How does foreign currency debt relief affect households' loan demand? Evidence from the OeNB Euro Survey in CESEE

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Many Central, Eastern and Southeastern European (CESEE) countries have implemented or are discussing measures to alleviate the debt burden of households with foreign currency loans, in particular Swiss franc loans, such as converting these loans at historical exchange rates. This paper presents evidence from the OeNB Euro Survey indicating whether households are aware of government efforts to help borrowers and shows that awareness of current government measures is positively and significantly correlated with expectations of future government action for debt relief. We find that expectations of debt relief have no effect on loan demand in general but positively and significantly increase demand for foreign currency loans.

Governments in various countries, especially emerging economies, have taken action for household debt relief in the past. More recently, a number of Central, Eastern and Southeastern European (CESEE) countries have adopted such measures, especially to support households with foreign currency loans. While such support schemes are beneficial for individual indebted households, the expediency of unconditional bailouts, however, remains controversial. Opponents argue that debt relief may in fact exacerbate credit rationing or induce moral hazard. Proponents highlight the welfare benefits for individuals and argue that overindebtedness distorts investment and production decisions.

Why has government action for household debt relief proliferated in the CESEE region in recent years? Household indebtedness in CESEE rose during the transition process, starting from very low initial levels of leverage. The growth of credit to households picked up substantially in the years before the financial crisis and, according to the literature, approached or in some countries even surpassed equilibrium levels. At the same time, foreign currency loans became popular in CESEE. Such loans soared during the pre-crisis years. They were mostly denominated in euro and, in a number of countries, in Swiss francs. As a result, many CESEE countries entered the crisis with a significant percentage of loans to households denominated in foreign currencies (see chart 1, which also broadly covers the country sample that we have used for our empirical analysis).

While foreign currency borrowing can be individually and socially rational under certain circumstances,[2] it also poses risks to financial stability, especially if borrowers are unhedged. Major unexpected exchange rate or interest rate moves can wreck the balance sheets of such borrowers and thus taint the asset quality of
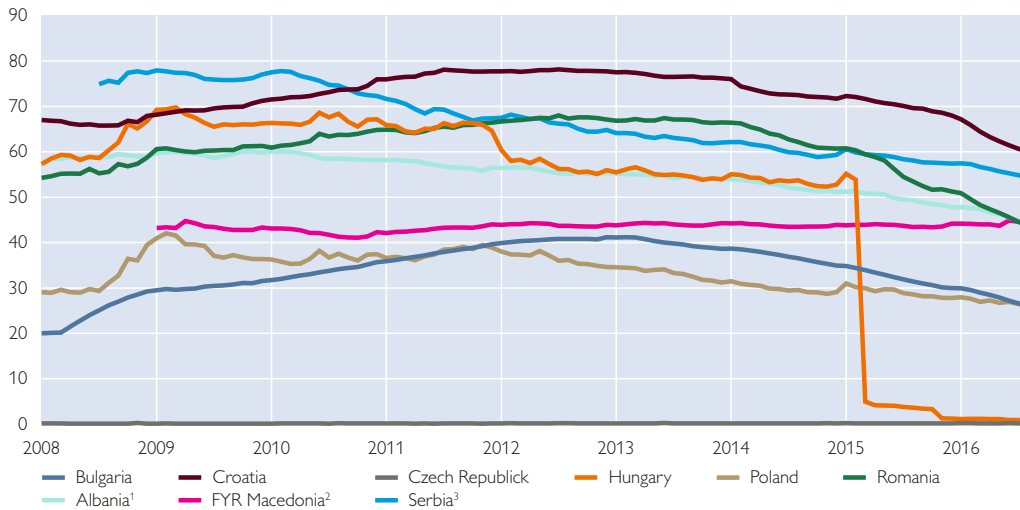

Chart 1

Development of foreign currency lending in selected CESEE countries

% of total loans to households and nonprofit institutions serving households (NPISH)

— Bulgaria	— Croatia	— Czech Republick	— Hungary — Poland — Romania
— Albania[1]	— FYR Macedonia[2]	— Serbia[3]	

Source: NCBs.

[1] *Claims on households and NPISH.*

[2] *Before January 2009 excluding loans indexed to foreign currency and therefore not reported.*

[3] *Claims on households and NPISH. Before July 2008 excluding claims indexed to foreign currencies and therefore not reported.*

Note: The value for Serbia for 2008 is the average from July to December 2008. For Bosnia and Herzegovina, data are not comparable, as they do not include loans indexed to foreign currency. Therefore, the chart does not cover Bosnia and Herzegovina.

banks. This may in turn lead to aggregate refinancing problems of banks, e.g. because of sudden stops of capital inflows (Fernandéz-Arias, 2006; Levy Yeyati, 2006) and thus to banking crises.[3] Furthermore, as borrowers come under financial stress, they reduce spending, thus dampening aggregate demand. The subsequent repair of balance sheets typically has a drawn-out negative effect on the growth performance of economies.
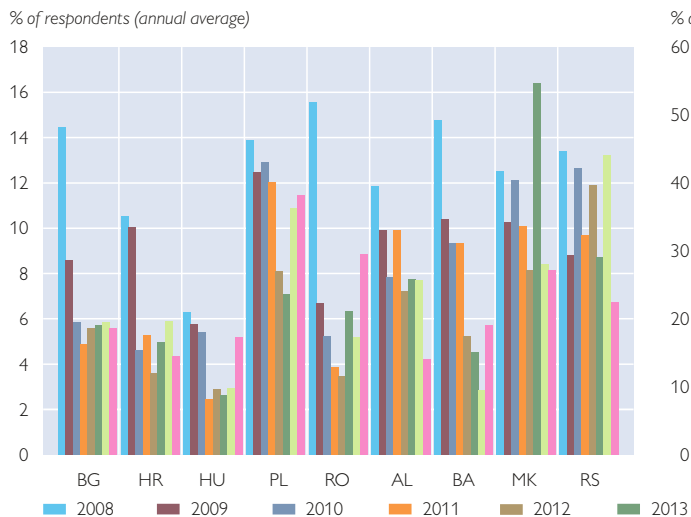
When the crisis hit in 2008–09, the currencies of most CESEE countries remained, by and large, remarkably stable vis-à-vis the euro. However, CESEE currencies depreciated considerably against the Swiss franc, both in the initial phase of the crisis and then again after the announcement of the Swiss National Bank (SNB) on January 15, 2015, that it would no longer hold the exchange rate floor of the Swiss franc to the euro. These developments have highlighted that foreign currency loans can pose a substantial threat to unhedged borrowers who are vulnerable to currency fluctuations.

Against this backdrop, calls for government support to households with foreign currency loans in CESEE countries gained momentum during the financial crisis. It is not at all surprising that calls for support were greatest in countries with substantial volumes of Swiss franc loans to households (Hungary, Poland, Croatia, Serbia and Romania). See the box below for more information on the specific measures of authorities to alleviate the debt burden of foreign currency borrowers.
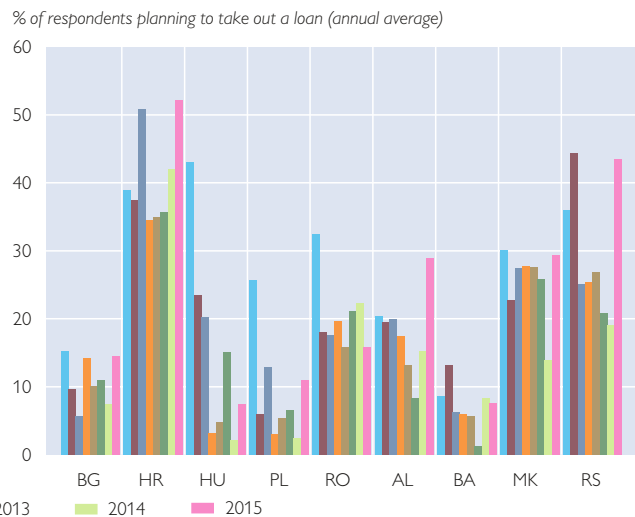
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[3] *A further risk relates to currency mismatches of banks. This risk usually is limited by regulations, i.e. by caps on net foreign currency positions of banks.*

Chart 2

Loan demand

Do you plan to take out a loan within the next year?

% of respondents (annual average)

Do you plan to take out a foreign currency loan within the next year?

% of respondents planning to take out a loan (annual average)

2008 2009 2010 2011 2012 2013 2014 2015

Source: OeNB Euro Survey.

Note: Abbreviations represent the two-digit ISO country code.

Alongside the conversion of foreign currency loans, the extension of new foreign currency loans to households was restricted to different degrees in most CESEE countries. In May 2015, the European Systemic Risk Board assessed the implementation of its recommendations on lending in foreign currencies issued a few years earlier (ESRB, 2015; ESRB, 2011) and concluded that with the exception of Bulgaria,[4] countries were largely or fully compliant with the recommendations. However, the ESRB also noted that the current low level of new foreign currency lending may also be due to current credit conditions in general and pointed out that "economic conditions have not yet materialized that could lead to a renewal of foreign currency lending to unhedged borrowers, which could in turn trigger new systemic vulnerabilities" (ESRB, 2015). As credit conditions in CESEE have eased in recent quarters and lending dynamics are seeing a revival, it will be interesting to watch whether these apprehensions will be substantiated and if so, to what degree. Indeed, chart 2, which is based on OeNB Euro Survey data, indicates that the percentage of households who plan to take out a foreign currency loan is growing again in all countries except Bosnia and Herzegovina.[5]

This paper presents new and unique evidence from the OeNB Euro Survey on whether households in CESEE are aware of government debt relief action. It then looks at how the awareness and expectations of borrower bailout influence loan demand. Does government action for debt relief create incentives for households

[4] *Bulgaria was assessed as only partially compliant because the Bulgarian authorities argued that domestic prudential regulation should not treat the euro as a foreign currency because the country was operating a currency board.*

[5] *Of course, foreign currency lending going forward will also depend on supply conditions and on the width and the effectiveness of regulatory restrictions mentioned above.*

to take on riskier loans? Is foreign currency loan demand driven by bailout expectations?

