Household financial exclusion in the Eurozone throughout the crisis

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Abstract

In this paper, we show that older, unemployed, lower-income, lower-educated and lower-wealth households of the Eurozoneare less likely to have a current account. But the definition of financial exclusion matters: savings accounts discriminate less by age, while access to credit is more probable for younger and lower-income people. There is a strong heterogeneity across the Eurozone, with households from the Southern countries being more financially excluded. The aftermath of the crisis did not increase the financial exclusion of vulnerable households as a whole, but had rather country-specific effects, pointing out systemic risks over some banking systems.

JEL classification: G21, G28, D14.

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1. Introduction

Dealing with financial exclusion is a major concern for policymakers worldwide, especially since the 2009 G20 Pittsburgh summit. The access to financial services is an issue for developing countries but also for advanced economies where financial exclusion is less frequent but potentially associated with a more severe social exclusion.

The ownership of a formal bank account is considered as a first step to many types of economic inclusion: it is often necessary to get a salary or public subsidies;it allows more liquidity and gives access to savings;it reduces transaction costs; it is useful to access credit; it strengthens the financial autonomy for women;it helps to smooth consumption and investments;it reduces the risk of fraud. The theme of financial exclusion leads to measure geographical and social inequalities.

The financial inclusion is more specifically a rising issue for central banks especially through the question of access to secured and efficient payments. The Committee on Payments and Market Infrastructure of the Bank for International Settlements and of the World Bank Group has issued in 2015 a report on the payment aspects of financial inclusion (Bank for International Settlements and the World Bank Group, 2015), quoting several examples of harmonization (Single Euro Payment Area – SEPA – projectin Europe) and promotion of payment channels (electronic money…). Every type of transaction between consumers, businesses and the public sector are concerned by financial inclusion issues, and especially when there can be many transactions with a small amount. The Irving Fisher Committee has also issued a report on the central bank perspective on the measures of financial inclusion (Irving Fisher Committee, 2016), insisting on the need for central banks to define financial inclusion, collect data and stay updated on the subject. The report reveals some differences between countries in the definition of financial inclusion and of the legal roles of central banks.

Thus, the measure of financial inclusion and the study of the possible reasons for banking exclusion is an emerging subject for economic research at national levels but also regarding international comparisons. The World Bank has computed a very detailed database on access to finance, in partnership with the Gallup World Poll and sponsored by the Bill & Melinda Gates Fundation: the Global Findex is based on interviews with about 150 000 adults in 140 countries in 2011 and 2014. A major part of the literature on financial inclusion uses the data from the Global Findex, for global studies as well as for regional focuses.

If financial inclusion can be defined at a first level as the access to any kind of financial services, generally associated with the ownership of a bank account, it is useful and especially relevant for developed countries to take into account different types of financial inclusion issues. Allen, Demirgüç-Kunt, Klapper, and Martinez Peria (2012)define as following three levels of financial inclusion (it is worth noting that international comparisonsare possible only for the first level):

- Ownership of a formal bank account;
- Use of a formal savings account;
- Frequent use of the account (three withdrawals or more every month).

They use the data of 123 countries from Findex (2011) to estimate through Probit models the relationships between personal and national characteristics on the one hand and the level of financial inclusion on the other hand. They define the involuntary financial exclusion as the situation when the marginal gain of inclusion is higher than its marginal cost, but when some barriers such as distance or high cost arise as a result of market failures. On the contrary, households are considered as voluntarily excluded when they do have enough money to make a bank account profitable, or because of religious or cultural reasons. They conclude that the banking inclusion (at the first level) is higher among richer, older, urban, educated, employed and married individuals, in countries where the fees are lower and in countries where savings are encouraged through tax incentive schemes.

One particular issue is to develop the access to the formal financial sector, as opposed to the informal services which can be found in the personal circle (family) or through unofficial financial service providers, associated with uncertainty and unsecurity.Demirgüç-Kunt and Klapper (2013) use the Findex database of 2011 to define formal and informal financial inclusion, and also distinguish the voluntary and involuntary exclusion. Behind a global level of 50% of the world population using formal financial services, they observe huge variations from a country to another and, within a country, in function of the income. When they also include the informal sector, they find a global level of financial inclusion of 75%: that underlines the presence of an inequality trap, since the informal sector offers less guaranties.

Demirgüç-Kunt and Klapper also define a level of financial inclusion regarding the use of more specific services: 36% of the adults use formal or informal savings (22% formal only). The difference between formal and informal is even greater as far as credit is concerned: 9% of the world population have contracted a loan in a formal financial institution, whereas 23% have borrowed money in an informal network. They summarize the reasons why a type of financial service is not used, by order of importance: not enough money, the too high cost of services, the use of an account owned by another member of the family, the geographical distance, the lack of documentation, the lack of trust in the financial institutions and then religious reasons. With Findex, they also stress the emerging use of alternative finance: 68% of the Kenyan use their mobile phone as a mean of payment.

As financial inclusion encourages economic development and fight against poverty, the Findex database has been used to focus on emerging countries. For instance, Fungáčová and Weill (2015) study the level of formal financial inclusion in China, which is higher than in other BRICS countries (Brazil, Russia, India, China, South Africa) regarding the ownership of a bank account and regarding savings, but not as far as credit is concerned because of the prevalence of informal networks: 6.5% only of the new loans are subscribed in the formal sector, as opposed to 82% of the savings. The main reasons of financial exclusion are the lack of money to justify the opening of an account and the use of another account in the family.

At the individual level, the income is positively correlated with the ownership of an account but not with credit and savings. The level of education and the gender are linked with the bank accounts and credits, but not with savings. The impact of age is positive on the three types of inclusion, and the squared age has a negative effect, which is explained by the authorsby the coexistence of two effects: age and generation. Indeed, modelling age is a challenge to this extend.

Cámara, Peña and Tuesta (2014) focus on Peru in the Findex database: 20% of the population has access to a bank account, which is lower than Chile (42%) and Brazil (56%). Here again, the principal barriers to financial inclusion are linked with age, education and income, and correspond to the most vulnerable categories of population: women, youth and rural inhabitants. Financial inclusion progresses through credit more than through savings. These results are consolidated with a national survey which allows the computation of proxies with incomplete measures: savings through the flows of interest, credit through mortgage loans and the ownership of on account through the on-line transactions only. Cámara and Peña (2014)precise the Peruvian policy to improve financial inclusion by addressing the problems of cost and distance, when 50% of the population have a mobile phone and no access to financial services:in 2012, a law defines an electronic platform to access finance via mobile phone, through a cooperation of financial institutions and mobile operations.

Focusing on the Argentina case, Tuesta, Sorensen, Haring and Cámara (2015)use the Findex database but also some macro indicators such as the ratios between credit and GDP and between deposits and GDP.The remark that the level of financial exclusion has sensibly increased since the 2002 crisis, but the development of alternative finance is encouraging: mobile phone finance, financial intermediaries in geographical zones without any bank agency. In Argentina, the level of education, the income and the age broadly explain both the financial exclusion itself and the subjective perception of the barriers.

The situation of developed countries raises different issues, because financial exclusion is more discriminant and more rare: according to Ampudia and Ehrmann (2015), the ratio of individuals without any access to financial services (whether involuntarily or not) is 7% in the United States and 3% only in the Euro area. They use some regional surveys: the Survey of Consumer Finance (SCF) for the United States and the Household Finance and Consumption Survey (HFCS) for the Euro Area. Two types of models are proposed to take into account the national effects in Europe: national dummies or national macroeconomic variables. The other regressors are age, quintiles of income, employment situation, composition of the household, and gender. Not surprisingly, the linear modelling of age is not really significant.

The involuntary component of financial exclusion can justify the analysis of possible discriminations, even in developed countries. Deku, Kara and Molyneux (2014)deal with the situation of the United Kingdom, using a national “Living cots and food survey” and conclude that the households where the reference person is non-white have less access to credit than the others. However, they consider that the households with a budgetary deficit do necessarily want to access credit, underlining a constraint on the supply side. Yet, the studies in emerging countries reveal that there can be some cultural or religious reasons to refuse the use of credit, thus the observed differences are not necessarily discrimination.

For a long time, the financial inclusion policies in Europe have broadly relied on the conditions of a fair competition between banks. But Carbó, Humphrey, Maudos and Molyneux (2009)reveal that the choice of a concentration or a competition indicator is not neutral to the result, and that the competition does not guaranty a full access to financial services, which is confirmed byCarbó, Gardener and Molyneux (2007). They identify several national orientations addressing financial inclusion in the years 2000. According to them, Spain, Greece, Ireland and Italy relied on the banking market and did not take specific actions. On the contrary, a voluntary approach of the banks was encouraged by the governments of Belgium, Finland, France, Germany and Holland. In addition, some mediation mechanisms are possible, like in France and in the United Kingdom, as well as a coercive legislation (France, Portugal and Sweden).

The European Commission has proposed in 2008 an overview of the situation: “Financial Services Provision and Prevention of Financial Exclusion” (2008), focusing particularly on geographical zones of financial exclusion and on the situation of migrants. The report stresses the involuntary motives of financial exclusion and precisely identifies the actors (formal or not…). It considers the access to an account as well as to credit, savings and insurance. Several levels of access to a bank account are distinguished, as well as the difference between appropriated and unappropriated credit. Using the Eurobarometer survey, the report concludes that 10% of the European population does not have a bank account. In the ten new countries, this ratio rises to 47%. The percentage of total exclusion is 7% in the EU (15 members) and 2% in France, 3% in Germany, 8% in Spain and 16% in Italy. The factors of exclusion are identified as following: low level of income, unemployment, single parenthood, unemployability, age, low level of education, immigration and living in a disadvantaged area. Some individual characteristics are significant only in countries where the level of exclusion is high and disappear in other countries.

Our paper adds to the existing literature in three dimensions. First, it seeks to assess the factors underlying financial exclusion in the euro area. It takes advantage of the use of a homogenous database over those countries, the Household Finance and Consumption Survey, whose first two waves were carried out in 2008-2009 and 2014-2015. In that respect, it allows for a comparison of the determinants of financial exclusion before and after the crisis: this is the second original contribution. Finally, as a too narrow definition of financial inclusion based on the sole current account criteria may blur the results, it rests on various definitions of financial exclusion, based on current accounts, savings accounts, and access to credit.

