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Household financial exclusion in the Eurozone: the contribution of the Household Finance and Consumption survey¹

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Abstract

In this paper, we use the data of the Eurosystem's Household Finance and Consumption Survey (HFCS) in order to analyze the factors determining financial exclusion in the euro area. We find that the information content of this database is extremely useful to the definition and the understanding of financial inclusion in the Eurozone. As regards the household individual characteristics, we show that older, unemployed, lower-income, lower-educated and less wealthy households of the euro area are less likely to owe 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. As far as country specificities are concerned, we find a strong heterogeneity across the euro area.

Keywords: financial inclusion, household finance

JEL classification: G21, G28, D14

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Introduction

Understanding and preventing financial exclusion is a major concern for policymakers worldwide, especially since the 2009 G20 Pittsburgh summit. Indeed, in September 2009 G20 leaders *'reiterat(ed) (their) strong commitment to financial inclusion and recognize(d) the benefits of universal access to financial services'*. The G20 noted *'the overarching and cross-cutting nature of financial inclusion and therefore has included financial inclusion as one of the main pillars of the development agenda'*. In addition, the G20 recognized several steps for the implementation of the agreed principles, among which the establishment of a Global Partnership for Financial Inclusion (GPMI), and set up key action items. In particular, one of them *'encourage improving the quality of measurement and data on financial inclusion (of households/individuals).'*

While the access to financial services is a crucial matter for developing countries, it is also a major issue for advanced economies: financial exclusion of households is less frequent but potentially associated with a severe social exclusion, as other sources of familial or social solidarity are less prevalent. Demirgüç-Kunt and Klapper (2013) point out the importance of informal financial inclusion in those developing countries with respect to developed economies, not only for sight accounts, but also for savings and loans. Hence, 36% of the adults worldwide use formal or informal savings (against 22% for formal savings only), 9% of the world population has contracted a loan in a formal financial institution, whereas 23% have borrowed money in an informal network. Reasons for not using formal financial services include: lack of money, the too high cost of financial services, the use of an account owned by another member of the family, the geographical distance to banks, weak financial literacy, the lack of trust in the financial institutions and finally religious reasons.

Nevertheless, the ownership of a formal bank account is considered as a first step to many types of economic and social 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.

Financial inclusion is also a major issue in the context of access to secured and efficient payments, which involve another key stakeholder of financial inclusion, namely central banks. Hence, 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 – project in 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 in case of numerous transactions of small amount. The Irving Fisher Committee has also issued a report on the central bank perspective on financial inclusion measures (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.

At the national level, some National Central Banks have made the follow-up of banking inclusion a reality in the creation of observatories, where appropriate associating the Treasuries. This is the case for instance in France, where the 'Observatoire de l'inclusion bancaire' chaired by the Governor of the Banque de France is responsible for following the practices of credit institutions in the field of banking inclusion, particularly with regard to financially fragile populations. The 'Observatoire de l'inclusion bancaire' brings together representatives of public authorities, credit institutions and consumer, family and anti-exclusion associations. Its work should provide data to monitor and evaluate banking practices to identify areas for improvement. Its installation session was held on September 11, 2014 and it releases a report each year on the achievements in the matter (e.g. Banque de France, 2017).

In the meantime, the measure and the characterization of financial inclusion have been an emerging subject for institutional and academic economic research.

Already in 2008, the European Commission proposed an overview of the stance: "Financial Services Provision and Prevention of Financial Exclusion" (2008), focusing particularly on geographical zones and sociodemographic determinants of financial exclusion. The report stresses the involuntary motives of financial exclusion. 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 concluded that 10% of the European population does not have a bank account. In the ten (at the time) new countries, this ratio rose to 47%. The percentage of total exclusion was 7% in the EU (15 members) and 2% in France, 3% in Germany, 8% in Spain and 16% in Italy. The determinants of exclusion were identified as following: low level of income, unemployment, single parenthood, unemployability, age, low level of education, immigration and living in a disadvantaged area.

