Household Saving Behaviour and Credit Constraints in the Euro Area

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Abstract

We study the role of household saving behaviour, of individual motives for saving and that of perceived liquidity constraints on household finances in the 15 Euro Area countries. The empirical analysis is based on the Household Finance and Consumption Survey (HFCS), a new harmonized data set collecting detailed information on wealth holdings, consumption and income at the household level. We find evidence of some degree of homogeneity across countries with respect to saving preferences and the relative importance of alternative motives for saving. In addition we find a more heterogeneous impact of credit constraints, that are perceived to be binding for specific groups of respondents and geographic regions. Both household characteristics and institutional macroeconomic variables are significant and economically important determinants of household saving preferences and of the credit constraints they face. These findings have relevant policy implications if interpreted in light of the recent financial crisis, the country-specific institutional settings, and the different degree of development of formal lending channels.

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1 Introduction

This paper focuses on household saving behaviour, with particular emphasis on why households save, how much heterogeneity in savings motives there is across households and countries, and how liquidity constraints relate to saving motives. These questions are particularly relevant in a time period when household saving has revived interest of both policy makers and academics. Understanding which motives drive households' saving behaviour across countries and at different stages of their life cycle is fundamental for understanding past, current and future saving behaviour. In a cross-country framework of European countries, this exercise should deliver new insights into the differences of saving motives across different countries and the impact of different institutional settings on saving. Studying saving motives is of particular policy relevance as reforms of the social security systems, currently undertaken in many countries of our data set, will have a direct impact on households' need to save and the credit constraints they face.

We use a new cross-country household data set, the Household Finance and Consumption Survey (HFCS), that collects detailed information on wealth holdings, consumption and income in the 15 Euro Area countries. In addition, the data allows us to study the underlying motives for saving and relate them to household characteristics and perceived liquidity constraints.

Household saving behaviour has been extensively studied in the literature. Several saving motives were first identified by Keynes (1936): "Precaution", "Foresight", "Calculation", "Improvement", "Independence", "Enterprise", "Pride", and "Avarice". Subsequent papers have primarily concentrated on precautionary saving, on life-cycle or retirement saving as well as on saving for bequest. An additional saving motive, namely the "Down-payment" motive was added by Browning and Lusardi (1996).

Most of these motives have by now been incorporated into the life-cycle model, the main work horse of economists to understand saving and consumption over the life cycle. According to the life-cycle theory by Modigliani and Brumberg (1954) and Friedman (1975), saving is the outcome of agents' desire to smooth consumption over their life cycle. Early versions of this theory explain the old-age provision motive as the main saving motive. Individuals save during working life as a consequence of the income drop at retirement. The basic version of the life cycle model has been extended to include also other saving motives, most prominently the precautionary savings motive. Carroll (1992, 1997) and Carroll and Samwick (1997) show that if income is uncertain, risk averse households will save to smooth their consumption paths. Individuals face uncertainty not only in income but also in the length of life

and in all kinds of future economic circumstances, for example in the size of health costs they may face, particularly in old age (see Palumbo (1999), Hubbard *et al.* (1995), Ziegelmeyer (2012)). The precautionary motive can explain a large share of individual and aggregate wealth accumulation (see e.g. Skinner (1988), Carroll (1997), Gourinchas and Parker (2002)). Further extensions of the life-cycle model include a housing motive (e.g. Hayashi (1988)) and a bequest motive (Hurd (1987)).

On the empirical side, large literature has linked precautionary savings to income risk, coming to mixed results for the prevalence of a precautionary savings motive (Guiso *et al.* (1992), Skinner (1988), Fuchs-Schuendeln and Schuendeln (2005)). Guiso *et al.* (1994) use micro data to show that financing a house has an effect on the consumption of Italian households. Chiuri and Jappelli (2003) suggest that a housing motive might also have an effect in Germany.

While most of the cited papers focus on one saving motive only, few papers in the economic and psychologic literature have studied the co-existence of different motivations to save (see, among others, Katona (1975) for the US; Alessie *et al.* (1997) for NL; Lindqvist *et al.* (1978) for Sweden; Horioka and Watanabe (1997) for Japan; Harris *et al.* (2002) for Australia, Schunk (2009) for Germany).

Schunk (2009) relates four different motives, namely the old-age provision motive, the precautionary motive, the bequest motive and the motive to purchase a house to the heterogeneity in saving behaviour of German households and finds that the different saving motives are related to how much households save at different life stages. Additionally, different saving motives can elicit information on which saver type households belong to, i.e. whether they are regular or irregular savers. Knowing whether households plan their savings can be of importance for policy makers in particular if long-term savings (old-age provision) are directed towards private households. Policy reforms that alter the importance of different savings motives might therefore also change household saving behaviour.

Only limited evidence of saving motives and saving behaviour is available for cross-country comparable studies (with few exceptions such as Boersch-Supan and Lusardi (2003)).

In the life-cycle framework the existence of *credit constraints* has direct predictions for savings (e.g. Zeldes (1989), Deaton(1991), Alessie *et al.* (1988)). Households that face borrowing constraints are prevented from smoothing consumption as they can only consume less than they would optimally like to. In several papers, Jappelli and Pagano (1988, 1989) identify the gap in consumption that liquidity-constrained households face. This gap is largest for households headed by individuals less than 30 years old, the unemployed and for non-home-owners and is lowest for those headed by individuals over 50. This accords with the notion that banks view

unemployment and lack of home-ownership as negative signals about the worthiness of their credit applicants. Across countries, Jappelli and Pagano (1988, 1989) show that in Italy liquidity constraints significantly affect individual consumption and are more severe than in the United States. Therefore, one would expect higher saving rates (especially at younger ages) in countries with more stringent borrowing constraints (Boersch-Supan and Lusardi (2003)).

Uncertainty from income shocks, medical expenditures and other factors driving precautionary savings becomes particularly relevant when households simultaneously face borrowing constraints (see Deaton (1991)), so there is often an interaction between the precautionary saving motive and imperfections in financial markets. Therefore, institutional differences across countries may play a major role for different savings behaviour and credit constraints. Countries with a higher degree of uncertainty in income and other future economic circumstances will most likely feature higher saving rates in the presence of a precautionary savings motive (Boersch-Supan and Lusardi (2003)). In this context, public safety nets may replace the need for precautionary savings, for example countries with a high replacement of earnings by pension benefits are more likely to feature lower wealth at retirement, and less decumulation of wealth after retirement (see Browning and Lusardi (1996)). Unemployment benefits and other welfare policies which aim to reduce changes and shocks to life-time income might have the same effects (see Hubbard *et al.* (1995)). In addition to public safety nets, individuals may also rely on the network of relatives and friends to offset shocks. Such informal borrowing opportunities may replace formal capital market requirements and binding liquidity constraints and hence replace the need to save (Boersch-Supan and Lusardi (2003)).

Differences in institutions may explain a large part of cross-national differences in saving motives and perceived credit constraints. The extent of the heterogeneity in household behaviour will also be due to differences in individual preferences and characteristics of households in different countries. The present paper improves upon earlier studies by analyzing a much larger number of saving motives and perceived liquidity constraints and by using new and comparable micro data across all countries in the Euro zone. Our findings can be summarized as follows.

We find that in the Euro Area expenses were about the same as average expenses, and about the same as income. Households whose head is female, young and divorced are significantly more likely to have expenses exceeding income; in contrast, wealthier households are less likely to incur in expenses higher than income. We also find evidence of households being rather confident in the possibility to get funded through informal lending channels, like family and/or friends. In particular we find evidence of intra-household risk sharing within couples rather than

within never-married individuals who cannot rely on this informal channel to face "rainy days".

Precautionary saving is the mostly reported motive in all countries, followed by saving for old age provision. Preferences for other motives are then rather heterogeneous across countries. We observe a relevant role for education and support of children and grandchildren, home purchase and other major purchases.

We find that saving for home purchase and precautionary saving are monotonically decreasingly important with age. Moreover, in accordance with the life-cycle model, being retired is negatively related to the importance of saving for buying a house. Higher property taxes, higher transaction costs and higher tax reliefs on the debt financing cost of home ownership decrease the relevance for this saving motive. We also find evidence of a significant complementarity between home-purchase saving motive and saving for old-age provision, as well as between precautionary saving and saving to invest in financial assets. Higher levels of financial literacy are associated with higher importance of precautionary saving. We also find a clear dichotomy between home owners and renters with respect to saving for home purchase. It follows that policy makers need to think carefully about the population they want to target when proposing or implementing housing-related policies as the response to these policies can be opposite between home owners and renters, or mixed.

Finally we find that households living in Mediterranean countries report to be more subject to liquidity constraints than households living in Continental Europe. This might reflect the higher degree of market imperfections in the first macroeconomic region. As expected, the duration of foreclosures and the existence of personal bankruptcy laws significantly decrease the probability of being liquidity constrained, pointing to the role of guarantee of those factors on the propensity to give a loan to the household sector.

The rest of the paper is organized as follows. Section 2 provides a description of the data set used in the empirical analysis. Section 3 focuses on self assessed, qualitative measures of household saving, with emphasis on how households perceive their saving and on how negative saving is financed. The relevance of saving motives and their main determinants are analyzed in Section 4. Liquidity constraints are analysed in Section 5. Section 6 concludes the paper.

2 The data

The analysis in this paper is based on data collected from households participating in the Eurosystem Household Finance and Consumption Survey (HFCS), a joint project of 15 central banks of the Eurosystem. The survey collects detailed household-level data on various aspects of household balance sheets and related economic and demographic variables, including income, pensions, employment, gifts and measures of consumption. A key distinguishing feature of the HFCS is that it provides country-representative data, which have been collected in a harmonised way in 15 Euro Area countries (all Euro Area countries with the exception of Estonia and Ireland) for a sample of more than 62,000 households. Consequently, the survey is unique in that it makes it possible to undertake detailed analysis of issues related to wealth in a fashion that allows consistent comparisons across countries.

The survey was conducted from November 2008 in Spain to August 2011 in Italy. The fieldwork for most countries was 2010. Thus, the reference year of wealth is in most cases 2010 (at the point the survey was conducted) and the year prior to the survey year for income, which is 2009 for most countries. Almost all countries used CAPI (Computer Assisted Personal Interviews) as an interview mode[1] and applied a stratified random sampling as sampling strategy. Most countries over sampled the wealthy in order to better assess the right tail of the wealth distribution (HFCN, 2013b, section 4).[2] In this paper, we do neither an inflation adjustment nor a PPP adjustment of the monetary variables. Table 9.2 of HFCN (2013b) shows that inflation correction has a very small impact. Differences in purchasing power parities are taken into account since monetary control variables are included as weighted quintile dummies (calculated separately over each country). Individual answers are subject to logical consistency checks and possible correction based on editing. Item non-response is addressed by country specific multiple imputation models, which results in 5 implicates for each country data set to properly adjust for imputation uncertainty (HFCN, 2013b, section 6).

In addition, all descriptive and multivariate analysis combine the results obtained from each of the five implicates according to Rubin's rule (Rubin, 1987). Imputations are done for the most important variables such as wealth and income. For these questions all variables necessary to construct the aggregates are imputed in all countries. Most countries imputed even more, if not all, variables. Moreover, all descriptive statistics and marginal effects are weighted to obtain country and

[1] In the Netherlands CAWI (Computer Assisted Web Interviews) was adopted as interview mode.

[2] For a detailed overview on sampling mode and fieldwork periods see HFCN (2013b).

Euro Area representative results (HFCN, 2013b, section 5). In addition, we execute weighted regressions. In case of complex survey designs, this is advised (Faiella, 2010; Magee *et al.*, 1998).

2.1 Household characteristics

Personal variables for the reference person are selected according to the financially knowledgeable person (FKP), considered to be the main respondent providing financial information for the whole household, since this information is collected together for the whole household instead of by individual persons (HFCN, 2013b).

- MALE - male indicator
- AGE - in classes defined as follows:
  - Age class 1: age less than/equal 40 years (reference group)
  - Age class 2: age between 41 and 55 years
  - Age class 3: age between 56 and 70 years
  - Age class 4: age equal/more than 71 years
- MARITAL STATUS - in categories
  - Couples (reference group)
  - Singles
  - Divorced
  - Widowed
- HOUSEHOLD SIZE - number of total members in the household
- EDUCATION LEVEL - in categories based on ISCED-97 classification
  - Low education (reference group), (ISCED-97=0,1,2)
  - Mid education (ISCED-97=3,4)
  - High education (ISCED-97=5,6)
- TYPE OF CONTRACT - temporary contract indicator
- MAIN LABOUR STATUS - in categories
  - Employee (reference group)
  - Self-employed

  - Unemployed
  - Retired
  - Other
- EMPLOYMENT SECTOR - in dummies based on NACE-code
  - Financial sector (NACE-code: K)
  - Public sector (NACE-code: O, P, Q)
- INCOME - in quintiles (1st quintile as reference group)
- WEALTH - in quintiles (1st quintile as reference group)
- COUNTRY - in dummies (Germany as reference group)

Table 1 reports the summary statistics of the variables we use as controls in the regressions throughout the paper.

The sample consists of a slight predominance of male heads of households (54 percent). Age classes are roughly equally represented, even if we observe more household heads aged between 41 and 55 years old (30 percent), and fewer household heads aged 71 years and over (19 percent). More than half of the sample is made of couples, defined as married or living with a partner (54 percent); single respondents represent 22 percent of the sample; widowed and divorced follow with 13 and 10 percent, respectively. The average household size is slightly more than 2 persons. About one third of household heads have a low level of education, 41 percent and 24 percent have a medium and high level of education, respectively.

As for labour-related variables, we observe that 5 percent only have a temporary contract. The vast majority of the sample consists of employees (45 percent), followed by retired respondents (31 percent), self-employed (8 percent) and unemployed (5 percent). About 12 percent work in the public sector, and 2 percent in the financial sector.

The country with the highest number of weighted households is Germany (29 percent) followed by France (20 percent), Italy (17 percent) and Spain (12 percent).

Table 1 about here

2.2 Institutional variables

Financial institutions and capital markets are key in bringing together savers who want to lend with those with a shortage of funds who want to borrow. The functioning of financial intermediation is very likely to affect differences in individual

saving behaviour and credit constraints, that typically arise when capital markets are imperfect (Deaton, 1991; Jappelli *et al.*, 2008).

In addition, household private savings might be influenced by the presence of mandatory public pension schemes. In a life-cycle framework, with actuarially fair public pension schemes and perfect substitutability between public pension fund wealth and private household wealth, a public pension schemes financed through payroll taxes would have no effect on individual consumption/saving. However, several studies show that this theoretical prediction is not supported empirically (Feldstein, 1980; Koskela and and Viren, 1983; Gale, 1998). The quantitative impact of the crowding-out effect of compulsory public retirement programs on saving behaviour has been proven to be very difficult to estimate appropriately (see Jappelli, 1995 among others), mainly for lack of proper data (Hurd *et al.*, 2012).

Finally, the impact of public policy on household saving behaviour and spending has gained increasing importance in the recent years, in view of the reforms of both pension and tax systems in many Euro Area countries who very likely impact consumption and saving through the effects on lifetime wealth and on the rate of return on saving.

To take these considerations into account, alternatively to including country fixed effects, in some regressions we control for a number of specific institutional variables that might have a direct effect on both saving behaviour and liquidity constraints. We strictly follow Bover *et al.* (2013) in selecting most of the variables of interest for credit conditions and the rules governing financial institutions. In addition, we include a set of pension-related variables, which have the advantage that they vary both across countries and across households. Thus, country fixed effects can be included as additional controls. In particular, we consider the following institutional factors:

Financial institutions and credit conditions

- TAX ON IMPUTED RENT - Indicator for existence of tax on imputed rent. Source: ESCB[3]
- TAX ON PROPERTY - Indicator for existence of tax on property. Source: ESCB[4]
- TAX ON PROPERTY (%) - In percentage of GDP. Source: OECD[5]

[3]ESCB 2009: Housing Finance in the Euro Area, Structural Issue Report (data refer to 2007).
[4]ESCB 2009: Housing Finance in the Euro Area, Structural Issue Report (data refer to 2007).
[5]ESCB 2012: OECD - ISSN 2075-8510 (data refer to 2010).