The remainder of the paper is structured as follows. The second part presents the data used and some descriptive statistics on the database. Section 3 explains the econometric models used in the paper. Section 4 elaborates on the results and Section 5 concludes and draws some policy conclusions.

2. The data

Our analysis rests on household-level data collected from the Household Finance and Consumption Survey. The HFCS collects household-level data on households' finance and consumption. The fieldwork took place for most countries in 2010 and 2011 for the first wave and between 2013 and the first half of 2015 for the second wave. Those survey data are key to: understanding both individual behavior and developments in aggregate variables; evaluating the impact of shocks, policies and institutional changes, both for households and for different institutional structures; better understanding the implications of shocks for macroeconomic variables; building and calibrating realistic economic models incorporating heterogeneous agents; gaining important insights into issues such as monetary policy transmission and financial stability.

Effectively, the data cover more than 50000 households in the first wave and more than 58000 in the second wave, across 13 countries (Austria, Belgium, Cyprus, Germany, Spain, France, Greece, Italy, Luxembourg, Netherlands, Portugal, Slovenia, Slovakia) in the first wave and 15 countries in the second wave (adding Latvia and Poland to the former). Data from Finland were discarded as a 100% current account participation rate is assumed in this country, which may blur the final results.

The HFCS contains very useful information about the socio-demographic characteristics of households, their financial and real assets, their liabilities, income and consumption behavior. With the help of weighting procedures, those survey data are representative of households of a single country and of the euro area as a whole.

A first set of descriptive statistics based on current accounts allows for a confirmation of some intuitions. At the euro area level, the participation rate in current accounts reaches about 96.9% and has slightly increased from the first wave. The household size does not play

an important role in the probability of not having a current account, likewise the age of the reference person of the household. Rather, financial variablesdiscriminate more the population, especially the income and the net wealth: being in the low-quintile of the distribution of income (resp. net wealth) decreases the participation rate to 89.9% (resp. 92.3%). In addition, having a low education or a more fragile work status also decreases the participation rate. These are those financially more vulnerable people, whose participation rates have decreased throughout the crisis.

[Table 1]

As regards national situations, it is clear that the participation rate is highly country-specific. In wave 2, the participation rates for current accounts range from 73.9% in Greece to 99.7% in Austria. While this rate has increased,or remained stable, in most of the euro area countries, it has dramatically decreased in Cyprus, and to a lesser extent in Slovakia and in the Luxembourg.

[Table 2]

As it is crucial to distinguish between those different factors, we decide to estimate probit models allowing for a quantification of financial exclusion depending on different financial products.

3. The models

The ownership of a transaction account is usually seen as the first step of financial inclusion, and the other issues such as credit and savings are, at least partially, dependent of this general measure. Therefore, our first and main model “transaction account”explains the probability for a household to have no transaction account by a Probit regression on independent variables.

The literature and a descriptive analysis both suggest that the effect of age is not linear because of the coexistence of the impact of age itself (i.e. the position of the person of reference in the life cycle) and of generation. Thus, we perform a discretization of age and we maximize its significance in the model by using five categories (15-25, 25-35, 35-50,50-70, 70 or more). It is striking to observe that the age categories which are the more statistically useful to explain financial exclusion appear consistent with the main stages of the life cycle.

The impact of the employment of the person of reference of the household on its financial inclusion is obtained by simplifying the information contained in the survey, up to three categories: employed, unemployed and not in the labour force.

We also use the quartiles by countryof income in the one hand and of assets[3] in the other to take into account the global financial wealth of the household. For the level of education of the person of reference, we merge the upper secondary and the tertiary levels, as opposed to primary education in the one hand and lower secondary education in the other hand.

The size of the household is also discretized: 1 person, 2 persons, 3 persons, 4 persons, 5 persons and more. Dummies for countries are also used in the model, and Germany is the reference.

All these choices have been made in order to allow the independent variables to fit the general model but also, when possible, other models about credit and savings.It is worth noting at this stage that all of our variables are this discretionary.

The main model on the ownership of transaction account can be written as follows:

[3] We merge the 3rd and the 4th quartiles of assets, since the distinction between them does not seem to be discriminant regarding financial inclusion.

$$P(Y_{\text{no account}} = 1|X) = \Phi(\alpha + X'\beta)$$

Where $Y_{\text{no account}} = 1$ if the household does not own a transaction account, $\Phi \hookrightarrow N(0,1)$ and:

$$\beta = \begin{pmatrix} \beta_{\text{age}} \\ \beta_{\text{employment}} \\ \beta_{\text{income}} \\ \beta_{\text{education}} \\ \beta_{\text{household composition}} \\ \beta_{\text{Assets}} \\ \beta_{\text{country}} \end{pmatrix}^{t} \text{ and } \quad X = \begin{pmatrix} X_{\text{age}} \\ X_{\text{employment}} \\ X_{\text{income}} \\ X_{\text{education}} \\ X_{\text{household composition}} \\ X_{\text{Assets}} \\ X_{\text{country}} \end{pmatrix}$$

Each vector of coefficient *β* and of independent variable *X* can be decomposed

$$\beta = \begin{pmatrix} \beta_{\text{age}}\{\text{15-25}\} \\ \beta_{\text{age}}\{\text{25-35}\} \\ \beta_{\text{age}}\{\text{35-50}\} \\ \beta_{\text{age}}\{\text{50-70}\} \\ \beta_{\text{employment}}\{\text{Employed}\} \\ \beta_{\text{employment}}\{\text{Unemployed, seeking for a job}\} \\ \beta_{\text{income}}\{\text{First quartile}\} \\ \beta_{\text{income}}\{\text{Second quartile}\} \\ \beta_{\text{income}}\{\text{Third quartile}\} \\ \beta_{\text{education}}\{\text{Primary}\} \\ \beta_{\text{education}}\{\text{Lower secondary}\} \\ \beta_{\text{household composition}}\{\text{1 person}\} \\ \beta_{\text{household composition}}\{\text{2 persons}\} \\ \beta_{\text{household composition}}\{\text{3 persons}\} \\ \beta_{\text{household composition}}\{\text{4 persons}\} \\ \beta_{\text{Assets}}\{\text{First quartile}\} \\ \beta_{\text{Assets}}\{\text{Second quartile}\} \\ \beta_{\text{country}}\{\text{Austria}\} \\ \beta_{\text{country}}\{\text{Belgium}\} \\ \beta_{\text{country}}\{\text{Cyprus}\} \\ \beta_{\text{country}}\{\text{Spain}\} \\ \beta_{\text{country}}\{\text{France}\} \\ \beta_{\text{country}}\{\text{Greece}\} \\ \beta_{\text{country}}\{\text{Italy}\} \\ \beta_{\text{country}}\{\text{Latvia}\} \\ \beta_{\text{country}}\{\text{Luxembourg}\} \\ \beta_{\text{country}}\{\text{Netherlands}\} \\ \beta_{\text{country}}\{\text{Poland}\} \\ \beta_{\text{country}}\{\text{Portugal}\} \\ \beta_{\text{country}}\{\text{Slovenia}\} \\ \beta_{\text{country}}\{\text{Slovakia}\} \end{pmatrix}^{t} \quad \text{and } X = \begin{pmatrix} \mathbb{1}_{\text{age}}\{\text{15-25}\} \\ \mathbb{1}_{\text{age}}\{\text{25-35}\} \\ \mathbb{1}_{\text{age}}\{\text{35-50}\} \\ \mathbb{1}_{\text{age}}\{\text{50-70}\} \\ \mathbb{1}_{\text{employment}}\{\text{Employed}\} \\ \mathbb{1}_{\text{employment}}\{\text{Unemployed, seeking for a job}\} \\ \mathbb{1}_{\text{income}}\{\text{First quartile}\} \\ \mathbb{1}_{\text{income}}\{\text{Second quartile}\} \\ \mathbb{1}_{\text{income}}\{\text{Third quartile}\} \\ \mathbb{1}_{\text{education}}\{\text{Primary}\} \\ \mathbb{1}_{\text{education}}\{\text{Lower secondary}\} \\ \mathbb{1}_{\text{household composition}}\{\text{1 person}\} \\ \mathbb{1}_{\text{household composition}}\{\text{2 persons}\} \\ \mathbb{1}_{\text{household composition}}\{\text{3 persons}\} \\ \mathbb{1}_{\text{household composition}}\{\text{4 persons}\} \\ \mathbb{1}_{\text{Assets}}\{\text{First quartile}\} \\ \mathbb{1}_{\text{Assets}}\{\text{Second quartile}\} \\ \mathbb{1}_{\text{country}}\{\text{Austria}\} \\ \mathbb{1}_{\text{country}}\{\text{Belgium}\} \\ \mathbb{1}_{\text{country}}\{\text{Cyprus}\} \\ \mathbb{1}_{\text{country}}\{\text{Spain}\} \\ \mathbb{1}_{\text{country}}\{\text{France}\} \\ \mathbb{1}_{\text{country}}\{\text{Greece}\} \\ \mathbb{1}_{\text{country}}\{\text{Italy}\} \\ \mathbb{1}_{\text{country}}\{\text{Latvia}\} \\ \mathbb{1}_{\text{country}}\{\text{Luxembourg}\} \\ \mathbb{1}_{\text{country}}\{\text{Netherlands}\} \\ \mathbb{1}_{\text{country}}\{\text{Poland}\} \\ \mathbb{1}_{\text{country}}\{\text{Portugal}\} \\ \mathbb{1}_{\text{country}}\{\text{Slovenia}\} \\ \mathbb{1}_{\text{country}}\{\text{Slovakia}\} \end{pmatrix}$$

For instance, $\mathbb{1}_{\text{age}}\{\text{15-25}\} = 1$ if the person of reference is between 15 and 25 years old, and $\mathbb{1}_{\text{income}}\{\text{Second quartile}\} = 1$ if the household is in the second quartile of income in its country.

The model “savings 1” uses the same independent variables as previously in order to predict the probability not to have any kind of savings (including from the informal sector). In the model “savings 2”, the distribution of ages is slightly different, in order to test for thehypothesis that savings behavior is more continuous at the beginning of the life cycle:

“15-40”, “40-50”, “50-70” and “70 or more” (reference value). We also use a dummy for current overdraft in a third model about savings (“savings 3”).

The model “credit 1” is exactly the same as the model on the ownership of a transaction account but the explained variable is the ownership of an outstanding credit from the formal or the informal sector. Another version (“credit 2”) is proposed with fewer categories for the composition of the household: “1 person”, “2 persons” and “3 persons or more” (reference value). The use of a dummy identifying a current overdraft for the household (“credit 3”) enhances the prediction.