In that respect, 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 Foundation: the Global Findex is based on interviews with about 150 000 adults in 140 countries in 2011 and 2014. Since then, a major part of the economic literature on financial exclusion 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 financial services, generally associated with the ownership of a bank account, it is useful and especially relevant for developed countries to take into account broader definitions of financial exclusion. For instance, Allen, Demirgüç-Kunt, Klapper, and Martinez Peria (2012) define three levels of financial inclusion: ownership of a formal bank account; use of a formal savings account; frequent use of the account (three withdrawals or more every month). Using data from the Findex survey, they find that 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. According to Fungáčová and Weill (2015), in BRICS countries (Brazil, Russia, India, China, South Africa), 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. Focusing on the Argentina case, Tuesta, Sorensen, Haring and Cámara (2015) remark that the level of financial exclusion has increased since the 2002 crisis accompanying 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 scarce: 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. Not surprisingly, they find that low-income households, unemployed households and those with a poor education are the most likely to be affected by financial exclusion, and remarkably more so in the United States than in the euro area. More importantly, they quantify the economic effect of being banked vs. unbanked on wealth accumulation: banked households report substantially higher net wealth than their unbanked counterparts, with a gap of around €74000 and \$42000 in the euro area and the United States.

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. 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 and elaborates on the main results. Section 5 concludes and draws some policy conclusions.

A first look at 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, and gaining important insights into issues such as monetary policy transmission and financial stability.

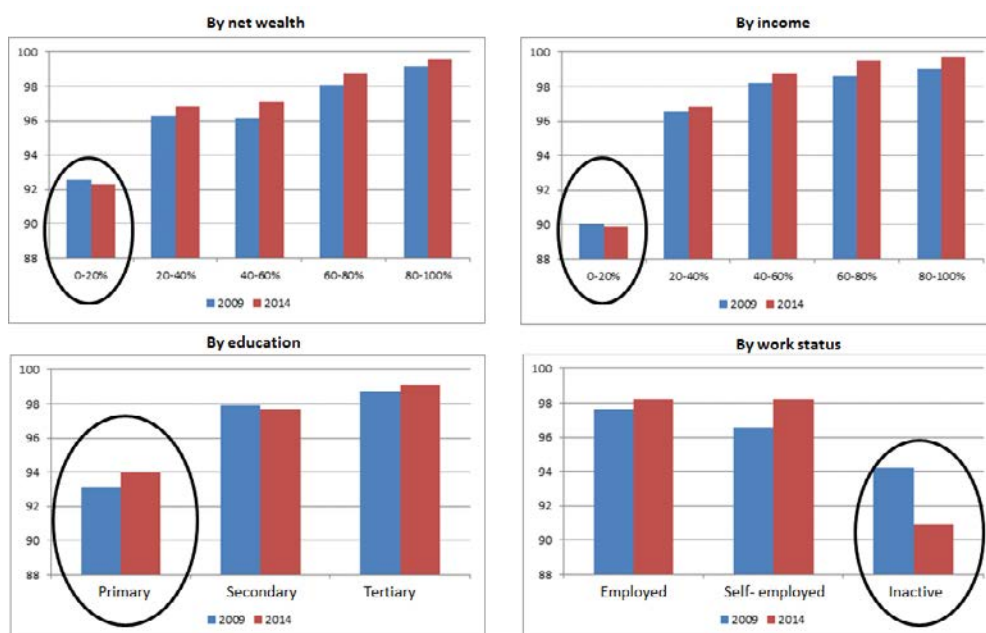
Effectively, the data cover more than 50000 households in the first wave and more than 58000 in the second wave, across 13 countries (Austria, Belgium, Cyprus, Germany, Spain, France, Greece, Italy, Luxembourg, Netherlands, Portugal, Slovenia, Slovakia) in the first wave and 16 countries in the second wave (adding Hungary, Latvia and Poland to the former). Data from Finland were discarded as the reported current account participation rate reached in that country is 100%, which highlights some very specific national features and may blur the final results.

The HFCS contains very useful information about the socio-demographic characteristics of households, financial and real assets, 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.

While the HFCS data provide very useful information on sociodemographic characteristics of households, it may nonetheless lead to slightly biased figures because, especially, of the sampling scheme. First, since wealth is distributed very unequally, in order to make aggregates as representative as possible of the whole population, all participating countries are encouraged to explore methods for oversampling the wealthiest households, which by corollary induces an under sampling of the poorest. Second, the sampling frame and stratification criteria used in different countries are not the same. Whatever the countries, however, the sampling frame of the HFCS leaves out the whole of the institutionalized population was left out of the sampling frame. More importantly related to the topic of financial exclusion, the sample does not include homeless people as the sample drawing rests in general on housing census or at least the existence of the main residence. Individuals belonging to some of the excluded groups, however, can be included in the sample, if they are considered as part of a household that is part of the sampling frame. Third, the panel component of the survey, which allows to follow the development of the situation of specific households over time, is not carried out in all countries. In wave 2, only 7 out of 19 countries reported information on panel households.