- LTV RATIO FOR FIRST-TIME HOUSE BUYER - Source: ESCB[6]
- TRANSACTION COSTS OF BUYER - Transaction costs refer to average costs. The estimates do not take into account the various tax breaks that exist in countries for certain dwellings implying that the estimated cost may overestimate the actual cost in some countries, in particular in Italy, where such tax breaks are frequent. Sources: OECD[7]
- TAX RELIEF ON MORTGAGE - Indicator for whether the interest payments on mortgages are deductible from taxable income and whether there are limits on the allowed period of deduction/the deductable amount. The indicator estimates the difference in percentage points between the market interest rate and the after-tax debt financing of housing. Source: OECD[8]
- INCOME TAX - average and marginal income taxes (national average). Source: OECD[9]
- FINANCIAL LITERACY - Senior business leaders' evaluation of the statement: *Economic literacy among the population is generally high*, measured on a 0-10 scale. Source: World Competitiveness Yearbook of the International Institute for Management Development[10]
- DURATION OF FORECLOSURE (in number of months) - period usually required for the completion of foreclosure proceeding. It includes the completion of court proceedings, the sale of the asset and the distribution of the proceeds to the creditors. Source: ESCB[11]
- EXISTENCE OF PERSONAL BANKRUPTCY LAW - indicator for legal status of a person or other entity that cannot repay the debts it owes to creditors. In most jurisdictions, bankruptcy is imposed by a court order, often initiated by the debtor. Source: ESCB[12]

[6]ESCB 2009: Housing Finance in the Euro Area, Structural Issue Report (data refer to 2007).

[7]OECD 2011: OECD Journal: Economic Studies (data refer to 2011).

[8]OECD 2011: OECD Journal: Economic Studies (data refer to 2011).

[9]OECD 2010: Taxing Wages 2009-2010. For average income tax: Table I.3. Income tax plus employee contributions less cash benefits, by family-type and wage level (as % of gross wage earnings). For marginal income tax: Table I.7. Marginal rate of income tax plus employee contributions less cash benefits, by family-type and wage level (as % of gross wage earnings). We use the figures for the average worker who is single without children. Data refer to 2009.

[10]Averages for the period 1998-2005, as reported in Figure 1 of Jappelli (2010).

[11]ESCB 2009: Housing Finance in the Euro Area, Structural Issue Report (data refer to 2007).

[12]ESCB 2009: Housing Finance in the Euro Area, Structural Issue Report (data refer to 2007).

- VARIABLE-RATE MORTGAGE - share of adjustable-rate mortgages relative to all mortgages. Source: ESCB[13]

- CREDIT INFORMATION - depth of credit information on borrowers, i.e. the rules and practices affecting the coverage, scope and accessibility of credit information available through either a public credit registry or a private credit bureau. The indicator is based on information from banking supervision and measured on a 0-6 scale. Source: World Bank[14]

Pension related variables

- DEPENDENCY RATIOs (past or projected) - ratio of population aged 65 and more to the population aged between 15 and 64 computed at the year the household becomes 65 years of age. Source: AMECO dependency ratio (from 1960-2010/2011); Eurostat, projected old-age dependency ratio (2015-2060). The future years with missing values are our own calculations using linear approximation.

- REPLACEMENT RATIOs - (past or projected) - ratio of average first pension to the average wage at retirement. Three replacement ratios are available and considered:

  - Gross replacement rates from the first pillar (public)
  - Total gross replacement rates - in cases where replacement rates from the second pillar are minor, the total gross replacement rate is the same as the replacement rate from the first pillar.
  - Total net replacement rates

  Source: Report by the Indicators Subgroup of the Social protection Committee of the European Commission (2006).
  In addition we also consider gross average replacement rates in 2010 and 2060. Source: European Commission, Ageing Report 2012, (p.129).

[13]ESCB 2009: Housing Finance in the Euro Area, Structural Issue Report (data refer to 2007).

[14]Data from Chapter 5.5 on financial access, stability and efficiency of: World Bank, "World Development Indicators 2012". The indicator is based on information from banking supervision authorities and surveys on the public credit registrys or private credit bureaus structure, laws and associated rules, administered to the entity itself. It refers to 2011.

3 Self assessed measures of household saving

This section focuses on how households perceive their saving behaviour and, in addition, on how they cope with negative saving.

3.1 Perception of saving

We ask households to report how their overall expenses in the previous 12 months compare with the average expenses they typically face, and with their income. The two questions read as follows:

Aside from any purchases of assets, would you say that your (households) overall expenses over the last 12 months were unusually high or low compared to what you would expect in a "normal" year, or were they about normal?

Again aside from any purchases of assets, over the last 12 months would you say that your (households) regular expenses were higher than your (households) income, just about the same as your (households) income or that (you/your household) spent less than (your/its) income?

More than 70 percent of respondents in the Euro Area claim that in the previous 12 months their household expenses were about the same as average household expenses. About 19 percent claim they were higher, and the remaining 7 percent claim they were lower than average. If compared with household income, expenses turned out to be about the same for almost half of respondents, lower for 41 percent, higher for about 11 percent (see Table 2).

Table 2 about here

Figure 1 shows the distribution of answers to the first question. Figure 2 shows the distribution of answers to the second question. Both figures report the answers by country.[15] As already reported above, in all countries the most reported answer is that expenses were about the same as average expenses (percentages are in the range of 80 percent for Germany and Italy, and 56 percent for Slovakia), and about the same as income (percentages are in the range of 69 percent for Portugal, and 46 percent for Luxembourg).

Figure 1 about here

Figure 2 about here

[15]Data on self assessed household saving have not been collected in Finland and France.

Some 12 percent of all households report that their expenses were above their income. We perform a simple probit analysis in order to better understand who these households are more likely to be. Results (average marginal effects over the 5 implicates and t-statistics) are reported in Table 3. Some of the control variables turn out to be significant, some at the 1-percent level. Households whose head is female and divorced are significantly more likely to have expenses exceeding income (the marginal effects are 1.4 and 3.7 percentage points, respectively). Singles are significantly less likely to incur in spending more than their income, with a marginal effect of 3 percentage points. Aging is negatively correlated with having expenditures exceed income. Households whose head is in the oldest age category are less likely to have expenditures exceeding income compared to those households whose head is less than or equal to 40 years old (marginal effect is 3.9 percentage points). This finding is in line with the dynamic stochastic life-cycle model predictions. Young households whose incomes are low and whose marginal propensity to consume is high are more likely to spend all of their income and will additionally finance their age-specific expenses by borrowing. As households grow older and their income increases, they will have enough means to cover their expenses. Our result is also in line with the findings of Bover *et al.* (2013) who show that negative saving and holding secured debt or unsecured debt is predominant in the beginning of the life cycle and decreases after the age of 44. There are no significant effects for the level of education. Household size, being self-employed, unemployed, or retired are positively and significantly related to having expenses higher than income. Similarly, wealthier households (in terms of household income and household net wealth) are less likely to incur in expenses higher than income.

Table 3 about here

3.2 Financing negative saving

The fact that expenses are higher than income is not *per se* an indication of vulnerability, as long as it is a transitory/occasional situation and it is possible to finance this negative saving somehow. Therefore, in order to better understand this issue we consider additional information available in the HFCS. The respondents who reported their expenses were higher than their income in the last 12 months are then asked the following question:

You have told me that your expenses in the last 12 months have been above your income. What did you do to meet expenses?

- *Sold assets*
- *Got a credit card / overdraft facility*
- *Got some other loan*
- *Spent out of savings*
- *Asked for help from relatives or friends*
- *Left some bills unpaid*
- *Other (SPECIFY)*

Multiple answers are allowed. Respondents may also choose the "Do not know" option or the "No answer" option.

This questions allows to identify three groups of households. Negative saving can be financed:

- out of wealth/past saving
- out of loans, both formal (credit cards/overdraft facilities) and informal (family and friends)
- out of unpaid bills

Therefore we are able to identify the households who have been able to cope with negative saving (either by dissaving or by relying on some forms of borrowing) and those who have not (by leaving unpaid bills), thus being financially vulnerable to adverse economic conditions and potentially "at risk" of poverty.

Table 4 reports the summary statistics for the alternative sources of financing.[16] The majority of households says that they mostly spent out of past savings (55 percent). The second most relevant sources of financing are a credit card/overdraft facility and assistance from relatives/friends (22 percent). Some 13 percent of households, for which average expenses were above average income during the last 12 months, claim they left bills unpaid.

Table 4 about here

Figure 3 shows the distribution of answers by country. A certain degree of homogeneity can be observed across countries. The mostly reported source of financing

[16]Data on financing negative saving have not been collected in Italy, Finland and France. Moreover, multiple answers are responsible for mean values not summing up to 100.

negative saving is spending out of savings cumulated in the past in all countries, with the exception of Greece, where here is a predominance of the habit to ask for help from relatives and friends (51 percent), and in Cyprus, where it is very common to get a credit card/overdraft facility (more than 90 percent).

Figure 3 about here

We then perform a probit regression analysis for each of the three sources of financing negative saving.[17] Table 5 reports the full set of results. We observe a very significant (at the 1 percent level) wealth effect for all three sources of financing and with the expected sign. Wealthier households are more likely to cover negative saving by decumulating existing wealth or by dissaving. The marginal effects are rather high and monotonically increasing with wealth quintiles from 14 percentage points to 37 percentage points. Wealthier households are also significantly less likely to leave bills unpaid, even if the marginal effects are lower (in the range between 9 percentage points and 18 percentage points) and non-monotonic. In addition, wealthier households are significantly less likely to take out new loans or credit cards/overdraft facilities. The marginal effects are again rather high (between 15 percentage points and 30 percentage points) and non-monotonic. These findings are consistent with Arrondel *et al.* (2013), who find that the ownership rates of all asset categories generally increase with wealth, therefore allowing them to decumulate assets in case of need.

We also observe an income effect, even if some findings are less intuitive than for the wealth effect. We find that the higher the income, the higher the probability of dissaving, but also the higher the probability of leaving bills unpaid, even if the significance level is very high for the former effect and much lower for the latter (only for the second income quintile). There is some evidence of a negative relationship for taking out loans or other forms of borrowing (only for the second income quintile).

Overall, the households who leave bills unpaid are significantly more likely to be low educated, and self employed.

Older households, unemployed or retired are significantly less likely to rely on loans or borrowing. Household size is positively and significantly related to financing negative saving by relying on loans or borrowing.

Table 5 about here

[17] A more appropriate way to model this analysis is to perform multinomial probit regressions. However our data do not allow this since multiple answers are possible, making the three alternative forms of financing not fully mutually exclusive.

To further elaborate on the role of informal lending channels, the HFCS contains a question relative to the ability to get financial assistance from relatives and friends. Figure 4 shows the distribution of the percentages reported by countries.[18] In all countries where this information is available there seem to be a pretty high confidence in the possibility to get financial assistance through informal borrowing. Peaks are found for Luxembourg and Portugal (70 percent). Only in Slovakia and in Slovenia the percentage is below 40.

Figure 4 about here

4 Saving motives

The HFCS elicit information on the importance of a number of saving motives. The question used in this paper to identify saving purposes reads as follows:

Now I'd like to ask you some questions about your attitudes about savings. People have different reasons for saving, even though they may not be saving all the time. What are your (household's) most important reasons for saving?

- *Purchase own home*
- *Other major purchases (other residences, vehicles, furniture, etc.)*
- *Set up a private business or finance investments in an existing business*
- *Invest in financial assets*
- *Provision for unexpected events*
- *Paying off debts*
- *Old-age provision*
- *Travels/holidays*
- *Education/support of children or grandchildren*
- *Bequests*
- *Taking advantage of state subsidies (for example, a subsidy to building society savings)*

[18]Data on ability to get financial assistance from relatives and friends have not been collected in Spain, Italy, Finland and France.

- *Other (SPECIFY)*

Multiple answers are allowed. Respondents may also choose the "Do not know" option or the "No answer" option.

Figure 5 shows the relevance of saving motives. Figure 6 shows the distribution of each of the reasons for saving by country.[19]

Figure 5 about here

Precautionary saving is reported as the most important motive in all countries, followed by saving for old age provision. The percentage of households reporting precautionary saving as an important reason for saving ranges between 89 percent in Netherlands and 42 percent in Germany. The percentage related to saving for old age ranges between 71 percent in Netherlands and 28 percent in Spain. Preferences for other motives are then rather heterogeneous across countries. We observe a relevant role for education and support of children and grandchildren, home purchase and other major purchases. Saving for paying off debts is rather important in Netherlands, a country with a relatively substantial household indebtedness.

Figure 6 about here

We focus on three motives for saving, namely saving for home purchase, saving for old-age provision, and precautionary saving. For each of these motives we perform probit analysis to better characterize the main determinants of saving behaviour.

4.1 Saving for home purchase

All regressions in Table 6 include a common set of background characteristics as described in Section 2.1. On top of those variables, the baseline specification (column (I)) includes country fixed effects.

Specification (II) controls for a number of institutional macroeconomic variables available in all countries in place of country fixed effects. In particular, we include presence of tax deductibility of interest payments (positive estimated coefficient expected), limit on tax deductibility of interest payments (negative estimated coefficient expected), tax on imputed rent (negative estimated coefficient expected), presence of property tax (negative estimated coefficient expected), and loan-to-value ratio on first home buyers. For loan-to-value ratio we may expect a negative estimated coefficient, as the higher the amount one can borrow, the less one should

[19]Data on saving purposes have not been collected in Italy, Finland and France. In Netherlands the questions about saving motives have been asked with a different wording, which explains why the bar for "other" saving motives is high for this country.

be concerned about saving for buying a house. However a positive coefficient could also be expected as the higher the LTV ratio, the higher the incentive to invest in housing. The former argument is valid within homeowners, i.e. conditional on having decided to own a house; the latter argument works as difference between homeowners and non-homeowners. We will elaborate this dichotomy due to house ownership in Section 4.1.3.

Specification (III) is a slightly different version of the previous one as it includes the macroeconomic variables available in most countries. Transaction costs of the buyer, and tax relief on the debt financing cost of home ownership are added. Moreover we replace the indicator for existence of tax on property used in specification (II) with tax on property as percentage of GDP. The number of observations is lower (19,819 vs. 23,921) because for Malta and Cyprus some variables were not available. We expect a negative estimated coefficient for transaction costs. For tax relief we may expect a negative estimated coefficient, but a positive coefficient could also be expected, with the same line of reasoning described for the loan-to-value ratio above.

Country fixed effects and the (past or projected) dependency ratio are included in regression (IV). Please note that the latter set of variables vary not only over countries but also over households, so that we can capture some cohort variation.

In regression (V) we control for the gross replacement rates from the first (public) pillar, in addition to country fixed effects and the dependency ratio. The reason to include pension indicators in regression for home purchase saving is to investigate whether there is any link between the two saving motives. Up to this point, in fact, our analysis treats each preference for saving separately from one another and does not allow for any kind of interplay among them. This implicitly points to the direction of mental accounting: individuals save either for one purpose or for the other one. In reality we may think that saving behaviour should be interpreted in a broader sense, instead. It is an attitude, a personal trait. Some people save (irrespective of the specific reason why), because they can and because they are risk averse; some other people do not save, not only because they cannot, but also because they are impatient, or risk lovers or alike. Including pension indicators is a proxy to control for saving for old age in the saving motive. Therefore we are able to investigate whether there is a significant link between these two saving motives; whether home main residence is considered as an investment good to create liquidity late in the life cycle (negative estimated coefficient expected), or whether the home-purchase saving motive is complementary to saving for old age (positive estimated coefficient expected).

Finally specifications (VI) and (VII) combine all institutional variables from the previous regressions.

4.1.1 The role of household characteristics

Age is a relevant determinant for saving behaviour, both in terms of significance levels and in terms of marginal effects. There is a clear pattern for home purchase: saving for buying a home is monotonically decreasingly important with age in all specifications. Marginal effects are in the order of 10 percentage points. The households belonging to the younger age class (defined as households aged less than 41) are significantly more likely to report saving for buying a house as a very important motive for putting money aside.

