	75,606	0.169	0.375
Deposit insurance	75,606	0.912	0.284
Female to male ratio	75,606	0.873	0.198
Gender inequality	72,361	0.323	0.153

Table 2.
Trust in banks by country for each gender

This table provides the mean level of trust in banks by country by comparing male and female respondents. The p-value is based on a two-sided test and gives the probability that the two means are equal.

Country	N	Male	Female	Difference	p-value
Argentina	923	2.013	2.06	-0.046	0.392
Armenia	1,656	2.26	2.478	-0.219***	0.000
Australia	1,166	2.107	2.208	-0.101***	0.008
Bangladesh	1,142	2.995	2.986	0.009	0.856
Bolivia	1,975	2.63	2.463	0.167***	0.000
Brazil	1,574	2.375	2.41	-0.035	0.489
Canada	3,997	2.504	2.522	-0.018	0.473
Chile	884	2.379	2.285	0.093*	0.075
China	2,965	3.135	3.187	-0.052**	0.017
Columbia	1,498	2.241	2.223	0.018	0.699
Cyprus	870	1.858	1.946	-0.088	0.145
Ecuador	1,183	2.587	2.519	0.068	0.180
Egypt	894	2.687	2.737	-0.05	0.403
Ethiopia	1,207	3.526	3.513	0.013	0.743
Germany	1,446	2.077	2.212	-0.136***	0.001
Greece	1,137	1.847	1.942	-0.094**	0.035
Guatemala	1,157	2.153	2.157	-0.004	0.936
Hong Kong	2,039	3	2.913	0.087***	0.002
Indonesia	3,176	3.172	3.166	0.006	0.822
Iran	1,469	2.46	2.545	-0.085	0.112
Iraq	1,048	1.914	1.89	0.024	0.698
Japan	1,114	2.714	2.784	-0.07*	0.070
Jordan	1,033	2.248	2.274	-0.026	0.679
Kazakhstan	1,137	2.651	2.634	0.017	0.732
Kenya	1,213	3.15	3.16	-0.009	0.858
Kyrgystan	1,154	2.84	3.014	-0.174***	0.000
Lebanon	1,173	2.036	2.068	-0.033	0.493
Libya	1,068	2.051	2.112	-0.061	0.250

Malaysia	1,310	2.91	2.933	-0.022	0.559
Mexico	1,693	2.103	2.094	0.009	0.845
Mongolia	1 538	2.375	2.492	-0.117***	0.006
Morocco	1,200	2.235	2.273	-0.038	0.420
Myanmar	1,198	3.152	3.204	-0.052	0.266
New Zealand	852	2.323	2.51	-0.188***	0.000
Nicaragua	1,199	2.276	2.219	0.056	0.323
Nigeria	1,206	3.029	2.963	0.067	0.204
Pakistan	1,798	3.107	3.042	0.066	0.162
Peru	1,342	2.165	2.085	0.079	0.102
Philippines	1,199	3.11	3.075	0.035	0.433
Romania	1,025	1.983	1.847	0.136**	0.016
Russia	1,620	2.254	2.34	-0.086*	0.059
Serbia	939	2.04	2.063	-0.022	0.669
Singapour	1,936	2.913	2.931	-0.018	0.536
South Korea	1,245	2.735	2.774	-0.04	0.237
Tajikistan	1,133	2.939	2.876	0.063	0.202
Thailand	1,308	3.083	3.072	0.011	0.805
Tunisia	1,117	2.006	2.075	-0.069	0.161
Turkey	2,268	2.268	2.335	-0.068*	0.075
Ukraine	1,117	2.16	2.105	0.055	0.262
United States	2,508	2.282	2.396	-0.114***	0.000
Venezuela	1,189	2.286	2.318	-0.032	0.546
Vietnam	1,174	3.145	3.135	0.01	0.765
Zimbabwe	1,194	2.37	2.497	-0.128**	0.033
TOTAL	75,606	2.549	2.572	-0.022***	0.001

Table 3.
Main estimations

This table presents ordered logit regressions. The dependent variable is the ordinal variable *Trust in banks.* Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5% and 1% level, respectively. Definitions of variables are provided in the Appendix.

	(1)	(2)
Female	0.034**	0.044***
	(2.52)	(3.3)
Married	0.315***	0.200***
	(22.62)	(14.15)
Age	-0.008***	-0.003***
	(-19.26)	(-7.64)
Education	-0.391***	-0.238***
	(-21.28)	(-12.56)
Income	0.014***	0.030***
	(4.22)	(8.78)
GDP per capita		-0.181***
		(-30.19)
Bank concentration		-0.011***
		(-29.22)
Financial crisis		-0.408***
		(-22.60)
Deposit Insurance		-0.356***
		(-14.00)
Observations	75 606	75 606
Pseudo R-squared	0.006	0.018

Table 4.
Marginal effects

This table provides the marginal effects for the ordered logit models reported in Table 3. Marginal effects are presented in percentage points. For dummy variables, the marginal effects are based on change of one category. For other variables, the marginal effects are based on a change of one standard deviation. The dependent variable is *Trust in banks*. Marginal effects are presented for *Trust in banks* outcome categories 3 ("quite a lot") and 4 ("a great deal") of confidence. Definition of all variables are presented in the Appendix.