In analyzing these questions, the paper contributes to two strands of research. On the one hand, it adds to a large and growing literature that analyzes the drivers and consequences of foreign currency borrowing. On the other hand, it contributes to the research studying the effect of debtor bailouts on the credit market. In contrast to other research on government bailouts, the paper does not attempt to assess the general welfare effect of such measures but focuses on the role of debt relief in influencing borrowers' expectations and inducing moral hazard. The specific government actions to alleviate the debt burden of foreign currency borrowers are distinct from other government bailouts, as the costs of the debt relief are borne mainly by creditors rather than by government itself. For simplicity, we will refer to government actions for debt relief, including the laws on foreign currency loan conversion at historical rates, as "bailouts," even though they do not represent a government bailout in the conventional sense, as the bailout costs are not borne (mainly) by government.

We find that up to one-third of households are aware of government debt relief action, and that awareness is significantly higher among (potential) borrowers. Up to 30% of respondents (Hungary) expect that the government will bail out borrowers in financial difficulties. While bailout expectations do not influence loan demand as such, they significantly increase demand for foreign currency loans.

The rest of the paper is organized as follows. Section 1 summarizes the relevant literature. A box then provides an overview of measures taken by CESEE authorities to alleviate the debt burden of households with foreign currency loans. Section 2 describes the data. Section 3 presents evidence showing which households are aware of debt relief measures. Section 4 analyzes bailout expectations and shows how these are linked to households' awareness of debt relief measures already in place. Section 5 studies how bailout expectations influence loan demand and whether these expectations induce foreign currency loan demand. The final section summarizes our findings and looks into their implications for economic policy.

1 Literature review

In the immediate aftermath of the global financial crisis, one view of foreign currency lending was that it was merely a boom phenomenon and could be fully contained by appropriate regulation. However, a large and growing body of research suggests that foreign currency borrowing should also be seen in the broader context of currency substitution and especially in the context of the persistence of currency substitution (Zettelmeyer et al., 2011). Several papers have argued that foreign currency borrowing can be rational in an environment of volatile inflation and low institutional credibility; in such settings, it is closely related to deposit euroization (Ize and Levy Yeyati, 2003; Jeanne, 2005). Macrodata-based empirical evidence has confirmed the importance of these factors for foreign currency borrowing (Luca and Petrova, 2008; Rosenberg and Tirpák, 2009). Other papers stress the role of the supply side, arguing that banks with deposits in foreign currency try to balance the currency risk of their assets and liabilities by issuing loans in foreign currency (Basso et al., 2011). Finally, the interest rate differential is of-

ten discussed as one important factor in driving foreign currency lending. However, Crespo Cuaresma et al. (2011) conclude in a meta-analysis that on average, over all (then) existing studies of determinants of foreign currency lending, the interest differential is insignificant.

The majority of microdata-based studies focus on firms. With the exception of Csajbók et al. (2010), empirical evidence on the determinants of foreign currency borrowing by households is based mainly on survey data. Beer et al. (2010) show that among Austrian households, risk-loving, older, financially better educated and wealthier households are more likely to take out foreign currency loans. Albacete and Lindner (2015) confirm that households with a foreign currency loan in Austria have a relatively high risk-bearing capacity. By contrast, Pellényi and Bilek (2009) show that foreign currency borrowers in Hungary are neither more financially literate nor wealthier or more risk-loving than local currency borrowers. Several previous papers have already employed Euro Survey data, as this dataset provides rich survey information on issues related to foreign currency borrowing by households. Beckmann et al. (2011) provide evidence that households have come to perceive foreign currency loans as riskier since the global financial crisis, but a majority of respondents in six out of nine countries nevertheless regard loans in euro as more attractive than loans in domestic currency. Fidrmuc et al. (2013) show that a lack of trust in the stability of the local currency and distrust in domestic financial institutions drive foreign currency loan demand. In addition, expectations of the future introduction of the euro in a given country play an important role. Beckmann and Stix (2015) demonstrate that knowledge about exchange rate risk reduces demand for foreign currency loans. Beckmann et al. (2015) illustrate that both demand-side and supply-side factors have an influence on foreign currency lending: Foreign currency loans are sought after by households for long-term borrowing, but banks are also more likely to grant large and long-term loans in foreign currency. Linking household survey data to bank data on global ultimate owners indicates that on average across countries, foreign-owned banks do not issue more foreign currency loans than domestically-owned banks. Banai and Vágó (2016) employ multiple imputation methods and show that existing banking relations (which may be closely connected with financial awareness and financial literacy), macroeconomic expectations (which are also linked to households' personal financial situation), and trust in the institutional system drive borrowing decisions. We provide empirical evidence to support the theoretical model put forward by Ranciere et al. (2010), who highlight that foreign currency borrowing can also be rational for unhedged borrowers if they expect a government bailout in case the local currency depreciates against the loan currency. The authors argue that governments will implement policies to guarantee that creditors are repaid if the number of borrowers in risk of default reaches a critical mass. These policies can take the form of providing financial support to borrowers, easing monetary policy or maintaining an exchange rate peg. Let us note that the same line of reasoning also applies if the authorities adopt debt relief measures for households with foreign currency loans, which are not mainly funded by the state but by the banking sector.

To the best of our knowledge, no empirical papers investigate the importance of perceived bailout guarantees for foreign currency loan demand based on microlevel data. However, Kanz (2012) examines how the nationwide debt relief program in India in 2008 affected households' economic decisions. He shows that

debt relief persistently reduces household debt but does not improve investment or productivity. Rather than allowing the household to re-enter the formal credit market, the measures let households who benefitted from debt relief increasingly rely on informal credit. Importantly, Kanz argues that this reliance is due to the impact of debt relief on borrowers' expectations and provides evidence of a link between debt relief and moral hazard: Households who benefitted from debt relief are significantly less concerned about the reputational consequences of defaulting on a bank loan. They are, however, concerned that defaulters will have greater difficulties accessing formal credit in the future.

Box 1

Overview of support measures for foreign currency borrowers[1]

As shown in chart 1 above, Hungary was one of the countries where foreign currency lending to households was particularly widespread in 2009–10 (up to 70% of all loans to households). Moreover, Swiss franc (CHF) loans predominated, accounting for a share of approximately 86% of all foreign currency loans to households at the end of 2014 (ESRB, 2015). Against this background and as interest rates rose while the forint softened due to the repercussions of the financial crisis, Hungary was the first country where the authorities took measures to alleviate the financial situation of households that had taken out such loans.[2] Starting in the fall of 2011, the Hungarian authorities implemented an early repayment possibility at preferential exchange rates and conversion schemes of foreign currency loans of households into local currency loans in several steps.[3] These measures initially focused on mortgage loans but were extended to other household loan categories at later stages (see e.g. Schreiner et al., 2011, and Schreiner et al., 2013). As a result, by the spring of 2015, foreign currency loans to households had fallen to about 5% of total loans to households. A conversion of almost all remaining foreign currency loans to households (car loans, consumer loans) followed and was implemented in late 2015. All these measures were motivated mainly by the need to rein in macrofinancial vulnerabilities and to restore the effectiveness of monetary policy transmission, but also by political and social policy considerations (especially with respect to owner-occupied housing financed by foreign currency loans). In addition, an exchange rate cap system was in place between late 2011 and late 2014 under which household debtors of foreign currency mortgage loans could apply for loan servicing at preferential exchange rates. Banks had to shoulder a substantial part of the financial burden associated with these measures, in particular in the earlier stages.[4]

Foreign currency loans later became the subject of public debate also in other CESEE countries, especially in countries with substantial shares of CHF loans to households, in particular after the Swiss National Bank dropped the exchange rate floor of the Swiss franc to the euro (EUR) in January 2015; also, there were increasing calls for providing support to foreign currency debtors. While Hungary converted foreign currency loans denominated in all foreign currencies (mostly CHF and EUR), developments in other countries focused mostly or exclusively on CHF loans. For the sake of brevity, we have focused on key aspects of government support measures to household foreign currency borrowers in other CESEE countries.

[1] *Compiled by Peter Backé based on contributions by Elisabeth Beckmann, Mariya Hake, Mathias Lahnsteiner, Thomas Reininger and Zoltan Walko (all Oesterreichische Nationalbank, Foreign Research Division).*

[2] *Beckmann et al. (2012) present evidence that in contrast to households in other countries, more than 80% of households in Hungary who report difficulties with loan repayments name higher installments as the reason.*

[3] *Conversion took place roughly at market exchange rates but following a substantial reduction in households' foreign currency loan stock, as banks were mandated to pay back past interest rate increases and exchange rate margins to the extent that they were deemed unjustified.*

[4] *These measures were accompanied by having a state-owned asset management company purchase houses and apartments of households in loan arrears from banks and re-renting these houses and apartments to the former owners. Moreover, already in June 2010, the authorities had issued a moratorium on collateral foreclosures and evictions, which was replaced by a system of quarterly foreclosure quotas between Q4 2011 and end-2015 (since the beginning of 2016, foreclosures have been possible again without limitation, apart from an eviction moratorium during the winter months).*

In Poland, with the issue of CHF loans moving center stage in early 2015, the authorities recommended that banks lower interest rates on CHF loans quickly in line with market developments. The ministry of the economy called on banks to give household debtors with CHF loans the possibility to convert their loans into złoty loans, to grant temporary repayment breaks on mortgage loans and to cap installments at their end-2014 level. Thus, in practice, the issue of foreign currency loans has been addressed on a voluntary basis at the individual client-bank level rather than by the adoption of a law that would have lent generalized support to CHF-indebted households.[5] Nevertheless, the CHF loan issue continued to feature prominently in the political debate, especially during the presidential campaign in the spring of 2015. In January 2016, the newly elected president presented plans for a comprehensive law on CHF loan conversion at historical exchange rates, but withdrew these plans after criticism, also from the central bank in late summer 2016. Instead, the president put forward two legislative proposals: First, capital requirements for foreign currency loans should be raised to encourage banks to convert such loans into złoty loans (no draft law published yet). Second, foreign exchange spread amounts considered to be unfairly charged by banks in connection with foreign currency loans should be reimbursed to the debtors (draft law being dealt with in parliament).