A first set of descriptive statistics based on current accounts allows for a confirmation of some intuitions. At the euro area level, the ownership rate of 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 variables discriminate 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.

Figure 1: probability of having a current account in the euro area...



As regards national situations, it is rather 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 1: participation rate in deposits accounts

	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

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.

A simple econometric investigation of the determinants of financial exclusion

The determinants of financial exclusion in the aftermath of the crisis

The ownership of a transaction account is usually seen as the first degree of financial inclusion, and the other issues such as credit and savings are, at least partially, dependent of this general measure. Therefore, our first 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) consistent with the main stages of the life cycle.

The impact of the employment of the person of reference of the household on 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 of income by country on the one hand and of assets⁴ on 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 considered as the reference modality for country-specific aspects.

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:

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

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

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

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

Our second model "savings" 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 the hypothesis 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).

Our third model "credit" 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.

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 the largest country, for which financial inclusion remained in addition stable and high throughout the period, namely Germany.

Our main results for the second wave of the HFCS are presented in table 2. Post-estimation diagnosis appears good enough so as to interpret the results.

We find that the probability of being financially excluded in the sense of not having a current account is higher for older, lower-educated, unemployed and less wealthy households. 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, Hungary 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.

Table 2: estimation results

Dependent variable (probability of exclusion)	Transaction account	Savings	Credit
Constant	-3.102*** [0.09]	-1.683*** [0.038]	-1.955*** [0.047]
Age: 15-25	-0.335*** [0.064]	-0.047 [0.042]	-0.27*** [0.042]
Age: 25-35	-0.275*** [0.044]	-0.08*** [0.028]	-0.625*** [0.029]
Age: 35-50	-0.196*** [0.036]	0.058** [0.024]	-0.66*** [0.024]
Age: 50-70	-0.187*** [0.025]	0.114*** [0.018]	-0.483*** [0.017]
<i>Age : > 70</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
Situation: employed	-0.248*** [0.027]	-0.05*** [0.017]	-0.307*** [0.017]
Situation: unemployed and seeking for a job	0.183*** [0.036]	0.083*** [0.027]	0.004 [0.027]
<i>Situation: not in the labour force</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
Income: first quartile (in the country)	0.898*** [0.035]	0.739*** [0.022]	0.697*** [0.022]
Income: second quartile (in the country)	0.508*** [0.033]	0.481*** [0.019]	0.407*** [0.019]
Income: third quartile (in the country)	0.185*** [0.033]	0.28*** [0.018]	0.171*** [0.018]
<i>Income: fourth quartile (in the country)</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
Education: primary	0.413*** [0.029]	0.205*** [0.019]	0.604*** [0.02]
Education: lower secondary	0.343*** [0.025]	0.237*** [0.017]	0.238*** [0.018]
<i>Education: upper secondary and tertiary</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
Household composition: 1 person	-0.096** [0.041]	-0.297*** [0.027]	0.317*** [0.028]
Household composition: 2 persons	-0.139*** [0.04]	-0.256*** [0.025]	0.162*** [0.026]
Household composition: 3 persons	-0.169*** [0.041]	-0.131*** [0.026]	0.052* [0.027]
Household composition: 4 persons	-0.095** [0.042]	-0.117*** [0.026]	-0.065** [0.028]
<i>Household composition: 5 persons or more</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
Assets : first quartile (in the country)	0.463*** [0.023]	0.754*** [0.016]	0.134*** [0.016]
Assets : second quartile (in the country)	0.232*** [0.023]	0.366*** [0.015]	-0.054*** [0.015]
<i>Assets : third and fourth quartiles (in the country)</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
Country: Austria	0.031 [0.114]	-0.065 [0.04]	0.261*** [0.053]
Country: Belgium	0.342*** [0.104]	0.126*** [0.041]	0.807*** [0.051]
Country: Cyprus	2.374*** [0.087]	1.128*** [0.045]	1.222*** [0.058]
<i>Country: Germany</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
Country: Spain	-0.64*** [0.12]	0.931*** [0.031]	0.522*** [0.044]
Country: France	-0.062 [0.089]	-0.359*** [0.031]	1.944*** [0.04]
Country: Greece	3.695*** [0.083]	0.754*** [0.036]	2.532*** [0.047]
Country: Hungary	1.821*** [0.079]	1.001*** [0.03]	2.081*** [0.042]
Country: Italy	1.309*** [0.08]	1.315*** [0.03]	1.886*** [0.041]
Country: Luxembourg	0.608*** [0.107]	0.186*** [0.046]	0.184*** [0.07]
Country: Latvia	1.848*** [0.089]	2.125*** [0.05]	2.065*** [0.054]
Country: Netherlands	0.524*** [0.115]	-0.278*** [0.057]	0.661*** [0.061]
Country: Poland	1.775*** [0.082]	2.432*** [0.039]	2.009*** [0.045]
Country: Portugal	0.512*** [0.086]	0.835*** [0.032]	1.285*** [0.044]
Country: Slovenia	1.13*** [0.087]	1.424*** [0.036]	1.069*** [0.049]
Country: Slovakia	1.745*** [0.084]	1.66*** [0.039]	2.336*** [0.048]
Observations	64 908	64 910	64 910
Percent Concordant	92.7	83.9	84.7
Percent Discordant	7.0	16.0	15.1
Percent Tied	0.3	0.2	0.2