We do not find any significant role for neither gender nor marital status.

Education level has a mixed influence on saving for home purchase. Households with mid education consider this saving motive less important than the low-educated households (marginal effects of about 3 percentage points), maybe because credit constraints are less relevant for them. In contrast the highly educated households report home purchase saving as more important than the non educated households in 5 out of 7 regressions (marginal effects are around 1 percentage points), but the effect is not significant.

The self-employed are significantly less likely than the employees to report saving for home purchase as an important motive for putting money aside. One plausible explanation could be that this motive conflicts with the project to improve their business. As expected and in accordance with the stochastic life-cycle model, being retired is negatively related to the importance of saving for buying a house: presumably they are already home owners or they have sold their house to finance old-age consumption.

All other household characteristics, including income and wealth, have no significant impact on the probability of considering home purchase as an important motive for saving.

4.1.2 The role of institutional variables

Tax deductibility of interest payments has a significant (at the 1-percent level) and positive effect on the importance of saving for home purchase in two out of four regressions. The marginal effects are rather large, ranging between 7 and 10 percentage points.

The limit on tax deductibility of interest payments has the expected (significant) negative estimated coefficient in one regression only (column (II)). In the other three specifications it displays a positive sign, and almost always with a 1-percent significance level. Similarly, the tax on imputed rent is estimated with a positive coefficient and significantly at the 1-percent level in three out of four specifications.

The presence of property tax is also estimated with an opposite sign (positive) than the one expected (negative), but it is never significant.

The loan-to-value ratio on first home buyers has reversed signs across the four regressions where it is included, but the coefficients are virtually zero and they are never significant.

The other institutional macroeconomic variables have a clearer effect on the importance of saving for home purchase. Higher property taxes, higher transaction costs and higher tax reliefs on the debt financing cost of home ownership decrease the relevance for this saving motive. The significance levels in almost all regressions are very high (1-percent), and the size of the marginal effects is highest for the tax on property (10 percentage points).

We also find evidence of a significant complementarity between the home-purchase saving motive and saving for old-age provision. The dependency ratio always has a positive and significant impact on saving for buying a house, even if the quantitative effect is very low. In addition, there is also a strong role of (partial) substitutability among the two saving motives, as gross replacement rates from the first (public) pillar have negative and significant estimated coefficients in two regressions out of three.

Table 6 about here

4.1.3 The role of housing consumption commitment

In Section 4.1 we highlight how opposite signs for estimated coefficients of some institutional variables could be expected depending on whether households are home owners or not. The relevance of saving for home purchase might be rather different between these two groups of households, suggesting that we should control for the intention to buy a house. A rigorous way to account for the presence of any potential selection effect is to estimate a two-step Heckman selection model, or to further split the sample between home owners and potential first-home buyers. In both cases the data at our disposal do not allow to identify good exclusion/identifying restrictions. Instead we adopt a model with interaction effects between the macroeconomic institutional variables and home ownership dummy (Ai and Norton, 2003; Norton *et al.*, 2004). The idea behind this decision is a housing consumption commitment. We distinguish between "committed buyers" (e.g. home owners and/or those who intend to buy a house) and "potential buyers" (e.g. renters). Households who report the saving motive for home purchase being important can be those who have committed or with a stronger intention to buy a house. The main effect captures the latter aspect, whereas the interaction effect captures the former aspect. Many

of the macroeconomic variables we consider in Section 2.2 can work in the opposite direction for these two groups of households.[20]

We perform logit regressions on a number of variants of the specifications in Table 6. The model adds interaction terms between the home ownership rate and the macroeconomic institutional variables used above, on top of all other household characteristics included in that table. Since it is not straightforward to interpret the marginal effects of the interaction terms in a non-linear model (Ai and Norton, 2003; Norton *et al.*, 2004), we also display the odds ratios as an alternative (Buis 2010). Therefore results in terms of estimated logit coefficients, odds ratios and t-statistics are reported in Table 7. For the purposes of this section, only the results on the main effects and on the interaction effects of home ownership rates and the macroeconomic institutional variables are reported. The main effect represents the effect on the potential buyer, the interaction term represents the additional effect of the macroeconomic variable on the probability of reporting saving for home purchase to be important among the committed buyers.

We observe an "odds-ratio reversal" in almost all specifications: the main effect and the interaction effect display opposite signs over all the macroeconomic variables. This supports the distinction between committed and potential buyers described above. Given each institutional variable, when the probability of reporting saving for home purchase as an important motive for saving is smaller than 50 percent if renter, the probability increases if the household becomes home owner; or when the probability of reporting saving for home purchase as an important motive for saving is larger than 50 percent if renter, the probability decreases if the household becomes home owner.

Alternatively, if the institutional variable reflects a housing friendly factor to lower the purchase cost, it will encourage the potential buyer to save more for housing in a way to speed up the ownership transition (i.e. by preparing more for the down-payment). Nevertheless this factor also discourages the committed buyer to save for housing purchase (i.e. by paying off the mortgage more slowly). The opposite direction of reasoning will arise when housing unfriendly factor is represented. For example, tax on property seems to be a housing unfriendly policy. Therefore, all the odds ratios in the interaction effect are larger than one (with significance level at 1 percent except the last specification) and smaller than one (with significance level at 1 percent in two out of four specifications) in the main effect.

[20]We also use the cross-country variation of home ownership rates as proxy to identify the two groups of households. We argue that the housing consumption commitment is stronger in countries where home ownership is more widespread than in those with low home ownership rates. The results are quite similar.

Although this "odds-ratio reversal" is rather consistent across the specifications, the signs of either effects are mixed. This is not surprising since it might be uncertain among our regressions whether the specific institutional variable captures a housing friendly or unfriendly effect. As an example, tax deductibility on interest could be deemed as a housing friendly policy from the demand side; however it might induce the overpricing of house and/or mortgage when the supply side wants to take advantage of it.[21] We observe that the signs for tax deductibility on interest are mixed in our results.

The main policy implication suggested by this analysis is that policy makers need to think carefully about the population they want to target when proposing or implementing housing-related policies. The effect of such policies can be opposite between home owners and renters, or mixed.

Table 7 about here

4.2 Saving for old-age provision

As in the previous subsection, we run a number of regressions with alternative control variables in order to characterize the main determinants of saving for old-age provision. Table 8 reports the full set of results related to this saving motive.

We start with the baseline specification consisting of household background characteristics as described in section 2.1 and country fixed effects (column (I)).

We then add the past and projected dependency ratio (column(II)) and the gross replacement rates from the first (public) pillar (column (III)). We expect a positive estimated coefficient for the dependency ratio, because if it increases, the pressure on the public pension system increases as well, leading to lower public pensions (*ceteris paribus*) and to higher incentive/importance to save for old-age provision. In contrast, we expect a negative estimated coefficient for the replacement rate, on the basis of a simple substitutability mechanism.

As robustness checks alternative measures of replacement rates are considered further, namely total gross replacement rates (regression (IV)), total net replacement rates (regression (V)), and gross average replacement rates (regression (VI)). The sample size varies across specifications because the dependency ratio is available for all years and for all countries, but this is not the case for the different replacement rates considered.

[21] Bover *et al.* (2013) show some weak evidence of charging higher interest rates among the countries with housing friendly policies.

4.2.1 The role of household characteristics

There is no significant effect for gender for old-age provision saving.

In contrast age is a significant and quantitatively important determinant of saving for retirement, especially during the middle part of the life cycle, in particular when households are aged between 41 and 55. This finding supports the theoretical prediction of the life-cycle model according to which households have positive savings during the working phase of their lives to be used to finance consumption after retirement. It is interesting to notice that these findings are robust to controlling for pension indicators explicitly (columns (II) to (VI)).

Marital status has a mixed impact on old-age provision saving preferences. Singles are significantly (at the 5-percent level, at most) more likely than couples to report this saving motive as important in three regressions out of six, but widowed and divorced households have no significantly different preferences compared to the reference groups of couples. However, household size plays a relevant role. The higher the number of household's members, the lower the importance of saving for retirement, suggesting a clear role of intra-family financial support sharing.

Employees are significantly more likely to save for old-age provision than household heads with other employment status. As expected, the probability of retired households to report this saving motive to be important is significantly lower.

Higher incomes and higher levels of wealth are significantly and positively associated with the importance of saving for retirement. The marginal effects are monotonically increasing with quintiles and are substantial (between 5 and 20 percentage points).

4.2.2 The role of institutional variables

The dependency ratio has the expected positive sign, but it is significant at the 10-percent level only in one specification (column (VI)). The gross replacement rate from the first pillar is insignificant (column (III)).

Total gross replacement rates, total net replacement rates, gross average replacement rates in regressions (IV), (V) and (VI) are significant but they display a positive coefficient which is opposite to what we expect.

These findings contrast with IMF (1997) who find that variables related to the structure of the tax system and the financing/generosity of the social security and welfare systems are found the be important determinants of household saving.

Table 8 about here

4.3 Precautionary saving

In order to characterize the main determinants of precautionary saving we run a baseline specification with background household characteristics and country fixed effects (regression (I)). We then substitute the country fixed effects with a set of institutional variables, namely income taxes (both average and marginal), old-age spending and financial literacy (regression (II)).

Next we control for the importance of the two saving motives analyzed in the previous subsections, e.g. saving for home purchase and saving for old-age provision, with country fixed effects (regression (III)) and with macroeconomic variables (regression (IV)).

In the last two specifications we include all saving motives, again with country fixed effects (regression (V)) and with macroeconomic variables (regression (VI)).

Full results are reported in Table 9.

4.3.1 The role of household characteristics

The effect of gender on precautionary saving is mixed. Overall there is some evidence of males being less likely to report they save for unexpected events than females, and never significantly.

There is a clear effect of age on precautionary saving. The importance of precautionary saving is monotonically decreasing with age in almost all regressions. The significance levels are often highest (1-percent) and the marginal effects are largest (ranging between 2 and 12 percentage points in absolute value) for the households whose head is between 41 and 55 years old. Marital status is never significant. However, single households are more likely to report it is important to save for unexpected events than married households. On the contrary both divorced and widowed households consider precautionary saving less important than married households. These findings can be interpreted as evidence of intra-household risk sharing for couples (no matter whether they are are still in place or not) versus never-married individuals who cannot rely on this informal channel to face "rainy days".

Similar considerations can be inferred from the negative estimated coefficients for household size, but again all estimated coefficients are insignificant.

The effects of education and employment status are not stable across specifications, mainly insignificant and consequently rather difficult to interpret. We found, however, that the precautionary motive is important for the self-employed, who typically face higher income risk. Therefore the positive estimated coefficient for them is in line with the prediction of the precautionary saving model, where households with higher income uncertainty accumulate more wealth (Carroll, 1992, 1997), and

with previous empirical studies (Mody *et al.*, 2012, among others).

Higher income quintiles and higher wealth quintiles are significantly associated with higher relevance of precautionary saving. We tend to interpret these findings in terms of affordability (wealthier households can afford to put money aside to cope with unforseen adverse shocks).

4.3.2 The role of institutional variables

Income taxes (both average and marginal) have a negative and significant effect on precautionary saving. The marginal effects are very low, though (around 2 percentage points).

The role of old-age spending should be interpreted together with the old-age provision saving motive. When the latter is not controlled for (regression (II)), old-age spending has no effect whatsoever on precautionary saving. When saving for old-age provision is included with home purchase saving (regression (IV)), old-age spending has a positive and significant (at the 1-percent level) effect on saving for unexpected events. On the contrary when saving for old-age provision is included together with all saving motives (regression (VI)), old-age spending has a negative and significant (at the 1-percent level) effect on saving for unexpected events.

The impact of financial literacy is very neat and straightforward. Higher levels of financial literacy are associated with higher importance of precautionary saving. The marginal effects are substantial (around 20 percentage points) when other saving motives are included. These findings are in line with the literature showing better/more sophisticated financial choices and higher wealth levels by the households scoring high in numeracy and financial literacy (Lusardi, Mitchell, 2007a, 2007b).

4.3.3 The link with other saving motives

Precautionary saving is negatively related to saving for home purchase and saving for old-age provision, indicating that these motives for saving are substitutes.

A positive effect is nevertheless observed between saving for unexpected events and saving to invest in financial assets, suggesting a complementarity between precautionary saving and building up a wealth stock intended to be used as buffer against adverse financial shocks. Similarly, precautionary saving and saving to take advantage of state subsidies are positively related.

The bequest motive has a positive effect on precautionary saving. This finding is in line with the literature and has an intuitive interpretation. Bequests can be unintentional, so that a (risk-averse) household may decide to save for "rainy days" and

leave the amount of savings left to its offsprings. Moreover, Arrondel *et al.* (2013) show that the significance of inheritances for wealth accumulation is remarkable and underlines its key role in the process of persistent wealth inequality.

All other saving motives display a negative estimated coefficient.

Table 9 about here

5 Credit constraints

We strictly follow Jappelli *et al.* (1998) in defining liquidity-constrained households. We construct four indicators of which three are directly derived from answers given to HFCS respondents and one derives from a calculation based on household net liquid assets. The liquidity constraints indicators are described as follows:

1. "Turned down/discouraged" - The first indicator includes households who gave an affirmative answer to any of the following questions:
    - *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?*
    - *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?*
2. "Turned down/discouraged and no credit card/line" - The second indicator excludes from the constrained group all households that report that they have a credit card or a line of credit.
3. "No credit card/line" - The third indicator of liquidity constraints considers only those households that have neither a credit card nor a line of credit.
4. "Low assets" - The fourth indicator includes households whose net liquid assets are worth less than six months' gross income.

In order to better capture the difference across European countries with respect to both institutional settings and cultural habits in formal and informal lending channels, we identify three geographic areas as follows:

- Continental - Austria, Belgium, Germany, France, Luxembourg, Netherlands
- Mediterranean - Cyprus, Spain, Greece, Italy, Malta, Portugal

- Other - Slovakia, Slovenia, Finland

This classification comes from several studies in the literature about welfare systems (e.g. Esping-Andersen (1990) and Arts and Gelissen (2002), among others). In the empirical analysis Italy and Finland are excluded as data on liquidity constraints ar not collected there.

Table 10 reports the mean values for each of the four liquidity constraints indicators. We first report the values for the full sample and compare them with the values found by Jappelli *et al.* (1998) for the US. We observe that 8.2 percent of households in the Euro Area report to have been turned down or discouraged from asking for a loan. The percentage drops to 1.4 percent when households with no credit card are considered additionally. About 23 percent of households claim they do not have any credit card or credit line. When the indirect measure of liquidity constraints (indicator 4 - low assets) is considered, we observe that 43.8 percent of households turn out to have problems in getting credit. The patterns of all indicators resemble those by Jappelli *et al.* (1998), despite the fact that they are based on a different time period and on different countries.

When the sample is split in geographic areas, we observe that households living in Mediterranean countries report to be more subject to liquidity constraints than households living in Continental Europe. This might reflect the higher degree of market imperfections between the two macroeconomic regions.

Table 10 about here

We then run probit regressions for each of the four indicators. We use two specifications. In the first specification (see Table 11) we control for country fixed effects and, alternatively, for a set of institutional variables that we expect to have a direct impact on the probability of facing liquidity constraints. In the second specification (see Table 12) we perform the analysis by geographic area for indicator 1 only. The idea behind this is to better highlight how liquidity constraints affect household behaviour in different institutional settings.

5.1 The role of household characteristics

Table 11 shows that gender has hardly any effect on the probability of being liquidity constraints. Only when the indirect asset-based indicator of liquidity constraints is used (columns IVa and IVb) females turn out to be significantly more subject to credit constraints. The marginal effect is around 2 percentage points. This finding reflects the lower amount of assets that females typically hold and the more limited credit card holdings by women.

Older individuals are significantly less likely to be liquidity constrained for all indicators but the third one: Not having a credit card or credit line is significantly and positively related to age.

Marital status has a mixed effect on liquidity constraints. Divorced households are significantly more likely to report they are liquidity constraints (indicator 1) and more likely to have low assets at disposal.