In Bosnia and Herzegovina, CHF loans have been a political topic mainly in one of the two entities, namely the Republika Srpska. A proposal for CHF loan conversion had been under discussion for some time; a draft law was prepared, but the issue was then dropped in Q1 2016 in the course of the negotiation of an Extended Fund Facility program with the IMF. Instead, as advised by the IMF, the matter of CHF loans is now being resolved at the individual client-bank level.

In Serbia, the central bank required banks to offer modalities for loan repayment to households indebted in CHF-indexed loans in February 2015.[6] The menu of options ranges from the conversion of CHF-indexed loans into EUR-indexed loans to retaining the existing indexation while lowering the interest rate burden and extending the duration of the loans (and thereby lowering monthly installments). There were increasing calls from the public, in particular in late 2015, for the adoption of a law that would allow all customers with CHF loans to repay their mortgages in EUR at lower exchange rates. So far, however, special repayment schemes based on law have only been introduced for borrowers facing particular financial difficulties. Reportedly, only a very small number of borrowers have so far claimed a conversion of their CHF loans under these legal provisions. Rather, a number of households have apparently taken up the conversion options offered by banks in line with the aforementioned central bank decision, given that the share of CHF-indexed loans in total loans to households fell from almost 16% in early 2015 to about 11% in late 2016. Recently, a court ruling invalidating a CHF mortgage contract has cast some doubt on the legal validity of such loans in general. Further court rulings, also at higher levels, will presumably address these doubts going forward.

[5] *In mid-2015, the former government submitted a draft law which would have led to an ex tunc conversion of a part of household foreign currency mortgages into złoty loans (depending on own use of the apartment, apartment size and the loan-to-value ratio) and involving difference payments to the borrowers and partial burden-sharing between banks and clients. However, this draft law was never passed.*

[6] *Indexation of loans to foreign currencies is a widespread phenomenon in Serbia (and some other successor states of former Yugoslavia). Rather than issuing outright CHF loans to households in Serbia, banks extended loans indexed to the Swiss franc.*

In Croatia, in early 2015 the authorities fixed, for one year, the CHF exchange rate to the kuna for household CHF loan debtors at the level prevailing right before the Swiss National Bank abolished the exchange rate floor. Subsequently, in September 2015, a law was adopted stipulating the conversion of household loans denominated in CHF into EUR (rather than into kuna) loans.[7] Under the law, the banking sector must bear the conversion costs of an estimated EUR 1 billion. Several banks are contesting this provision in court, however. In fact, similar conversion measures have been taken or are under discussion in most countries covered by this analysis.[8] As a result of these measures, the share of foreign currency lending in the overall stock of household loans fell noticeably, as chart 1 shows.

In Romania, the debate on CHF loan conversion had been simmering since 2015, ultimately leading to the adoption by parliament of a law on converting CHF-denominated loans to individuals ("consumers") into leu-denominated loans at historical exchange rates in October 2016. However, at the time of writing (mid-December 2016), this law had not yet been promulgated by the president of Romania. Shortly after approval by parliament, government challenged the law at the constitutional court. A ruling is expected for early 2017. Moreover, a debt discharge law for household mortgage borrowers has been in force since May 2016. While the law pertains to all mortgage loans independent of the currency of denomination, almost two-thirds of all mortgage loans of households were denominated in foreign currency when the law was initially passed (in November 2015) so that de facto, the walk-away option the law provides for is available for households that are indebted mainly in foreign currencies.

Among the countries covered in the subsequent empirical part of this study, Bulgaria, the former Yugoslav Republic of (FYR) Macedonia and Albania have not undertaken any foreign currency loan conversion measures, nor has conversion been a key topic in the public debate in these countries. Again, this is not surprising, since CHF loans to households in these countries are practically nonexistent and since all the three countries have kept their national currencies' exchange rate to the euro very stable, be it under a currency board arrangement (Bulgaria), under a pegged regime (FYR Macedonia) or under a flexible exchange rate regime with very low actual exchange rate fluctuation (Albania).

[7] *Swiss franc loans were not converted into kuna loans due to possible adverse effects on the foreign exchange reserves of the Croatian National Bank and the asset-liability management of banks given the high share of deposits denominated in euro.*

[8] *Fischer and Yesin (2016) argue, however, that CHF loan conversion only marginally reduces aggregate systemic risk.*

2 Data

Our analysis is based on the fall 2015 wave of the OeNB Euro Survey of households, which included a set of questions dedicated to the perception and expectation of borrower bailout. These questions and descriptive results are presented in detail in sections 3 and 4. The survey covers nine CESEE countries: five EU Member States (Bulgaria, Croatia, Hungary, Poland and Romania) and four (potential) candidate countries (Albania, Bosnia and Herzegovina, FYR Macedonia and Serbia).[6] In each country, a representative sample of 1,000 respondents is polled via multistage stratified random sampling. Respondents are interviewed face-to-face at their residence. For the purpose of this analysis, we exclude respondents below the age of 19, as they are unlikely to take economically significant borrowing decisions. This provides us with a total number of 8,937 observations. However, depending

[6] *The Euro Survey is also conducted in the Czech Republic, which is excluded from the present analysis because foreign currency lending to households is of no importance there (as shown in chart 1). Therefore, the central questions for this analysis were not included in the Czech questionnaire.*

on the survey question used, the number of observations for some of the presented results can be rather low. For example, only around 10% of respondents plan to take out a loan within the next 12 months.

In general, the survey collects a rich set of information on the financial decisions of households as well as their economic expectations. With regard to borrowing, the survey questions include information about the existence of loans and plans to take out loans and the currency denomination of existing and planned loans. Regarding the currency denomination, the questionnaire accounts for the widespread use of loans indexed to foreign currency in the Western Balkans. The subsequent analysis defines these loans as foreign currency loans, since economically, they are equivalent to loans denominated in foreign currency. The survey focuses on individuals rather than households, but the questionnaire accounts for the fact that loans are typically taken out by households by asking whether the respective loan is held alone or together with a partner. Table A1 presents definitions for all variables in the subsequent analysis. Table A2 presents descriptive statistics by country.

As the survey does not inquire about the amounts of outstanding loans, it is not trivial to benchmark results with external data sources. However, previous research based on the Euro Survey has shown that survey results on loans, deposits and savings fit well with data from monetary statistics and other household surveys (Brown and Stix, 2015; Beckmann et al., 2011). For more information on the OeNB Euro Survey and related publications, see https://www.oenb.at/en/Monetary-Policy/Surveys/OeNB-Euro-Survey.html.

3 Awareness of government debt relief

The central questions for this analysis were designed to understand the impact of government bailouts on foreign currency loan demand. To gauge awareness of such actions, respondents were asked "Are you aware of any government policies in [your country] to help borrowers who are in trouble with their loan?" Chart 3 plots the responses to these questions and shows big differences across countries. Awareness of government debt relief actions is highest in Croatia, where government measures to convert Swiss franc loans into euro loans at historical exchange rates were implemented one month before the survey was conducted in fall 2015 and received substantial media attention both nationally and internationally. Awareness is similarly high in Hungary (the most important bailout measure was implemented in early 2015), followed by Poland and Serbia, where discussions on foreign currency loan conversions also received substantial media attention and played a major role in election campaigns. In countries where awareness is low, measures had been more or less under discussion but no explicit bailout measures had been adopted (or were close to adoption) by the fall of 2015. In Romania, awareness is also low, which is, however, likely to be related to the timing of the survey in fall 2015: Romanian parliament approved the "giving-in-payment law" in April 2016 and the law on Swiss franc loan conversion in October 2016.

The percentage of respondents who benefitted from government action for debt relief is highest in Hungary. The majority of beneficiaries in Hungary are borrowers who took out a loan in Swiss francs (53%) before 2008. Furthermore, 41% of these beneficiaries indicate they have been in loan arrears over the past 12 months and 20% state they suffered a significant reduction of their income over

Chart 3

Perception of government bailout

% of respondents
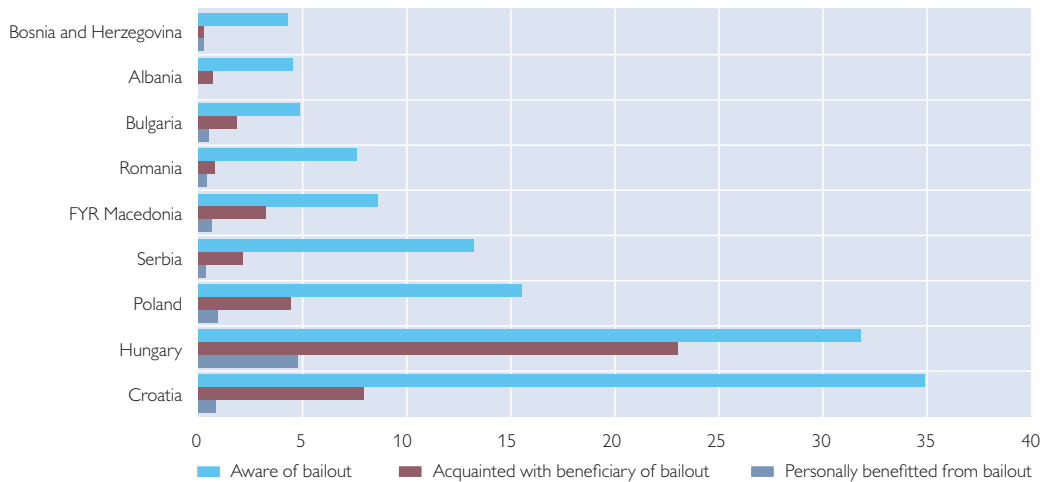
Source: OeNB Euro Survey.