Standard errors in brackets

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

As far as saving accounts are concerned, our results show again that being younger increases the probability of being excluded, likewise an unemployed work status. Income, education level (to a lesser extent), net wealth (to a higher extent) play the same role as for current account financial. 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 interest rates in average higher than those that remunerate current accounts.

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, Hungary, Slovakia, Latvia and Poland.

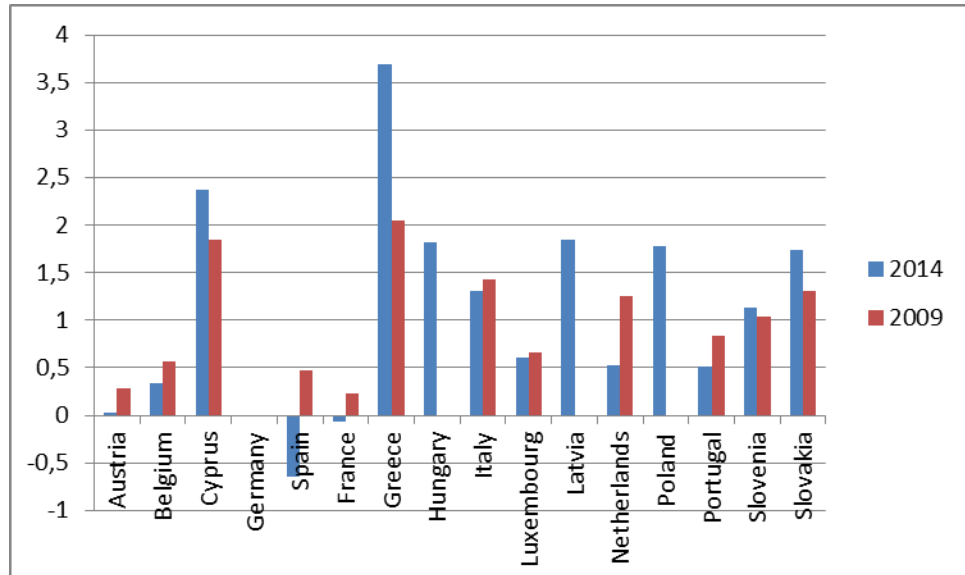
Effect of the crisis on financial exclusion

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

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 in wave to the composition of the households than financially-based. 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. Figure 2 below represents the value of the country-specific

coefficient estimated in our first model on the data of the first wave (red) and second wave (blue).

Figure 2: country-specific contributions to current account participation rate (%)



Conclusion and policy lessons

Financial exclusion plays an important role, not only for social reasons, but also for economic purposes, as for 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, pointing out systemic risks over some banking systems.

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.

References

Allen F., A. Demirgüç-Kunt, L. Klapper and M. S. Martinez Peria (2012), "The Foundations of financial Inclusion: Understanding Ownership and Use of Formal Accounts", *World Bank's Policy Research Working Paper WPS6290*, December.

Ampudia M. and M. Ehrmann (2017), "Financial inclusion-what's it worth?", *European Central Bank Working paper series nb. 1990*, January.