Higher degrees of education are associated with significantly lower probability of facing liquidity constraints for the third and fourth indicator. For the first two indicators the sign is as expected (negative) but not significant.

Household size is significantly and positively related to all indicators of liquidity constraints. Similarly, the respondents who are self employed and unemployed are more likely to face credit constraints than employed individuals. The findings for retired respondents are mixed, as the estimates are positive and negative depending on the liquidity indicator analyzed, but almost always significant at the 1-percent level. Household income and household net wealth are negatively related to liquidity constraints.

5.2 The role of institutional variables

As expected, the long duration of foreclosures and the existence of personal bankruptcy laws significantly decrease the probability of being liquidity constrained, pointing to the role of guarantee of those factors on the propensity to give a loan to the household sector. The loan-to-value ratio for first-time house buyers has a significant and negative effect on credit constraints for the second indicator only (regression IIb).

We also performed some regressions with additional institutional macroeconomic variables available in a number of countries only. We do not report the full table in the paper. Having a variable interest-rate mortgage is negatively associated with credit constraints. There is some evidence that households are more flexible in exploiting favorable interest rate fluctuations as well as the possibility to renegotiate existing mortgage conditions with this kind of contracts. Finally, we find a very significant and important effect of credit information on liquidity constraints. The estimated coefficients are always negative, implying that the deeper the knowledge about borrowers the higher the probability to lend out money. The marginal effects are also substantial, especially for the indicator "No credit card/line" (15 percentage points). These findings suggest a crucial screening role of information in selecting out bad borrowers and enhancing the chances for good borrowers to avoid liquidity constraints.

Table 11 about here

When splitting the sample by geographic area we observe (see Table 12) that overall the effect of background characteristics is the same between Continental and Mediterranean countries (with the only exception for males, who are significantly more likely to be liquidity constrained in Continental Europe, and less likely to be turned down or discouraged in Mediterranean countries). On the contrary, all the institutional variables we control for have opposite signs between the two geographic areas. This finding confirms our prior that Continental and Mediterranean countries differ substantially in the structure of their formal lending markets, therefore leading to a different role and a different degree of development of informal credit channels.

Table 12 about here

6 Concluding remarks

The paper studies several aspects of household saving behaviour, of individual motives for saving and of perceived liquidity constraints in the 15 Euro Area countries. The empirical analysis is based on the Household Finance and Consumption Survey, a new harmonized data set collecting detailed information on wealth holdings, consumption and income.

We find a rather similar perception of household saving behaviour and dynamics across countries. The majority of respondents claim that in the previous 12 months their household expenses were about the same as average household expenses as well as their household income. Nevertheless about 12 percent of households report that their expenses were above their income. These households potentially at risk of financial vulnerability are more likely to have a head who is female, to be less than 40 years old and divorced. In contrast wealthier households are less likely to incur in expenses higher than income. We further analyze three sources of financing negative saving, namely dissaving, borrowing and leaving bills unpaid. We observe a very significant wealth effect for all three sources of financing and with the expected sign. Wealthier households are more likely to cover negative saving by decumulating existing wealth or by dissaving. The marginal effects are rather high and monotonically increasing with wealth quintiles from 14 percentage points to 37 percentage points. Wealthier households are also significantly less likely to leave bills unpaid, even if the marginal effects are lower (in the range between 9 percentage points and 18 percentage points) and non-monotonic. In addition, wealthier households are significantly less likely to take out new loans or credit cards/overdraft facilities. The marginal effects are again rather high (between 15 percentage points and 30 percentage points) and non-monotonic.

We also observe an income effect, even if some findings are less intuitive than for the wealth effect. We find that the higher the income, the higher the probability of dissaving, but also the higher the probability of leaving bills unpaid. Overall, the households who leave bills unpaid are significantly more likely to be low educated, and self employed. Older households, unemployed or retired are significantly less likely to rely on loans or borrowing. Household size is positively and significantly related to financing negative saving by relying on loans or borrowing.

Households tend to be rather confident in the possibility to get funded through informal lending channels, like family and/or friends. In particular we find evidence of intra-household risk sharing within couples rather than within never-married individuals who cannot rely on this informal channel to face unpredicted adverse shocks.

We find evidence of some degree of homogeneity across countries with respect to saving preferences and the relative importance of alternative motives for saving. Precautionary saving is the mostly reported motive in all countries, followed by saving for old age provision. We observe a relevant role for education and support of children and grandchildren, home purchase and other major purchases.

Saving for home purchase and precautionary saving are monotonically decreasingly important with age. Moreover, in accordance with the life-cycle model, being retired is negatively related to the importance of saving for buying a house. Higher property taxes, higher transaction costs and higher tax reliefs on the debt financing cost of home ownership decrease the relevance for this saving motive. We also find evidence of a significant complementarity between home-purchase saving motive and saving for old-age provision, as well as between precautionary saving and saving to invest in financial assets. Higher levels of financial literacy are associated with higher importance of precautionary saving. We also find a clear dichotomy between home owners and renters with respect to saving for home purchase. It follows that policy makers need to think carefully about the population they want to target when proposing or implementing housing-related policies as the response to these policies can be opposite between home owners and renters, or mixed.

Finally, we find a more heterogeneous impact of credit constraints, that are perceived to be binding for specific groups of respondents, namely the young, least educated, divorced and more numerous households, as well as the self-employed and the unemployed individuals. We also find that households living in Mediterranean countries report to be more subject to liquidity constraints than households living in Continental Europe. This might reflect the different degree of market imperfections between the two macroeconomic regions. As expected, the duration of foreclosures and the existence of personal bankruptcy laws significantly decrease the probability of being liquidity constrained, pointing to the role of guarantee of those factors on

the propensity to give a loan to the household sector.

Overall, these findings have relevant policy implications if interpreted in light of the recent financial crisis, the country-specific institutional settings, and the different degree of development of formal lending channels. We intend to tackle these issue more extensively in a future version of the paper.

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Table 1: Summary statistics

Statistics	**Mean**	**Std.Dev.**	**Min.**	**Max.**	**N.Obs**
Male	0.543	0.498	0	1	62,521
Age classes					
Less than/equal 40 years	0.265	0.441	0	1	62,521
Between 41 and 55 years	0.303	0.459	0	1	62,521
Between 56 and 70 years	0.240	0.427	0	1	62,521
Equal/more than 71 years	0.190	0.392	0	1	62,521
Marital status					
Couple	0.536	0.498	0	1	62,514
Single	0.222	0.415	0	1	62,514
Divorced	0.106	0.308	0	1	62,514
Widowed	0.134	0.340	0	1	62,514
Household size	2.321	1.268	1	16	62,521
Education level					
Low education	0.349	0.476	0	1	62,370
Mid education	0.414	0.492	0	1	62,370
High education	0.235	0.424	0	1	62,370
Temporary contract	0.053	0.224	0	1	57,930
Employment status					
Employee	0.445	0.496	0	1	62,521
Self employed	0.081	0.273	0	1	62,521
Unemployed	0.054	0.226	0	1	62,521
Retired	0.309	0.462	0	1	62,521
Other	0.102	0.303	0	1	62,521
Missing employment	0.007	0.086	0	1	62,521
Financial sector	0.019	0.138	0	1	62,240
Public sector	0.123	0.328	0	1	62,240

Table 1: Summary statistics - continued

Statistics	**Mean**	**Std.Dev.**	**Min.**	**Max.**	**N.Obs**
Household income					
Income - quintile 1	0.200	0.400	0	1	62,521
Income - quintile 2	0.201	0.401	0	1	62,521
Income - quintile 3	0.200	0.400	0	1	62,521
Income - quintile 4	0.200	0.400	0	1	62,521
Income - quintile 5	0.200	0.400	0	1	62,521
Household net wealth					
Net wealth - quintile 1	0.200	0.400	0	1	62,521
Net wealth - quintile 2	0.200	0.400	0	1	62,521
Net wealth - quintile 3	0.200	0.400	0	1	62,521
Net wealth - quintile 4	0.200	0.400	0	1	62,521
Net wealth - quintile 5	0.200	0.400	0	1	62,521
Countries					
Austria	0.027	0.163	0	1	62,521
Belgium	0.033	0.181	0	1	62,521
Cyprus	0.002	0.046	0	1	62,521
Finland	0.018	0.134	0	1	62,521
France	0.201	0.401	0	1	62,521
Germany	0.287	0.452	0	1	62,521
Spain	0.123	0.328	0	1	62,521
Greece	0.029	0.169	0	1	62,521
Italy	0.172	0.377	0	1	62,521
Luxembourg	0.001	0.036	0	1	62,521
Malta	0.001	0.032	0	1	62,521
Netherlands	0.053	0.224	0	1	62,521
Portugal	0.028	0.166	0	1	62,521
Slovenia	0.005	0.074	0	1	62,521
Slovakia	0.013	0.116	0	1	62,521

Table 2: Subjective measures of household saving

	Household expenses in the last 12 months compared with					
	average expenses			*household income*		
Statistics	**Freq.**	**Perc.**	**Cum. perc.**	**Freq.**	**Perc.**	**Cum. perc.**
Higher	6,832	18.87	18.87	4,067	11.19	11.19
About the same	26,597	73.48	92.35	17,325	47.67	58.86
Lower	2,770	7.65	100	14,951	41.14	100
	36,199	100		36,342	100	

Table 3: Household with expenses higher than income - probit estimates

Variable	**(I)**
	Marg.eff.
	(t-stats)
Male	-0.014 *
	(-1.91)
Age 41-55 years	0.002
	(0.24)
Age 56-70 years	-0.002
	(-0.15)
Age 71 years and more	-0.039 **
	(-2.38)
Single	-0.032 ***
	(-2.74)
Divorced	0.037 ***
	(2.98)
Widowed	0.002
	(0.13)
Household size	0.016 ***
	(5.02)
Mid education	0.009
	(0.98)
High education	-0.000
	(-0.02)
Temporary contract	-0.001
	(-0.05)
Self employed	0.049 ***
	(3.92)
Unemployed	0.073 ***
	(5.65)
Other	0.037 ***
	(2.85)
Employ missing	0.006
	(0.17)
Retired	0.026 **
	(2.07)
Financial sector	0.015
	(0.66)
Public sector	0.012
	(1.01)
Household income - 2nd quintile	0.005
	(0.05)
Household income - 3rd quintile	-0.027 **
	(-2.28)
Household income - 4th quintile	-0.039 ***
	(-3.16)
Household income - 5th quintile	-0.066 ***
	(-4.83)
Household net wealth - 2nd quintile	-0.036 ***
	(-3.46)
Household net wealth - 3rd quintile	-0.030 ***
	(-2.74)
Household net wealth - 4th quintile	-0.035 ***
	(-3.34)
Household net wealth - 5th quintile	-0.034 ***
	(-2.72)
N.Obs.	36,100

The table reports probit marginal effects and t-statistics (in parenthesis) on the probability of reporting household expenses in the previous 12 months higher than income.
The dependent variable takes value 1 if household expenses in the previous 12 months higher than income; 0 if household expenses in the previous 12 months about the same or lower than income.
Reference groups are "Age less than 40 years" for age; "Employee" for occupational status; "Married" for marital status; "Low education" for education level;
Household income/net wealth - 1st quintile for household income and net wealth.
Finland and France are excluded from the analysis as this question is not asked there.
Country fixed effects are included but not reported for space reasons.
*** denotes significant at 1-percent level; ** denotes significant at 5-percent level;
* denotes significant at 10-percent level.

Table 4: Summary statistics for financing sources of negative saving

Statistics	**Mean**	**Min.**	**Max.**	**N.Obs**
Sold assets	0.050	0	1	3,654
Got a credit card / overdraft facility	0.229	0	1	3,654
Got some other loan	0.154	0	1	2,732
Spent out of savings	0.550	0	1	3,654
Asked for help from relatives or friends	0.221	0	1	3,654
Left some bills unpaid	0.127	0	1	2,590
Other (SPECIFY)	0.044	0	1	3,654

Table 5: Financing negative saving - probit estimates

Variable	**(I)** **Out of wealth** Marg.eff. (t-stats)	**(II)** **Out of loans** Marg.eff. (t-stats)	**(III)** **Unpaid bills** Marg.eff. (t-stats)
Male	0.015	0.010	0.039
	(0.45)	(0.26)	(1.50)
Age 41-55 years	0.006	-0.140 ***	0.028
	(0.15)	(-3.02)	(0.84)
Age 56-70 years	0.038	-0.175 ***	-0.011
	(0.73)	(-2.90)	(-0.23)
Age 71 years and more	0.042	-0.264 ***	-0.045
	(0.60)	(-3.09)	(-0.85)
Single	-0.044	-0.001	-0.003
	(-0.86)	(-0.01)	(-0.07)
Divorced	-0.077	0.143 **	0.033
	(-1.53)	(2.40)	(0.77)
Widowed	0.025	0.122	0.048
	(0.44)	(1.54)	(1.15)
Household size	-0.021	0.036 **	0.010
	(-1.42)	(2.12)	(1.08)
Mid education	0.009	0.012	-0.068 *
	(0.23)	(0.24)	(-1.89)
High education	0.047	-0.019	-0.149 ***
	(0.97)	(-0.30)	(-3.16)
Temporary contract	0.060	-0.105	-0.001
	(0.85)	(-1.05)	(-0.02)
Self employed	0.023	-0.116	0.110 **
	(0.38)	(-1.52)	(2.07)
Unemployed	0.045	-0.150 **	0.048
	(0.87)	(-2.27)	(1.15)
Other	0.055	-0.131 **	0.046
	(0.99)	(-1.96)	(1.10)
Employ missing	-0.108	0.105	
	(-0.73)	(0.77)	
Retired	0.068	-0.128 *	-0.073 *
	(1.11)	(-1.78)	(-1.65)
Financial sector	0.012	-0.035	-0.072
	(0.12)	(-0.27)	(-0.98)
Public sector	-0.057	-0.029	0.040
	(-0.97)	(-0.45)	(0.92)
Household income - 2nd quintile	0.125 ***	-0.103 *	0.067 *
	(2.74)	(-1.80)	(1.95)
Household income - 3rd quintile	0.084 *	0.020	0.018
	(1.72)	(0.34)	(0.43)
Household income - 4th quintile	0.045	-0.003	0.029
	(0.74)	(-0.04)	(0.61)
Household income - 5th quintile	0.130 **	-0.074	-0.013
	(2.21)	(-1.05)	(-0.28)
Household net wealth - 2nd quintile	0.138 ***	-0.151 ***	-0.107 ***
	(3.21)	(-2.71)	(-3.41)
Household net wealth - 3rd quintile	0.279 ***	-0.292 ***	-0.155 ***
	(6.44)	(-5.39)	(-4.60)
Household net wealth - 4th quintile	0.355 ***	-0.277 ***	-0.175 ***
	(8.16)	(-4.69)	(-4.38)
Household net wealth - 5th quintile	0.371 ***	-0.300 ***	-0.093 **
	(7.41)	(-5.12)	(-2.07)
N.Obs.	3,620	2,384	2,549

The table reports probit marginal effects and t-statistics (in parenthesis) on the probability of financing negative saving out of wealth (I), out of loans (II), or leaving bills unpaid (III).
Reference groups are "Age less than 40 years" for age; "Employee" for occupational status; "Married" for marital status; "Low education" for education level;
Household income/net wealth - 1st quantile for household income and net wealth.
Spain and Cyprus are dropped from the specification (II) since they have always positive outcomes.
Spain is dropped from specification (III) since this category is not asked in this country.
Netherlands is dropped from specification (III) since it always has positive outcomes.
Country fixed effects are included but not reported for space reasons.
*** denotes significant at 1-percent level; ** denotes significant at 5-percent level;
* denotes significant at 10-percent level.