Note: Results are based on the following question posed to all respondents: "Are you aware of any government policies in [your country] to help
borrowers who are in trouble with their loan? a) No. b) Yes, but I do not know anyone personally who benefitted from this policy. c) Yes, I know
somebody who benefitted from this policy. d) Yes, I myself benefitted from this policy. e) Don't know. f) No answer."

the past 12 months. These percentages are based on a very small number of obser-
vations (55) and are, therefore, not necessarily representative. But they do indicate
that these borrowers might otherwise have defaulted on their loans.

To provide a first indication of how bailouts affect household financial deci-
sions, we analyzed the variation in awareness among individuals. Chart 4 plots
average marginal effects of a probit regression where the dependent variable is a
dummy variable that takes the value one if respondents are aware of government
bailouts, know somebody who has benefitted from one, or have personally ben-
efitted from one. The estimation controls for further sociodemographic charac-
teristics as well as country fixed effects so that the marginal effects illustrate the
within-country variation among individuals. The chart shows that bailout aware-
ness is not correlated with income; however, there is some indication that it is
correlated with wealth. In addition, the highly educated and financially literate are
more likely to be aware of bailout measures. Finally, as expected, borrowers are
also more likely to be aware of such government actions. Interestingly, however,
respondents who are currently planning to take out a loan in fact have a higher
likelihood of being aware of bailout measures (7 percentage points) than those
who already have a loan (3 percentage points). In the next section we look at how
awareness of debt relief affects expectations of bailout in the future.

Chart 4

Differences in awareness of government bailout among individuals

Marginal effects and 95% confidence interval
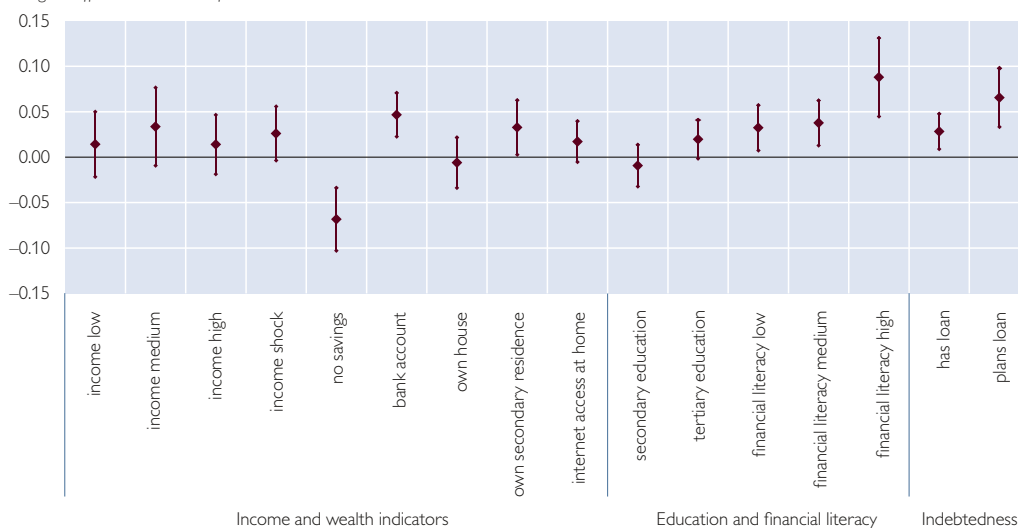
Source: Author's calculations.

4 Who expects government action for debt relief?

Our measure of bailout expectations is based on the following two questions:

— "What do you expect are the chances that the government in [your country] will help borrowers who are in trouble with their loan? Please indicate your answer on a scale from 0 (absolutely no chance) to 100 (absolutely certain)."

— "Do you think the government in [your country] is more likely to help local currency or foreign currency borrowers or is there no difference?

a) The government is likely to help both local currency and foreign currency borrowers.

b) The government is more likely to help foreign currency borrowers.

c) The government is more likely to help local currency borrowers.

d) It is not likely that the government will help either foreign currency or local currency borrowers."

Chart 5 shows that the majority of respondents do not expect government intervention. However, in five out of nine countries, at least every tenth respondent thinks there is a more than 50% chance the government will intervene on behalf of borrowers. There is a strong variation between countries – ranging from 3% (Albania) to 30% (Hungary) – of respondents who consider government bailout likely. In Hungary, Croatia and Poland, expected government action on behalf of borrowers is linked to the currency denomination of loans (right panel, chart 5). This suggests that debt relief that is already in effect influences expectations.

We test this assumption more formally in table 1, showing average marginal effects from probit estimations where the dependent variables are, first, a dummy variable "expect bailout" based on question 1 above that takes the value one if respondents think that the chance government will intervene on behalf of borrowers is more than 50% and, second, three dummy variables based on question 2 above that take the value one if respondents consider bailout (1) of foreign currency

Chart 5

Expectations of government bailout

What are the chances that the government will help borrowers who are in trouble with their loan?

% of respondents
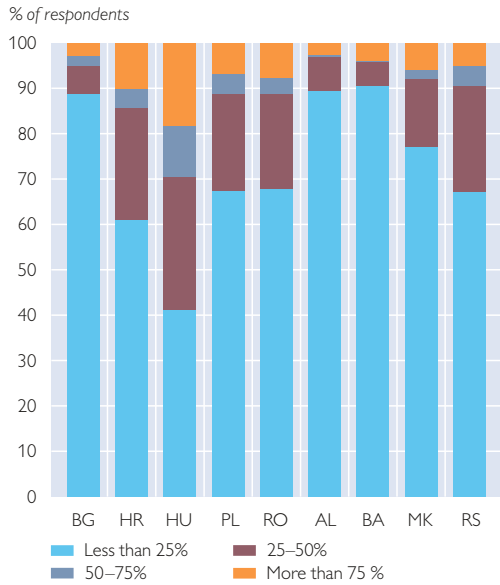
Is the government more likely to help local currency or foreign currency borrowers?

% of respondents

Left chart legend:
- Less than 25%
- 50–75%
- 25–50%
- More than 75 %

Right chart legend:
- Foreign currency borrowers
- Local currency borrowers
- Both equally

Source: OeNB Euro Survey, fall 2015.

Note: Abbreviations represent the two-digit ISO country code.

borrowers more likely, (2) local currency borrowers more likely (3), both equally likely. Specifically, we model the probability that the respondent expects government assistance for borrowers as:

$$P\left(Exp = 1\right) = \varPhi_{Exp}\left(\mathbf{X}_{Exp}\boldsymbol{\beta}_{Exp} + u_{Exp}\right)$$

This analysis does not attempt to fully explain the mechanism of how expectations are formed; rather, it indicates which factors are important and how bailout expectations, awareness and experience are correlated.

Results show that awareness of, or experiences with, debt relief action by the government are positively and significantly correlated with bailout expectations. Respondents who are aware of debt relief measures are 5 percentage points more likely to expect future government bailout. However, expectations can only to some extent be explained by publicly available information. Respondents who know somebody who benefitted from debt relief measures or personally benefitted are 8 percentage points more likely to expect future government bailout. Thus, personal experience has a stronger influence on expectations than information does. As expected, given the targeted efforts to alleviate the debt burden of foreign currency borrowers, the correlation between experience and expectation is higher for the expectation of foreign currency debt relief efforts. The table further shows that debt relief is associated with trust in the government and the general economic situation but not with trust in the central bank. The insignificant coefficient on trust in the central bank might imply that contrary to the theo-

Table 1

Who expects government bailout?

