

Does the Past Haunt Us No More? How Proximity to Foreign Currency Lending Experience Affects Trust in the Banking System and Financial Literacy*

Zita Fellner – Anna Marosi

While FX lending is often the focus of analyses on non-performing loans and post-crisis debt relief measures, its effect on debtors' subsequent behaviour and attitudes has been addressed to a far lesser extent in the research in recent years. In our study, we seek to fill this gap by examining the effect of proximity to foreign currency lending experience on an individual's trust in the banking system, and financial literacy. For our study, we relied on data from a CATI survey conducted on behalf of the MNB, the central bank of Hungary, in September 2021. The sample of 1,001 respondents represents the Hungarian adult population in terms of gender, age, type of municipality, region and educational level. In addition to the proximity to foreign currency lending experience, modelling controls included sociodemographic variables on the one hand, and variables related to borrowing on the other. The effect of proximity to foreign currency lending experience was examined in terms of both trust in the banking system and components of financial literacy. The effect was quantified using a linear regression model based on OLS estimation. According to our estimate, the role of proximity to foreign currency lending experience is less important than expected. Closer proximity to foreign currency lending experience has no apparent effect on a borrower's overall trust in banks operating in Hungary. At the same time, proximity to foreign currency lending experience increases the likelihood of the respondent's belief that a bank acts in bad faith (exploiting legal loopholes). Among the components of financial literacy, it plays a significant role only in financial knowledge, i.e. controlled for other factors, closer proximity on average increases financial knowledge. Conversely, it fails to influence, in any manner, the adoption of more conscious attitude, behaviour and practices.

Journal of Economic Literature (JEL) codes: D14, E51, R20

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1. Introduction

In our study, we examine the effect of proximity to foreign currency (FX) lending experience on an individual's trust in the banking system and financial literacy. In Hungary, prior to the 2008 financial crisis, foreign currency indebtedness was dominant, partly driven by a generally low level of financial literacy. One question of relevance to financial stability is to what extent experiences with FX debt have been incorporated into the current behaviour, knowledge and attitude of the population. That question is all the more relevant because trust in the banking system has an important role in increasing credit penetration, i.e. financial deepening. Therefore, it is not irrelevant whether negative experiences with FX debt continue to affect the attitude of the population towards the institutional system nowadays.

The study is structured as follows: In *Section 2*, we provide a brief literature review of the main issues being addressed, namely trust in the banking system, financial literacy, and the repercussions of FX debt on individuals. *Section 3* presents the data collection, our explanatory variables, our dependent variables, and the methodology of analysis. In *Section 4*, we present our results in detail, analysing the effects of other variables in our regressions in addition to the role of FX debt. *Section 5* offers a summary of our findings.

2. Literature review

2.1. Trust in the banking system

Mutual trust between the banking system and customers is the basis of banking: deposit-taking and lending are two core activities of banks, a medium- or long-term transaction in an asymmetric information situation, the subject of which is the bank's or the customer's money. *Kovács and Terták (2019: pp. 38–47)* argue in their work that although banking has undergone significant changes as a result of financial innovation and technological development, this fundamental feature of the business relationship has not disappeared.

Müller and Kerényi (2019) discuss trust in the financial intermediation system in relation to *FinTech*. Their study is theoretical rather than empirical: based on *Koslowki (2011)*, they argue that institutional trust is the focus of attention after periods of crises, after an economy has successfully passed through the bottom of the crisis as a result of the most urgent interventions. As a case study, they show that after the financial crisis of 2008, the European Union set up a number of institutions to maintain and control the safe functioning of the financial sector in response to the crisis of confidence (as well). Regulations in Hungary were also strengthened accordingly. However, the restoration of confidence proved to be

a longer-lasting process than the economic crisis: trust in the banking sector was restored by the mid-2010s as a result of the joint involvement of state and market actors (Müller – Kerényi 2019: p. 11).

While there is limited research available on the evolution of household trust in the banking system, it is common knowledge that whatever its previous level was, it was negatively impacted by the 2008 financial crisis. Of the ad-hoc surveys, one of the most comprehensive is the World Values Survey conducted in 60 countries between 2010–2014.¹ It found that in many countries more than half of the population trusts in banks (however, due to differences in reference periods, the results of specific countries may not be comparable). The results show significant regional differences, with the populations of European countries appearing to be more mistrustful by global standards. Hungary did not participate in this research, but the MNB conducted a survey on the subject in 2019, also on an ad-hoc basis, finding that one quarter of the Hungarian population had no trust in banks at all (El-Meouch et al. 2020).

Based on the 2018 OECD Financial Literacy Survey, Béres (2020) analysed trust in deposit insurance in reference to the attitude that “My money in the bank is safe even if the bank goes bankrupt.” Based on his results, in Hungary trust in the banking system is independent of gender and income; however, there is a relationship with age, region, type of municipality and educational level.² He also concludes, remarkably, that a higher proportion of respondents, trusting the deposit insurance scheme, set financial goals or prepare a family budget.

2.2. Measuring financial literacy

The OECD *International Network on Financial Education* is at the forefront of measuring the public’s financial literacy at the international level. They define financial literacy as “a combination of awareness, knowledge, skill, attitude and behaviour, necessary to make sound financial decisions and ultimately achieve individual financial wellbeing” (Atkinson – Messy 2012). In keeping with the concept that they have developed, current research distinguishes three main pillars of financial literacy, namely *knowledge*, *behaviour* and *attitude* (OECD 2018). All three factors contribute to the process whereby an individual ultimately decides on financial issues that may determine his or her life in the long term.

¹ The questionnaire and the data used in the survey can be found here: <https://www.worldvaluessurvey.org/WVSDocumentationWV6.jsp>

² The degree of trust was found to exceed the average in the age bracket of 30–39-year-olds, residents of the West Transdanubia and North Great Plain regions, residents of settlements with fewer than 100,000 inhabitants, and respondents with higher educational level.

These components provide a complex view of the financial literacy of Hungarian households in an international comparison. According to the *OECD 2018 survey*, Hungary is in the mid-range in terms of level of financial knowledge, while it is also a country with one of the most cautious financial attitudes, but one of the least aware in terms of behaviour (*Figure 1*). This highlights the risky duality that although risk seeking, impulsivity and a *carpe diem* attitude are not strong characteristics of Hungarian households, they are still not able to develop behaviour to match that mentality.