Model specification	(1)		(2)	
Trust in banks outcome	3	4	3	4
Female	0.4	0.4	0.5	0.6
Married	3.7	4.1	2.4	2.5
Age	-0.1	-0.1	0.0	0.0
Education	-3.9	-5.6	-2.6	-3.2
Income	0.2	0.2	0.3	0.4
GDP per capita			-2.1	-2.3
Bank concentration			-0.1	-0.1
Financial crisis			-5.4	-4.8
Deposit insurance			-3.5	-5.0

Table 5.
Relative trust in banks

This table presents ordered logit regressions. The dependent variable is the ordinal variable *Relative trust in banks.* Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5% and 1% level, respectively. Definitions of variables are provided in the Appendix.

	(1)
Female	0.027**
	(1.97)
Married	-0.184***
	(-12.62)
Age	0,000
	(-0.61)
Education	0.117***
	(6.11)
Income	-0,003
	(-0.76)
GDP per capita	-0.342***
	(-54.47)
Bank concentration	-0.001***
	(-2.70)
Financial crisis	-0.169***
	(-8.70)
Deposit insurance	0.279***
	(10.12)
Observations	73 655
Pseudo R-squared	0.017

Table 6.
Financial crisis

This table presents ordered logit regressions. The dependent variable is the ordinal variable *Trust in banks*. Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5% and 1% level, respectively. Definitions of variables are provided in the Appendix.

	Female	
	0	1
Financial crisis	-0.391***	-0.425***
	(-14.93)	(-16.99)
Married	0.193***	0.208***
	(9.01)	(10.87)
Age	-0.003***	-0.004***
	(-4.47)	(-6.12)
Education	-0.230***	-0.247***
	(-8.22)	(-9.57)
Income	0.035***	0.025***
	(7.23)	(5.33)
GDP per capita	-0.209***	-0.155***
	(-24.11)	(-18.63)
Bank concentration	-0.010***	-0.012***
	(-19.09)	(-22.43)
Deposit insurance	-0.278***	-0.433***
	(-7.83)	(-11.92)
Observations	36 350	39 256
Pseudo R-squared	0.018	0.019
χ^2	0.84	

Table 7.
Banking crisis lived

This table presents ordered logit regressions. The dependent variable is the ordinal variable *Trust in banks.* Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5% and 1% level, respectively. Definitions of variables are provided in the Appendix.

	Female	
	0	1
Financial crisis	-0.391***	-0.425***
	(-14.93)	(-16.99)
Married	0.193***	0.208***
	(9.01)	(10.87)
Age	-0.003***	-0.004***
	(-4.47)	(-6.12)
Education	-0.230***	-0.247***
	(-8.22)	(-9.57)
Income	0.035***	0.025***
	(7.23)	(5.33)
GDP per capita	-0.209***	-0.155***
	(-24.11)	(-18.63)
Bank concentration	-0.010***	-0.012***
	(-19.09)	(-22.43)
Deposit insurance	-0.278***	-0.433***
	(-7.83)	(-11.92)
Observations	36 350	39 256
Pseudo R-squared	0.018	0.019
χ^2	0.84	

Table 8.
Gender inequality in the society

This table presents ordered logit regressions. The dependent variable is the ordinal variable *Trust in banks.* Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5% and 1% level, respectively. Definitions of variables are provided in the Appendix.

	Female	
	0	1
Gender inequality	0.588***	0.138**
	(8.22)	(1.97)
Married	0.242***	0.229***
	(11.12)	(11.76)
Age	-0.006***	-0.006***
	(-9.16)	(-9.94)
Education	-0.311***	-0.325***
	(-10.77)	(-12.18)
Income	0.033***	0.025***
	(6.77)	(5.28)
Bank concentration	-0.011***	-0.013***
	(-19.93)	(-24.57)
Financial crisis	-0.426***	-0.445***
	(-15.73)	(-17.31)
Deposit insurance	-0.436***	-0.582***
	(-11.99)	(-15.75)
Observations	34 789	37 572
Pseudo R-squared	0.015	0.018
χ^2	21.12***	

Table 9.
Female to male ratio

This table presents ordered logit regressions. The dependent variable is the ordinal variable *Trust in banks.* Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5% and 1% level, respectively. Definitions of variables are provided in the Appendix.