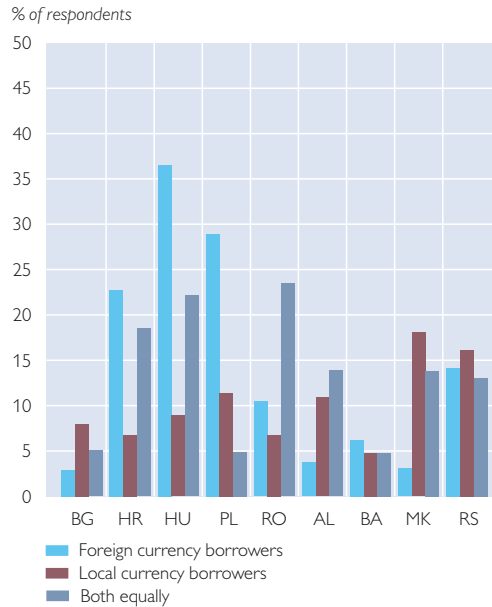| Dependent variable	Expect bailout	Foreign currency borrower bailout more likely	Local currency borrower bailout more likely	Foreign currency and local currency borrower bailout equally likely
	Average marginal effect			
Aware of bailout	0.053***	0.070***	0.057***	0.062***
	(0.018)	(0.010)	(0.013)	(0.015)
Knows beneficiary of bailout or benefitted personally from bailout	0.075***	0.087***	0.063	0.069*
	(0.023)	(0.021)	(0.040)	(0.036)
Trusts government	0.050***	0.025**	0.02	0.041***
	(0.010)	(0.011)	(0.013)	(0.009)
Trusts central bank	0.008	0.004	0.013	0.002
	(0.013)	(0.018)	(0.012)	(0.012)
Expects economic situation to get better	0.030***	0.024***	0.034***	0.030*
	(0.007)	(0.009)	(0.009)	(0.015)
Expects local curency depreciation	−0.016*	−0.019	0.012	0.001
	(0.008)	(0.025)	(0.011)	(0.013)
Financial loss during transition	0.034**	−0.021	0.033**	0.006
	(0.017)	(0.016)	(0.016)	(0.015)
Trusts domestically owned banks	0.029*	−0.031*	0.009	0.059***
	(0.016)	(0.018)	(0.014)	(0.016)
Trusts foreign-owned banks	−0.027***	0.008	0.014	−0.044***
	(0.005)	(0.013)	(0.012)	(0.015)
Exchange rate literate	−0.032	−0.019*	−0.027**	0.007
	(0.022)	(0.010)	(0.012)	(0.021)
Inflation literate	−0.016*	−0.008	−0.02	−0.031*
	(0.008)	(0.017)	(0.014)	(0.019)
Interest rate literate	−0.009	−0.016	−0.011	−0.01
	(0.009)	(0.016)	(0.010)	(0.010)
Country fixed effects	Yes	Yes	Yes	Yes
Sociodemographic controls	Yes	Yes	Yes	Yes
Log-L	−1,599.3	−2,053.6	−1,775	−2,049.2
Pseudo-R²	0.14	0.17	0.07	0.1
Number of observations	5,538	5,789	5,789	5,789
P(DepVar=1)	0.1	0.15	0.1	0.13

Source: Author's calculations.

Note: Estimates obtained from probit models. Robust standard errors (in parentheses) are adjusted for clustering at the country level. *, ** and *** denote significance at the 1%, 5% and 10% level, respectively. P(DepVar=1) denotes the unconditional probability of the respective dependent variable.

retical model by Ranciere et al. (2010), central bank intervention to maintain exchange rate pegs or tightly managed floats is not linked to foreign currency loans in the perception of households.

5 How does debt relief affect loan demand?

To determine whether bailouts create incentives for households to take on riskier loans and specifically whether expectations of government bailouts drive foreign currency loan demand, we have to address several problems. First, we want to study the effect of expectations on foreign currency loan demand and therefore cannot use information on existing loans, as decisions about the loan currency were made in the past. However, we do observe current expectations of future government intervention. Furthermore, previous research has shown that the supply side is one important factor for the prevalence of foreign currency loans (Brown, Kirschenmann and Ongena, 2014, and Beckmann et al., 2015). There-

fore, we would not be able to identify the effect of expectations on demand. To address these problems, we follow Fidrmuc et al. (2013) and Beckmann and Stix (2015) and use information on planned loans.

5.1 Empirical strategy

We estimate a sample selection model following Heckman (1979) where the selection equation models the probability that a respondent plans to take out a loan,

$$P(L=1) = \phi_L(X_L\beta_L + u_L), \tag{1}$$

while the outcome equation is a probit model of the demand for foreign currency loans:

$$P(F=1\,|\,L=1) = \phi_F(X_F\beta_F + u_F) \tag{2}$$

Error terms are normally distributed, $u_L \sim N(0,1)$, $u_F \sim N(0,1)$, and are correlated, $corr(u_L, u_F) = \rho$.

Following Fidrmuc et al. (2013), we use the following characteristics of respondents for identification, arguing that these variables are correlated with the decision to take out a loan but not with the decision about the currency denomination of the loan: labor market status (student, retired and unemployed), information on whether households have a current account or savings deposits as well as expectations about the economic situation. In addition, we employ information on whether the respondent or another member of the household was laid off from their job during the preceding 12 months.

In both the selection and outcome equation, we control for a rich set of behavioral as well as sociodemographic characteristics that have been shown to influence loan demand and to determine foreign currency loan demand. Again, we follow Fidrmuc et al. (2013) in our specification, and we control for foreign currency income and expectations about exchange rate developments. Furthermore, we include a variable measuring foreign currency saving preferences, which also captures trust in monetary and institutional stability. Following Beckmann and Stix (2015), we further control for understanding exchange rate risk. In addition, data availability allows us to control for behavioral characteristics that – as e.g. McCarthy (2011) shows – influence the financial decisions of households: We include measures of time preference, self-control and of whether or not respondents are well organized in making financial decisions. Differences in regulation and exchange rate regimes across countries as well as interest rate differentials are controlled for by including country fixed effects. Guiso et al. (2013) show that the perceived probability of facing legal consequences for default does not differ much between recourse and nonrecourse states in the U.S.A. Therefore, in addition to including country fixed effects to control for differences in credit market regulation across countries, we include a measure of individual expectations about the likelihood that borrowers in default will be pursued by creditors and will face legal consequences.

We check thoroughly for the robustness of our results *inter alia* by accounting (1) for the large differences between the countries included in our sample, (2) for

supply effects, and (3) for the specific loan currency of the planned foreign currency loan.

Table 2

Determinants of loan demand

Dependent variable	Plans to take out a loan						
	Baseline	1	2	3	4	5	6
	Average marginal effect						
Risk averse	−0.041**	−0.042**	−0.042**	−0.039**	−0.039**	−0.035	−0.039*
	(0.017)	(0.019)	(0.019)	(0.017)	(0.019)	(0.021)	(0.020)
Self-control: impulsive	0.003	0.001	−0.002	0.004	−0.001	−0.007	−0.006
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.010)	(0.009)
Time preference: present	0.004	−0.002	0.002	0.005	0.006	0.003	0.005
	(0.009)	(0.010)	(0.010)	(0.009)	(0.009)	(0.010)	(0.010)
Financial management: organized	−0.021**	−0.022**	−0.027**	−0.020**	−0.021**	−0.020*	−0.024**
	(0.010)	(0.010)	(0.011)	(0.010)	(0.010)	(0.011)	(0.011)
Current account / savings deposits	0.024**	0.023**	0.020*	0.023**	0.019	0.018	0.017
	(0.011)	(0.012)	(0.011)	(0.010)	(0.012)	(0.012)	(0.012)
Expects economic situation to get better	0.013*	0.013	0.015*	0.013*	0.018**	0.015*	0.017**
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.009)	(0.009)
Unemployed	−0.043***	−0.054***	−0.054***	−0.042***	−0.045***	−0.055***	−0.055***
	(0.011)	(0.012)	(0.012)	(0.011)	(0.012)	(0.014)	(0.013)
Student	−0.115***	−0.108***	−0.105***	−0.116***	−0.125***	−0.113***	−0.117***
	(0.027)	(0.028)	(0.029)	(0.027)	(0.030)	(0.034)	(0.031)
Retired	−0.040**	−0.01	−0.018	−0.039**	−0.039*	−0.01	−0.02
	(0.020)	(0.020)	(0.019)	(0.019)	(0.022)	(0.021)	(0.021)
Not laid off from job in past 12 months	−0.035***	−0.027**	−0.030***	−0.035***	−0.027**	−0.022*	−0.024**
	(0.010)	(0.011)	(0.011)	(0.010)	(0.011)	(0.012)	(0.012)
Expects legal consequences		0				0	
		(0.000)				(0.000)	
Expects bailout			0			0	0
			(0.000)			(0.000)	(0.000)
Aware of bailout				0.028***		0.028**	
				(0.011)		(0.012)	
Knows beneficiary of bailout or benefitted personally from bailout				0.033**		0.029	
				(0.015)		(0.018)	
Foreign currency borrower bailout more likely					0.014	0.009	0.02
					(0.011)	(0.014)	(0.013)
Local currency borrower bailout more likely					0.016	0.016	0.024*
					(0.012)	(0.013)	(0.012)
Foreign currency and local currency borrower bailout equally likely					−0.003	−0.008	−0.003
					(0.012)	(0.014)	(0.014)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Further controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log-L	−1,513.5	−1,277.6	−1,286.6	−1,508.2	−1,330.6	−1,099.4	−1,168.9
N(selection equation)	5,441	4,669	4,610	5,441	4,767	3,986	4,190
N(outcome equation)	418	354	353	418	369	308	322
P(plan loan=1)	0.21	0.21	0.22	0.21	0.21	0.22	0.22
Rho	0.15	0.19	0.4	0.16	0.16	0.55	0.35
P-value	0.75	0.73	0.43	0.75	0.8	0.6	0.56

Source: Author's calculations.

Note: Selection equations of the Heckman sample selection probit models. Coefficients reflect average marginal effects. The dependent variable is a dummy variable that takes the value one if a respondent plans to take out a loan within the next 12 months. P(plan loan=1) denotes the sample probability. Rho denotes the correlation between the selection and the outcome equation, p-value denotes the significance of rho. Robust standard errors (in parentheses) are adjusted for clustering at the country level. *, ** and *** denote significance at the 1%, 5% and 10% level, respectively.