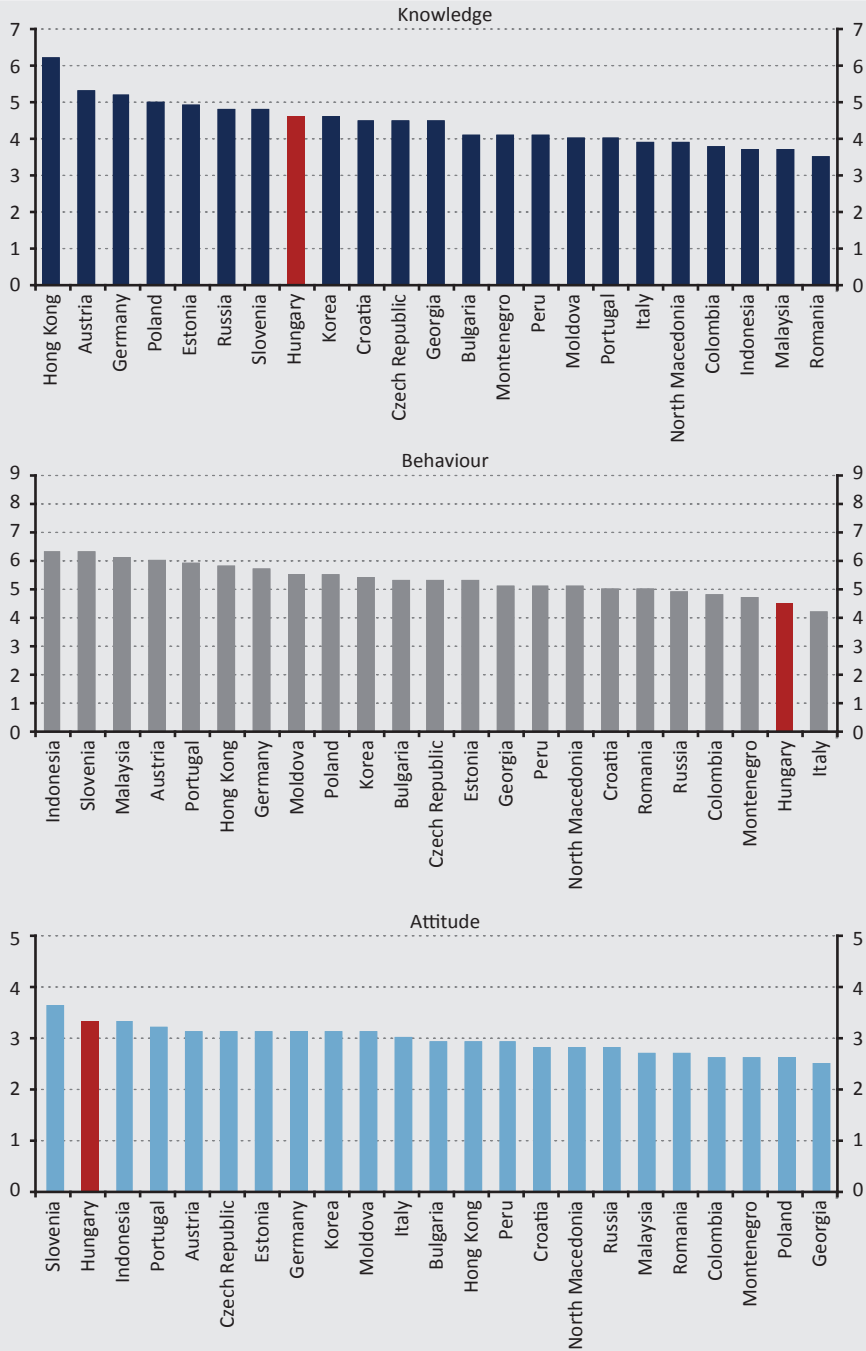
Following multiple validations, the OECD measurement toolkit includes the following items:

- knowledge (7 questions, values 0–7): (1) time value of money; (2) interest payment on loans; (3) simple interest calculation; (4) compounding; (5) risk and return; (6) inflation; (7) risk diversification.
- behaviour (9 questions, values 0–9): (1) active saving; (2) borrowing at the end of the month to make ends meet; (3) setting long-term financial goals; (4) seeking independent information or advice when considering making a purchase of financial products and services; (5) considering multiple options when selecting; (6) making informed decisions by shopping around rather than purchasing the most readily available product or service; (7) keeping a watch of financial affairs; (8) paying bills on time; (9) avoiding falling into arrears.
- attitude (3 questions, values 1–5): (1) “I tend to live for today and let tomorrow take care of itself”; (2) “Money is there to be spent”; (3) “I find it more satisfying to spend money than to save it for the long-term”.

The most significant researchers in the concept and research of financial literacy in the international literature are *Annamaria Lusardi and Olivia Mitchell* (their most cited works are *2008, 2011a, 2011b, 2014*). In several studies, the authors have discussed international differences in financial literacy and the impact of gender, age, or environmental differences on personal finances, as well as the macroeconomic role of household financial literacy on economic growth.

In recent years, a number of studies have been published in the Hungarian literature that have performed empirical analysis of financial literacy and culture. Some of these processes the OECD results (see, for example, *Németh – Zsótér 2017; Németh et al. 2017; Csorba 2020; Kovács – Szóka 2020*). Another key direction in the Hungarian literature is the development of financial personality types (see, for example, *Luksander et al. 2016; Zsótér et al. 2016; Németh et al. 2016*). *Szobonya (2021)* examined the relationship with digital competencies, *Horváthné Kökény and Széles (2014)* in connection with savings, and *Huzdik et al. (2014)* researched its role in risk appetite. Numerous surveys target the financial literacy of young

Figure1
Financial knowledge, behaviour and attitude in an international comparison



Note: Based on 2018 data. Higher scores indicate higher level of knowledge, more conscious behaviour, and less carpe diem attitude respectively.

Source: OECD (2020)

people, even high school students (e.g. *Luksander et al. 2014; Zsótér 2018; Kovács et al. 2021*), and there are studies that apply to other, narrower groups in society (e.g., *Botos et al. 2012*). *Csorba (2020)* and *Zsótér and Nagy (2012)* examined financial culture in a broader context. The financial vulnerability of the population was discussed by *Németh et al. 2020*, and the macroeconomic effects of financial culture were discussed by *Béres and Huzdik (2012)*.

The MNB addressed financial literacy in several previous studies. In 2015, a survey of non-performing mortgage loan debtors was conducted and confirmed that this group of debtors expected further government assistance, which justified the potential existence of a moral hazard (*Dancsik et al. 2015*). In 2018, consumer credit debtors were segmented based on credit statistics, resulting in the identification of two problematic groups in terms of stability: the “jugglers”, who have several credit agreements at the same time, typically with different financial institutions; and the “over-indebted”, who had undertaken relatively large debts compared to their incomes (*MNB 2018, Box 4*). In 2019, a survey was conducted on the perception of interest rate risk among retail borrowers, which confirmed that although they were characterised by a risk-averse attitude, i.e. a preference for instalments that were predictable over the long term, in practice they did not recognise these offers, were not really able to identify factors that influence instalments and could not assess the impact of interest rate increases (*MNB 2019, Chapter 9*).

2.3. Effects of FX debt on the individual

The effects of FX debt on individuals are mostly examined in the context of non-performing loans and debt relief measures resulting from the realisation of exchange rate risk and the increase of the instalments due to banks’ unilateral interest rate increases after the crisis.