Table 6: Importance of saving motives - saving for home purchase

	(I) Marg.eff. (t-stats)	(II) Marg.eff. (t-stats)	(III) Marg.eff. (t-stats)	(IV) Marg.eff. (t-stats)	(V) Marg.eff. (t-stats)	(VI) Marg.eff. (t-stats)	(VII) Marg.eff. (t-stats)
Male	0.004	0.009	0.005	0.005	0.004	0.007	0.004
	(0.50)	(1.08)	(0.59)	(0.53)	(0.42)	(0.70)	(0.39)
Age 41-55 years	-0.082***	-0.080***	-0.082***	-0.055***	-0.056***	-0.058***	-0.059***
	(-7.68)	(-7.54)	(-7.44)	(-3.80)	(-3.41)	(-3.66)	(-3.36)
Age 56-70 years	-0.126***	-0.125***	-0.128***	-0.073***	-0.071**	-0.075***	-0.076**
	(-9.24)	(-9.14)	(-9.07)	(-2.90)	(-2.36)	(-2.73)	(-2.43)
Age 71 years and more	-0.142***	-0.141***	-0.144***	-0.076**	-0.075*	-0.080*	-0.082*
	(-7.49)	(-7.55)	(-7.42)	(-2.33)	(-1.68)	(-1.91)	(-1.76)
Single	0.007	0.008	0.006	0.003	0.006	0.008	0.005
	(0.60)	(0.77)	(0.49)	(0.26)	(0.46)	(0.61)	(0.40)
Divorced	0.007	0.009	0.007	0.007	0.009	0.011	0.009
	(0.46)	(0.63)	(0.47)	(0.48)	(0.59)	(0.71)	(0.56)
Widowed	-0.019	-0.018	-0.019	-0.018	-0.028	-0.026	-0.028
	(-1.35)	(-1.27)	(-1.28)	(-1.25)	(-1.35)	(-1.28)	(-1.31)
Household size	-0.005	-0.004	-0.005	-0.006*	-0.006	-0.004	-0.005
	(-1.46)	(-1.17)	(-1.37)	(-1.75)	(-1.37)	(-1.06)	(-1.26)
Mid education	-0.027**	-0.041***	-0.029**	-0.027**	-0.024*	-0.035***	-0.025*
	(-2.24)	(-3.70)	(-2.39)	(-2.27)	(-1.73)	(-2.64)	(-1.72)
High education	0.006	-0.010	0.004	0.006	0.008	-0.005	0.008
	(0.45)	(-0.85)	(0.30)	(0.49)	(0.52)	(-0.35)	(0.49)
Temporary contract	-0.016	-0.017	-0.017	-0.017	-0.012	-0.012	-0.013
	(-0.95)	(-0.97)	(-0.94)	(-1.00)	(-0.62)	(-0.62)	(-0.61)
Self employed	-0.031**	-0.031**	-0.033**	-0.030**	-0.027*	-0.024	-0.028*
	(-2.35)	(-2.29)	(-2.34)	(-2.26)	(-1.84)	(-1.62)	(-1.82)
Unemployed	-0.009	-0.010	-0.006	-0.008	0.003	0.001	0.006
	(-0.53)	(-0.62)	(-0.37)	(-0.47)	(0.17)	(0.04)	(0.31)
Other	-0.037**	-0.039**	-0.036**	-0.037**	-0.034*	-0.036**	-0.034*
	(-2.37)	(-2.55)	(-2.29)	(-2.37)	(-1.87)	(-1.97)	(-1.82)
Employ missing	-0.098***	-0.094***	-0.099***	-0.097***	-0.089***	-0.086***	-0.090***
	(-3.63)	(-3.46)	(-3.58)	(-3.61)	(-3.04)	(-2.97)	(-3.02)
Retired	-0.032**	-0.032**	-0.032**	-0.026*	-0.021	-0.019	-0.019
	(-2.29)	(-2.30)	(-2.25)	(-1.84)	(-1.33)	(-1.24)	(-1.21)
Financial sector	0.027	0.026	0.028	0.025	0.029	0.029	0.030
	(1.19)	(1.13)	(1.16)	(1.10)	(1.12)	(1.12)	(1.12)
Public sector	-0.006	-0.005	-0.005	-0.006	-0.005	-0.005	-0.005
	(-0.45)	(-0.39)	(-0.37)	(-0.45)	(-0.36)	(-0.38)	(-0.33)

Table 6 cont.: Importance of saving motives - saving for home purchase

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)
	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.
	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)
HH income - 2nd qnt	-0.031*	-0.031*	-0.034*	-0.030*	-0.027	-0.027	-0.029
	(-1.81)	(-1.84)	(-1.93)	(-1.76)	(-1.24)	(-1.24)	(-1.29)
HH income - 3rd qnt	0.006	0.004	0.005	0.008	0.008	0.005	0.007
	(0.40)	(0.27)	(0.31)	(0.50)	(0.38)	(0.27)	(0.35)
HH income - 4th qnt	0.011	0.010	0.010	0.013	0.017	0.016	0.017
	(0.73)	(0.66)	(0.64)	(0.81)	(0.90)	(0.83)	(0.86)
HH income - 5th qnt	0.014	0.012	0.012	0.015	0.018	0.016	0.018
	(0.74)	(0.63)	(0.62)	(0.81)	(0.79)	(0.69)	(0.74)
HH net wealth - 2nd qnt	0.021	0.023	0.026*	0.021	0.024	0.025	0.029
	(1.49)	(1.61)	(1.74)	(1.49)	(1.44)	(1.51)	(1.64)
HH net wealth - 3rd qnt	0.020	0.022*	0.026*	0.021	0.018	0.020	0.024
	(1.51)	(1.65)	(1.84)	(1.53)	(1.16)	(1.24)	(1.43)
HH net wealth - 4th qnt	0.022	0.024	0.028*	0.023	0.021	0.022	0.027
	(1.36)	(1.43)	(1.65)	(1.41)	(1.11)	(1.15)	(1.35)
HH net wealth - 5th qnt	0.006	0.007	0.011	0.007	0.003	0.004	0.007
	(0.39)	(0.43)	(0.63)	(0.44)	(0.18)	(0.18)	(0.34)
Tax deduct. on interest		0.074***	0.001			0.099***	0.040
		(3.48)	(0.04)			(4.16)	(1.09)
Limit on tax deduct.		-0.073***	0.115***			0.009	0.146***
		(-3.43)	(3.85)			(0.29)	(2.96)
Tax on imputed rent		0.112***	0.236***			-0.030	0.176***
		(2.85)	(6.59)			(-0.57)	(2.80)
Tax on property		0.043				0.009	
		(1.53)				(0.27)	
LTV - 1st-time buyer		-0.002	0.001			0.001	0.002
		(-1.51)	(0.39)			(0.32)	(0.58)
Tax on property (%)			-0.101***				-0.101***
			(-7.34)				(-6.13)
Trans. costs of buyer			-0.006***				-0.004
			(-3.19)				(-1.12)
Tax relief on mortgage			-0.064***				-0.067***
			(-3.21)				(-2.82)
Dependency ratio				0.003**	0.004**	0.003**	0.003*
				(2.32)	(2.45)	(2.13)	(1.92)
Gross repl. ratio - 1st pillar					0.002	-0.002***	-0.001**
					(1.14)	(-5.60)	(-2.53)
Country FE	YES	NO	NO	YES	YES	NO	NO
Pseudo R2	0.132	0.120	0.131	0.134	0.115	0.107	0.113
N.Obs.	23,921	23,921	19,819	23,895	19,472	19,472	15,818

The table reports probit marginal effects and t-statistics (in parenthesis) on the importance of saving for home purchase. Specifications (I), (IV) and (V) include country fixed effects; specifications (II), (III), (VI) and (VII) include institutional macroeconomic variables instead.
Reference groups are "Age less than 40 years" for age; "Employee" for occupational status; "Married" for marital status; "Low education" for education level; Household income/net wealth - 1st quintile for household income and net wealth.
*** denotes significant at 1-percent level; ** denotes significant at 5-percent level; * denotes significant at 10-percent level.

Table 7: Saving for home purchase - logit estimates and odds ratios

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
	Odds ratio	Odds ratio	Odds ratio	Odds ratio	Odds ratio	Odds ratio	Odds ratio	Odds ratio
	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)
Home ownership	5.271***	-2.468	63.933***	0.247	0.832***	6.616***	-4.831**	10.289
	194.684***	0.085	5.829e+27***	1.281	2.299***	746.947***	0.008**	29400.786
	(4.33)	(-1.21)	(4.57)	(1.08)	(2.74)	(4.66)	(-2.21)	(0.11)
Tax deduct. on interest	-0.593***	0.482*	-0.882			-0.481**	0.885**	15.221
	0.553***	1.620*	0.414			0.618**	2.423**	4076990.150
	(-2.99)	(1.79)	(-0.46)			(-2.07)	(2.51)	(1.24)
Limit on tax deduct.	0.829***	0.112	1.549			1.011***	-0.387	-16.294
	2.292***	1.119	4.705			2.749***	0.679	0.000
	(3.96)	(0.39)	(0.78)			(3.47)	(-0.85)	(-1.19)
Tax on imputed rent	-1.038***	1.025**	-0.768			-1.275***	2.035***	22.673
	0.354***	2.787**	0.464			0.280***	7.651***	7.030e+09
	(-3.28)	(2.40)	(-0.28)			(-2.82)	(3.14)	(1.27)
Tax on property	-0.803***		-0.817			-0.967***		8.668
	0.448***		0.442			0.380***		5815.648
	(-3.89)		(-0.66)			(-3.24)		(1.16)
LTV - 1st-time buyer	0.059***	-0.024	0.084			0.068***	-0.057**	-1.236
	1.061***	0.976	1.087			1.070***	0.944**	0.291
	(4.31)	(-1.18)	(0.55)			(3.71)	(-1.99)	(-1.22)
Home ownership*	1.455***	-0.667*	12.116***			1.624***	-0.968**	1.920
Tax deduct. on interest	4.284***	0.513*	182723.784***			5.074***	0.380**	6.821
	(5.21)	(-1.77)	(4.44)			(5.17)	(-2.57)	(0.11)
Home ownership*	-1.754***	0.957**	-12.516***			-1.143***	1.886***	-1.337
Limit on tax deduct.	0.173***	2.604**	0.000***			0.319***	6.592***	0.263
	(-6.09)	(2.54)	(-4.39)			(-3.15)	(3.81)	(-0.07)
Home ownership*	2.318***	0.769	17.589***			1.434**	-1.527**	2.537
Tax on imputed rent	10.157***	2.157	43534883.451***			4.197**	0.217**	12.637
	(4.44)	(1.46)	(4.62)			(2.30)	(-2.21)	(0.10)
Home ownership*	1.419***		7.543***			1.706***		1.703
Tax on property	4.135***		1886.885***			5.505***		5.492
	(3.84)		(4.22)			(4.34)		(0.15)
Home ownership*	-0.098***	0.039	-0.974***			-0.091***	0.097***	-0.136
LTV - 1st-time buyer	0.907***	1.040	0.378***			0.913***	1.101***	0.872
	(-4.64)	(1.46)	(-4.50)			(-3.88)	(3.11)	(-0.09)

Table 7 cont.: Saving for home purchase - logit estimates and odds ratios

	(I) Coeff. Odds ratio (t-stats)	(II) Coeff. Odds ratio (t-stats)	(III) Coeff. Odds ratio (t-stats)	(IV) Coeff. Odds ratio (t-stats)	(V) Coeff. Odds ratio (t-stats)	(VI) Coeff. Odds ratio (t-stats)	(VII) Coeff. Odds ratio (t-stats)	(VIII) Coeff. Odds ratio (t-stats)
Tax on property (%)		-0.204	-0.198				-0.201	-0.253
		0.815	0.820				0.818	0.776
		(-1.19)	(-1.14)				(-1.09)	(-1.33)
Transaction costs of buyer		-0.058***	-0.013				-0.102***	-0.649
		0.944***	0.987				0.903***	0.523
		(-2.88)	(-0.20)				(-3.11)	(-1.36)
Tax relief on mortgage		0.183	-0.501				0.319	7.642
		1.201	0.606				1.376	2083.065
		(0.91)	(-0.55)				(1.35)	(1.21)
Home ownership*		-0.609***	-0.669***				-0.541**	-0.517**
Tax on property (%)		0.544***	0.512***				0.582**	0.596**
		(-3.01)	(-3.20)				(-2.49)	(-2.31)
Home ownership*		0.006	-0.435***				0.100***	-0.011
Transaction costs on buyer		1.006	0.647***				1.105***	0.990
		(0.21)	(-5.09)				(2.86)	(-0.02)
Home ownership*		-0.807***	5.702***				-0.930***	0.491
Tax relief on mortgage		0.446***	299.428***				0.395***	1.634
		(-3.05)	(4.44)				(-3.47)	(0.05)
Dependency ratio				-0.006	-0.006	0.028***	0.032***	0.035***
				0.994	0.994	1.028***	1.033***	1.036***
				(-1.17)	(-0.94)	(2.81)	(2.82)	(2.97)
Home ownership*				-0.013**	-0.014**	-0.027***	-0.030***	-0.029***
Dependency ratio				0.988**	0.986**	0.973***	0.971***	0.971***
				(-2.12)	(-2.02)	(-3.44)	(-3.44)	(-3.28)
Gross repl. ratio - 1st pillar					0.001	-0.002	0.008*	0.030
					1.001	0.998	1.008*	1.030
					(0.62)	(-0.74)	(1.89)	(1.47)
Home ownership*					-0.011***	-0.021***	-0.025***	-0.020
Gross repl. ratio - 1st pillar					0.989***	0.979***	0.976***	0.980
					(-5.35)	(-4.75)	(-5.05)	(-0.68)
Constant	-4.247***	1.270	-5.769	-0.467	-0.538	-6.144***	1.831	78.430
	0.014***	3.560	0.003	0.627	0.584	0.002***	6.242	1.153e+34
	(-4.90)	(0.83)	(-0.58)	(-1.62)	(-1.46)	(-4.44)	(1.02)	(1.19)
Country FE	YES	NO	NO	NO	NO	YES	NO	NO
Pseudo R2	0.131	0.141	0.143	0.106	0.100	0.127	0.131	0.131
N.Obs	23,921	19,819	19,819	23,056	18,771	18,771	15,818	15,818

The table reports logit marginal effects and t-statistics (in parenthesis) on the importance of saving for home purchase.
Specifications (I), and (VI) include country fixed effects; all other specifications include institutional macroeconomic variables.
All household characteristics described in Section 2.1 are included but not reported.
Slovakia is dropped from specification (II), (III), (VII) and (VIII) since tax relief on mortgage is missing.
*** denotes significant at 1-percent level; ** denotes significant at 5-percent level; * denotes significant at 10-percent level.