We then distinguish between the type of credit, using the same independent variables as in the model “credit 2”: “credit 4” deals with the current ownership of a consumer credit, and “credit 5“ with mortgage loans.

In addition, the HFCS database provides interesting information on the difference between voluntary and involuntary exclusion on the market of credit, since we have information about total or partial turn down with the answer to the question: “In the last three years, has any lender or creditor turned down any request you [or someone in your household] made for credit, or not given you as much credit as you applied for?”. We can also measure self-censorship thanks to the question: “In the last three years, did you (or another member of your household) consider applying for a loan or credit but then decided not to, thinking that the application would be rejected?”.

Therefore a model “credit 6: total turn-down” is performed on the probability to have be confronted to a total turn down, with the same independent variable as in model “credit 1”, except for the dummies on education. Another version “credit 7: total turn-down” includes a dummy identifying a current overdraft for the household. With the same pattern, we also perform models “credit 8” and “credit 9” for total or partial turn down. “Credit 10” and credit 11”, on self-censorship, include dummies for education.

More details on the model specification are provided in Appendix 1. For each variable we have defined a reference: this is the difference between that reference and the variable modality that has to be interpreted.

Therefore, each model is estimated on the data of wave 1, and of wave 2, separately. As we carry out logistic modeling with categorical predictors, we have to define for each variable a reference modality. While the choice of the reference variable remains a debated issue, some common sense principles should determine this modality in that specific context: using a normative category; using the largest category; use the category in the middle of at one of the ends.

As a result, for the sake of results readability, we define in general as references the modalities at the extreme of each variable, that is to say: households whose reference person is aged over 70 years for the 'age' variable, households not in the labour force for the 'labour force status' variable, households in the fourth quartile of income and in the third and fourth quartile of net wealth, households with an upper secondary or tertiary education for the 'education' variable. For the country variable, we chose thelargest country, for which financial inclusionremained in addition stable and high throughout the period, that is to say Germany.

4. Results

Financial exclusion in the post crisis period

Our main results for the second wave of the HFCS are presented in table 3. Post-estimation diagnosis appears good enough so as to interpret the results.

[Table 3]

We find that the probability of being financially excludedin the sense of not having a current account is higher for older households, lower-educated and less wealthy people. The effect of income is massive in magnitude and monotonous: higher income means lower financial exclusion, with the latter being in relative terms extremely important for the first quartile of income. The size of the household only plays a minor role in magnitude, though being statistically significant, with households of 2 or 3 people being more financially included. The use of categorical variables allows us the comparison of coefficients across variables. In that respect, as regards country specificities, noteworthy that the magnitude of the coefficients related to countries is much higher than those related to individual characteristics, meaning that the estimation captures especially country-specific and more systemic features. In particular, households living in Greece, Cyprus, Latvia, Slovakia or Poland significantly experiment a higher probability of being financially excluded. On the contrary, households from Spain (especially), Austria, France and Germany experiment a lower financial exclusion, all other things equal. It is remarkable that those characteristics of financial exclusion in the sense of current account are extremely close to those of Allen, Demirgüç-Kunt, Klapper, and Martinez Peria (2012), thus highlighting the features of fragile households. Our results nevertheless tend to show a higher risk for older people.

As far as saving accounts are concerned, our results show again that being youngerincreases the probability of being excluded, likewise anunemployed work status. Income, education level (to a lesser extent), net wealth (to a higher extent) play the same role as for current account financial exclusion. Being a smaller household decreases the probability of not having a savings account, which might relate to the fact that consumption needs are higher for more numerous households*ceteris paribus*. The effect of net wealth is higher than for current accounts, meaning that being less wealthy yields more exclusion from savings than from current accounts.For most of the countries results are similar to those obtained for current accounts, although with coefficients smaller than for the former equation, meaning that country-specific factors should not discriminate as much for savings as for current accounts. We nonetheless find a higher exclusion on savings for households in Spain, for which current accounts exclusion was low and a higher participation in France and the

Netherlands, meaning that in relative terms, having a savings account in those latter countries might appear easier than a current account one. It is interesting to notice that incentives might play a role, as current accounts benefit relative interesting interest rates in Spain, while savings accounts in France ('Livret A') benefit specific fiscal exemptions with relatively high remuneration rates.

Looking at credit exclusion, we find that being aged between 25 and 50 decreases significantly the probability of not having a credit, which is consistent with the life cycle model. The probability of exclusion is smaller for employed people, numerous households, higher income and wealthier households, although for this latter characteristic the effect is smaller than for other, meaning that the credit allocation may rather depend on criteria about income than on net wealth (through the collateral channel). Being lower educated appears also as a significant factor of exclusion. Again, country-specific variables matter much more than individual characteristics, indicating that national legislations, practices or banking system functioning, play a key role in credit exclusion. In that respect, households that are less included in the credit market all other things kept equal live in Greece, Slovakia, Latvia, Poland, France and Italy.

Effect of the crisis on financial exclusion

The same equation is estimated on the first wave data, with the intention to estimate whether the crisis yielded significant changes in financial exclusion. Results are presented in Table 4. The comparison of coefficient magnitudes and signs allows us to draw the following conclusions.

[Table 4]

As regards current accounts, after the crisis are more excluded younger households, and inactive people, while surprisingly, financial variables such as income and net wealth does not seem to play a more important role in wave 2 rather than in wave 1. Household

composition was a higher source of financial exclusion in wave 1 than in wave 2, as the magnitude of coefficients has decreased. Financial exclusion on these grounds seems more related to the composition of the households, or stigma-related, than financially-based in wave 2. We also find that, in comparison with the reference modality, current account financial exclusion has decreased in countries that have relatively well born the crisis (Austria, Germany, France, the Netherlands), while it has increased in others (Cyprus, Greece). Surprisingly, it seems to have significantly decreased in Spain but, beyond any measures undertaken in favor of household inclusion, it should also be reminded that HFCS data for Spain in wave 2 were collected in 2011. In that respect, it is worth mentioning that coefficients differences between wave 1 and wave 2 estimations are much more important with country-specific variables than individual characteristics, pointing to systemic phenomenon related to a weakening of households situation in those countries dramatically hit by the crisis, or by mistrust from those households towards their financial systems' resilience. This seems to be the case in Cyprus and Greece, but not for instance in Italy, Portugal and Spain.

As regards savings accounts, again the effects of individual characteristics remain sensibly similar to those of the first wave, with numerous households having less access to savings nonetheless after the crises, pointing to higher consumption needs and less cash for savings. On the contrary, country-specific variables seem to play a major role, with country-specific evolutions consistent with those found for current accounts, although smaller in magnitude. Interestingly enough, participation in savings accounts in Greece have increased between both waves.

Finally, as regards access to credit, we find a more minor role for country-specific variables than for other definitions of financial exclusion in the evolution of exclusion between 2009 and 2014. Conversely, individual characteristics play a more major role: being older, inactive, lower educated, or having a lower income increase the probability of not having any credit. While income remain of high importance for the access to credit, the magnitude of the coefficient related to net wealth has decreased between both waves.

Additional results on second wave

We run additional regressions in order to make more precise the determinants of exclusion on savings. We use alternative breakdowns of age and the existence of overdraft coincident (Table 5). We find that the variant yields better results on the significance of age categories and, interestingly, that having an overdraft increases the probability of not having a savings account. All other results remain the same.

[Table 5]

Alternatively in Table 6, we present an alternative specification for having a credit with this overdraft variable and find that it has no significant on the probability of not having a credit (all types considered together). Robustness checks show that being 1 or 2 persons in the household increases the probability of not having a credit.

[Table 6]

Table 7 proposes alternative specifications broken down by type or credit. Overall results remain the same but we show that people between 25 and 50 years old benefit a relative easier access to mortgage loans with respect to consumer credit. Variables related to work status and education level do not have the same influence for mortgage as for consumer credit –they are less discriminant, while income plays roughly the same role. Interestingly, net wealth discriminates more mortgage loans, showing the effect of induced collateral on the access to credit, while this type of guarantee is not required in general for consumer credit. Finally, we show that the country specific effect may differ and depend on the type of credit, with consumer credit being less diffused in the vast majority of euro area countries, all other things kept equal, with the exception of Austria.

[Table 7]

Tables 8 and 9 examine the probability of informal credit rationing that is to say the fact that household have faced a turn down when applying for a credit. We find that credit exclusion increases with the size of the household, with the fact of being middle-aged, with low income, and quite significantly and with ample magnitude with having a low wealth. We also find quite heterogeneous results across countries, with Spain, Luxembourg and Slovakia being more akin to total turn down, all other things equal.Having an overdraft is also likely to increase total or partial turndown.

[Table 8]

[Table 9]

Finally, table 10 present the determinants of self-censorship i.e.of not applying for a credit due to perceived constraints. In light of these results, we find that self-censorship is higher for middle-aged, unemployed, low-income, lower educated, poorly endowed households, especially with an overdraft. We also find that self-censorship is higher is some countries, for which credit endowment is not necessarily low: Cyprus, Greece, Slovakia, but also France and Spain, while it is significantly low in the Netherlands.

[Table 10]

5. Conclusion and policy lessons

Financial exclusion plays an important role, not only for social reasons, but also for economic purposes, as fir instance financial inclusion is highly correlated to national wealth (Ampudia and Ehrmann, 2015). Hence, understanding the determinants of financial inclusion remains of the essence.

In this paper, we estimate probit models so as to identify the determinants of financial exclusion, based on various definitions. We find that being an older, unemployed, low-income, low-educated and low-wealth household increases the probability of not having a current account. But the definition of financial exclusion matters: savings accounts discriminate less by age, while access to credit is more probable for younger and lower-income people. There is a strong heterogeneity across Euro area, with households from Greece, Cyprus, Poland and Slovakia being more financially excluded.

The aftermath of the crisis did not increase the financial exclusion of vulnerable households as a whole, but had rather country-specific effects on current account and savings accounts, pointing out systemic risks over some banking systems.This is less the case for credit exclusion, where individual characteristics seem to matter more than for current account and savings accounts. Among other features, having an overdraft seems to weigh both on formal and on informal exclusion.

This paper adds to the existing literature in identifying the characteristics of financial exclusion based on three different definitions and over the crisis. It shows that current account and savings account exclusion remains essentially a country-specific issue, while access to credit is relatively more related to the individual characteristics of the households.