However, there is no extensive literature in a specific Hungarian context on how foreign currency credit histories affected individuals’ *subsequent* behaviours and attitudes. Concerning the effect on risk perception, in their study of using the Austrian central bank’s *Euro Survey* micro-level data, *Beckmann et al. (2011)* show that following the global economic crisis, the risk awareness of households in Central and South-Eastern European countries increased: respondents considered the foreign currency loans to be riskier, especially in the countries experiencing the devaluation of the domestic currency during the crisis. Of the countries examined, the proportion of respondents who considered FX loans to be riskier than before was the highest in Hungary, at 90 per cent. Where the respondent had acquaintances who had had negative experience with foreign currency loans, this had a significant positive effect on risk awareness in all countries. Nevertheless, in the above survey, 40 per cent of respondents in Hungary – and even higher proportions in the other countries examined – considered euro loans to be more favourable than domestic

currency loans, which, according to the authors, indicates that even after the crisis, exchange rate risk was overwritten by interest rate differentials. Overall, this does not provide a very encouraging view of how the negative consequences of foreign currency debt affect financial literacy.

By contrast, *Dancsik (2017)* found that in Hungary, FX credit history, or more precisely a previous exchange rate loss incurred on FX loans, increases the likelihood that in the event of subsequent borrowing, the debtor will take out a loan with an interest rate fixed for at least five years. He concludes that the shock to FX debtors may therefore have had a significant effect on the uptake of fixed-rate loans following the 2008 crisis. Using survey data, *Banai and Vágó (2016)* examined the factors determining households' credit demand in Hungary and Poland, and concluded that in the case of Hungary, negative experiences with foreign currency loans had a negative effect on credit demand in the period considered.

Certainly, in exploring the effects of FX debt in Hungary on individuals, it is also important to identify the social groups where taking foreign currency loans is (or was) more common. *Pellényi and Bilek (2009)* found no differences in Hungary between foreign currency debtors and non-foreign currency debtors in terms of either wealth or risk aversion, arguing that foreign currency borrowing was instead driven by macroeconomic factors and a generally low level of financial literacy. By contrast, in other countries the group of credit debtors was more heterogeneous; for example, *Beer et al. (2010)* demonstrated that in Austria, FX loans were more likely to be taken out by more risk-seeking, older, financially educated and wealthier households.

3. Data and variables

3.1. Source of data

The results presented here are based on the MNB's survey "*Financial habits in the post-COVID era*". The survey was conducted by telephone (CATI) in September 2021, with 1,001 respondents. Quota sampling ensured the representativeness of the entire Hungarian adult population by gender, age, type of settlement, region and education based on the 2011 census data. Subsequent minimal divergences from the quotas were adjusted by weighting.

The purpose of the 20-minute questionnaire was to map the financial habits of Hungarian consumers, with particular regard to (1) the level of financial literacy; (2) the effect of the coronavirus pandemic on banking digitalisation; (3) trust in banks and financial products; and (4) familiarity with subsidised assistance and credit programmes. The data collection method (telephone) did not allow respondents to answer the questions on a more sensitive scale that is commonly used in such cases;

instead, attitude statements were typically binary (true–false; agree–disagree).³ This methodological difference does not allow our results to be directly compared with the results of international research.

3.2. Variables of socio-demography and credit history

For modelling purposes, explanatory variables included socio-demographic variables on the one hand, and variables related to borrowing on the other, including proximity to foreign currency lending experience.

The socio-demographic characteristics included the respondent's gender, age (5 categories), size of household (continuous variable), net monthly income (4 categories) and the presence of children under 18 years of age (binary, dummy variable). We also controlled for the type of municipality (4 categories) and the county of the respondent's residence (*Tables 1 and 2*).

In addition, we used the respondent's highest educational level, where instead of the common scale of four (8 years of primary schooling or lower; vocational secondary school; secondary grammar school; college, university), we introduced a scale of five. Within tertiary attainment, we distinguished respondents who studied finance at tertiary level, assuming that financial qualifications could affect attitudes and financial literacy and could therefore lead to different results regarding the effects of proximity to foreign currency lending experience (in the sample, the share of respondents with tertiary non-financial and financial qualifications was 13 per cent and less than 6 per cent, respectively).

The relationship of a household to debt was captured with a binary variable that shows whether the respondent or a member of his/her household has any of the credit products we queried (we only asked about outstanding mortgages and consumer loans). In 39 per cent of the sample, the household has one of the products in question. This ratio is much higher than, for example, the 30-per cent credit penetration established for Hungary based on the 2020 wave of the *European Central Bank's Household Finance and Consumption Survey* (HFCS). The reason for this may be that, owing to the telephone method used in collecting data, more financially aware respondents are over-represented in the sample, which results in a higher level of estimated credit penetration. However, this does not affect our main research question.

³ Although face-to-face interviews would have been more appropriate for the purposes of the questionnaire, it was not possible to conduct this between the waves of the coronavirus pandemic.

Table 1
Distribution of the weighted and the unweighted sample by explanatory variables (I)

Explanatory variables		Unweighted sample – distribution (%)	Weighted sample – distribution (%)
Gender	Female	53.3	53.5
	Male	46.8	46.5
Age	18–29 years	18.1	17.5
	30–39 years	19.4	19.1
	40–49 years	16.2	16.2
	50–59 years	17.7	17.6
	Over 60 years	28.7	29.6
Educational level	8 years of primary schooling or lower	25.1	28.1
	Vocational secondary school	23.4	22.4
	Secondary grammar school	32.9	31.5
	College, university – non-financial	13.1	12.6
	College, university – financial	5.6	5.4
Number of household members*	1	21.0	21.1
	2	36.4	36.6
	3	20.6	20.6
	4	12.6	12.5
	More than 4	9.3	9.3
Are there any children under the age of 18 in the household?	No	74.6	74.9
	Yes	25.4	25.1
Monthly household net income**	Below HUF 300,000	44.4	45.6
	HUF 300,000–500,000	34.0	33.4
	HUF 500,000–1,000,000	17.4	16.9
	Over HUF 1,000,000	4.2	4.1
Does the household have any loans?	No	61.4	61.9
	Yes	38.6	38.1

Note: At the end of September, HUF/EUR exchange rate was 360.5, thus HUF 300,000 and HUF 1,000,000 was equal to EUR 832 and EUR 2,774, respectively. Sample size: 1,001 * sample size: 998, used as a continuous variable in the regression (households with more than 4 members were not merged) ** sample size: 944.