Table 8 : Importance of saving motives - saving for old-age provision

	(I)	(II)	(III)	(IV)	(V)	(VI)
	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.
	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)
Male	-0.003	-0.003	0.009	0.008	0.009	0.003
	(-0.19)	(-0.18)	(0.53)	(0.52)	(0.53)	(0.16)
Age 41-55 years	0.124***	0.149***	0.129***	0.119***	0.136***	0.096***
	(6.07)	(5.16)	(4.26)	(3.94)	(4.50)	(2.64)
Age 56-70 years	0.118***	0.167***	0.140***	0.127***	0.146***	0.040
	(4.82)	(3.66)	(2.88)	(2.61)	(2.98)	(0.68)
Age 71 years and more	0.104***	0.164***	0.082	0.081	0.110	
	(3.18)	(2.97)	(1.22)	(1.22)	(1.63)	
Single	0.033	0.030	0.051**	0.046*	0.049**	0.044
	(1.49)	(1.33)	(2.11)	(1.93)	(2.04)	(1.62)
Divorced	-0.032	-0.031	-0.020	-0.021	-0.021	-0.023
	(-1.19)	(-1.18)	(-0.75)	(-0.79)	(-0.76)	(-0.72)
Widowed	-0.011	-0.009	0.010	0.008	0.009	-0.029
	(-0.39)	(-0.33)	(0.28)	(0.23)	(0.25)	(-0.57)
Household size	-0.027***	-0.028***	-0.031***	-0.031***	-0.032***	-0.035***
	(-3.89)	(-4.00)	(-4.34)	(-4.33)	(-4.39)	(-4.16)
Mid education	-0.016	-0.016	-0.031	-0.018	-0.029	0.009
	(-0.86)	(-0.83)	(-1.52)	(-0.89)	(-1.39)	(0.34)
High education	0.007	0.008	-0.003	0.011	-0.000	0.036
	(0.34)	(0.39)	(-0.15)	(0.48)	(-0.01)	(1.23)
Temporary contract	-0.097***	-0.098***	-0.088**	-0.085**	-0.088**	-0.068*
	(-2.67)	(-2.70)	(-2.35)	(-2.29)	(-2.36)	(-1.72)
Self employed	-0.019	-0.017	-0.022	-0.022	-0.023	-0.023
	(-0.71)	(-0.64)	(-0.85)	(-0.82)	(-0.86)	(-0.79)
Unemployed	-0.095***	-0.094***	-0.071**	-0.064*	-0.069**	-0.050
	(-2.98)	(-2.95)	(-2.12)	(-1.93)	(-2.07)	(-1.38)
Other	-0.066**	-0.066**	-0.041	-0.043	-0.042	-0.043
	(-2.34)	(-2.34)	(-1.30)	(-1.38)	(-1.33)	(-1.30)
Employ missing	-0.077	-0.075	-0.047	-0.038	-0.045	-0.191
	(-1.29)	(-1.26)	(-0.77)	(-0.63)	(-0.75)	(-1.21)
Retired	-0.097***	-0.091***	-0.088***	-0.084***	-0.084***	-0.100***
	(-3.90)	(-3.63)	(-3.34)	(-3.20)	(-3.19)	(-3.04)
Financial sector	0.121***	0.119***	0.119***	0.115**	0.118***	0.112**
	(2.68)	(2.62)	(2.62)	(2.54)	(2.60)	(2.23)
Public sector	-0.015	-0.015	-0.016	-0.018	-0.017	-0.028
	(-0.62)	(-0.62)	(-0.62)	(-0.73)	(-0.67)	(-0.99)

Table 8 cont.: Importance of saving motives - saving for old-age provision

	(I) Marg.eff. (t-stats)	(II) Marg.eff. (t-stats)	(III) Marg.eff. (t-stats)	(IV) Marg.eff. (t-stats)	(V) Marg.eff. (t-stats)	(VI) Marg.eff. (t-stats)
HH income - 2nd qnt	0.014	0.015	0.061*	0.064*	0.062*	0.073*
	(0.52)	(0.55)	(1.83)	(1.94)	(1.87)	(1.87)
HH income - 3rd qnt	0.008	0.009	0.046	0.052*	0.047	0.063
	(0.30)	(0.34)	(1.50)	(1.72)	(1.56)	(1.63)
HH income - 4th qnt	0.059**	0.060**	0.090***	0.094***	0.091***	0.105***
	(2.15)	(2.17)	(2.91)	(3.07)	(2.96)	(2.79)
HH income - 5th qnt	0.067**	0.068**	0.104***	0.107***	0.105***	0.122***
	(2.32)	(2.34)	(3.24)	(3.36)	(3.28)	(2.98)
HH net wealth - 2nd qnt	0.044*	0.045*	0.052*	0.047*	0.051*	0.038
	(1.79)	(1.82)	(1.90)	(1.70)	(1.85)	(1.12)
HH net wealth - 3rd qnt	0.111***	0.112***	0.103***	0.099***	0.102***	0.102***
	(4.25)	(4.27)	(3.46)	(3.34)	(3.44)	(3.11)
HH net wealth - 4th qnt	0.151***	0.152***	0.173***	0.168***	0.172***	0.165***
	(5.76)	(5.81)	(6.15)	(6.05)	(6.14)	(5.02)
HH net wealth - 5th qnt	0.194***	0.195***	0.223***	0.218***	0.222***	0.225***
	(7.51)	(7.56)	(7.93)	(7.84)	(7.93)	(6.68)
Dependency ratio		0.002	0.002	0.001	0.003	0.005*
		(1.22)	(0.94)	(0.24)	(1.21)	(1.81)
Gross repl. ratio - 1st pillar			0.000			
			(0.10)			
Gross repl. ratio - total				0.021***		
				(7.89)		
Net repl. ratio - total					0.010***	
					(3.94)	
Gross average repl. ratio						0.039***
						(6.28)
Country FE	YES	YES	YES	YES	YES	YES
Pseudo R2	0.085	0.085	0.094	0.099	0.095	0.091
N.Obs.	23,926	23,900	19,476	19,476	19,476	15,091

The table reports probit marginal effects and t-statistics (in parenthesis) on the importance of saving for old-age provision. All specifications include country fixed effects.
Reference groups are "Age less than 40 years" for age; "Employee" for occupational status; "Married" for marital status; "Low education" for education level; Household income/net wealth - 1st quintile for household income and net wealth.
*** denotes significant at 1-percent level; ** denotes significant at 5-percent level;
* denotes significant at 10-percent level.

Table 9: Importance of saving motives - precautionary saving

	(I)	(II)	(III)	(IV)	(V)	(VI)
	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.
	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)
Male	-0.014	0.013	-0.013	0.004	-0.018	-0.002
	(-0.91)	(1.52)	(-0.88)	(0.24)	(-1.17)	(-0.14)
Age 41-55 years	-0.024	-0.078***	-0.031	-0.024	-0.044**	-0.035
	(-1.14)	(-7.35)	(-1.50)	(-1.15)	(-2.04)	(-1.61)
Age 56-70 years	-0.021	-0.121***	-0.037	-0.026	-0.078***	-0.061**
	(-0.81)	(-8.85)	(-1.42)	(-0.99)	(-2.85)	(-2.25)
Age 71 years and more	-0.067*	-0.138***	-0.084**	-0.079**	-0.146***	-0.128***
	(-1.91)	(-7.38)	(-2.46)	(-2.28)	(-4.04)	(-3.51)
Single	0.019	0.013	0.024	0.035	0.021	0.032
	(0.84)	(1.17)	(1.09)	(1.54)	(0.88)	(1.34)
Divorced	-0.025	0.013	-0.028	-0.013	-0.027	-0.017
	(-0.89)	(0.90)	(-1.01)	(-0.47)	(-0.97)	(-0.61)
Widowed	-0.030	-0.016	-0.032	-0.030	-0.030	-0.034
	(-1.00)	(-1.12)	(-1.11)	(-1.01)	(-1.01)	(-1.12)
Household size	-0.007	-0.003	-0.011	-0.006	-0.008	-0.008
	(-0.89)	(-0.91)	(-1.53)	(-0.78)	(-1.10)	(-0.99)
Mid education	0.015	-0.049***	0.008	-0.039*	0.015	-0.033
	(0.71)	(-4.59)	(0.36)	(-1.91)	(0.65)	(-1.55)
High education	0.039*	-0.016	0.041*	-0.003	0.058**	0.016
	(1.67)	(-1.29)	(1.78)	(-0.13)	(2.37)	(0.66)
Temporary contract	0.011	-0.019	-0.002	-0.006	-0.017	-0.017
	(0.31)	(-1.10)	(-0.06)	(-0.18)	(-0.46)	(-0.47)
Self employed	0.026	-0.032**	0.017	0.019	0.019	0.019
	(0.91)	(-2.30)	(0.60)	(0.67)	(0.67)	(0.67)
Unemployed	-0.072**	-0.010	-0.085***	-0.079**	-0.089**	-0.082**
	(-2.13)	(-0.59)	(-2.58)	(-2.38)	(-2.52)	(-2.30)
Other	0.045	-0.038**	0.029	0.031	0.013	0.020
	(1.53)	(-2.45)	(1.03)	(1.08)	(0.45)	(0.67)
Employ missing	0.012	-0.067**	-0.020	0.111**	-0.008	0.096*
	(0.21)	(-2.41)	(-0.34)	(1.99)	(-0.13)	(1.67)
Retired	0.012	-0.032**	-0.005	0.004	0.008	0.006
	(0.45)	(-2.28)	(-0.17)	(0.16)	(0.30)	(0.23)
Financial sector	0.028	0.027	0.053	0.051	0.031	0.033
	(0.59)	(1.16)	(1.08)	(1.05)	(0.60)	(0.66)
Public sector	0.001	-0.001	-0.003	0.009	0.004	0.015
	(0.04)	(-0.10)	(-0.11)	(0.36)	(0.14)	(0.60)

Table 9 cont.: Importance of saving motives - precautionary saving

	(I)	(II)	(III)	(IV)	(V)	(VI)
	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.
	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)
HH income - 2nd qnt	0.045	-0.030*	0.043	0.044	0.042	0.047
	(1.55)	(-1.75)	(1.56)	(1.60)	(1.48)	(1.64)
HH income - 3rd qnt	0.074**	0.005	0.077***	0.076***	0.075***	0.080***
	(2.55)	(0.30)	(2.81)	(2.77)	(2.69)	(2.89)
HH income - 4th qnt	0.055*	0.011	0.067**	0.066**	0.076**	0.083***
	(1.66)	(0.72)	(2.12)	(2.07)	(2.47)	(2.66)
HH income - 5th qnt	0.041	0.013	0.054*	0.050	0.063*	0.070**
	(1.22)	(0.65)	(1.66)	(1.54)	(1.95)	(2.13)
HH net wealth - 2nd qnt	0.068**	0.024*	0.077***	0.079***	0.083***	0.086***
	(2.55)	(1.68)	(2.97)	(3.01)	(3.17)	(3.24)
HH net wealth - 3rd qnt	0.062**	0.023*	0.078***	0.077***	0.074***	0.074***
	(2.26)	(1.66)	(2.91)	(2.84)	(2.70)	(2.68)
HH net wealth - 4th qnt	0.072***	0.024	0.093***	0.091***	0.100***	0.099***
	(2.64)	(1.41)	(3.47)	(3.37)	(3.63)	(3.60)
HH net wealth - 5th qnt	0.024	0.007	0.047*	0.044*	0.062**	0.061**
	(0.93)	(0.40)	(1.85)	(1.71)	(2.30)	(2.25)
Income tax - average		0.002		-0.004		-0.018***
		(0.79)		(-0.91)		(-4.72)
Income tax - marginal		-0.003		-0.017***		-0.004
		(-1.49)		(-4.57)		(-1.09)
Old-age spending		-0.000		0.011***		-0.013***
		(-0.22)		(2.71)		(-3.27)
Financial literacy		0.028***		0.202***		0.173***
		(5.43)		(24.73)		(19.25)
Sav. motive - home purchase			-0.194***	-0.160***	-0.206***	-0.188***
			(-7.96)	(-6.67)	(-8.40)	(-7.71)
Sav. motive - old-age provision			-0.111***	-0.096***	-0.135***	-0.129***
			(-7.75)	(-6.71)	(-9.14)	(-8.71)
Sav. motive - other purchases					-0.105***	-0.105***
					(-6.00)	(-6.14)
Sav. motive - private business					-0.065	-0.045
					(-1.31)	(-0.87)
Sav. motive - investment fin. assets					0.119***	0.145***
					(3.33)	(4.00)
Sav. motive - pay off debt					-0.091***	-0.072***
					(-4.00)	(-3.06)
Sav. motive - travels/holidays					-0.025	-0.020
					(-1.43)	(-1.13)
Sav. motive - family support					-0.048***	-0.038**
					(-2.72)	(-2.18)
Sav. motive - bequest					0.064**	0.086***
					(2.55)	(3.40)
Sav. motive - subsidies					0.269***	0.305***
					(9.23)	(10.81)
Country FE	YES	NO	YES	NO	YES	NO
Pseudo R2	0.079	0.066	0.097	0.079	0.126	0.115
N.Obs.	23,928	21,881	23,917	21,875	20,748	19,542

The table reports probit marginal effects and t-statistics (in parenthesis) on the importance of saving for unexpected events.
Specifications (I), (III) and (V) include country fixed effects; specifications (II), (IV), and (VI) include institutional macroeconomic variables instead.
Reference groups are "Age less than 40 years" for age; "Employee" for occupational status; "Married" for marital status; "Low education" for education level; Household income/net wealth - 1st quintile for household income and net wealth.
*** denotes significant at 1-percent level; ** denotes significant at 5-percent level; * denotes significant at 10-percent level.

Table 10: Mean values for liquidity constraints indicators

Area	**(1)**	**(2)**	**(3)**	**(4)**
Full sample	0.082	0.014	0.229	0.438
Jappelli et al. (1998)	*0.144*	*0.058*	*0.237*	*0.621*
Continental	0.082	0.011	0.116	0.460
Southern	0.073	0.032	0.473	0.506
Other	0.144	0.051	0.462	0.593

(1) - Turned down/discouraged
(2) - Turned down and no credit card
(3) - No credit card or credit line
(4) - Low assets
Finland and Italy are excluded from the sample
in the calculation of (1) as data are not collected.
Finland, France and Italy are excluded from the sample
in the calculation of (2) as data are not collected.
Finland and France are excluded from the sample
in the calculation of (3) as data are not collected.

Table 11: Credit constraints indicators - probit estimates

	(Ia)	(Ib)	(IIa)	(IIb)	(IIIa)	(IIIb)	(IVa)	(IVb)
	Turned down or discouraged		**Turned down/disc. and no credit card**		**No credit card/line**		**Low assets**	
	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.
	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)
Male	0.006	0.008	0.004	0.005	0.002	0.006	-0.018**	-0.019**
	(0.92)	(1.18)	(1.23)	(1.28)	(0.28)	(0.73)	(-2.05)	(-2.18)
Age 41-55 years	0.003	0.002	-0.005	-0.004	0.014	0.004	0.010	0.008
	(0.36)	(0.27)	(-1.39)	(-1.14)	(1.23)	(0.31)	(0.82)	(0.63)
Age 56-70 years	-0.005	-0.007	-0.008*	-0.008*	0.027**	0.010	-0.023	-0.023
	(-0.50)	(-0.70)	(-1.75)	(-1.74)	(2.01)	(0.75)	(-1.61)	(-1.57)
Age 71 years and more	-0.047***	-0.047***	-0.019**	-0.020**	0.086***	0.059***	-0.115***	-0.112***
	(-3.22)	(-3.21)	(-2.18)	(-2.34)	(4.95)	(3.41)	(-6.21)	(-6.02)
Single	0.007	0.010	-0.003	-0.004	0.030**	0.026*	-0.037***	-0.037***
	(0.86)	(1.17)	(-0.77)	(-0.94)	(2.28)	(1.94)	(-3.01)	(-2.96)
Divorced	0.041***	0.042***	0.006	0.006	0.022	0.025*	0.037**	0.035**
	(4.21)	(4.23)	(1.10)	(1.24)	(1.47)	(1.67)	(2.54)	(2.36)
Widowed	0.009	0.012	0.012	0.012*	0.015	0.019	-0.009	-0.012
	(0.64)	(0.85)	(1.54)	(1.65)	(1.17)	(1.40)	(-0.67)	(-0.87)
Household size	0.012***	0.012***	0.004**	0.004**	0.014***	0.021***	0.041***	0.041***
	(4.71)	(4.69)	(2.14)	(2.11)	(3.30)	(4.93)	(9.32)	(9.29)
Mid education	-0.002	-0.002	-0.005	-0.006**	-0.095***	-0.137***	-0.056***	-0.057***
	(-0.23)	(-0.34)	(-1.55)	(-1.96)	(-10.63)	(-16.87)	(-5.57)	(-5.91)
High education	-0.005	-0.007	-0.001	-0.002	-0.116***	-0.153***	-0.111***	-0.108***
	(-0.60)	(-0.81)	(-0.27)	(-0.48)	(-9.35)	(-13.17)	(-8.99)	(-8.88)
temporary contract	0.015	0.014	0.007	0.008	0.036*	0.044**	0.024	0.026
	(1.35)	(1.28)	(1.30)	(1.38)	(1.95)	(2.38)	(1.21)	(1.30)
Self employed	0.052***	0.050***	0.011**	0.011**	0.020	0.042**	0.054***	0.057***
	(4.71)	(4.52)	(2.04)	(2.06)	(1.14)	(2.54)	(3.58)	(3.70)
Unemployed	0.038***	0.035***	0.022***	0.020***	0.066***	0.074***	0.076***	0.074***
	(3.91)	(3.52)	(4.37)	(3.92)	(4.05)	(4.50)	(4.15)	(3.92)
Other	0.005	0.001	0.012**	0.012**	0.074***	0.080***	-0.015	-0.014
	(0.52)	(0.08)	(2.55)	(2.52)	(5.31)	(5.76)	(-0.99)	(-0.87)
Employ missing	-0.072*	-0.154***			-0.027	-0.045	0.019	0.009
	(-1.67)	(-3.24)			(-0.68)	(-1.06)	(0.36)	(0.19)
Retired	-0.029**	-0.027**	0.006	0.008	0.058***	0.074***	-0.043***	-0.048***
	(-2.50)	(-2.30)	(0.82)	(1.24)	(4.24)	(5.29)	(-3.05)	(-3.39)
Financial sector	-0.039	-0.040	0.014	0.014	-0.021	-0.044	-0.045	-0.048*
	(-1.35)	(-1.38)	(1.00)	(1.02)	(-0.43)	(-0.85)	(-1.60)	(-1.67)
Public sector	-0.009	-0.009	0.000	-0.000	0.004	0.004	0.017	0.014
	(-0.96)	(-1.00)	(0.02)	(-0.05)	(0.25)	(0.27)	(1.23)	(1.00)