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Appendix 1: description of the models

Model "savings 1":

The main model on savings is exactly the same as the model "transaction account", with $Y_{\text{no savings}} = 1$if the household does not have any outstanding credit, and both β and X the same as previously :

$$P\left(Y_{\text{no savings}} = 1|X\right) = \Phi(\alpha + X'\beta)$$

Model "savings 2":

In the model "savings 2", the categories of ages are a little different:

$$X_{\text{age}} = \begin{pmatrix} \mathbb{1}_{\text{age}}\{15\text{-}40\} \\ \mathbb{1}_{\text{age}}\{40\text{-}50\} \\ \mathbb{1}_{\text{age}}\{50\text{-}70\} \end{pmatrix}$$

Model "savings 3":

The model "savings 3" is the same as "savings 2" with in addition in X a dummy for the current use of an overdraft by the household: $\mathbb{1}_{\text{overdraft}} = 1$ if the household declares an overdrawn account.

Model "credit 1":

The main model on credit is exactly the same as the model "transaction account", with $Y_{\text{no credit}} = 1$if the household does not have any outstanding credit, and both β and X the same as in the reference model :

$$P(Y_{\text{no credit}} = 1|X) = \Phi(\alpha + X'\beta)$$

Model "credit 2":

Another to present the composition of the households (where the reference value is "3 persons or more") leads to slightly more significant results of the model on credit:

$$X_{\text{household composition}} = \begin{pmatrix} X_{\text{household composition}}\{1 \text{ person}\} \\ X_{\text{household composition}}\{2 \text{ persons}\} \end{pmatrix}$$

Model "credit 3":

The model "credit 3" is the same as "credit 2" with in addition in X a dummy for the current use of an overdraft by the household: $\mathbb{1}_{\text{overdraft}} = 1$ if the household declares an overdrawn account.

Model "credit 4 – consumer credit":

The model "credit 4" is the same as "credit 2" but Y is the current ownership of a consumer credit.

Model “credit 5 – mortgage”:

The model “credit 5” is the same as “credit 2” but *Y* is the current ownership of a mortgage loan.

Model “credit 6 – total turn-down”:

The model “credit 6 – total turn-down” is the same as “credit 1” but *Y* is the probability that a lender has totally turned down a request for credit in the last three year, and without any dummy on education.

Model “credit 7 – total turn-down”:

The model “credit 7 – total turn-down” is the same as “credit 6” with in addition in *X* a dummy for the current use of an overdraft by the household.

Model “credit 8 – total or partial turn-down”:

The model “credit 8 – totalor partial turn-down” is the same as “credit 1” but *Y* is the probability that a lender has totally or partially turned down a request for credit in the last three year, and without any dummy on education.

Model “credit 9 – totalorpartial turn-down”:

The model “credit 9 – total or partial turn-down” is the same as “credit 8” with in addition in *X* a dummy for the current use of an overdraft by the household.

Model “credit 10 – self-censorship”:

The model “credit 10 – self-censorship” is the same as “credit 1” but *Y* is the probability of self-censorship in the last three years.

Model “credit 11 – self-censorship”:

The model “credit 11 – self-censorship” is the same as “credit 10” with in addition in *X* a dummy for the current use of an overdraft by the household.

Appendix 2: descriptive statistics

Table 1: participation rate in deposits accounts depending on household characteristics

Participation rate - deposits		
	Wave 2	Wave 1
All		
	96.9	96.4
Household size		
1	96.1	95.8
2	97.6	97.2
3	97.3	96.6
4	97.1	96.6
5	96.4	95
Age		
16-34	97.1	97.1
35-44	97	97.1
45-54	97.1	96.7
55-64	97.2	96.4
65-74	97.2	94.7
75+	96	
Percentile of net wealth		
Lessthan 20	92.3	92.6
20-39	96.8	96.3
40-59	97.1	96.1
60-79	98.8	98.1
80-100	99.6	99.2
Workstatus		
Employed	98.2	97.6
Self employed	98.2	96.6
Not in the labour force	90.9	94.2
Education		
Basic	94	93.1
Secondary	97.7	97.9
Tertiary	99.1	98.7
Percentile of income		
Lessthan 20	89.9	90
20-39	96.8	96.5
40-59	98.8	98.2
60-79	99.5	98.6
80-100	99.7	99

Table 2: participation rate in deposits accounts depending on countries

Participation rate - deposits		
Country		
	Wave 2	Wave 1
Austria	99.7	99.4
Belgium	97.5	97.7
Cyprus	76.3	81.2
Germany	99	99
Spain	99.6	98.1
France	99.6	99.6
Greece	73.9	73.4
Italy	93.2	91.8
Luxembourg	96.7	98
Latvia	78.5	NA
Netherlands	98.6	94.2
Poland	82.8	NA
Portugal	96.1	94.8
Slovenia	93.3	93.6
Slovakia	88.2	91.2

Appendix 3: results of Probit estimations

Table 3: three main models on the ownership of a transaction account, savings and credit (2014)

	Main model		**Savings 1**		**Credit 1**	
Dependent variable (probability of exclusion)	Transaction account		Savings		Credit	
Constant	-3.108***	[0.092]	-1.682***	[0.04]	-2.02***	[0.049]
Age: 15-25	-0.201***	[0.07]	-0.027	[0.045]	-0.251***	[0.045]
Age: 25-35	-0.145***	[0.048]	-0.026	[0.03]	-0.613***	[0.031]
Age: 35-50	-0.077*	[0.04]	0.101***	[0.025]	-0.648***	[0.026]
Age: 50-70	-0.106***	[0.029]	0.138***	[0.019]	-0.458***	[0.019]
Age : > 70	*Ref.*		*Ref.*		*Ref.*	
Situation: employed	-0.187***	[0.03]	-0.019	[0.018]	-0.326***	[0.018]
Situation: unemployed and seeking for a job	0.204***	[0.038]	0.103***	[0.028]	-0.036	[0.028]
Situation: not in the labour force	*Ref.*		*Ref.*		*Ref.*	
Income: first quartile (in the country)	0.809***	[0.038]	0.677***	[0.023]	0.766***	[0.023]
Income: second quartile (in the country)	0.392***	[0.036]	0.444***	[0.02]	0.439***	[0.02]
Income: third quartile (in the country)	0.106***	[0.036]	0.27***	[0.019]	0.197***	[0.019]
Income: fourth quartile (in the country)	*Ref.*		*Ref.*		*Ref.*	
Education: primary	0.471***	[0.03]	0.246***	[0.019]	0.582***	[0.02]
Education: lowersecondary	0.301***	[0.029]	0.227***	[0.018]	0.23***	[0.019]
Education: upper secondary and tertiary	*Ref.*		*Ref.*		*Ref.*	
Household composition: 1 person	-0.096**	[0.045]	-0.314***	[0.028]	0.299***	[0.029]
Household composition: 2 persons	-0.137***	[0.042]	-0.27***	[0.026]	0.154***	[0.028]
Household composition: 3 persons	-0.157***	[0.044]	-0.147***	[0.027]	0.046	[0.029]
Household composition: 4 persons	-0.098**	[0.045]	-0.135***	[0.027]	-0.082***	[0.03]
Household composition: 5 persons or more	*Ref.*		*Ref.*		*Ref.*	
Assets : first quartile (in the country)	0.477***	[0.026]	0.779***	[0.017]	0.185***	[0.018]
Assets : second quartile (in the country)	0.246***	[0.026]	0.355***	[0.016]	-0.04**	[0.016]
Assets : third and fourth quartiles (in the country)	*Ref.*		*Ref.*		*Ref.*	
Country: Austria	0.056	[0.113]	-0.061	[0.04]	0.269***	[0.054]
Country: Belgium	0.345***	[0.104]	0.126***	[0.041]	0.824***	[0.051]
Country: Cyprus	2.314***	[0.086]	1.107***	[0.045]	1.245***	[0.058]
Country: Germany	*Ref.*		*Ref.*		*Ref.*	
Country: Spain	-0.652***	[0.12]	0.922***	[0.031]	0.546***	[0.045]
Country: France	-0.072	[0.089]	-0.361***	[0.03]	1.973***	[0.04]
Country: Greece	3.627***	[0.083]	0.741***	[0.035]	2.569***	[0.047]
Country: Italy	1.307***	[0.08]	1.311***	[0.03]	1.919***	[0.042]
Country: Luxembourg	0.553***	[0.107]	0.166***	[0.046]	0.195***	[0.07]
Country: Latvia	1.819***	[0.089]	2.109***	[0.05]	2.094***	[0.055]
Country: Netherlands	0.531***	[0.115]	-0.276***	[0.057]	0.679***	[0.062]
Country: Poland	1.738***	[0.081]	2.413***	[0.038]	2.036***	[0.045]
Country: Portugal	0.478***	[0.086]	0.811***	[0.032]	1.321***	[0.044]

Country: Slovenia	1.117***	[0.087]	1.415***	[0.036]	1.086***	[0.049]
Country: Slovakia	1.743***	[0.084]	1.655***	[0.039]	2.366***	[0.049]

Observations	58701	58703	58703
Percent Concordant	93.5	84.7	85.6
Percent Discordant	6.2	15.1	14.2
Percent Tied	0.3	0.2	0.2

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 4: the three main models on the ownership of a transaction account, savings and credit (2009)