Bank for International Settlements and World Bank Group (2015), Committee on Payments and Market Infrastructure, "Consultative report – Payment aspects of financial inclusion".

Banque de France (2017), "Annual report of the Observatoire de l'inclusion bancaire", 26 June 2017, available online at https://publications.banque-france.fr/sites/default/files/medias/documents/inclusion_bancaire_rapport_2016.pdf.

Demirgüç-Kunt A. and L. Klapper (2013), "Measuring Financial Inclusion: Explaining Variation in Use of Financial Services across and within Countries", *Brookings Papers on Economic Activity*, vol. 44, issue 1 (Spring), pages 279-340.

European Commission (2008), "Financial Services Provision and Prevention of Financial Exclusion", May, available online <http://www.bristol.ac.uk/media-library/sites/geography/migrated/documents/pfrc0807.pdf>.

Fungáčová Z. and L. Weill (2015), "Understanding financial inclusion in China", *China Economic Review*, n°134, pp. 196-206.

Irving Fisher Committee on Central Bank Statistics (2016), "Measures of financial inclusion – a central bank perspective", available online https://www.bis.org/ifc/publ/ifc_finan_inclu.pdf.

Tuesta D., G. Sorensen, A. Haring and N. Cámara (2015), "Financial inclusion and its determinants: the case of Argentina", *BBVA research Working Paper*, January.



Irving Fisher Committee on
Central Bank Statistics

BANK FOR INTERNATIONAL SETTLEMENTS

IFC-National Bank of Belgium Workshop on "*Data needs and Statistics compilation for macroprudential analysis*"

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Household financial exclusion in the Eurozone throughout the crisis¹

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¹ This presentation prepared for the meeting. The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.



Household financial exclusion in the Eurozone throughout the crisis IFC-NBB Workshop, Brussels

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and do not necessarily represent those of the Banque de France*

Motivations

- The access to financial services is a crucial matter for developing countries (e.g. 2009 G20 Pittsburgh summit)
- But also a major issue for advanced economies:
 - Financial exclusion of households is less frequent
 - But yields a major economic and social exclusion

Strong interest by stakeholders

- Reports – among others – by Committee on Payments and Market Infrastructure, Bank for International Settlements and World Bank Group, Findex/Gallup database
- Irving Fisher Committee report on the central bank perspective (2016):
 - measures of financial inclusion
 - need for central banks to define financial inclusion, collect data and stay updated on the subject
 - some differences between countries in the definition of financial inclusion and of the legal roles of central banks

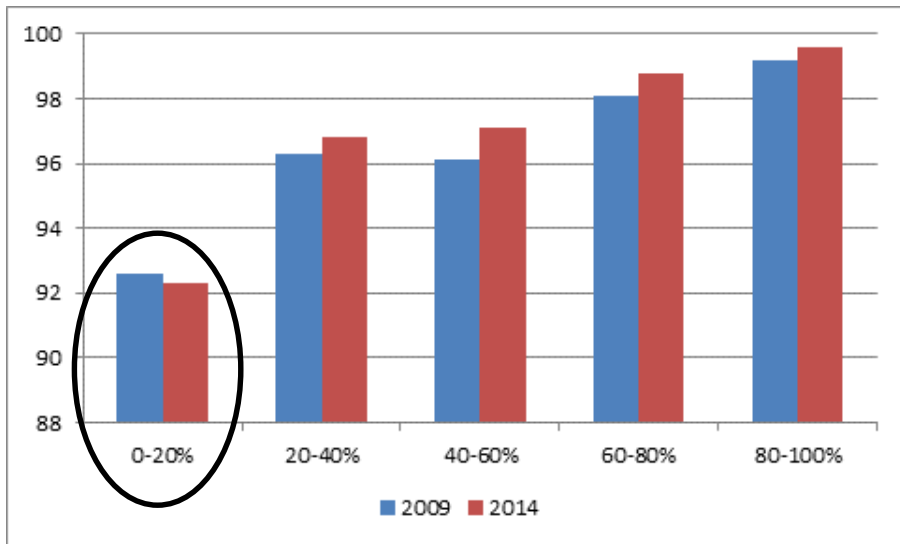
A strong need to improve our knowledge financial inclusion in the euro area