Table 11 cont.: Credit constraints indicators - probit estimates

	(Ia)	(Ib)	(IIa)	(IIb)	(IIIa)	(IIIb)	(IVa)	(IVb)
	Turned down or discouraged		**Turned down/disc. and no credit card**		**No credit card/line**		**Low assets**	
	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.
	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)	(t-stats)
HH income - 2nd quintile	0.007	0.007	-0.004	-0.004	-0.070***	-0.070***	0.023*	0.025*
	(0.78)	(0.70)	(-0.79)	(-0.81)	(-5.66)	(-5.54)	(1.71)	(1.76)
HH income - 3rd quintile	0.002	0.002	-0.012**	-0.011**	-0.125***	-0.121***	0.045***	0.045***
	(0.24)	(0.23)	(-2.52)	(-2.44)	(-9.16)	(-8.81)	(3.09)	(3.07)
HH income - 4th quintile	-0.021*	-0.020*	-0.018***	-0.018***	-0.179***	-0.173***	0.054***	0.055***
	(-1.78)	(-1.75)	(-3.65)	(-3.51)	(-13.83)	(-13.23)	(3.58)	(3.51)
HH income - 5th quintile	-0.038***	-0.038***	-0.023***	-0.022***	-0.231***	-0.224***	0.047**	0.047**
	(-3.02)	(-2.93)	(-3.52)	(-3.17)	(-15.43)	(-15.04)	(2.56)	(2.48)
HH net wealth - 2nd qnt	-0.034***	-0.033***	-0.014***	-0.013***	-0.048***	-0.047***	-0.320***	-0.325***
	(-4.31)	(-4.16)	(-3.17)	(-3.08)	(-3.81)	(-3.70)	(-25.15)	(-24.96)
HH net wealth - 3rd qnt	-0.054***	-0.055***	-0.021***	-0.021***	-0.063***	-0.058***	-0.404***	-0.408***
	(-6.63)	(-6.56)	(-4.58)	(-4.52)	(-5.15)	(-4.74)	(-33.82)	(-33.43)
HH net wealth - 4th qnt	-0.084***	-0.085***	-0.027***	-0.026***	-0.097***	-0.093***	-0.496***	-0.501***
	(-9.07)	(-9.12)	(-5.52)	(-5.16)	(-7.96)	(-7.44)	(-41.28)	(-40.96)
HH net wealth - 5th qnt	-0.099***	-0.100***	-0.031***	-0.030***	-0.132***	-0.127***	-0.597***	-0.602***
	(-9.05)	(-9.07)	(-5.08)	(-4.82)	(-9.93)	(-9.37)	(-42.19)	(-41.81)
Duration of foreclosure		0.001***		0.000***		0.005***		-0.001***
		(5.97)		(7.41)		(33.25)		(-6.76)
Bankruptcy law		0.010		-0.012***		-0.114***		-0.043***
		(1.41)		(-5.02)		(-14.60)		(-4.16)
LTV - 1st-time buyer		-0.000		-0.001***		0.004***		0.001**
		(-0.01)		(-2.76)		(9.76)		(2.03)
CountryFE	YES	NO	YES	NO	YES	NO	YES	NO
Pseudo R2	0.124	0.107	0.176	0.171	0.347	0.290	0.195	0.192
N.Obs.	43,058	40,659	28,242	25,843	36,280	33,881	57,548	55,149

The table reports probit marginal effects and t-statistics (in parenthesis) on the probability of being credit constrained, measured by Turned down/discouraged (I), Turned down/discouraged and no credit line (II), No credit card/line (III), or Low assets (IV).
Specifications (a) include country Fixed Effects; specifications (b) include institutional variables instead.
Reference groups are "Age less than 40 years" for age; "Employee" for occupational status; "Married" for marital status; "Low education" for education level; Household income/net wealth - 1st quintile for household income and net wealth.
Finland and Italy are dropped from specifications (I) and (II) since the dependent variable is missing; Slovenia and Slovakia are dropped from specifications (b) since institutional variables are missing; Finland and France are dropped from specification (III) since the dependent variable is missing.
*** denotes significant at 1-percent level; ** denotes significant at 5-percent level; * denotes significant at 10-percent level.

Table 12: Credit constraints indicator by geographic area - probit estimates

	(I)	(II)	(III)	(IV)
	Continental		**Mediterranean**	
	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.
	(t-stats)	(t-stats)	(t-stats)	(t-stats)
male	0.015*	0.012	-0.010	-0.010
	(1.94)	(1.50)	(-1.18)	(-1.12)
Age 41-55 years	0.004	0.009	-0.010	-0.010
	(0.37)	(0.89)	(-0.97)	(-0.97)
Age 56-70 years	-0.008	0.001	-0.026*	-0.026*
	(-0.62)	(0.04)	(-1.84)	(-1.85)
Age 71 years and more	-0.066***	-0.056***	-0.039*	-0.041*
	(-3.52)	(-2.92)	(-1.90)	(-1.95)
Single	0.006	0.006	0.017	0.017
	(0.62)	(0.63)	(1.36)	(1.38)
Divorced	0.043***	0.040***	0.035**	0.035**
	(3.70)	(3.47)	(2.32)	(2.35)
Widowed	0.010	0.006	0.009	0.010
	(0.53)	(0.34)	(0.55)	(0.57)
Household size	0.014***	0.012***	0.007*	0.007*
	(4.61)	(4.04)	(1.67)	(1.70)
Mid education	-0.006	0.001	-0.015	-0.016
	(-0.72)	(0.16)	(-1.41)	(-1.42)
High education	-0.013	-0.005	-0.011	-0.013
	(-1.15)	(-0.40)	(-0.93)	(-1.06)
Temporary contract	0.016	0.014	0.025*	0.024*
	(1.12)	(1.01)	(1.73)	(1.65)
Self employed	0.060***	0.054***	0.046***	0.046***
	(4.53)	(4.06)	(2.75)	(2.75)
Unemployed	0.037***	0.029**	0.046***	0.045***
	(2.86)	(2.20)	(3.51)	(3.42)
Other	-0.002	-0.002	0.013	0.012
	(-0.18)	(-0.12)	(0.89)	(0.80)
Retired	-0.018	-0.027*	-0.012	-0.010
	(-1.21)	(-1.81)	(-0.76)	(-0.68)
Financial sector	-0.029	-0.030	-0.118***	-0.117***
	(-0.94)	(-0.94)	(-3.83)	(-3.82)
Public sector	-0.003	-0.008	-0.020	-0.020
	(-0.28)	(-0.73)	(-1.40)	(-1.37)

Table 12 cont.: Credit constraints indicator by geographic area - probit estimates

	(I)	(II)	(III)	(IV)
	Continental		**Mediterranean**	
	Marg.eff.	Marg.eff.	Marg.eff.	Marg.eff.
	(t-stats)	(t-stats)	(t-stats)	(t-stats)
Household income - 2nd quintile	0.013	0.013	-0.008	-0.008
	(1.14)	(1.07)	(-0.64)	(-0.65)
Household income - 3rd quintile	0.009	0.008	-0.014	-0.014
	(0.69)	(0.63)	(-1.06)	(-1.06)
Household income - 4th quintile	-0.017	-0.018	-0.024	-0.024
	(-1.15)	(-1.17)	(-1.60)	(-1.61)
Household income - 5th quintile	-0.037**	-0.038**	-0.032*	-0.032*
	(-2.22)	(-2.22)	(-1.92)	(-1.91)
Household net wealth - 2nd quintile	-0.035***	-0.036***	-0.028**	-0.028**
	(-3.53)	(-3.56)	(-2.44)	(-2.46)
Household net wealth - 3rd quintile	-0.054***	-0.053***	-0.062***	-0.062***
	(-5.28)	(-5.15)	(-5.12)	(-5.15)
Household net wealth - 4th quintile	-0.090***	-0.090***	-0.071***	-0.071***
	(-7.87)	(-7.74)	(-5.08)	(-5.10)
Household net wealth - 5th quintile	-0.107***	-0.108***	-0.076***	-0.076***
	(-8.18)	(-8.05)	(-4.58)	(-4.59)
Duration of foreclosure		0.005***		-0.001
		(9.64)		(-1.41)
Bankruptcy law		-0.055***		0.006
		(-5.79)		(0.49)
LTV - 1st-time buyer		-0.002***		0.006**
		(-4.06)		(1.99)
Country FE	YES	NO	YES	NO
Pseudo R2	0.112	0.129	0.094	0.095
N.Obs	25,141	25,141	15,518	15,518

The table reports probit marginal effects and t-statistics (in parenthesis) on the probability of being credit constrained, measured by "Turned down/discouraged" in Continental countries ((I) and (II)) and Mediterranean countries ((III) and (IV)).
Specifications (a) include country Fixed Effects; specifications (b) incude institutional variables instead.
Reference groups are "Age less than 40 years" for age; "Employee" for occupational status; "Married" for marital status; "Low education" for education level;
Household income/net wealth - 1st quintile for household income and net wealth.
Italy is dropped from specifications (III) and (IV) since the dependent variable is missing.
*** denotes significant at 1-percent level; ** denotes significant at 5-percent level;
* denotes significant at 10-percent level.

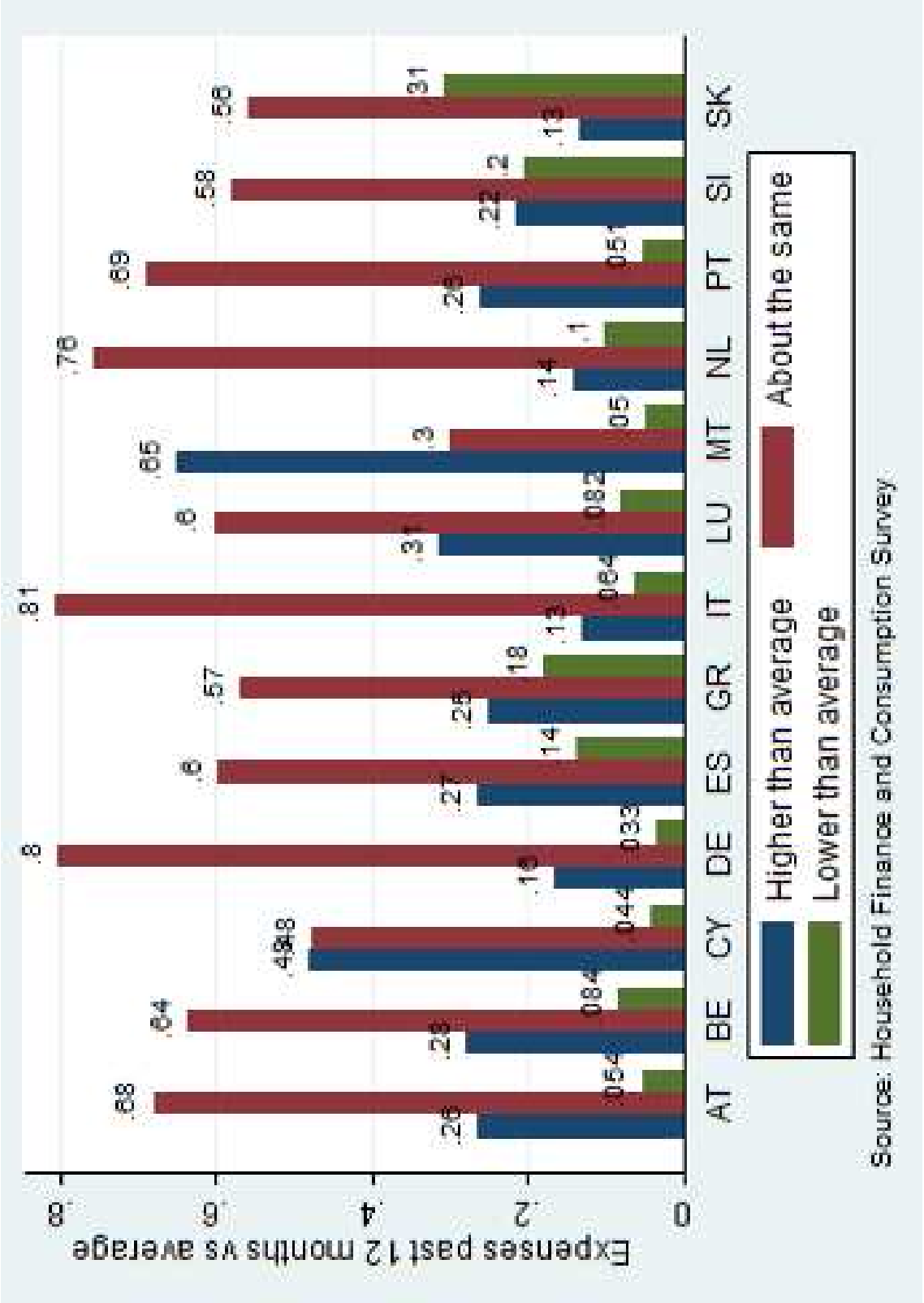

Figure 1: *Self assessed measure of household saving.*
Comparison of last 12 months' expenses with average expenses.