	Main model		**Savings 1**		**Credit 1**	
Dependent variable (probability of exclusion)	Transaction account		Savings		Credit	
Constant	-2.985***	[0.101]	-1.85***	[0.045]	-2.155***	[0.059]
Age: 15-25	-0.291***	[0.066]	-0.036	[0.045]	-0.437***	[0.044]
Age: 25-35	-0.171***	[0.049]	0.087***	[0.033]	-0.738***	[0.033]
Age: 35-50	-0.103**	[0.041]	0.128***	[0.027]	-0.705***	[0.027]
Age: 50-70	-0.07**	[0.03]	0.133***	[0.021]	-0.513***	[0.02]
Age : > 70	*Ref.*		*Ref.*		*Ref.*	
Situation: employed	-0.105***	[0.03]	0.018	[0.02]	-0.403***	[0.019]
Situation: unemployed and seeking for a job	0.238***	[0.043]	0.156***	[0.033]	-0.143***	[0.033]
Situation: not in the labour force	*Ref.*		*Ref.*		*Ref.*	
Income: first quartile (in the country)	0.822***	[0.041]	0.646***	[0.025]	0.617***	[0.024]
Income: second quartile (in the country)	0.339***	[0.039]	0.381***	[0.022]	0.308***	[0.021]
Income: third quartile (in the country)	0.135***	[0.039]	0.245***	[0.021]	0.097***	[0.02]
Income: fourth quartile (in the country)	*Ref.*		*Ref.*		*Ref.*	
Education: primary	0.44***	[0.03]	0.287***	[0.02]	0.429***	[0.019]
Education: lowersecondary	0.212***	[0.031]	0.218***	[0.02]	0.236***	[0.02]
Education: upper secondary and tertiary	*Ref.*		*Ref.*		*Ref.*	
Household composition: 1 person	-0.307***	[0.046]	-0.239***	[0.031]	0.321***	[0.032]
Household composition: 2 persons	-0.345***	[0.044]	-0.202***	[0.029]	0.205***	[0.03]
Household composition: 3 persons	-0.216***	[0.045]	-0.12***	[0.03]	0.038	[0.031]
Household composition: 4 persons	-0.179***	[0.046]	-0.059*	[0.03]	-0.011	[0.032]
Household composition: 5 persons or more	*Ref.*		*Ref.*		*Ref.*	
Assets : first quartile (in the country)	0.521***	[0.027]	0.783***	[0.019]	0.39***	[0.019]
Assets : second quartile (in the country)	0.29***	[0.027]	0.373***	[0.017]	0.09***	[0.018]
Assets : third and fourth quartiles (in the country)	*Ref.*		*Ref.*		*Ref.*	
Country: Austria	0.289**	[0.116]	-0.081*	[0.046]	0.843***	[0.061]
Country: Belgium	0.563***	[0.104]	0.111**	[0.044]	1.141***	[0.059]
Country: Cyprus	1.853***	[0.096]	0.85***	[0.048]	1.211***	[0.071]
Country: Germany	*Ref.*		*Ref.*		*Ref.*	
Country: Spain	0.473***	[0.092]	1.151***	[0.034]	1.033***	[0.053]
Country: France	0.226**	[0.09]	-0.181***	[0.033]	2.184***	[0.05]
Country: Greece	2.055***	[0.09]	2.577***	[0.045]	2.472***	[0.056]
Country: Italy	1.428***	[0.088]	1.331***	[0.033]	1.991***	[0.052]
Country: Luxembourg	0.658***	[0.122]	0.226***	[0.058]	0.512***	[0.088]
Country: Netherlands	1.252***	[0.101]	-0.082	[0.056]	0.836***	[0.07]
Country: Portugal	0.833***	[0.093]	1.106***	[0.037]	1.937***	[0.055]
Country: Slovenia	1.041***	[0.142]	1.327***	[0.076]	1.143***	[0.101]
Country: Slovakia	1.303***	[0.096]	1.617***	[0.041]	2.35***	[0.058]
Observations	50 689		50 689		50 689	

Percent Concordant	87.1	85.1	84.8
Percent Discordant	12.4	14.7	15.0
Percent Tied	0.5	0.2	0.2

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 5: three main models on savings (2014)

Dependent variable (probability of exclusion)	**Savings 1**		**Savings 2**		**Savings 3**	
	Savings		Savings		Savings	
Constant	-1.682***	[0.04]	-1.681***	[0.039]	-1.703***	[0.04]
Age: 15-25	-0.027	[0.045]				
Age: 25-35	-0.026	[0.03]				
Age: 35-50	0.101***	[0.025]				
Age: 50-70	0.138***	[0.019]				
Age : > 70	*Ref.*					
Age: 15-40			-0.003	[0.026]	-0.006	[0.026]
Age: 40-50			0.118***	[0.026]	0.114***	[0.026]
Age: 50-70			0.136***	[0.019]	0.133***	[0.019]
Age : > 70			*Ref.*		*Ref.*	
Situation: employed	-0.019	[0.018]	-0.018	[0.018]	-0.022	[0.018]
Situation: unemployed and seeking for a job	0.103***	[0.028]	0.104***	[0.027]	0.102***	[0.027]
Situation: not in the labour force	*Ref.*		*Ref.*		*Ref.*	
Income: first quartile (in the country)	0.677***	[0.023]	0.678***	[0.023]	0.681***	[0.023]
Income: second quartile (in the country)	0.444***	[0.02]	0.445***	[0.02]	0.448***	[0.02]
Income: third quartile (in the country)	0.27***	[0.019]	0.272***	[0.019]	0.273***	[0.019]
Income: fourth quartile (in the country)	*Ref.*		*Ref.*		*Ref.*	
Education: primary	0.246***	[0.019]	0.245***	[0.019]	0.246***	[0.019]
Education: lowersecondary	0.227***	[0.018]	0.225***	[0.018]	0.226***	[0.018]
Education: upper secondary and tertiary	*Ref.*		*Ref.*		*Ref.*	
Household composition: 1 person	-0.314***	[0.028]	-0.319***	[0.028]	-0.312***	[0.028]
Household composition: 2 persons	-0.27***	[0.026]	-0.276***	[0.026]	-0.27***	[0.026]
Household composition: 3 persons	-0.147***	[0.027]	-0.149***	[0.027]	-0.145***	[0.027]
Household composition: 4 persons	-0.135***	[0.027]	-0.134***	[0.027]	-0.131***	[0.027]
Household composition: 5 persons or more	*Ref.*		*Ref.*		*Ref.*	
Assets : first quartile (in the country)	0.779***	[0.017]	0.779***	[0.017]	0.773***	[0.017]
Assets : second quartile (in the country)	0.355***	[0.016]	0.357***	[0.016]	0.355***	[0.016]
Assets : third and fourth quartiles (in the country)	*Ref.*		*Ref.*		*Ref.*	
Overdraft : yes					0.136***	[0.025]
Overdraft : no					*Ref.*	
Country: Austria	-0.061	[0.04]	-0.06	[0.04]	-0.061	[0.04]
Country: Belgium	0.126***	[0.041]	0.129***	[0.041]	0.14***	[0.041]
Country: Cyprus	1.107***	[0.045]	1.111***	[0.045]	1.105***	[0.045]
Country: Germany	*Ref.*		*Ref.*		*Ref.*	
Country: Spain	0.922***	[0.031]	0.925***	[0.031]	0.945***	[0.031]
Country: France	-0.361***	[0.03]	-0.359***	[0.03]	-0.346***	[0.031]
Country: Greece	0.741***	[0.035]	0.744***	[0.036]	0.762***	[0.036]
Country: Italy	1.311***	[0.03]	1.314***	[0.03]	1.33***	[0.03]
Country: Luxembourg	0.166***	[0.046]	0.17***	[0.046]	0.18***	[0.046]

Country: Latvia	2.109***	[0.05]	2.111***	[0.05]	2.123***	[0.05]
Country: Netherlands	-0.276***	[0.057]	-0.27***	[0.057]	-0.279***	[0.057]
Country: Poland	2.413***	[0.038]	2.417***	[0.038]	2.433***	[0.039]
Country: Portugal	0.811***	[0.032]	0.816***	[0.032]	0.832***	[0.032]
Country: Slovenia	1.415***	[0.036]	1.416***	[0.036]	1.406***	[0.037]
Country: Slovakia	1.655***	[0.039]	1.659***	[0.039]	1.673***	[0.039]

Observations	58 703	58 703	58 696
Percent Concordant	84.7	84.7	84.7
Percent Discordant	15.1	15.1	15.1
Percent Tied	0.2	0.2	0.2

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 6: The three main models on credit (2014)

variables	**Credit 1**		**Credit 2**		**Credit 3**	
Dependent variable (probability of exclusion)	Credit		Credit		Credit	
Constant	-2.02***	[0.049]	-2.024***	[0.043]	-2.019***	[0.044]
Age: 15-25	-0.251***	[0.045]	-0.253***	[0.045]	-0.277***	[0.047]
Age: 25-35	-0.613***	[0.031]	-0.618***	[0.031]	-0.604***	[0.032]
Age: 35-50	-0.648***	[0.026]	-0.659***	[0.026]	-0.641***	[0.026]
Age: 50-70	-0.458***	[0.019]	-0.458***	[0.019]	-0.443***	[0.019]
Age : > 70	*Ref.*		*Ref.*		*Ref.*	
Situation: employed	-0.326***	[0.018]	-0.328***	[0.018]	-0.32***	[0.019]
Situation: unemployed and seeking for a job	-0.036	[0.028]	-0.036	[0.028]	-0.013	[0.029]
Situation: not in the labour force	*Ref.*		*Ref.*		*Ref.*	
Income: first quartile (in the country)	0.766***	[0.023]	0.77***	[0.023]	0.797***	[0.024]
Income: second quartile (in the country)	0.439***	[0.02]	0.444***	[0.02]	0.456***	[0.02]
Income: third quartile (in the country)	0.197***	[0.019]	0.201***	[0.019]	0.201***	[0.02]
Income: fourth quartile (in the country)	*Ref.*		*Ref.*		*Ref.*	
Education: primary	0.582***	[0.02]	0.581***	[0.02]	0.582***	[0.021]
Education: lowersecondary	0.23***	[0.019]	0.229***	[0.019]	0.234***	[0.019]
Education: upper secondary and tertiary	*Ref.*		*Ref.*		*Ref.*	
Household composition: 1 person	0.299***	[0.029]				
Household composition: 2 persons	0.154***	[0.028]				
Household composition: 3 persons	0.046	[0.029]				
Household composition: 4 persons	-0.082***	[0.03]				
Household composition: 5 persons or more	*Ref.*					
Household composition: 1 person			0.301***	[0.019]	0.289***	[0.019]
Household composition: 2 persons			0.157***	[0.016]	0.149***	[0.017]
Household composition: 3 persons or more			*Ref.*		*Ref.*	
Assets : first quartile (in the country)	0.185***	[0.018]	0.187***	[0.018]	0.247***	[0.018]
Assets : second quartile (in the country)	-0.04**	[0.016]	-0.039**	[0.016]	-0.033*	[0.017]
Assets : third and fourth quartiles (in the country)	*Ref.*		*Ref.*		*Ref.*	
Overdraft : yes					-6.087	[17.613]
Overdraft : no					*Ref.*	
Country: Austria	0.269***	[0.054]	0.27***	[0.054]	0.298***	[0.055]
Country: Belgium	0.824***	[0.051]	0.824***	[0.051]	0.821***	[0.052]
Country: Cyprus	1.245***	[0.058]	1.242***	[0.058]	1.32***	[0.061]
Country: Germany	*Ref.*		*Ref.*		*Ref.*	
Country: Spain	0.546***	[0.045]	0.546***	[0.045]	0.503***	[0.046]
Country: France	1.973***	[0.04]	1.973***	[0.04]	2.008***	[0.042]
Country: Greece	2.569***	[0.047]	2.567***	[0.047]	2.574***	[0.048]
Country: Italy	1.919***	[0.042]	1.919***	[0.042]	1.91***	[0.043]
Country: Luxembourg	0.195***	[0.07]	0.194***	[0.07]	0.177**	[0.072]
Country: Latvia	2.094***	[0.055]	2.097***	[0.055]	2.13***	[0.057]