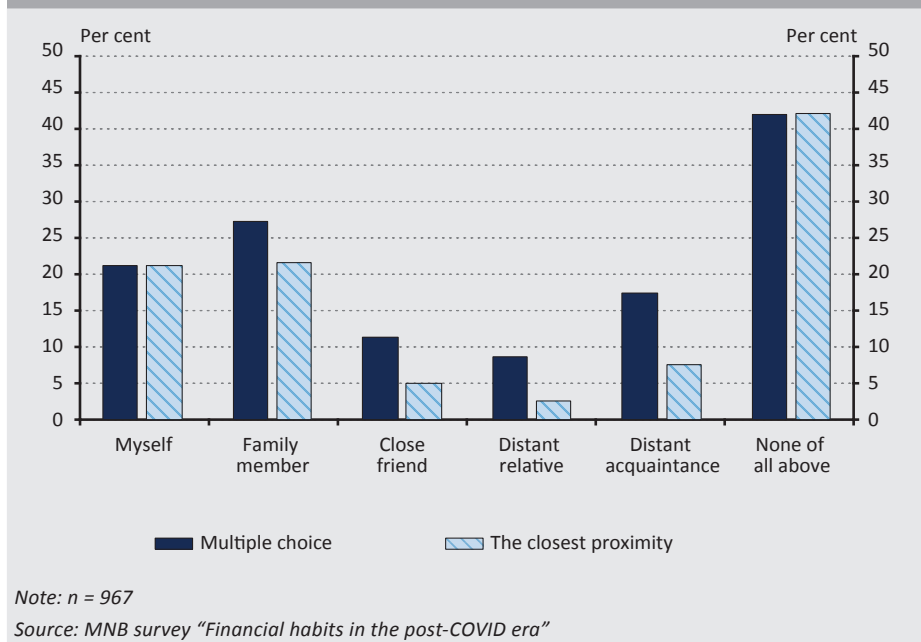
Source: MNB survey “Financial habits in the post-COVID era”

Table 2			
Distribution of the weighted and the unweighted sample by explanatory variables (II)			
Explanatory variables		Unweighted sample – distribution (%)	Weighted sample – distribution (%)
Type of municipality	Budapest	19.0	18.2
	County seat, city with county authority	17.1	16.8
	Other city/town	35.0	35.0
	Rural municipality	29.0	29.9
County	Budapest	18.1	17.4
	Bács-Kiskun	4.6	4.5
	Baranya	4.3	4.4
	Békés	3.2	3.2
	Borsod-Abaúj-Zemplén	7.0	7.2
	Csongrád-Csanád	5.3	5.3
	Fejér	4.2	4.1
	Győr-Moson-Sopron	3.7	3.8
	Hajdú-Bihar	4.8	4.9
	Heves	3.3	3.3
	Jász-Nagykun-Szolnok	5.0	5.1
	Komárom-Esztergom	3.3	3.3
	Nógrád	1.6	1.6
	Pest	12.0	11.7
	Somogy	4.0	4.1
	Szabolcs-Szatmár-Bereg	4.8	4.9
	Tolna	1.2	1.3
	Vas	1.8	1.8
	Veszprém	3.4	3.5
	Zala	4.5	4.5

Source: MNB survey “Financial habits in the post-COVID era”

The other explanatory variable of borrowing history, which is also the variable in focus, is the proximity to foreign currency lending experience. The multiple choice question was formulated as follows: “Did you or any of your relatives/acquaintances take out a foreign currency loan before 2010?” On this basis, 42 per cent of the population does not have (or is unaware of) any acquaintance who took out a FX loan; yet 21 per cent had themselves been foreign currency debtors (Figure 2).⁴ For the purpose of the regression, we recoded this variable: the closest proximity was assigned to each respondent. For example, where a respondent had both a family member and a distant relative who had taken out FX loans, that closer relationship (“family member”) was assigned to the respondent. This denotes the proximity to foreign currency lending experience, 5 representing the closest proximity (“myself”) and 0 the most distant proximity (“None of all above”) (treated as a continuous variable).⁵

Figure 2
Proximity to foreign currency lending experience



⁴ The fact that 21 per cent of the respondents had foreign currency loans is in line with the micro-level administrative credit data. According to the report of the Magyar Nemzeti Bank (MNB 2016: p. 75, Table 8.1) almost 1.9 million FX and FX-based contracts were concluded until the FX conversion (including contracts terminated before settlement, live contracts and terminated contracts). This represents a penetration of 19 per cent of the population in 2016. In addition to the sampling error, the discrepancy may be due to the fact that a contract may have more than one debtor, so that several people may say that they have taken it on their own.

⁵ Proximity to foreign currency lending experience was also added to the equations as a binary variable, and our results are robust in this regard.

3.3. Dependent variables

The effect of proximity to foreign currency lending experience was examined in terms of both trust in the banking system and components of financial literacy. The effect was quantified using a linear regression model based on OLS estimation. The explanatory variables are the same in all regression functions, except that a given component of financial literacy was not included in the regression explaining it.

Trust in the banking system was measured by five variables (*Table 3*).

Our first variable (T1) was meant to capture the general trust in the banking system, while the rest (T2 to T5) focused on the partial segments of trust in the institutions and the factors influencing them.

T1: More than 70 per cent of the respondents have overall trust in banks operating in Hungary.

T2: 58 per cent of the respondents think that there may be situations where people do not have access to their money in financial institutions, which, other than lack of trust in the banking system, may also reflect some general uncertainty over economic policy.

T3: However, a meaningful proportion of the respondents perceive some sort of bad faith on the part of banks: 55 per cent consider it common for banks to exploit legal loopholes to the respondent's disadvantage

T4: About half of the respondents reported the experience of receiving information from financial institutions that was difficult to understand, which, in our view, could also be a factor eroding trust.

T5: However, only a relatively low proportion (27 per cent) reported cases where a bank failed to provide information about specific details or risks of the products the respondent used.

For regression purposes, the statements were inverted so that a response expressing trust was assigned the value of 1 and one expressing lack of trust the value of 0. Therefore, positive coefficients indicate factors encouraging trust, whereas negative coefficients indicate factors discouraging trust.

Our methodology is based on the OECD toolkit to measure financial literacy: accordingly, we distinguished financial knowledge, attitude and behaviour. In addition to the true/false test measuring knowledge and statements measuring attitudes and behaviours, we also incorporated three statements to assess the extent to which the respondent implements good practices that reinforce financial literacy.

Trust items	Unweighted sample – distribution (%)			Weighted sample – distribution (%)		
	Yes	No	Total	Yes	No	Total
T1. Overall, do you trust banks operating in Hungary?	71.8	28.2	100	71.6	28.4	100
T2. Do you think that there may be a situation in Hungary where people do not have access to their money in financial institutions?	58.2	41.9	100	58.1	41.9	100
T3. Do you think it is typical for your financial institution to act to your detriment, taking advantage of legal loopholes?	54.9	45.1	100	54.7	45.3	100
T4. Have you ever found it difficult to understand the received information from financial institutions?	50.9	49.1	100	50.7	49.3	100
T5. Have you ever not been informed by financial institutions about certain details and risks of the products and services you use (e.g. credit, bank account, savings product)?	26.8	73.2	100	26.6	73.4	100

Note: When asked about trust, interviewers asked the respondents to think primarily in terms of the previous 10 years, i.e. disregard the period of foreign currency lending. Sample size: T1: 979; T2: 982; T3: 960; T4: 975; T5: 969.