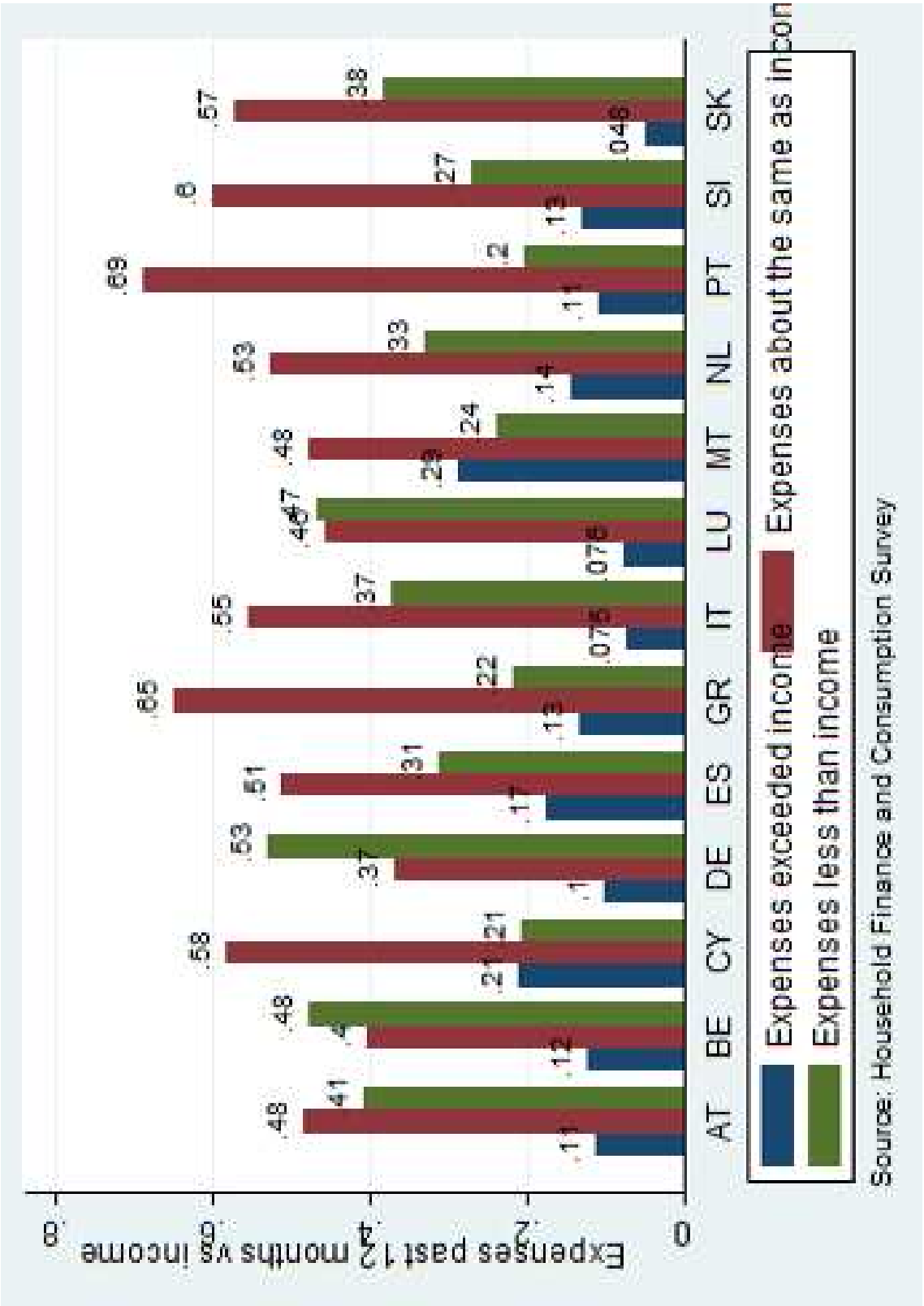

Figure 2: *Self assessed measure of household saving. Comparison of last 12 months' expenses with income.*

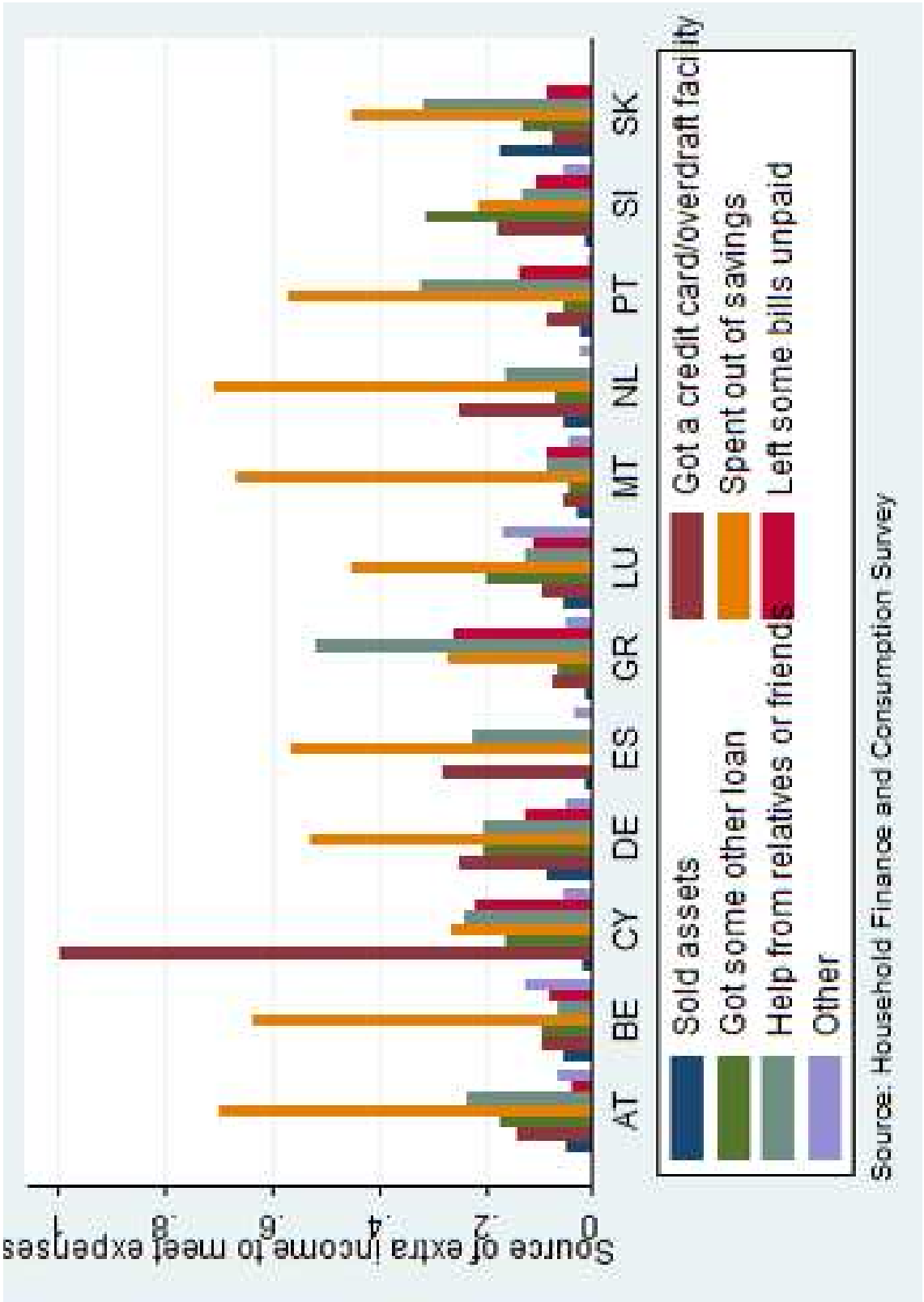

Figure 3: *Financing negative saving.*

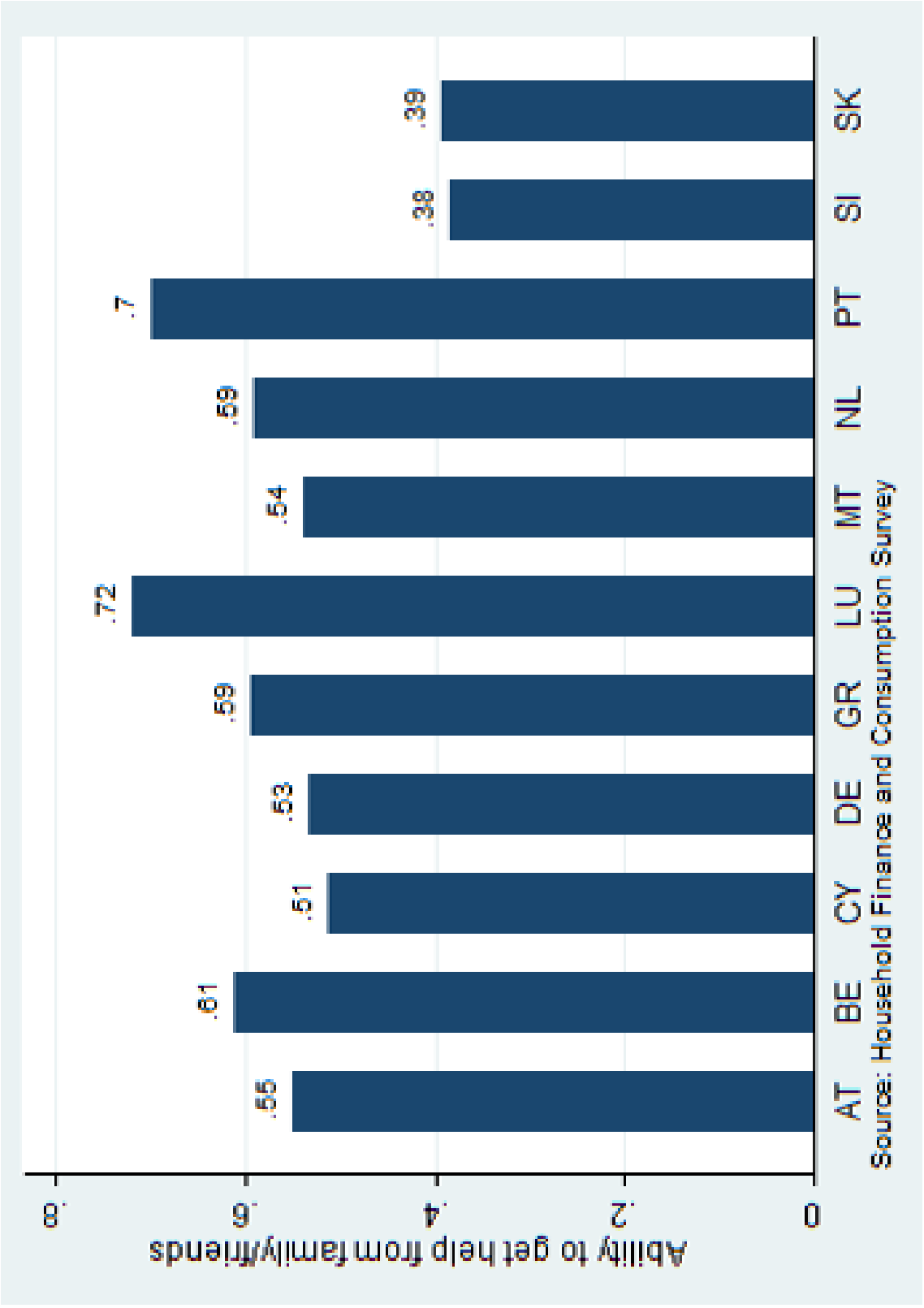

Figure 4: *Ability to get financial assistance from relatives and friends.*

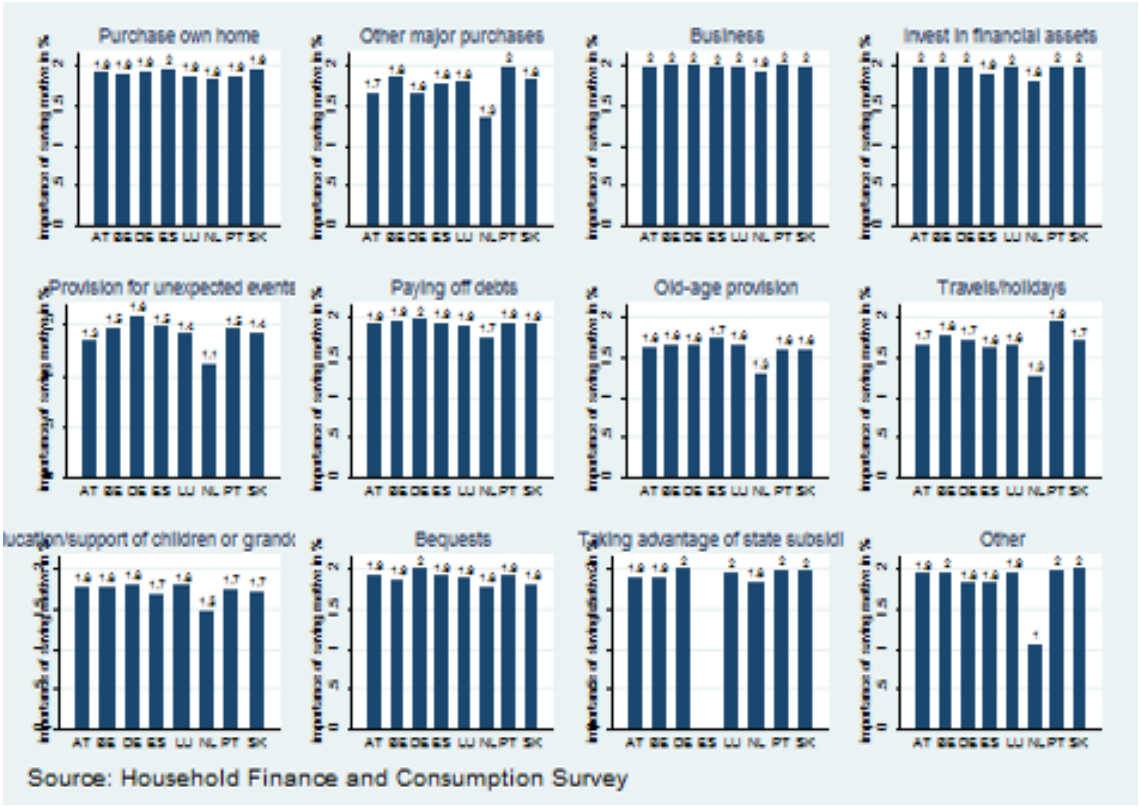

Figure 5: *Importance of saving motives.*

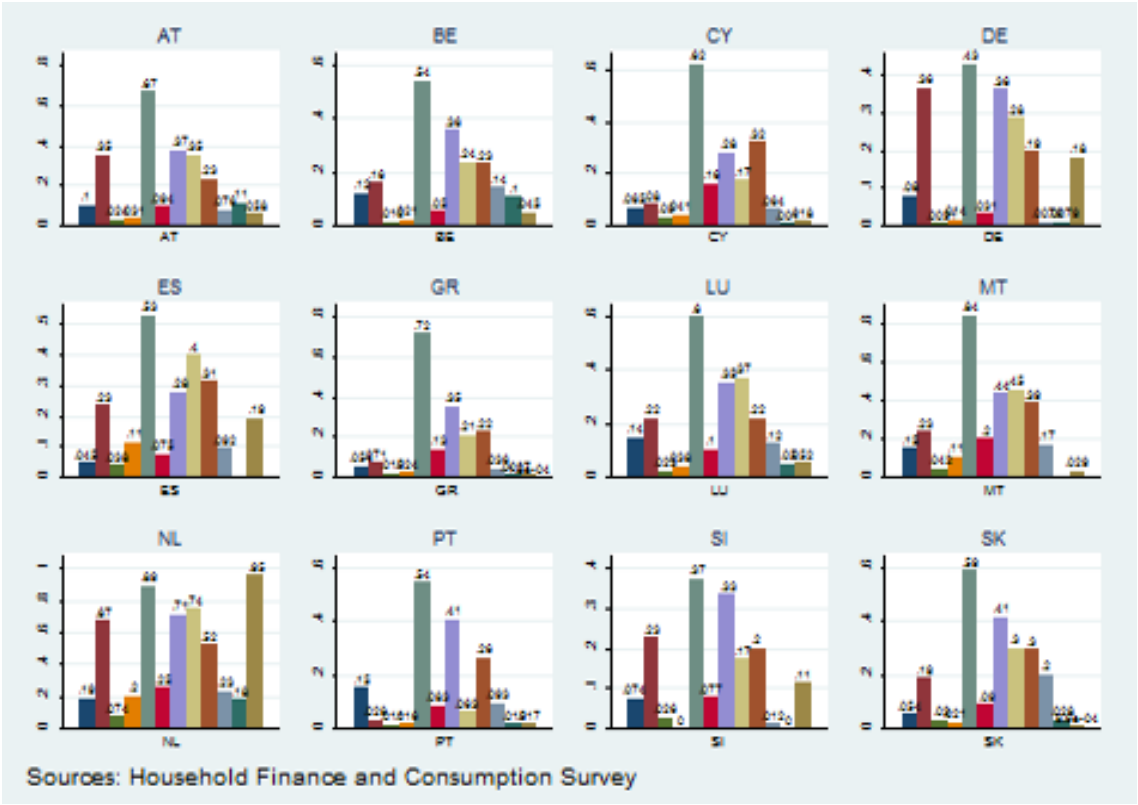

Figure 6: *Importance of saving motives by country.*

Legend:

Bar 1: Purchase own home

Bar 2: Other major purchases (other residences, vehicles, furniture, etc.)

Bar 3: Set up a private business or finance investments in an existing business

Bar 4: Invest in financial assets

Bar 5: Provision for unexpected events

Bar 6: Paying off debts

Bar 7: Old-age provision

Bar 8: Travels/holidays

Bar 9: Education/support of children or grandchildren

Bar 10: Bequests

Bar 11: Taking advantage of state subsidies (for example, a subsidy to building society savings)

Bar 12: Other (SPECIFY)