Country: Netherlands	0.679***	[0.062]	0.678***	[0.062]	0.764***	[0.064]
Country: Poland	2.036***	[0.045]	2.037***	[0.045]	2.066***	[0.046]
Country: Portugal	1.321***	[0.044]	1.324***	[0.044]	1.309***	[0.045]
Country: Slovenia	1.086***	[0.049]	1.087***	[0.049]	1.218***	[0.052]
Country: Slovakia	2.366***	[0.049]	2.368***	[0.049]	2.396***	[0.05]

Observations	58 703	58 703	58 696
Percent Concordant	85.6	85.6	87.0
Percent Discordant	14.2	14.2	12.8
Percent Tied	0.2	0.2	0.2

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 7: Exclusion by types of credit (2014)

Dependent variable (probability of exclusion)	**Credit 2** Credit		**Credit 4** Consumer credit		**Credit 5** Mortgage	
Constant	-2.024***	[0.043]	-1.882***	[0.041]	0.901***	[0.034]
Age: 15-25	-0.253***	[0.045]	-0.229***	[0.045]	-0.192***	[0.062]
Age: 25-35	-0.618***	[0.031]	-0.412***	[0.03]	-0.844***	[0.034]
Age: 35-50	-0.659***	[0.026]	-0.459***	[0.025]	-0.922***	[0.03]
Age: 50-70	-0.458***	[0.019]	-0.395***	[0.019]	-0.509***	[0.025]
Age : > 70	*Ref.*		*Ref.*		*Ref.*	
Situation: employed	-0.328***	[0.018]	-0.212***	[0.018]	-0.441***	[0.019]
Situation: unemployed and seeking for a job	-0.036	[0.028]	-0.012	[0.028]	-0.25***	[0.031]
Situation: not in the labour force	*Ref.*		*Ref.*		*Ref.*	
Income: first quartile (in the country)	0.77***	[0.023]	0.699***	[0.022]	0.62***	[0.025]
Income: second quartile (in the country)	0.444***	[0.02]	0.372***	[0.019]	0.388***	[0.02]
Income: third quartile (in the country)	0.201***	[0.019]	0.167***	[0.018]	0.163***	[0.017]
Income: fourth quartile (in the country)	*Ref.*		*Ref.*		*Ref.*	
Education: primary	0.581***	[0.02]	0.616***	[0.02]	0.27***	[0.024]
Education: lowersecondary	0.229***	[0.019]	0.212***	[0.019]	0.076***	[0.021]
Education: upper secondary and tertiary	*Ref.*		*Ref.*		*Ref.*	
Household composition: 1 person	0.301***	[0.019]	0.217***	[0.018]	0.384***	[0.021]
Household composition: 2 persons	0.157***	[0.016]	0.085***	[0.016]	0.225***	[0.016]
Household composition: 3 persons or more	*Ref.*		*Ref.*		*Ref.*	
Assets : first quartile (in the country)	0.187***	[0.018]	0.024	[0.017]	0.44***	[0.02]
Assets : second quartile (in the country)	-0.039**	[0.016]	0	[0.016]	-0.145***	[0.017]
Assets : third and fourth quartiles (in the country)	*Ref.*		*Ref.*		*Ref.*	
Country: Austria	0.27***	[0.054]	0.247***	[0.051]	0.607***	[0.039]
Country: Belgium	0.824***	[0.051]	0.857***	[0.048]	-0.017	[0.039]
Country: Cyprus	1.242***	[0.058]	1.535***	[0.052]	-0.463***	[0.044]
Country: Germany	*Ref.*		*Ref.*		*Ref.*	
Country: Spain	0.546***	[0.045]	0.502***	[0.042]	-0.081***	[0.03]
Country: France	1.973***	[0.04]	2.292***	[0.038]	-0.05*	[0.026]
Country: Greece	2.567***	[0.047]	2.627***	[0.045]	0.695***	[0.04]
Country: Italy	1.919***	[0.042]	1.834***	[0.039]	0.85***	[0.032]
Country: Luxembourg	0.194***	[0.07]	0.18***	[0.064]	-0.226***	[0.041]
Country: Latvia	2.097***	[0.055]	2.05***	[0.052]	0.417***	[0.05]
Country: Netherlands	0.678***	[0.062]	0.901***	[0.055]	-0.773***	[0.045]
Country: Poland	2.037***	[0.045]	1.96***	[0.042]	0.8***	[0.038]
Country: Portugal	1.324***	[0.044]	1.356***	[0.041]	-0.325***	[0.031]
Country: Slovenia	1.087***	[0.049]	0.993***	[0.046]	0.96***	[0.044]
Country: Slovakia	2.368***	[0.049]	2.341***	[0.046]	0.776***	[0.045]
Observations	58 703		58 703		58 703	

Percent Concordant	85.6	84.3	83.6
Percent Discordant	14.2	15.5	16.2
Percent Tied	0.2	0.2	0.3

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 8: Exclusion from credit and probability of total turn-down in the last three years (2014)

	Credit 1		**Credit 6**		**Credit 7**	
Dependent variable (probability of...)	Exclusion fromcredit		Total turn-down		Total turn-down	
Constant	-2.02***	[0.049]	-2.556***	[0.08]	-2.651***	[0.082]
Age: 15-25	-0.251***	[0.045]	0.114	[0.099]	0.113	[0.1]
Age: 25-35	-0.613***	[0.031]	0.446***	[0.065]	0.429***	[0.066]
Age: 35-50	-0.648***	[0.026]	0.386***	[0.06]	0.356***	[0.061]
Age: 50-70	-0.458***	[0.019]	0.289***	[0.053]	0.27***	[0.053]
Age : > 70	*Ref.*		*Ref.*		*Ref.*	
Situation: employed	-0.326***	[0.018]	0.173***	[0.039]	0.158***	[0.039]
Situation: unemployed and seeking for a job	-0.036	[0.028]	0.273***	[0.051]	0.27***	[0.051]
Situation: not in the labour force	*Ref.*		*Ref.*		*Ref.*	
Income: first quartile (in the country)	0.766***	[0.023]	0.21***	[0.047]	0.226***	[0.047]
Income: second quartile (in the country)	0.439***	[0.02]	0.216***	[0.041]	0.227***	[0.042]
Income: third quartile (in the country)	0.197***	[0.019]	0.145***	[0.04]	0.151***	[0.04]
Income: fourth quartile (in the country)	*Ref.*		*Ref.*		*Ref.*	
Education: primary	0.582***	[0.02]				
Education: lowersecondary	0.23***	[0.019]				
Education: upper secondary and tertiary	*Ref.*					
Household composition: 1 person	0.299***	[0.029]	-0.415***	[0.05]	-0.402***	[0.051]
Household composition: 2 persons	0.154***	[0.028]	-0.29***	[0.046]	-0.278***	[0.046]
Household composition: 3 persons	0.046	[0.029]	-0.236***	[0.046]	-0.23***	[0.047]
Household composition: 4 persons	-0.082***	[0.03]	-0.204***	[0.046]	-0.195***	[0.047]
Household composition: 5 persons or more	*Ref.*		*Ref.*		*Ref.*	
Assets : first quartile (in the country)	0.185***	[0.018]	0.406***	[0.034]	0.374***	[0.034]
Assets : second quartile (in the country)	-0.04**	[0.016]	0.083**	[0.036]	0.073**	[0.036]
Assets : third and fourth quartiles (in the country)	*Ref.*		*Ref.*		*Ref.*	
Overdraft : yes					0.491***	[0.038]
Overdraft : no					*Ref.*	
Country: Austria	0.269***	[0.054]	-0.227***	[0.088]	-0.247***	[0.09]
Country: Belgium	0.824***	[0.051]	-0.219**	[0.095]	-0.159*	[0.097]
Country: Cyprus	1.245***	[0.058]	-0.024	[0.093]	-0.051	[0.094]
Country: Germany	*Ref.*		*Ref.*		*Ref.*	
Country: Spain	0.546***	[0.045]	0.146**	[0.06]	0.256***	[0.062]
Country: France	1.973***	[0.04]	0.045	[0.054]	0.117**	[0.056]
Country: Greece	2.569***	[0.047]	-0.047	[0.075]	0.053	[0.076]
Country: Italy	1.919***	[0.042]	-0.063	[0.062]	0.028	[0.063]
Country: Luxembourg	0.195***	[0.07]	0.189**	[0.079]	0.255***	[0.08]
Country: Latvia	2.094***	[0.055]	0.278***	[0.086]	0.34***	[0.087]
Country: Netherlands	0.679***	[0.062]	-0.069	[0.105]	-0.096	[0.107]
Country: Poland	2.036***	[0.045]	-0.003	[0.071]	0.063	[0.072]

Country: Portugal	1.321***	[0.044]	-0.19***	[0.066]	-0.111	[0.067]
Country: Slovenia	1.086***	[0.049]	0.149**	[0.071]	0.079	[0.073]
Country: Slovakia	2.366***	[0.049]	0.185**	[0.075]	0.264***	[0.076]

Observations	58 703	58 703	58 696
Percent Concordant	85.6	72.4	74.5
Percent Discordant	14.2	24.5	22.6
Percent Tied	0.2	3.1	2.9

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 9: Exclusion from credit and probability of total or partial turn-down in the last three years (2014)