- Household-level data on households' finance and consumption based on Household Finance and Consumption Survey (HFCS).
- Fieldwork in 2010 and 2011 (first wave) and between 2013 and 2015 (second wave).
- Over 50000 households in first wave and over 58000 in the second wave, across 17 countries.
- Information about socio-demographic characteristics of households, financial and real assets, liabilities, income and consumption behavior,
- Three definitions of financial inclusion:
 - Having a current account
 - Having a savings account
 - Having a loan

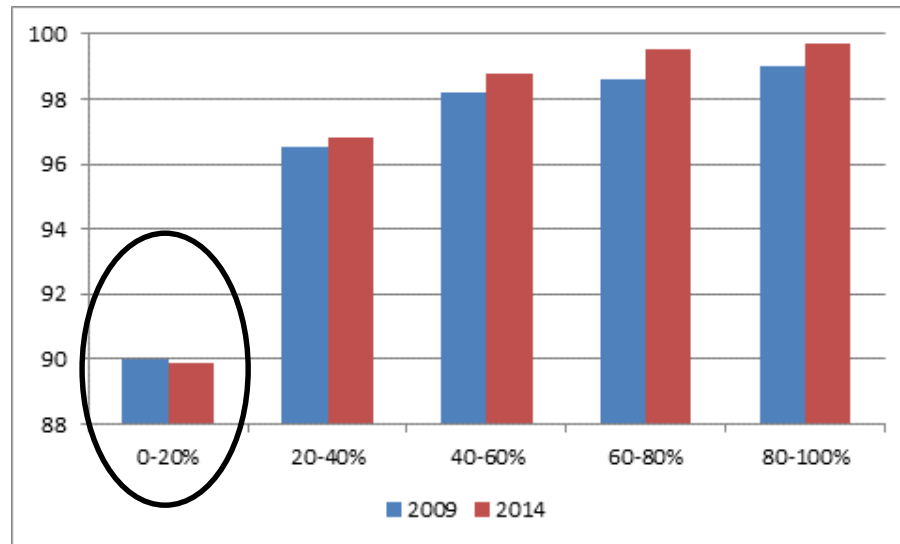


A first look at the data: probability of having a current account in the euro area...