Source: MNB survey “Financial habits in the post-COVID era”

The statements measuring knowledge gauged familiarity with the positive relationship between return and risk (K1, K4), inflation (K2, K5), and the effect of diversification as a risk mitigant (K3). Three of them (K1, K3, K5) are covered in the OECD survey, to which we added another two to gain a more nuanced picture. The results show that the share of correct answers was the highest in the case of questions about inflation, whereas respondents were the least familiar with the benefits of portfolio diversification (*Table 4*). This latter question also had the highest level of non-response. This can be explained by the fact that the OECD question is relevant to the developed world as a whole but less relevant in Hungary, because only a small proportion of the population exhibits demand in the security markets.

Table 4								
Items measuring financial knowledge								
Financial knowledge items	Unweighted sample – distribution (%)				Weighted sample – distribution (%)			
	Correct answer	Incorrect answer	Do not know / No answer	Total	Correct answer	Incorrect answer	Do not know / No answer	Total
K1. A high-return investment is likely to be high-risk.	78.7	16.4	4.9	100.0	78.5	16.5	5.0	100.0
K2. High inflation means that the cost of living is rising rapidly.	89.9	8.8	1.3	100.0	89.9	8.7	1.4	100.0
K3. In general, you can reduce the risk of stock market investments by buying many different stocks and shares.	53.5	20.5	26.0	100.0	52.8	20.6	26.6	100.0
K4. High-return investments are typically low-risk.	71.6	15.6	12.8	100.0	70.5	16.1	13.4	100.0
K5. If you put your money in the bank and inflation is higher than the annual bank interest rate for the next 1 year, your money will be worth more after 1 year.	82.2	11.5	6.3	100.0	81.3	12.0	6.7	100.0

Source: MNB survey “Financial habits in the post-COVID era”

To assess financial literacy in attitude, we also relied on three OECD statements, which capture the carpe diem attitude. While the non-response ratio was low, the proportion of respondents agreeing with each of the three statements varied greatly: half of the respondents agreed that “Money is there to be spent”, while 17 and 20 per cent, respectively, agreed with the other two statements (*Table 5*). This indicates an attitude of overall consciousness, one that is not defined by a carpe diem mentality.

Table 5								
Items measuring financial attitude								
Financial attitude items	Unweighted sample – distribution (%)				Weighted sample – distribution (%)			
	Agree	Disagree	Do not know / no answer	Total	Agree	Disagree	Do not know / no answer	Total
A1. I tend to live for today and let tomorrow take care of itself.	19.0	80.0	1.0	100.0	19.6	79.4	1.0	100.0
A2. Money is there to be spent.	48.9	49.9	1.3	100.0	49.1	49.5	1.4	100.0
A3. I find it more satisfying to spend money than to save it for the long-term.	16.8	79.4	3.8	100.0	17.2	78.9	3.9	100.0

Note: The sum of the weights in row A2 equals 100,1 per cent due to rounding.

Source: MNB survey “Financial habits in the post-COVID era”

We tested financial behaviour with four statements, primarily concerning conscious financial planning. The overwhelming majority, between 75 and 96 per cent, agree with the statements (*Table 6*). Accordingly, in addition to daily mandatory items (payment of bills), the setting of long-term goals also appears to be a common attribute of the population.

Table 6								
Items measuring financial behaviour								
Financial behaviour items	Unweighted sample – distribution (%)				Weighted sample – distribution (%)			
	Agree	Disagree	Do not know / No answer	Total	Agree	Disagree	Do not know / No answer	Total
B1. I check my financial affairs regularly and thoroughly.	88.5	11.4	0.1	100.0	88.6	11.2	0.2	100.0
B2. I set long-term goals and strive to achieve them.	74.8	24.7	0.5	100.0	74.5	24.9	0.6	100.0
B3. Before I buy, I carefully consider whether I can afford it.	91.4	8.5	0.1	100.0	91.4	8.5	0.2	100.0
B4. I pay bills on time.	96.1	3.5	0.4	100.0	96.0	3.5	0.5	100.0

Note: The sum of the weights in row A2 equals 100,1 per cent due to rounding.

Source: MNB survey “Financial habits in the post-COVID era”

In addition to behaviour, we also incorporated a fourth pillar into the study of financial literacy, which focused on concrete, practical activities in addition to behavioural elements expressing general attitudes. We considered this distinction important, and thus deserving to be added to the OECD methodology, because terms describing behavioural items, such as “regular”, “thorough” and “seeks”, also involve subjective judgement on the part of the respondent. For that reason, we formulated three statements that indicated specific activities, i.e. drawing up shopping lists and preparing household budgets, whereas “regular” checks on financial matters was defined as a weekly activity. Introducing these items to measure practice proved to be useful: they produced lower rates of agreement (between 45 and 68 per cent) compared to the statements about behaviour (*Table 7*). In our survey, we found that less than half of the population prepares a budget, but more than two-thirds of them prepare a shopping list before making purchases.

Table 7
Items measuring financial practice

Financial practice items	Unweighted sample – distribution (%)				Weighted sample – distribution (%)			
	Agree	Disagree	Do not know / No answer	Total	Agree	Disagree	Do not know / No answer	Total
P1. I maintain an accurate budget for my revenues and expenditures.	45.2	54.8	0.0	100.0	45.3	54.6	0.1	100.0
P2. At least once a week I check how much disposable income I have.	66.1	33.7	0.2	100.0	66.4	33.3	0.3	100.0
P3. I write a shopping list before I make purchases.	68.4	31.5	0.1	100.0	68.3	31.5	0.2	100.0

Source: MNB survey “Financial habits in the post-COVID era”

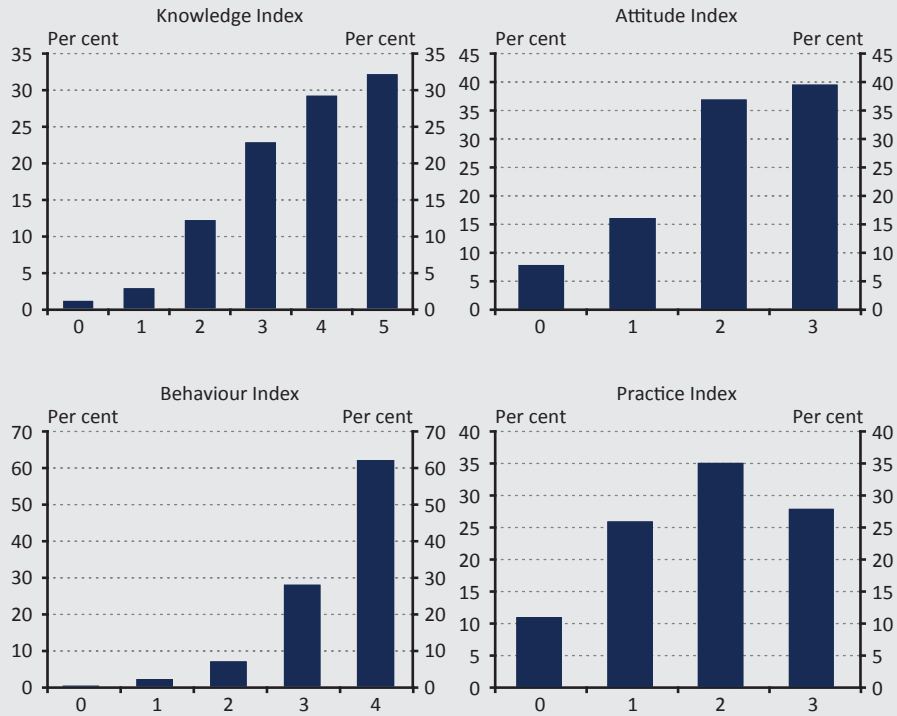
For application in regression functions, we derived indices from each literacy component by producing the unweighted aggregate of all statements associated with that component.⁶ For aggregation purposes, we converted each item by assigning it the value of 1 in the case of answers showing literacy, and the value of 0 in all other cases (lack of literacy and non-response). As can be seen from the tables presenting the answers to each question, the responses indicated relatively high levels of financial literacy. Accordingly, the distribution of the four derived indices is skewed to the right, with the practice index falling the closest to symmetric distribution (*Figure 3*).