5.2 Loan demand

Table 2 presents results of the selection equation. In line with Fidrmuc et al. (2013), we find that labor market status and existing banking relationships as well as expectations about the economic performance of the country influence

Table 3

Determinants of foreign currency loan demand

Dependent variable	Plans to take out a foreign currency loan						
	Baseline	1	2	3	4	5	6
Average marginal effect							
Exchange rate literate	−0.01	−0.018	−0.041	−0.011	−0.004	−0.023	−0.026
	(0.036)	(0.038)	(0.040)	(0.036)	(0.038)	(0.041)	(0.042)
Expects local currency depreciation	−0.03	−0.026	−0.021	−0.031	−0.035	−0.031	−0.034
	(0.038)	(0.037)	(0.042)	(0.038)	(0.038)	(0.038)	(0.042)
Foreign currency denomination preferences	0.102***	0.116***	0.118***	0.102***	0.115***	0.130***	0.120***
	(0.036)	(0.036)	(0.039)	(0.036)	(0.037)	(0.037)	(0.039)
Network savings weak	−0.089*	−0.097*	−0.105*	−0.089*	−0.068	−0.094*	−0.079
	(0.051)	(0.051)	(0.054)	(0.051)	(0.051)	(0.053)	(0.054)
Income in euro	0.095	0.036	0.092	0.094	0.073	0.057	0.07
	(0.081)	(0.092)	(0.095)	(0.081)	(0.092)	(0.102)	(0.102)
Risk averse	0.104	0.129*	0.083	0.104	0.126	0.153*	0.092
	(0.073)	(0.073)	(0.078)	(0.073)	(0.080)	(0.084)	(0.083)
Self-control: impulsive	−0.016	−0.013	0.002	−0.017	−0.024	−0.01	−0.004
	(0.041)	(0.039)	(0.046)	(0.041)	(0.046)	(0.044)	(0.050)
Time preference: present	0.081**	0.082**	0.079*	0.081**	0.067*	0.070*	0.067
	(0.038)	(0.040)	(0.043)	(0.038)	(0.039)	(0.040)	(0.043)
Financial management: organized	−0.071	−0.071	−0.075	−0.071	−0.084*	−0.084*	−0.081*
	(0.044)	(0.045)	(0.046)	(0.044)	(0.044)	(0.046)	(0.047)
Expects legal consequences		0				−0.001	
		(0.001)				(0.001)	
Expects bailout			0.002***			0.002**	0.002**
			(0.001)			(0.001)	(0.001)
Aware of bailout				0.005		0.004	
				(0.041)		(0.050)	
Knows beneficiary of bailout or benefitted personally from bailout				−0.014		−0.076	
				(0.076)		(0.081)	
Foreign currency borrower bailout more likely					0.066	−0.017	0.021
					(0.055)	(0.069)	(0.067)
Local currency borrower bailout more likely					0.016	−0.014	−0.017
					(0.051)	(0.058)	(0.058)
Foreign currency and local currency borrower bailout equally likely					0.011	−0.055	−0.042
					(0.054)	(0.061)	(0.065)
Country-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Further controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log-L	−1,513.5	−1,277.6	−1,286.6	−1,508.2	−1,330.6	−1,099.4	−1,168.9
N(Selection equation)	5,441	4,669	4,610	5,441	4,767	3,986	4,190
N(Outcome equation)	418	354	353	418	369	308	322
P(DepVar=1)	0.21	0.21	0.22	0.21	0.21	0.22	0.22
Rho	0.15	0.19	0.4	0.16	0.16	0.55	0.35
P-value	0.75	0.73	0.43	0.75	0.8	0.6	0.56

Source: Author's calculations.

Note: Outcome equations of the Heckman sample selection probit models where the selection refers to respondents who plan a loan (table 2). Coefficients reflect average marginal effects. The dependent variable is a dummy variable that takes the value one if a respondent plans to take out a foreign currency loan within the next 12 months. P(plan loan=1) denotes the sample probability. Rho denotes the correlation between the selection and the outcome equation, p-value denotes the significance of rho. Robust standard errors (in parentheses) are adjusted for clustering at the country level. *, ** and *** denote significance at the 1%, 5% and 10% level, respectively.

loan demand (see table 2, baseline). We also find that risk aversion and the ability to organize financial matters reduces loan demand. Expectations about the legal consequences of default do not significantly influence loan demand, nor do expectations about government debt relief. However, awareness of current government action for debt relief or experience with such measures is positively and significantly correlated with plans to take out a loan. The awareness effect is robust to including all controls jointly. Respondents who are aware of current government action for debt relief are 3 percentage points more likely to plan to take out a loan.
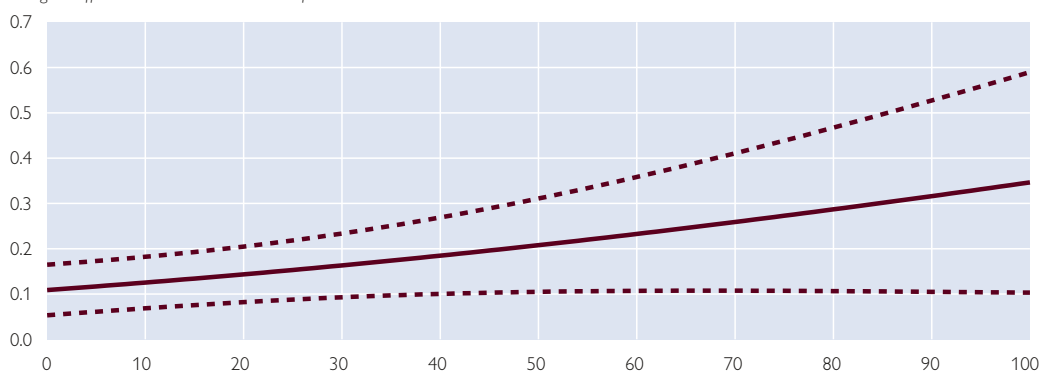
5.3 Foreign currency loan demand

The role of expectations of government debt relief changes significantly when looking at the choice of loan currency. Again, we confirm the results of previous research on the determinants of foreign currency loan demand. In particular, we find that preferences for foreign currency deposits strongly and significantly drive foreign currency loan demand (see table 3, baseline). Expectations about the legal consequences of default do not impact the choice of loan currency. However, expectations of bailout positively and significantly influence foreign currency loan demand. Somewhat surprisingly, experience with current bailout measures does not influence loan demand. This is, however, likely to be related to the fact that beneficiaries of government actions already have a loan and are not planning to take out a further loan. We look at this issue in robustness analyses. Awareness of current bailout measures does not influence foreign currency loan demand either. This is not surprising, as future borrowers will not benefit from current "bailouts" and therefore only expectations rather than knowledge influence plans to take out a loan. Column 5 in table 3 confirms that the positive and significant impact of expectations of debt relief is robust to including measures of awareness of current debt relief measures.

The average marginal effect of bailout expectations presented in table 3 only allows the conclusion that there is a significant positive impact on foreign currency loan demand. To illustrate the magnitude of this impact, chart 6 plots how foreign currency loan demand varies depending on the expected likelihood of govern-

Chart 6

Foreign currency loan demand increases with the perceived probability of government bailout

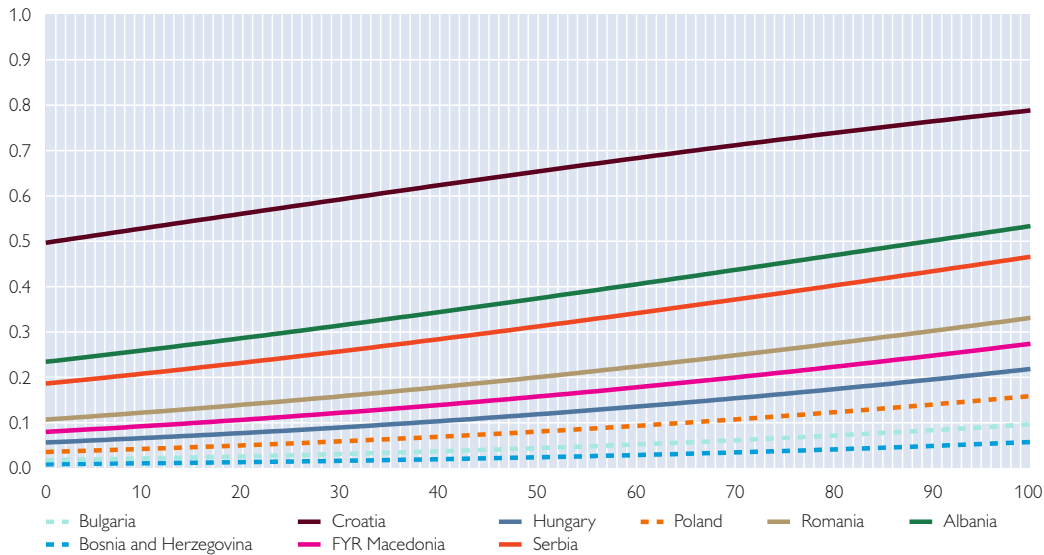*Marginal effect at means and at 95% confidence interval*

Source: Author's calculation.

Chart 7

Differences between countries: the impact of the perceived probability of government bailout on foreign currency loan demand

Marginal effect at means

Source: Author's calculation.

Note: Dotted lines indicate that the marginal effects are insignificant. Solid lines indicate significance at a minimum of 10%.

ment bailout (ranging from 0 "absolutely no chance" to 100 "absolutely certain"). Chart 6 illustrates that respondents who are "absolutely certain" the government will intervene are 20 percentage points more likely to plan to take out a foreign currency loan than respondents who think there is "absolutely no chance" that the government will take action to help borrowers experiencing trouble with their loan.

As explained in the box, the examined countries have very different bailout policies. Consequently, the effect of expectations of bailout on foreign currency loan demand is likely to vary between countries. As we have only a low number of observations, we cannot repeat the estimations for individual countries. Instead, we calculate the marginal effect at the means for the respective likelihood of a future bailout for each country individually. Chart 7 confirms that there are indeed significant differences between countries. The effect of bailout expectations on foreign currency loan demand is strongest in Croatia and insignificant in Bulgaria and in Bosnia and Herzegovina. The latter result is not surprising, as both countries operate a currency board and as the authorities consider euro loans nonforeign currency loans (as explained for Bulgaria in footnote 4).