	Female		Female	
	0	1	0	1
Female to male ratio	0.858***	1.069***	0.172***	0.482***
	(14.68)	(18.03)	(3.25)	(8.92)
Married	0.212***	0.227***	0.259***	0.253***
	(9.84)	(11.82)	(12.1)	(13.2)
Age	-0.004***	-0.005***	-0.009***	-0.008***
	(-5.67)	(-7.84)	(-13.04)	(-13.74)
Education	-0.271***	-0.310***	-0.390***	-0.415***
	(-9.65)	(-11.90)	(-14.02)	(-16.21)
Income	0.036***	0.023***	0.025***	0.019***
	(7.51)	(4.95)	(5.15)	(4.14)
GDP per capita	-0.268***	-0.223***		
	(-28.01)	(-24.33)		
Bank concentration	-0.008***	-0.008***	-0.010***	-0.011***
	(-13.21)	(-14.70)	(-17.32)	(-19.77)
Financial crisis	-0.458***	-0.504***	-0.319***	-0.378***
	(-17.20)	(-19.78)	(-12.20)	(-15.17)
Deposit insurance	-0.185***	-0.321***	-0.437***	-0.518***
	(-5.13)	(-8.69)	(-12.43)	(-14.33)
Observations	36 350	39 256	36 350	39 256
Pseudo R-squared	0,020	0,022	0,012	0,017
χ^2	5.50**		13.75***	

Appendix: Definitions and sources of variables

Name	Definition and source
Dependent variables	
Trust in banks	Ordinal variable with values between 1 and 4, based on response to the question: *Could you tell me how much confidence you have in banks?* Scoring: *None at all* (1), *Not very much confidence* (2), *Quite a lot of confidence* (3), *A great deal of confidence* (4). Source: World Values Survey.
Relative trust in banks	Difference between *Trust in Banks* and *Trust in courts*, defined as an ordinal variable and based on the response to the question: *Could you tell me how much confidence you have in the courts?* Scoring: *None at all* (1), *Not very much confidence* (2), *Quite a lot of confidence* (3), *A great deal of confidence* (4). Source: World Values Survey.
Independent variables	
Individual-level variables	
Female	Dummy variable equal to 1 if the individual is a female, and 0 if the individual is a male (by observation, not self-reported). Source: World Values Survey.
Married	Dummy variable equal to 1 if the individual is married, and 0 otherwise. Source: World Values Survey.
Age	Age in number of years. Source: World Values Survey.
Education	Dummy variable equal to 1 if the individual has secondary or tertiary education, and 0 otherwise. Source: World Values Survey.
Income	Self-reported level of income of the respondent to his country, based on the question: *On this card is an income scale on which 1 indicates the lowest income group and 10 the highest income group in your country. We would like to know in what group your household is. Please, specify the appropriate number, counting all wages, salaries, pensions and other incomes that come in.* The figure reported ranges from 1 for lowest decile to 10 for the highest income decile. Source : World Values Survey.
Banking crisis lived	Dummy variable equal to 1 if the individual has lived at least one systemic banking crisis, and 0 otherwise. Banking crisis identified based on Systemic Banking Crises Database II (Laeven and Valencia, 2020). For Iraq, no systemic banking crisis has been identified.
Country-level variables	
GDP per capita	Log of gross domestic product divided by mid-year population in thousands of current US dollars. For all countries, the mean of three years before the survey year has been used. For Libya, the mean of 2019 and 2020 has been used. Source: World Development Indicators. For Venezuela, data comes from IMF Datamapper.
Bank concentration	Assets of five largest banks as a share of total commercial banking assets, in percent. The mean of three years before the survey year

	in each country has been used. The most recent observation (2014) has been used when data was unavailable. Source: Global Financial Development Database. For Iran, the most recent data (2010) has been used and comes from the Federal Reserve Bank of St. Louis.
Financial crisis	Dummy variable equal to 1 if there has been at least one financial crisis (systemic banking crisis, currency crisis or sovereign debt crisis) in the country of the individual during the five years before the survey year, and 0 otherwise. Financial crisis identified based on Systemic Banking Crises Database II (Laeven and Valencia, 2020). For Iraq, no financial crisis has been identified.
Deposit insurance	Dummy variable equal to 1 if there is an explicit deposit insurance in the country, and 0 otherwise. Source: Deposit Insurance Database (Demirgüç-Kunt et al., 2014). Observations have been updated for Bolivia, China, Pakistan and Tunisia.
Female to male ratio	Percentage of females with an account in a financial institution divided by the percentage of males with an account in a financial institution (for respondents older than 15 years old). The observations of 2017 have been used for each country. Source: Global Findex 2017.
Gender inequality	Composite measure reflecting inequality in achievement between women and men in three dimensions: reproductive health, empowerment and the economic status. The mean of the three years before the survey year has been used. Observations are missing for Hong Kong and Nigeria. Source: Human Development Reports (United Nations Development Programme, 2020).