The four financial literacy indices are used in our study both as explanatory and dependent variables: in the first capacity, they are used to explain trust in the banking system, and in the second, their variance is described in relation to socio-demographic variables and each other.⁷

⁶ Having attitude statements at hand, we also carried out principal component analysis on the items associated with each component. The results are robust for the method measuring latent variables (principal component analysis versus indexing).

⁷ There is a complex relationship between the individual components of financial literacy, and endogeneity problems also arise. For regression purposes, our primary goal was to examine the impact of proximity to foreign currency lending experience; consequently, the relationship between the four indices is not discussed in more depth, we only establish the fact that correlations exist.

Figure 3
Distribution of each financial literacy index



Source: Calculation based on the MNB survey "Financial habits in the post-COVID era"

4. Results

We established a regression function using OLS estimation. Accordingly, the functions used for estimating the trust variables (T1, T2, T3, T4, T5) are linear probability models (the dependent variable being binary in these cases),⁸ and those of models treating financial literacy components as dependent variables are linear regression models. The results in *Table 8* are evaluated at a significance level of 5 per cent.

⁸ The results are robust for the estimation function: for the OLS linear probability model, patterns observed are similar to those in the logistic regression function established using maximum likelihood estimation. As we had no intention to use the regression function for prediction, in the *Appendix* we included the linear probability models for easier interpretation.

Table 8
Results of regressions explaining trust in the banking system and financial literacy

Explanatory variables	Dependent variable:									
	Trust 1.	Trust 2.	Trust 3.	Trust 4.	Trust 5.	Knowledge	Attitude	Behaviour	Practice	
Proximity to FX lending experience			-			+				
Gender				Male -		Male +			Male -	
Educational level						+	+			
Age		+				∩			U	
Type of municipality									Budapest +	
County										
Members of household										
Children below 18 years (dummy)										
Income	+	∩	∩	+	∩	+	HUF 300,000– 500,000 +		U	
Debtor (dummy)									-	+
Knowledge Index							+			
Attitude Index		+				+		+		
Behaviour Index										+
Practice Index										+
R ²	8.4%	8.9%	6.9%	7.2%	5.2%	22.7%	14.4%	18.3%	16.1%	
n	913	913	913	913	913	913	913	913	913	913

Note: ∩ means that the lower and upper values of the explanatory variable do not differ significantly, while the middle values do, and with those values the estimated coefficient is positive. U means that the lower and upper values of the explanatory variable do not differ significantly, while the middle values do, and with those values the estimated coefficient is negative.

The role of *proximity to foreign currency lending experience* is more limited than we expected.⁹ Closer proximity has no apparent effect on an individual's overall trust in banks operating in Hungary (T1), or on an individual's assumption that people may not have access to their money held in a bank account (T2). Furthermore, respondents (in the post-FX lending period) had no perception of banks failing to inform them about the risks of products or services (T5), nor of difficulty in understanding the information provided by the financial institutions (T4). By contrast, more proximity implies considering it common for banks to exploit legal loopholes to the respondent's disadvantage (T3).¹⁰ Among the components of financial literacy, it plays a significant role only in financial knowledge, i.e. controlled for other factors, closer proximity on average increases financial knowledge. It fails to influence, in any direction, the adoption of more prudent attitudes, behaviours and practices.¹¹

In terms of *gender*, men on average tend to agree more that information from banks is difficult to understand; in all other respects, men and women have the same degree of trust in the banking system. Among the financial literacy components, there is no significant gender difference in attitude or behaviour, whereas men scored higher in knowledge, and women in practice, on average.

Educational level has no influence on trust in the banking system, nor on behaviour and practice. On average, however, it is true that the higher the educational level, the greater the financial knowledge and the less the *carpe diem* attitude.

The role of *age* in models is mixed. In trust indicators, it is significant in a single case only: compared to other age groups, respondents over 60 years are less inclined to agree that people may not have access to their bank account funds (T2). Among the literacy indices, no significant effect was found in attitude or behaviour, whereas a quadratic relationship can be observed in terms of knowledge, in that index values tend to be higher in the case of middle-aged groups. With the practice index, however, an opposite quadratic relationship is found: middle-aged people are on average less financially aware in practice compared to young and elderly groups.

⁹ During the review process of the study, it was suggested that the partly counterintuitive results may be due to the high noise level in the data: some respondents were not interested in the questionnaire and responded randomly without a real opinion. We sought to address this in several ways following the reviewer's suggestions: we eliminated those who (1) gave inconsistent responses to K1 and K4 statements; (2) consider themselves as less financially aware than the average; (3) gave the same answer to all attitude, behaviour and practice statements. The regression functions did not change significantly as a result of this data cleaning, and so the number of samples used for the regression functions included in the study is smaller than the total number of respondents only due to missing data.

¹⁰ The aggregation of the trust statements into a single index did not lead to a meaningful result: the involvement with foreign currency lending was not significant in this case either.

¹¹ The results are robust in terms of whether proximity to FX lending experience was added to the equations on a continuous scale of six, or as a binary variable. We examined the possibility of converting to a binary variable in two ways: (1) we considered to be affected by a foreign currency lending if the respondent, a close family member, or a close friend was involved; (2) we considered affected only if the respondent was itself a foreign currency credit debtor.

Overall, the significance of *geographical* attributes could not be demonstrated: the type of municipality was only significant in explaining of the practice index, where those living in county seats, other cities/towns or rural municipalities consistently scored lower on average than those living in the capital. There is no clear pattern in terms of counties, except for one of the trust models (T1), all could be omitted from the models.

Household size and the presence of *children under 18 years of age* in the household showed no significant effect in any of the models.

Household income was found to be a significant factor in the largest number of cases, but the direction of the relationship varied. For some of the trust indicators, higher income is associated with higher trust (T1, T4). In the other cases, however, the trust of those in the lowest and highest income categories is on average lower (T2, T3, T5) than in the middle categories between the two. A similarly heterogeneous picture emerges when it comes to explaining literacy indices: (1) the relationship with knowledge is positive; (2) in terms of attitude, consciousness tends to be characteristic only of respondents with incomes in the HUF 300,000 to 500,000 bracket, but (3) does not play a role in behaviour, and (4) literacy in practice is more characteristic in the lowest and highest income groups.