5.4 Robustness analysis

As regulations and government action on foreign currency loans vary significantly between countries, we need to ensure that our results are not driven by a particular country. In table 4 we repeat estimations, dropping one country at a time from the estimations. For all of the nine specifications, we find a positive and significant effect of expectations of government help on foreign currency loan demand.

Table 4

Robustness analysis: are results driven by individual countries?

Dependent variable	Plans to take out a foreign currency loan								
Sample excluding:	Bulgaria	Croatia	Hungary	Poland	Romania	Albania	Bosnia and Herze-govina	FYR Macedonia	Serbia
Average marginal effects									
Expects bailout	0.002*	0.002**	0.002*	0.002*	0.002**	0.002*	0.002**	0.002**	0.001**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Expects foreign currency borrower bailout	0.043	0.048	−0.028	0.024	−0.02	0.013	0.03	−0.01	0.078
	(0.070)	(0.060)	(0.074)	(0.079)	(0.074)	(0.065)	(0.073)	(0.077)	(0.064)
Expects local currency borrower bailout	−0.003	0.005	−0.067	−0.017	−0.01	−0.025	−0.025	−0.024	−0.012
	(0.058)	(0.053)	(0.059)	(0.062)	(0.063)	(0.061)	(0.064)	(0.070)	(0.057)
Expects foreign curency and local currency borrower bailout	−0.015	−0.018	−0.027	−0.09	−0.102	−0.013	−0.046	−0.027	−0.058
	(0.067)	(0.061)	(0.069)	(0.072)	(0.065)	(0.063)	(0.074)	(0.079)	(0.062)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Further controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log-L	−1,083.9	−1,065	−1,015.8	−1,048.1	−1,041.4	−1,018.3	−1,054.1	−986.9	−995.2
Total observations	3,846	3,728	3,636	3,851	3,823	3,532	3,691	3,647	3,766
Uncensored observations	301	299	283	282	286	287	293	272	273
P(DepVar=1)	0.23	0.19	0.24	0.24	0.23	0.21	0.24	0.24	0.19
Rho	0.32	−0.04	0.58	0.49	0.53	0.23	0.38	0.63	−0.47
P-value	0.58	0.96	0.44	0.45	0.46	0.72	0.53	0.3	0.49

Source: Author's calculation.

As table 1 shows, expectations are correlated with actual bailout experience and trust in the government. Excluding respondents who already have a loan does not change our results. Furthermore, including a measure of trust in the government does not change the positive and significant impact of bailout expectations on loan demand either. We also allow for the effect of unobserved dependencies between respondents by repeating the estimations with standard errors clustered at the level of the primary sampling unit.

Our dependent variable "loan plans" is an established measure in the literature (Fidrmuc et al., 2013) that reflects only the demand side of the ultimate outcome of a loan contract. However, it may still be the case that borrowers anticipate supply effects in their loan planning. We repeat all our estimations including four separate measures of loan supply based on the results of previous research that shows that banks' funding structures and information asymmetries may affect the currency denomination of loans (Brown, Kirschenmann and Ongena, 2014; Brown, Ongena and Yesin, 2014): the distance to the nearest bank, the distance to the nearest foreign bank as well as a Herfindahl index of bank concentration and foreign bank ownership concentration.[7] None of these measures have a significant impact on loan demand or foreign currency loan demand. Furthermore, including

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[7] *For a detailed description of the bank branch dataset from which these measures are derived, see Beckmann, Reiter and Stix (2017).*

these controls for supply effects does not affect the size and significance of bailout expectations on foreign currency loan demand.

Box 1 shows that most bailout measures primarily relate to Swiss franc loans. Therefore, it is questionable whether the observed effect of bailout expectations on the demand for loans relates to foreign currency loans more generally or only to Swiss franc loans. The question on loan planning includes the specific currency of the loan the respondent is planning to take out. We repeat estimations excluding any respondents who plan to take out a Swiss franc loan. The effect of bailout expectations on plans to take out a euro loan remains positive and significant. Respondents who are "absolutely certain" the government will intervene are 16 percentage points more likely to plan to take out a euro loan than respondents who think there is "absolutely no chance" that the government will take action to help borrowers experiencing trouble with their loan. Thus, the estimated effect focusing on euro loans only is 4 percentage points smaller than the estimated effect taking into account all foreign currency loans (as in chart 6).

6 Summary and conclusions

We present evidence that recent measures to provide debt relief for borrowers in CESEE increase expectations of future government interventions. We then show that expectations of government bailout do not influence loan demand as such but increase demand for foreign currency loans. These results are robust to controlling for knowledge of exchange rate risk and expectations about exchange rate developments and are not driven by individual countries. In addition, we provide evidence that demand for foreign currency loans is growing again. Taken together, these finding suggest that policies targeted at relieving the debt burden of foreign currency borrowers may in the medium to long term lead to an increase rather than a decrease of foreign currency borrowers – if regulation prohibiting the issuance of new foreign currency loans to households is not in place. At the same time, however, it is likely that banks will lower the supply of foreign currency loans, as they have to shoulder the cost of the bailout; it is also likely that the interest rate on such loans will therefore increase. To prevent household demand for foreign currency loans from rising as a consequence of earlier debt relief actions, a ban on issuing new foreign currency loans should complement any policy measures geared at relieving the debt burden of households indebted in foreign currency.

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Annex

Table A1

Definition of variables

Variable name	Definition
Aware of bailout, knows beneficiary of bailout or benefitted personally from bailout	Dummy variables based on the question "Are you aware of any government policies in [your country] to help borrowers who are in trouble with their loan? [multiple answers] a) No; b) Yes, but I do not know anyone personally who benefitted from this policy; c) Yes, I know somebody who benefitted from this policy; d) Yes, I myself benefitted from this policy." Answer b) coded as "aware of bailout" equal one, otherwise zero. Answers c) and d) are coded as "knows beneficiary or benefitted personally from bailout" equal one, otherwise zero.
Current account / savings deposits	Dummy variable that takes the value one if the respondent has a deposit or a transaction account, otherwise zero.
Expects economic situation to get better	Derived from question "Over the next five years, the economic situation of my country will improve." Respondents could agree on a scale from 1 (strongly agree) to 6 (strongly disagree). Dummy variable, answers from 1 to 3 are defined as one.
Expects local currency depreciation	Dummy variable derived from the question "How do you think will the exchange rate of the local currency develop over the next five years?" coded as one if respondent answers "The local currency will lose value against the euro," otherwise zero.
Expects bailout	Based on the question "What do you expect are the chances that the government in [your country] will help borrowers who are in trouble with their loan? Please indicate your answer on a scale from 0 (absolutely no chance) to 100 (absolutely certain)."
Expects legal consequences	Based on the question „when people default on their loan, in some countries the lender repossesses the house or the equivalent value of the good bought with the loan. On a scale from 0 to 100, where 0 equals 'absolutely no chance' and 100 equals 'absolutely certain' what do you expect are the chances that the lenders in [your country] will go after people who default on their loans?"
Foreign currency borrower bailout more likely, local currency borrower bailout more likely, foreign currency and local currency borrower bailout equally likely	Dummy variables derived from the question "Do you think the government in [your country] is more likely to help local or foreign currency borrowers or is there no difference? a) The government is likely to help both local and foreign currency borrowers; b) The government is more likely to help foreign currency borrowers; c) The government is more likely to help local currency borrowers; d) It is not likely that the government will help either foreign or local currency borrowers."
Foreign currency deposit preferences	Dummy variable derived from the question "Suppose you had about two times an average monthly salary to deposit in a savings account. Would you choose to deposit this amount in local currency, euro, U.S. dollars, Swiss francs, or other foreign currency?" Answer category "local currency" is coded as zero, all foreign currencies are coded as one.
Financial loss during transition	Dummy variable based on question "Think back in time to periods of economic turbulences that happened prior to 2008, e.g. very high inflation, banking crisis or restricted access to savings deposits. At that time, did you personally incur a financial loss due to such events?" Answers "No, I had no savings then" and "No, I did not incur a financial loss" coded as zero, "Yes" coded as one.
Financial management: organized	Dummy variable derived from the question "please indicate your level of agreement on a scale from 1 (strongly agree) to 6 (strongly disagree) with the following statement: I am very organized when it comes to managing my money day-to-day." Respondents answering 1-3 are coded as one, otherwise zero.
Income in euro	Dummy variable; one if the respondent regularly receives income in euro.
Interest rate literate	Dummy variable derived from the question "Suppose you had 100 [local currency] in a savings account and the interest rate was 2% per year. Disregarding any bank fees, how much do you think you would have in the account after 5 years if you left the money to grow?" Answer "more than 102" coded as 1, answers "exactly 102," "less than 102" and "don't know" coded as zero. "No answer" observations are excluded.
Labor market status: unemployed, student	Dummy variable coded as one if respondent belongs to selected occupational category.
Network savings weak	Dummy variable derived from question "In my country, it is very common to hold foreign currency deposits." Respondents could agree on a scale from 1 (strongly agree) to 6 (strongly disagree). Answers "strongly disagree" and "disagree" are defined as one, answers "somewhat disagree" to "strongly agree" are defined as zero. "Don't know" and "no answer" are excluded.
Not laid off from job in past 12 months	Dummy variable based on the question "Over the last 12 months, have you or a member of your household been laid off from a job or lost your job? [multiple answers] a) Yes, I was laid off or lost my job; b) Yes, one other member of my household was laid off or lost his/her job; c) Yes, two or more members of my household were laid off or lost their job; d) No."
Plans to take out a foreign currency loan	Dummy variable derived from the question "Do you plan to take out a loan within the next year and if so in what currency?" Answer "Yes, in local currency" are coded as zero, answers "Yes, in euro," "Yes, in Swiss francs" and "Yes, in other foreign currency" are coded as one. Answers "No," "Don't know" and "No answer" are coded as missing.
Plans to take out a loan	Dummy variable derived from the question "Do you plan to take out a loan within the next year and if so in what currency?" Answer "No" is coded as zero, answers "Yes, in local currency," "Yes, in euro," "Yes, in Swiss francs" and "Yes, in other foreign currency" are coded as one. Answers "Don't know" and "No answer" are coded as missing.