Dependent variable (probability of...)	**Credit 1** Exclusion fromcredit		**Credit 8** Total or partial turn-down		**Credit 9** Total or partial turn-down	
Constant	-2.02***	[0.049]	-2.437***	[0.072]	-2.534***	[0.074]
Age: 15-25	-0.251***	[0.045]	0.193**	[0.089]	0.197**	[0.09]
Age: 25-35	-0.613***	[0.031]	0.464***	[0.059]	0.452***	[0.06]
Age: 35-50	-0.648***	[0.026]	0.404***	[0.054]	0.377***	[0.055]
Age: 50-70	-0.458***	[0.019]	0.299***	[0.047]	0.283***	[0.048]
Age : > 70	*Ref.*		*Ref.*		*Ref.*	
Situation: employed	-0.326***	[0.018]	0.187***	[0.035]	0.171***	[0.035]
Situation: unemployed and seeking for a job	-0.036	[0.028]	0.233***	[0.047]	0.228***	[0.048]
Situation: not in the labour force	*Ref.*		*Ref.*		*Ref.*	
Income: first quartile (in the country)	0.766***	[0.023]	0.163***	[0.043]	0.176***	[0.043]
Income: second quartile (in the country)	0.439***	[0.02]	0.199***	[0.037]	0.207***	[0.037]
Income: third quartile (in the country)	0.197***	[0.019]	0.149***	[0.035]	0.153***	[0.035]
Income: fourth quartile (in the country)	*Ref.*		*Ref.*		*Ref.*	
Education: primary	0.582***	[0.02]				
Education: lowersecondary	0.23***	[0.019]				
Education: upper secondary and tertiary	*Ref.*					
Household composition: 1 person	0.299***	[0.029]	-0.409***	[0.046]	-0.392***	[0.047]
Household composition: 2 persons	0.154***	[0.028]	-0.277***	[0.042]	-0.261***	[0.042]
Household composition: 3 persons	0.046	[0.029]	-0.231***	[0.042]	-0.222***	[0.043]
Household composition: 4 persons	-0.082***	[0.03]	-0.194***	[0.042]	-0.184***	[0.042]
Household composition: 5 persons or more	*Ref.*		*Ref.*		*Ref.*	
Assets : first quartile (in the country)	0.185***	[0.018]	0.359***	[0.031]	0.327***	[0.031]
Assets : second quartile (in the country)	-0.04**	[0.016]	0.078**	[0.032]	0.068**	[0.032]
Assets : third and fourth quartiles (in the country)	*Ref.*		*Ref.*		*Ref.*	
Overdraft : yes					0.494***	[0.035]
Overdraft : no					*Ref.*	
Country: Austria	0.269***	[0.054]	-0.259***	[0.08]	-0.277***	[0.083]
Country: Belgium	0.824***	[0.051]	-0.181**	[0.084]	-0.117	[0.085]
Country: Cyprus	1.245***	[0.058]	-0.038	[0.085]	-0.062	[0.086]
Country: Germany	*Ref.*		*Ref.*		*Ref.*	
Country: Spain	0.546***	[0.045]	0.173***	[0.054]	0.281***	[0.056]
Country: France	1.973***	[0.04]	-0.014	[0.05]	0.058	[0.051]
Country: Greece	2.569***	[0.047]	-0.139*	[0.072]	-0.041	[0.073]
Country: Italy	1.919***	[0.042]	-0.065	[0.056]	0.024	[0.057]
Country: Luxembourg	0.195***	[0.07]	0.256***	[0.07]	0.322***	[0.071]
Country: Latvia	2.094***	[0.055]	0.188**	[0.082]	0.25***	[0.083]
Country: Netherlands	0.679***	[0.062]	-0.088	[0.096]	-0.11	[0.098]

Country: Poland	2.036***	[0.045]	-0.032	[0.065]	0.033	[0.067]
Country: Portugal	1.321***	[0.044]	-0.068	[0.057]	0.015	[0.058]
Country: Slovenia	1.086***	[0.049]	0.252***	[0.063]	0.189***	[0.064]
Country: Slovakia	2.366***	[0.049]	0.335***	[0.065]	0.411***	[0.066]

Observations	58 703	58 703	58 696
Percent Concordant	85.6	71.6	73.6
Percent Discordant	14.2	25.9	24.1
Percent Tied	0.2	2.5	2.4

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 10: Exclusion from credit and probability of self-censorship in the last three years (2014)

	Credit 1		**Credit 10**		**Credit 11**	
Dependent variable (probability of...)	Exclusion fromcredit		Self-censorship		Self-censorship	
Constant	-2.02***	[0.049]	-2.301***	[0.062]	-2.386***	[0.063]
Age: 15-25	-0.251***	[0.045]	0.218***	[0.064]	0.226***	[0.064]
Age: 25-35	-0.613***	[0.031]	0.358***	[0.048]	0.346***	[0.048]
Age: 35-50	-0.648***	[0.026]	0.279***	[0.044]	0.256***	[0.044]
Age: 50-70	-0.458***	[0.019]	0.212***	[0.036]	0.198***	[0.036]
Age : > 70	*Ref.*		*Ref.*		*Ref.*	
Situation: employed	-0.326***	[0.018]	0.144***	[0.03]	0.134***	[0.03]
Situation: unemployed and seeking for a job	-0.036	[0.028]	0.357***	[0.038]	0.352***	[0.038]
Situation: not in the labour force	*Ref.*		*Ref.*		*Ref.*	
Income: first quartile (in the country)	0.766***	[0.023]	0.446***	[0.036]	0.458***	[0.037]
Income: second quartile (in the country)	0.439***	[0.02]	0.274***	[0.033]	0.281***	[0.033]
Income: third quartile (in the country)	0.197***	[0.019]	0.093***	[0.032]	0.094***	[0.032]
Income: fourth quartile (in the country)	*Ref.*		*Ref.*		*Ref.*	
Education: primary	0.582***	[0.02]	0.089***	[0.032]	0.098***	[0.032]
Education: lowersecondary	0.23***	[0.019]	0.083***	[0.03]	0.088***	[0.03]
Education: upper secondary and tertiary	*Ref.*		*Ref.*		*Ref.*	
Household composition: 1 person	0.299***	[0.029]	-0.474***	[0.04]	-0.453***	[0.041]
Household composition: 2 persons	0.154***	[0.028]	-0.363***	[0.037]	-0.348***	[0.038]
Household composition: 3 persons	0.046	[0.029]	-0.231***	[0.037]	-0.222***	[0.038]
Household composition: 4 persons	-0.082***	[0.03]	-0.217***	[0.038]	-0.209***	[0.038]
Household composition: 5 persons or more	*Ref.*		*Ref.*		*Ref.*	
Assets : first quartile (in the country)	0.185***	[0.018]	0.496***	[0.026]	0.464***	[0.027]
Assets : second quartile (in the country)	-0.04**	[0.016]	0.13***	[0.027]	0.121***	[0.027]
Assets : third and fourth quartiles (in the country)	*Ref.*		*Ref.*		*Ref.*	
Overdraft : yes					0.473***	[0.031]
Overdraft : no					*Ref.*	
Country: Austria	0.269***	[0.054]	-0.023	[0.063]	-0.047	[0.064]
Country: Belgium	0.824***	[0.051]	-0.106	[0.071]	-0.06	[0.072]
Country: Cyprus	1.245***	[0.058]	0.354***	[0.065]	0.339***	[0.066]
Country: Germany	*Ref.*		*Ref.*		*Ref.*	
Country: Spain	0.546***	[0.045]	0.303***	[0.05]	0.395***	[0.051]
Country: France	1.973***	[0.04]	0.319***	[0.043]	0.377***	[0.044]
Country: Greece	2.569***	[0.047]	0.105*	[0.058]	0.187***	[0.058]
Country: Italy	1.919***	[0.042]				
Country: Luxembourg	0.195***	[0.07]	0.124*	[0.068]	0.171**	[0.068]
Country: Latvia	2.094***	[0.055]	0.382***	[0.069]	0.439***	[0.07]
Country: Netherlands	0.679***	[0.062]	-0.156*	[0.09]	-0.203**	[0.093]
Country: Poland	2.036***	[0.045]	0.281***	[0.053]	0.337***	[0.054]

Country: Portugal	1.321***	[0.044]	0.112**	[0.051]	0.18***	[0.052]
Country: Slovenia	1.086***	[0.049]	0.495***	[0.053]	0.443***	[0.054]
Country: Slovakia	2.366***	[0.049]	0.239***	[0.061]	0.305***	[0.062]

Observations	58 703	49 589	49 584
Percent Concordant	85.6	73.8	74.9
Percent Discordant	14.2	25.1	24.0
Percent Tied	0.2	1.2	1.1

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 11: Exclusion from credit and probability of total turn-down in the last three years (2009)

Dependent variable (probability of exclusion)	**Credit 1** Credit		**Credit 6** Total turn-down		**Credit 7** Total turn-down	
Constant	-2.155***	[0.059]	-2.617***	[0.086]	-2.729***	[0.088]
Age: 15-25	-0.437***	[0.044]	0.263***	[0.086]	0.262***	[0.087]
Age: 25-35	-0.738***	[0.033]	0.432***	[0.068]	0.414***	[0.068]
Age: 35-50	-0.705***	[0.027]	0.377***	[0.063]	0.35***	[0.064]
Age: 50-70	-0.513***	[0.02]	0.251***	[0.055]	0.231***	[0.055]
Age : > 70	*Ref.*		*Ref.*		*Ref.*	
Situation: employed	-0.403***	[0.019]	0.219***	[0.042]	0.203***	[0.042]
Situation: unemployed and seeking for a job	-0.143***	[0.033]	0.383***	[0.057]	0.373***	[0.057]
Situation: not in the labour force	*Ref.*		*Ref.*		*Ref.*	
Income: first quartile (in the country)	0.617***	[0.024]	0.311***	[0.05]	0.321***	[0.05]
Income: second quartile (in the country)	0.308***	[0.021]	0.269***	[0.044]	0.267***	[0.044]
Income: third quartile (in the country)	0.097***	[0.02]	0.105**	[0.043]	0.102**	[0.043]
Income: fourth quartile (in the country)	*Ref.*		*Ref.*		*Ref.*	
Education: primary	0.429***	[0.019]				
Education: lowersecondary	0.236***	[0.02]				
Education: upper secondary and tertiary	*Ref.*					
Household composition: 1 person	0.321***	[0.032]	-0.428***	[0.055]	-0.418***	[0.056]
Household composition: 2 persons	0.205***	[0.03]	-0.264***	[0.05]	-0.253***	[0.051]
Household composition: 3 persons	0.038	[0.031]	-0.173***	[0.051]	-0.168***	[0.051]
Household composition: 4 persons	-0.011	[0.032]	-0.125**	[0.051]	-0.119**	[0.051]
Household composition: 5 persons or more	*Ref.*		*Ref.*		*Ref.*	
Assets : first quartile (in the country)	0.39***	[0.019]	0.38***	[0.037]	0.341***	[0.037]
Assets : second quartile (in the country)	0.09***	[0.018]	0.144***	[0.037]	0.132***	[0.037]
Assets : third and fourth quartiles (in the country)	*Ref.*		*Ref.*		*Ref.*	
Overdraft : yes					0.468***	[0.041]
Overdraft : no					*Ref.*	
Country: Austria	0.843***	[0.061]	-0.39***	[0.106]	-0.361***	[0.108]
Country: Belgium	1.141***	[0.059]	-1.044***	[0.198]	-0.968***	[0.201]
Country: Cyprus	1.211***	[0.071]	-0.048	[0.095]	-0.072	[0.095]
Country: Germany	*Ref.*		*Ref.*		*Ref.*	
Country: Spain	1.033***	[0.053]	-0.133**	[0.068]	0.015	[0.07]
Country: France	2.184***	[0.05]	0.392***	[0.055]	0.494***	[0.057]
Country: Greece	2.472***	[0.056]	0.165**	[0.07]	0.27***	[0.072]
Country: Italy	1.991***	[0.052]				
Country: Luxembourg	0.512***	[0.088]	-0.028	[0.107]	0.059	[0.109]
Country: Netherlands	0.836***	[0.07]	-0.534***	[0.153]	-0.549***	[0.157]
Country: Portugal	1.937***	[0.055]	0.21***	[0.065]	0.329***	[0.067]
Country: Slovenia	1.143***	[0.101]	0.289**	[0.138]	0.287**	[0.14]
Country: Slovakia	2.35***	[0.058]	-0.515***	[0.11]	-0.441***	[0.112]