Whether a household *currently has a loan* is not related to trust in the banking system, which is also not an intuitive result. The status of being a credit debtor is negatively correlated with prudent behaviour, but positively correlated with cautious practice.

Financial knowledge, as well as *attitude, behaviour and practice*, are correlated with each other, *ceteris paribus*. Attitude shows a positive relationship with knowledge and with one of the trust indicators (T2), as well as with prudent behaviour.

5. Summary

In our study, we examined the effect of proximity to foreign currency lending experience on an individual's trust in the banking system and financial literacy. Given that FX indebtedness in Hungary resulted in a prolonged financial and social crisis following the onset of the 2008 crisis, an important question to ask is to what extent experiences with FX debt continue to affect the *current* behaviour of the population, in other words, whether we are "still haunted by the past experience of FX lending."

The role and importance of proximity to FX lending experience fell short of our expectations. It does not play a role in explaining the variance of most variables of trust in the banking system. Among more closely involved respondents, only one dimension is given a different treatment: the assumption that banks act in bad faith

is more common, i.e. that a bank would exploit legal loopholes to the respondent's disadvantage. Overall, FX credit history is no longer a significant mitigating force when it comes to trust in the banking system.

Controlled for other factors, closer proximity increases financial knowledge on average, implying that presumably negative experiences with FX debt may have resulted in the acquisition of some basic knowledge. Contrary to our intuitions, however, the adoption of more prudent attitude, behaviour and practices is not influenced in any direction, which raises the question of whether the population's memories of the crisis have faded. Another possible explanation, which requires further research, is that due to the high prominence of the issue FX debt has affected not only those who had a connection to a FX debtor, but also the rest of the population. In this case, it is possible that the effect cannot be estimated because trust in the banking system deteriorated in the entire population, not only for FX debtors and their close environment.

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Appendix: Estimated linear regression functions

Dependent variable: trust (1)	Estimated coefficient	p-value	Dependent variable: trust (2)	Estimated coefficient	p-value
Proximity to FX lending experience	-0.003	0.714	Proximity to FX lending experience	-0.008	0.322
Debtor (dummy)	0.010	0.777	Debtor (dummy)	-0.008	0.818
Knowledge Index	0.016	0.273	Knowledge Index	0.027	0.094
Attitude Index	0.033	0.058	Attitude Index	0.040	0.032
Behaviour Index	0.036	0.105	Behaviour Index	0.024	0.311
Practice Index	0.006	0.718	Practice Index	-0.003	0.877
Gender (reference group: female)	0.003	0.929	Gender (reference group: female)	-0.035	0.314
Income (reference group: Below HUF 300,000)			Income (reference group: Below HUF 300,000)		
HUF 300,000–500,000	0.064	0.093	HUF 300,000–500,000	0.111	0.007
HUF 500,000–1,000,000	0.118	0.019	HUF 500,000–1,000,000	0.145	0.008
Over HUF 1,000,000	0.192	0.020	Over HUF 1,000,000	0.098	0.270
Educational level (reference group: 8 years of primary schooling or lower)			Educational level (reference group: 8 years of primary schooling or lower)		
Vocational secondary school	0.032	0.480	Vocational secondary school	0.076	0.124
Secondary grammar school	0.042	0.363	Secondary grammar school	0.004	0.933
College, university – non-financial	0.084	0.162	College, university – non-financial	0.013	0.834
College, university – financial	0.147	0.059	College, university – financial	-0.054	0.517
Age (reference group: 18–29 years)			Age (reference group: 18–29 years)		
30–39 years	-0.069	0.171	30–39 years	-0.033	0.547
40–49 years	-0.023	0.681	40–49 years	0.059	0.319
50–59 years	0.012	0.821	50–59 years	0.065	0.261
Over 60 years	0.008	0.877	Over 60 years	0.208	0.000
Type of municipality (reference group: Budapest)			Type of municipality (reference group: Budapest)		
County seat, city with county authority	-0.201	0.243	County seat, city with county authority	-0.340	0.067
Other city/town	-0.186	0.265	Other city/town	-0.306	0.089
Rural municipality	-0.201	0.234	Rural municipality	-0.349	0.055
Number of HH members	-0.020	0.177	Number of HH members	0.002	0.924
Children below 18 years (dummy)	0.059	0.209	Children below 18 years (dummy)	-0.048	0.334
County (reference group: Budapest)			County (reference group: Budapest)		
constant	0.368	0.001	constant	0.050	0.686
Sample size: 913			Sample size: 913		
R ² : 8.4%			R ² : 8.9%		

Dependent variable: trust (3)	Estimated coefficient	p-value	Dependent variable: trust (4)	Estimated coefficient	p-value
Proximity to FX lending experience	-0.018	0.024	Proximity to FX lending experience	-0.015	0.066
Debtor (dummy)	0.008	0.838	Debtor (dummy)	-0.060	0.106
Knowledge Index	0.016	0.319	Knowledge Index	-0.030	0.069
Attitude Index	0.034	0.074	Attitude Index	0.036	0.062
Behaviour Index	0.038	0.118	Behaviour Index	0.027	0.269
Practice Index	0.008	0.675	Practice Index	-0.017	0.358
Gender (reference group: female)	-0.052	0.144	Gender (reference group: female)	-0.076	0.034
Income (reference group: Below HUF 300,000)			Income (reference group: Below HUF 300,000)		
HUF 300,000–500,000	0.054	0.198	HUF 300,000–500,000	0.049	0.248
HUF 500,000–1,000,000	0.123	0.026	HUF 500,000–1,000,000	0.142	0.011
Over HUF 1,000,000	0.109	0.226	Over HUF 1,000,000	0.201	0.027
Educational level (reference group: 8 years of primary schooling or lower)			Educational level (reference group: 8 years of primary schooling or lower)		
Vocational secondary school	-0.046	0.357	Vocational secondary school	-0.004	0.941
Secondary grammar school	-0.009	0.856	Secondary grammar school	-0.029	0.567
College, university – non-financial	-0.022	0.737	College, university – non-financial	-0.061	0.356
College, university – financial	0.107	0.205	College, university – financial	0.004	0.959
Age (reference group: 18–29 years)			Age (reference group: 18–29 years)		
30–39 years	-0.025	0.656	30–39 years	0.029	0.607
40–49 years	0.000	1.000	40–49 years	0.002	0.980
50–59 years	-0.076	0.198	50–59 years	0.011	0.857
Over 60 years	0.034	0.539	Over 60 years	0.066	0.230
Type of municipality (reference group: Budapest)			Type of municipality (reference group: Budapest)		
County seat, city with county authority	-0.320	0.089	County seat, city with county authority	-0.178	0.347
Other city/town	-0.249	0.173	Other city/town	-0.170	0.356
Rural municipality	-0.262	0.156	Rural municipality	-0.209	0.262
Number of HH members	-0.021	0.213	Number of HH members	-0.011	0.521
Children below 18 years (dummy)	0.037	0.471	Children below 18 years (dummy)	0.035	0.500
County (reference group: Budapest)			County (reference group: Budapest)		
constant	0.167	0.185	constant	0.420	0.001
Sample size: 913			Sample size: 913		
R ² : 6.9%			R ² : 7.2%		