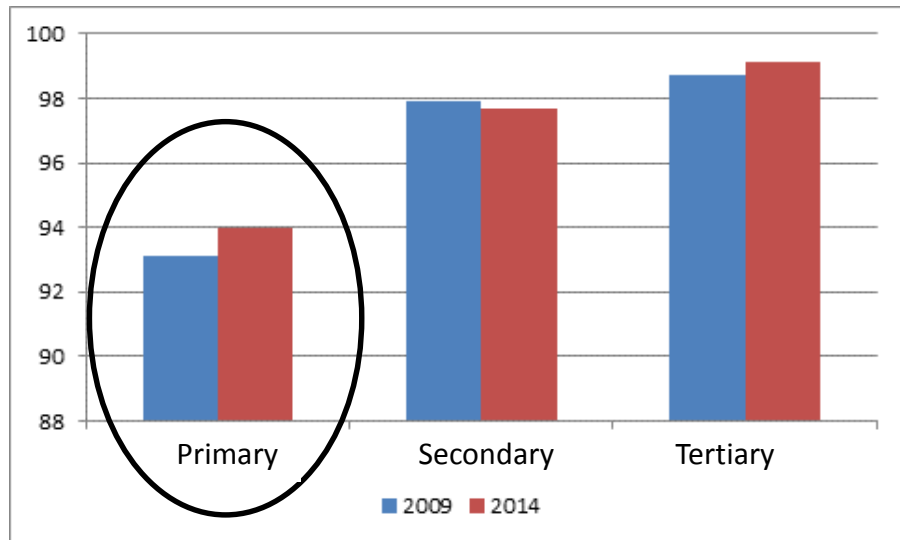
By net wealth



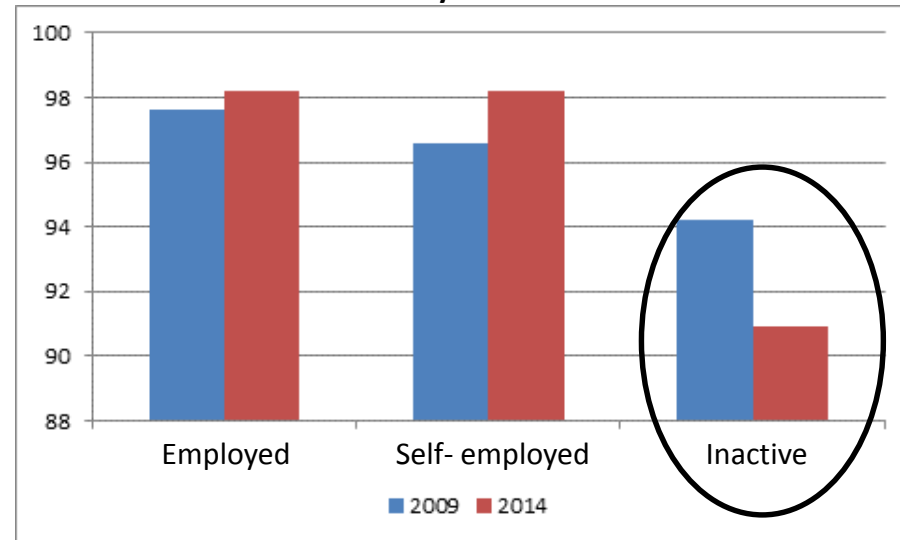
By income



By education



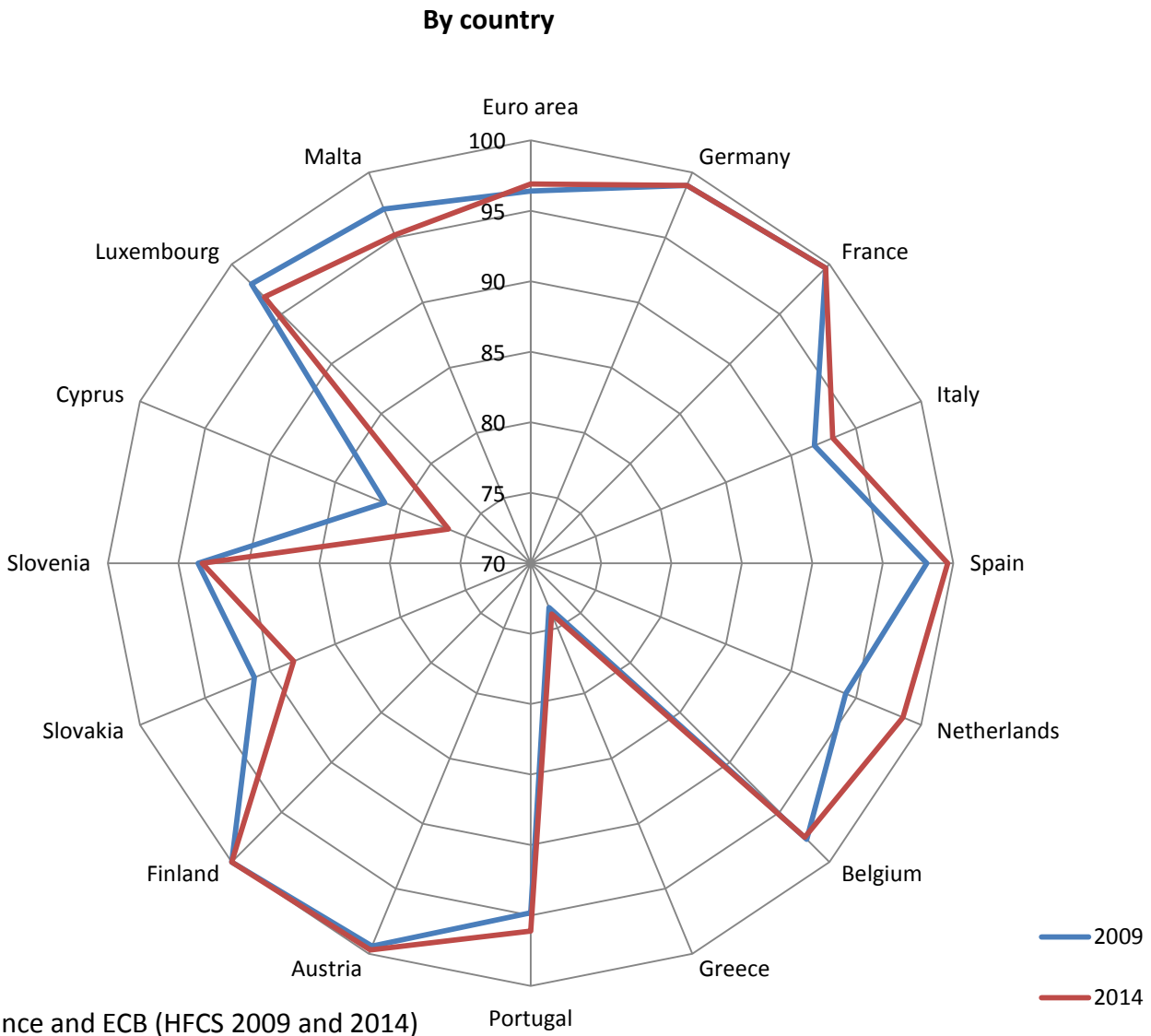
By work status



Source : Banque de France and ECB (HFCS 2009 et 2014)



A first look at the data: probability of having a current account in the euro area...