Observations	50 689	42 738	42 738
Percent Concordant	84.8	76.7	77.9
Percent Discordant	15.0	21.6	20.5
Percent Tied	0.2	1.7	1.6

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 12: Exclusion from credit and probability of total or partial turn-down in the last three years (2009)

Dependent variable (probability of exclusion)	**Credit 1** Credit		**Credit 8** Total or partial turn-down		**Credit 9** Total or partial turn-down	
Constant	-2.155***	[0.059]	-2.369***	[0.075]	-2.468***	[0.076]
Age: 15-25	-0.437***	[0.044]	0.311***	[0.077]	0.312***	[0.077]
Age: 25-35	-0.738***	[0.033]	0.467***	[0.061]	0.45***	[0.061]
Age: 35-50	-0.705***	[0.027]	0.384***	[0.057]	0.36***	[0.057]
Age: 50-70	-0.513***	[0.02]	0.266***	[0.049]	0.247***	[0.05]
Age : > 70	*Ref.*		*Ref.*		*Ref.*	
Situation: employed	-0.403***	[0.019]	0.232***	[0.037]	0.217***	[0.037]
Situation: unemployed and seeking for a job	-0.143***	[0.033]	0.361***	[0.052]	0.352***	[0.053]
Situation: not in the labour force	*Ref.*		*Ref.*		*Ref.*	
Income: first quartile (in the country)	0.617***	[0.024]	0.274***	[0.044]	0.284***	[0.044]
Income: second quartile (in the country)	0.308***	[0.021]	0.25***	[0.039]	0.25***	[0.039]
Income: third quartile (in the country)	0.097***	[0.02]	0.108***	[0.038]	0.104***	[0.038]
Income: fourth quartile (in the country)	*Ref.*		*Ref.*		*Ref.*	
Education: primary	0.429***	[0.019]				
Education: lowersecondary	0.236***	[0.02]				
Education: upper secondary and tertiary	*Ref.*					
Household composition: 1 person	0.321***	[0.032]	-0.417***	[0.05]	-0.407***	[0.05]
Household composition: 2 persons	0.205***	[0.03]	-0.245***	[0.045]	-0.233***	[0.046]
Household composition: 3 persons	0.038	[0.031]	-0.163***	[0.046]	-0.16***	[0.046]
Household composition: 4 persons	-0.011	[0.032]	-0.116**	[0.046]	-0.111**	[0.046]
Household composition: 5 persons or more	*Ref.*		*Ref.*		*Ref.*	
Assets : first quartile (in the country)	0.39***	[0.019]	0.341***	[0.033]	0.304***	[0.034]
Assets : second quartile (in the country)	0.09***	[0.018]	0.147***	[0.032]	0.136***	[0.033]
Assets : third and fourth quartiles (in the country)	*Ref.*		*Ref.*		*Ref.*	
Overdraft : yes					0.448***	[0.037]
Overdraft : no					*Ref.*	
Country: Austria	0.843***	[0.061]	-0.306***	[0.079]	-0.276***	[0.08]
Country: Belgium	1.141***	[0.059]	-1.099***	[0.156]	-1.027***	[0.157]
Country: Cyprus	1.211***	[0.071]	-0.029	[0.077]	-0.063	[0.078]
Country: Germany	*Ref.*		*Ref.*		*Ref.*	
Country: Spain	1.033***	[0.053]	-0.242***	[0.058]	-0.112*	[0.06]
Country: France	2.184***	[0.05]	0.229***	[0.046]	0.318***	[0.047]
Country: Greece	2.472***	[0.056]	0.078	[0.06]	0.169***	[0.061]
Country: Italy	1.991***	[0.052]				
Country: Luxembourg	0.512***	[0.088]	0.528***	[0.07]	0.61***	[0.071]
Country: Netherlands	0.836***	[0.07]	-0.634***	[0.129]	-0.642***	[0.132]
Country: Portugal	1.937***	[0.055]	-0.011	[0.057]	0.092	[0.059]

Country: Slovenia	1.143***	[0.101]	0.24**	[0.119]	0.235*	[0.121]
Country: Slovakia	2.35***	[0.058]	-0.6***	[0.092]	-0.533***	[0.093]

Observations	50 689	42 738	42 738
Percent Concordant	84.8	75.4	76.6
Percent Discordant	15.0	23.1	22.1
Percent Tied	0.2	1.5	1.4

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 13: Exclusion from credit and probability of self-censorship in the last three years (2009)

	Credit 1		**Credit 10**		**Credit 11**	
Dependent variable (probability of exclusion)	Credit		Self-censorship		Self-censorship	
Constant	-2.155***	[0.059]	-2.495***	[0.07]	-2.617***	[0.072]
Age: 15-25	-0.437***	[0.044]	0.362***	[0.064]	0.36***	[0.064]
Age: 25-35	-0.738***	[0.033]	0.448***	[0.054]	0.433***	[0.054]
Age: 35-50	-0.705***	[0.027]	0.423***	[0.049]	0.4***	[0.05]
Age: 50-70	-0.513***	[0.02]	0.295***	[0.041]	0.277***	[0.041]
Age : > 70	*Ref.*		*Ref.*		*Ref.*	
Situation: employed	-0.403***	[0.019]	0.128***	[0.033]	0.115***	[0.033]
Situation: unemployed and seeking for a job	-0.143***	[0.033]	0.403***	[0.044]	0.398***	[0.044]
Situation: not in the labour force	*Ref.*		*Ref.*		*Ref.*	
Income: first quartile (in the country)	0.617***	[0.024]	0.503***	[0.042]	0.51***	[0.042]
Income: second quartile (in the country)	0.308***	[0.021]	0.424***	[0.038]	0.421***	[0.038]
Income: third quartile (in the country)	0.097***	[0.02]	0.164***	[0.038]	0.155***	[0.038]
Income: fourth quartile (in the country)	*Ref.*		*Ref.*		*Ref.*	
Education: primary	0.429***	[0.019]	0.091***	[0.032]	0.101***	[0.032]
Education: lowersecondary	0.236***	[0.02]	0.068*	[0.038]	0.076**	[0.038]
Education: upper secondary and tertiary	*Ref.*		*Ref.*		*Ref.*	
Household composition: 1 person	0.321***	[0.032]	-0.381***	[0.046]	-0.362***	[0.047]
Household composition: 2 persons	0.205***	[0.03]	-0.303***	[0.043]	-0.283***	[0.043]
Household composition: 3 persons	0.038	[0.031]	-0.123***	[0.043]	-0.116***	[0.044]
Household composition: 4 persons	-0.011	[0.032]	-0.119***	[0.044]	-0.114**	[0.045]
Household composition: 5 persons or more	*Ref.*		*Ref.*		*Ref.*	
Assets : first quartile (in the country)	0.39***	[0.019]	0.566***	[0.03]	0.529***	[0.03]
Assets : second quartile (in the country)	0.09***	[0.018]	0.225***	[0.03]	0.211***	[0.03]
Assets : third and fourth quartiles (in the country)	*Ref.*		*Ref.*		*Ref.*	
Overdraft : yes					0.502***	[0.033]
Overdraft : no					*Ref.*	
Country: Austria	0.843***	[0.061]	-0.158**	[0.069]	-0.121*	[0.07]
Country: Belgium	1.141***	[0.059]	-0.162**	[0.068]	-0.071	[0.07]
Country: Cyprus	1.211***	[0.071]	-0.042	[0.075]	-0.066	[0.076]
Country: Germany	*Ref.*		*Ref.*		*Ref.*	
Country: Spain	1.033***	[0.053]	-0.017	[0.054]	0.127**	[0.056]
Country: France	2.184***	[0.05]	0.284***	[0.044]	0.382***	[0.046]
Country: Greece	2.472***	[0.056]	-0.192***	[0.063]	-0.092	[0.065]
Country: Italy	1.991***	[0.052]				
Country: Luxembourg	0.512***	[0.088]	-0.197**	[0.092]	-0.111	[0.093]
Country: Netherlands	0.836***	[0.07]	-0.698***	[0.132]	-0.712***	[0.137]
Country: Portugal	1.937***	[0.055]	-0.062	[0.058]	0.053	[0.059]
Country: Slovenia	1.143***	[0.101]	0.611***	[0.098]	0.618***	[0.1]
Country: Slovakia	2.35***	[0.058]	0.664***	[0.054]	0.758***	[0.055]

Observations	50 689	41 648	41 648
Percent Concordant	84.8	77.6	78.6
Percent Discordant	15.0	21.5	20.5
Percent Tied	0.2	0.9	0.9

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1