Dependent variable: trust (5)	Estimated coefficient	p-value	Dependent variable: Knowledge Index	Estimated coefficient	p-value
Proximity to FX lending experience	-0.006	0.401	Proximity to FX lending experience	0.052	0.002
Debtor (dummy)	-0.038	0.261	Debtor (dummy)	-0.063	0.415
Knowledge Index	-0.013	0.379	Attitude Index	0.085	0.033
Attitude Index	0.000	0.983	Behaviour Index	-0.073	0.149
Behaviour Index	0.020	0.367	Practice Index	-0.042	0.272
Practice Index	-0.032	0.059			
Gender (reference group: female)	-0.033	0.313	Gender (reference group: female)	0.344	0.000
Income (reference group: Below HUF 300,000)			Income (reference group: Below HUF 300,000)		
HUF 300,000–500,000	0.033	0.401	HUF 300,000–500,000	0.250	0.004
HUF 500,000–1,000,000	0.102	0.047	HUF 500,000–1,000,000	0.470	0.000
Over HUF 1,000,000	0.113	0.176	Over HUF 1,000,000	0.697	0.000
Educational level (reference group: 8 years of primary schooling or lower)			Educational level (reference group: 8 years of primary schooling or lower)		
Vocational secondary school	-0.006	0.897	Vocational secondary school	0.561	0.000
Secondary grammar school	-0.040	0.392	Secondary grammar school	0.565	0.000
College, university – non-financial	-0.054	0.371	College, university – non-financial	0.808	0.000
College, university – financial	-0.123	0.117	College, university – financial	0.773	0.000
Age (reference group: 18–29 years)			Age (reference group: 18–29 years)		
30–39 years	0.011	0.830	30–39 years	0.095	0.411
40–49 years	-0.066	0.237	40–49 years	0.416	0.001
50–59 years	-0.096	0.078	50–59 years	0.367	0.003
Over 60 years	-0.060	0.238	Over 60 years	0.021	0.858
Type of municipality (reference group: Budapest)			Type of municipality (reference group: Budapest)		
County seat, city with county authority	0.132	0.448	County seat, city with county authority	-0.065	0.869
Other city/town	0.279	0.099	Other city/town	0.027	0.944
Rural municipality	0.198	0.246	Rural municipality	-0.182	0.636
Number of HH members	-0.008	0.590	Number of HH members	-0.029	0.405
Children below 18 years (dummy)	0.012	0.799	Children below 18 years (dummy)	0.019	0.859
County (reference group: Budapest)			County (reference group: Budapest)		
constant	0.840	0.000	constant	3.051	0.000
Sample size: 913			Sample size: 913		
R ² : 5.2%			R ² : 22.7%		

Dependent variable: Attitude Index			Dependent variable: Behaviour Index		
	Estimated coefficient	p-value		Estimated coefficient	p-value
Proximity to FX lending experience	-0.005	0.714	Proximity to FX lending experience	0.002	0.887
Debtor (dummy)	-0.063	0.333	Debtor (dummy)	-0.115	0.025
Knowledge Index	0.062	0.033	Knowledge Index	-0.033	0.149
Behaviour Index	0.302	0.000	Attitude Index	0.185	0.000
Practice Index	0.001	0.971	Practice Index	0.218	0.000
Gender (reference group: female)	-0.107	0.088	Gender (reference group: female)	-0.024	0.628
Income (reference group: Below HUF 300,000)			Income (reference group: Below HUF 300,000)		
HUF 300,000–500,000	0.169	0.024	HUF 300,000–500,000	0.023	0.690
HUF 500,000–1,000,000	0.118	0.231	HUF 500,000–1,000,000	-0.012	0.880
Over HUF 1,000,000	0.144	0.370	Over HUF 1,000,000	0.071	0.573
Educational level (reference group: 8 years of primary schooling or lower)			Educational level (reference group: 8 years of primary schooling or lower)		
Vocational secondary school	0.250	0.005	Vocational secondary school	0.019	0.782
Secondary grammar school	0.320	0.000	Secondary grammar school	0.014	0.839
College, university – non-financial	0.328	0.005	College, university – non-financial	0.011	0.907
College, university – financial	0.478	0.002	College, university – financial	0.210	0.076
Age (reference group: 18–29 years)			Age (reference group: 18–29 years)		
30–39 years	-0.055	0.575	30–39 years	0.071	0.355
40–49 years	0.077	0.472	40–49 years	-0.046	0.584
50–59 years	0.032	0.763	50–59 years	-0.030	0.713
Over 60 years	-0.167	0.089	Over 60 years	-0.007	0.926
Type of municipality (reference group: Budapest)			Type of municipality (reference group: Budapest)		
County seat, city with county authority	0.154	0.647	County seat, city with county authority	-0.237	0.366
Other city/town	0.196	0.548	Other city/town	-0.155	0.543
Rural municipality	0.251	0.447	Rural municipality	-0.119	0.646
Number of HH members	-0.003	0.911	Number of HH members	0.010	0.665
Children below 18 years (dummy)	0.089	0.329	Children below 18 years (dummy)	0.016	0.821
County (reference group: Budapest)			County (reference group: Budapest)		
constant	0.515	0.021	constant	2.738	0.000
Sample size: 913			Sample size: 913		
R ² : 14.4%			R ² : 18.3%		

Dependent variable: Practice Index	Estimated coefficient	p-value
Proximity to FX lending experience	0.012	0.412
Debtor (dummy)	0.200	0.003
Knowledge Index	-0.033	0.272
Attitude Index	0.001	0.971
Behaviour Index	0.386	0.000
Gender (reference group: female)	-0.179	0.006
Income (reference group: Below HUF 300,000)		
HUF 300,000–500,000	-0.163	0.037
HUF 500,000–1,000,000	-0.207	0.043
Over HUF 1,000,000	-0.263	0.115
Educational level (reference group: 8 years of primary schooling or lower)		
Vocational secondary school	-0.159	0.088
Secondary grammar school	-0.163	0.079
College, university – non-financial	-0.024	0.845
College, university – financial	-0.210	0.183
Age (reference group: 18–29 years)		
30–39 years	-0.213	0.037
40–49 years	-0.372	0.001
50–59 years	-0.271	0.013
Over 60 years	-0.096	0.349
Type of municipality (reference group: Budapest)		
County seat, city with county authority	-0.696	0.047
Other city/town	-0.699	0.039
Rural municipality	-0.751	0.029
Number of HH members	-0.012	0.693
Children below 18 years (dummy)	0.103	0.275
County (reference group: Budapest)		
constant	0.970	0.000
Sample size: 913		
R ² : 16.1%		