Source : Banque de France and ECB (HFCS 2009 and 2014)

- Endogenous variable: probability for a household to have no transaction account / no savings account / no loan
- Probit regression on independent variables
- $P(Y_{\text{no account}} = 1|X) = \Phi(\alpha + X'\beta)$

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

- Categorical independent variables

- **Current account:**

- Probability of being financially excluded (not having a current account) increases for older, lower-educated, unemployed and less wealthy households
- Effect of income massive and monotonous: lower income means higher financial exclusion, especially for the poorest. Size of the household plays a minor role in magnitude
- The magnitude of the coefficients related to countries is much higher than those related to individual characteristics
- Greece, Cyprus, Latvia, Slovakia, Hungary and Poland significantly experiment a higher probability of having households financially excluded

- **Savings account:**

- Same results but education level plays a more minor role while net wealth increases more the probability of having a savings account
- Country-specific factors should not discriminate as much for savings as for current accounts

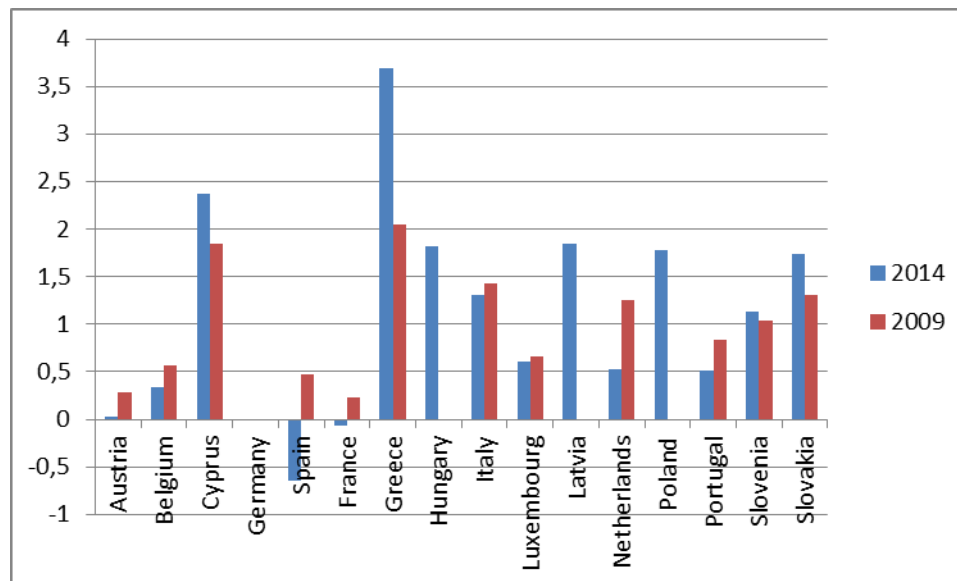
- **Loans:**

- Middle-aged households participate more in the loan market (life cycle model)
- Exclusion smaller for employed, numerous households, higher income and wealthier households
- Country-specific variables matter much more than individual characteristics

- **Effect of the crisis:**

- Are more excluded from current account and savings accounts: younger households and inactive people
- The role of individual financial variables (net wealth and income) has decreased over the crisis
- On the contrary, the magnitude of country-specific effects has increased!
- Credit: the role of individual characteristics has increased but that of country-specific variables has decreased

- **Country-specific contributions (current accounts):**



- A new source of data on households, both on financial characteristics and behaviors, and on socio-demographic features, which may complement already existing databases
- Not fully harmonized on the sampling scheme, which may yield some country-specific differences resulting from methodological design
- Older, unemployed, lower-income, lower-educated and less wealthy households of the euro area are less likely to have a current account
- 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.
- A strong heterogeneity across the euro area.
- 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.



Thank you for your attention
Any questions?