Definition of variables

Variable name	Definition
Risk averse	Dummy variable derived from the question "In managing your financial investments, would you say you have a preference for investments that offer: a) VERY HIGH returns, but with A HIGH risk of losing part of the capital; b) A GOOD return, but also a FAIR degree of protection for the investment capital; c) A FAIR return, with a GOOD degree of protection for the invested capital; d) LOW returns, WITH NO RISK of losing the invested capital." Respondents answering c or d are coded as one, otherwise zero.
Self-control: impulsive	Dummy variable derived from the question "please indicate your level of agreement on a scale from 1 (strongly agree) to 6 (strongly disagree) with the following statement: I am impulsive and tend to buy things even when I cannot really afford them" Respondents answering 1-3 are coded as one, otherwise zero.
Time preference: present	Dummy variable derived from the question "please indicate your level of agreement on a scale from 1 (strongly agree) to 6 (strongly disagree) with the following statement: I tend to live for today and let tomorrow take care of itself." Respondents answering 1-3 are coded as one, otherwise zero.
Trust: trust in government, trust in central bank, trust in domestically owned banks, trust in foreign-owned banks	Based on question "I would like to ask you a question about how much trust you have in certain institutions. For each of the following institutions, please tell me if you tend to trust it or tend not to trust it. 1 means 'I trust completely,' 2 means 'I trust somewhat,' 3 means 'I neither trust nor distrust,' 4 means 'I somewhat distrust' and 5 means 'I do not trust at all.' a) the government; b) the central bank; c) domestically owned banks; d) foreign owned banks." Dummy variable coded as one if respondents somewhat or completely trust, zero otherwise.
Exchange rate literate	Dummy variable derived from the question "Suppose that you have taken a loan in euro. Then the exchange rate of the [local currency] depreciates against the euro. How does this change the amount of local currency you need to make your loan installments? a) increases; b) stays exactly the same; c) decreases." Answer „increases" coded as one, answers „decreases," "stays the same" and "don't know" coded as zero. "No answer" observations are excluded.

Source: Author's compilation based on OeNB Euro Survey.

Table A2

Descriptive statistics

	Min/Max	BG	HR	HU	PL	RO	AL	BA	MK	RS	All countries
Aware of bailout	0/1	0.07 (0.26)	0.42 (0.49)	0.36 (0.48)	0.19 (0.39)	0.09 (0.29)	0.05 (0.22)	0.04 (0.21)	0.11 (0.31)	0.18 (0.38)	0.17 (0.37)
Current account / savings deposits	0/1	0.52 (0.50)	0.94 (0.23)	0.78 (0.42)	0.79 (0.41)	0.40 (0.49)	0.52 (0.50)	0.65 (0.48)	0.80 (0.40)	0.69 (0.46)	0.67 (0.47)
Expects economic situation to get better	0/1	0.37 (0.48)	0.55 (0.50)	0.48 (0.50)	0.46 (0.50)	0.42 (0.49)	0.44 (0.50)	0.39 (0.49)	0.51 (0.50)	0.57 (0.49)	0.47 (0.50)
Expects local currency depreciation	0/1	0.15 (0.36)	0.33 (0.47)	0.47 (0.50)	0.26 (0.44)	0.50 (0.50)	0.47 (0.50)	0.17 (0.37)	0.24 (0.43)	0.37 (0.48)	0.33 (0.47)
Expects bailout	0/100	8.43 (20.19)	26.81 (29.64)	39.84 (32.54)	23.82 (27.18)	22.25 (27.23)	8.76 (20.87)	7.67 (20.99)	15.38 (26.45)	21.04 (25.83)	19.06 (27.83)
Expects foreign currency and local currnecy bailout	0/1	0.04 (0.20)	0.21 (0.40)	0.25 (0.43)	0.05 (0.21)	0.25 (0.43)	0.11 (0.32)	0.05 (0.21)	0.15 (0.35)	0.14 (0.34)	0.14 (0.35)
Expects foreign currency bailout	0/1	0.02 (0.15)	0.23 (0.42)	0.39 (0.49)	0.29 (0.45)	0.11 (0.31)	0.03 (0.18)	0.06 (0.23)	0.02 (0.15)	0.14 (0.35)	0.14 (0.35)
Expects local currency bailout	0/1	0.09 (0.28)	0.06 (0.24)	0.08 (0.27)	0.10 (0.30)	0.07 (0.26)	0.13 (0.34)	0.05 (0.22)	0.18 (0.38)	0.18 (0.38)	0.10 (0.30)
Expects legal consequences	0/100	84.02 (29.90)	88.25 (21.12)	79.21 (27.13)	78.42 (27.82)	73.45 (28.72)	68.74 (38.28)	79.36 (32.80)	78.53 (34.14)	65.01 (35.51)	77.25 (31.90)
Foreign currency deposit preference	0/1	0.42 (0.49)	0.61 (0.49)	0.47 (0.50)	0.23 (0.42)	0.32 (0.46)	0.33 (0.47)	0.55 (0.50)	0.55 (0.50)	0.75 (0.43)	0.47 (0.50)
Financial management: organized	0/1	0.89 (0.31)	0.78 (0.42)	0.82 (0.39)	0.76 (0.43)	0.82 (0.38)	0.86 (0.35)	0.86 (0.35)	0.89 (0.31)	0.80 (0.40)	0.83 (0.37)
Income in euro	0/1	0.01 (0.12)	0.02 (0.14)	0.02 (0.14)	0.01 (0.10)	0.02 (0.14)	0.03 (0.18)	0.03 (0.17)	0.03 (0.16)	0.04 (0.20)	0.02 (0.15)
Knows beneficiary of bailout or benefitted personally from bailout	0/1	0.02 (0.15)	0.10 (0.29)	0.28 (0.45)	0.05 (0.23)	0.02 (0.13)	0.01 (0.12)	0.00 (0.06)	0.04 (0.21)	0.03 (0.16)	0.06 (0.24)
Network savings weak	0/1	0.20 (0.40)	0.08 (0.27)	0.40 (0.49)	0.35 (0.48)	0.27 (0.45)	0.14 (0.35)	0.20 (0.40)	0.12 (0.32)	0.17 (0.38)	0.21 (0.41)
Not laid off from job in past 12 months	0/1	0.87 (0.34)	0.90 (0.30)	0.93 (0.25)	0.89 (0.31)	0.96 (0.20)	0.80 (0.40)	0.94 (0.24)	0.90 (0.30)	0.84 (0.37)	0.89 (0.31)
Plans to take out a loan	0/1	0.06 (0.24)	0.05 (0.21)	0.06 (0.23)	0.12 (0.32)	0.09 (0.28)	0.05 (0.21)	0.06 (0.24)	0.10 (0.30)	0.08 (0.27)	0.07 (0.26)
Plans to take out a foreign currency loan	0/1	0.13 (0.34)	0.49 (0.51)	0.11 (0.31)	0.11 (0.32)	0.15 (0.36)	0.29 (0.46)	0.07 (0.26)	0.27 (0.45)	0.42 (0.50)	0.21 (0.41)
Risk averse	0/1	0.98 (0.15)	0.97 (0.17)	0.99 (0.09)	0.98 (0.13)	0.97 (0.17)	0.96 (0.20)	0.98 (0.15)	0.96 (0.20)	0.93 (0.26)	0.97 (0.17)
Self-control: impulsive	0/1	0.16 (0.37)	0.19 (0.39)	0.14 (0.35)	0.32 (0.47)	0.25 (0.44)	0.25 (0.43)	0.21 (0.41)	0.27 (0.45)	0.30 (0.46)	0.23 (0.42)
Student	0/1	0.04 (0.20)	0.06 (0.24)	0.02 (0.13)	0.03 (0.17)	0.02 (0.14)	0.08 (0.28)	0.05 (0.22)	0.05 (0.22)	0.07 (0.26)	0.05 (0.21)
Time preference: present	0/1	0.20 (0.40)	0.27 (0.45)	0.23 (0.42)	0.40 (0.49)	0.28 (0.45)	0.26 (0.44)	0.44 (0.50)	0.23 (0.42)	0.44 (0.50)	0.30 (0.46)
Unemployed	0/1	0.09 (0.29)	0.21 (0.40)	0.05 (0.22)	0.10 (0.30)	0.12 (0.32)	0.22 (0.42)	0.42 (0.49)	0.33 (0.47)	0.25 (0.43)	0.20 (0.40)
Exchange rate literate	0/1	0.57 (0.50)	0.70 (0.46)	0.67 (0.47)	0.64 (0.48)	0.58 (0.49)	0.52 (0.50)	0.44 (0.50)	0.57 (0.50)	0.60 (0.49)	0.59 (0.49)

Source: OeNB Euro Survey.

Note: Entries refer to sample means. Entries in parentheses refer to standard deviations. Abbreviations represent the two-digit ISO country code.