



OBSERVATOIRE DE L'ÉPARGNE EUROPÉENNE

The effects of the great recession on European household savings behavior and long-term beliefs



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EXECUTIVE SUMMARY

This report analyses the effects of the Great Recession among European households, looking both to economic variables and indicators of well-being and social exclusion. Most European economies are going through the worst recession since the 1930s: the crisis affects job security, earnings, statutory retirement ages, replacement rates and even real retirement income. Youth unemployment is particularly severe in Southern Europe, temporary layoffs and dismissals are affecting senior workers in most European countries. Both financial and real wealth have been severely hit by falls in stock, bond and housing prices. The macro data show that consumers have cut spending, but in some countries we also observe increased household savings. This may suggest that households perceive the crisis to have permanent effects, but precautionary savings can also have increased in response to the increased uncertainty, so the aggregate data are muted on the permanent or temporary nature of the macro shock affecting Europe, as indeed on the degree of risk-sharing that is taking place. Beliefs and perceptions have probably been altered by the crisis.

In this report we use household survey data from European countries to shed light on whether consumers perceive the macro shock to have a permanent or temporary nature and to investigate which socio-demographic groups have been worst hit by the Great Recession. The availability of micro data allows us to compare income, (real and financial) wealth and (some) consumption indicators across and within countries in the years 2004-2011 and study which groups of the population have been most affected by the crisis.

The report consists of three parts. In the first part we use large-scale micro dataset provided by Eurostat (EU-SILC), containing information about the households and their members. To better understand the effects of the recent crisis, we consider for the period 2006-2012 the following measures of well-being: the equivalent household net real annual income, the ability to face an unexpected financial expense, over-indebtedness (arrears in payments of mortgage, rent, utility bills, hire purchase instalments or other loan), and the Eurostat measure of material deprivation. In this study we consider five countries: Germany, Spain, France, Italy and the Netherlands.

The second part aims at a deeper understanding of the effects of the financial crisis on the economic conditions of Europeans aged 50+ using data from the second (2006/2007), fourth (2010/2011) and fifth (2013) waves of SHARE. Our analysis makes use of 'objective' indicators of financial well-being, including financial distress and the value of the housing equity. The measure of financial distress consists of a binary indicator taking on a unitary value if (i) the household has financial wealth, net of non-mortgage debt, lower than three months of income and (ii) the household equivalent income is not in the top third of the distribution, and zero otherwise. Notice that these indicators are not available in the EU-SILC data. Our sample includes eleven countries: Sweden, Denmark, Germany, the Netherlands, Belgium, France, Switzerland, Austria, Spain, Italy and Czech Republic.

Finally, in the third part of the project we carry out a more detailed analysis focusing on two European countries, Italy and the Netherlands, that differ greatly in terms of welfare systems and family ties. The micro data we use are taken from the Survey on Household Income and Wealth (SHIW) for Italy and from the DNB Household Survey (DHS) for the Netherlands. These two datasets contain comparable information on the following relevant variables which are also available in SHARE: 1) real disposable income per equivalent adult; 2) the financial distress indicator which signals low financial wealth for a given income; 3) home equity. Moreover, we also analyse a subjective variable indicating the ability to make ends meet.

The main findings of the analysis on the EU-SILC data can be summarized as follows:

- Spain and Italy are the most affected by the recession, based on all measures of well-being considered except payment arrears (over-indebtedness). The 2008 financial crisis has directly led to a deterioration of all well-being measures in 2008 in Spain, while Italy was hit by the crisis at a later stage. There seems to be a slight recovery in 2011 for Spain, but a second fall is observed in 2012.
- Spain, Italy and the Netherlands registered, on average, a decline in equivalent household income during the recession. Spain experienced first the impact of the crisis (from 2009 onwards), Italy and the Netherlands at a later stage. In all countries except France, young households suffered the most. In particular, Spanish households headed by individuals aged 35 or less exhibit the greatest decrease in income (*ceteris paribus*), by about 20 percent from 2008 to 2011. For all countries it holds that income of retirees did not change that much between 2008 and 2011. In Spain, average income of the unemployed decreased much more dramatically than that of employees. Also the self-employed in Germany, Spain and France experienced a bigger drop in income during the Great Recession than other socio/economic groups. Divorcees, single parents and renters also experienced a relatively big reduction in income
- During the recession the inability to pay for unexpected expenses increased significantly for Spanish and Italian households; for the former the probability rose from 2009, especially for households with unemployed head, two years later for the latter. Also for Dutch households the probability increased slightly throughout the crisis, in particular after 2009. The probability that Spanish and Italian households were unable to face unexpected financial expenses increased between 2008 and 2012 for all age groups, including older households (66+). This result seems at odds with the fact that average income of Spanish and Italian retirees was not affected much by the financial crisis, but may reflect an erosion in financial or real wealth due to the sudden drops in asset prices;
- Looking at over-indebtedness, we also find that Spain, Italy and to a lesser extent the Netherlands are those most affected during the crisis. The proportion of Spanish and Dutch over-indebted households increases in 2009 and 2010, in Italy the same proportion peaks in 2008. Younger household heads, single parents, low educated, and renters are those who have a higher probability to report being over-indebted during the Great Recession. In the Netherlands and Spain the fraction of over-indebted households increased dramatically between 2008 and 2010 among the unemployed
- We also study the Eurostat measure of deprivation, based on the affordability of some items that are considered necessary to have an acceptable standard of living. The indicator shows that in Spain, Italy and (to a lesser extent) the Netherlands individuals have become more deprived from 2008 onwards. The proportion of deprived households increased significantly from 2009 onwards in Spain, from 2010 in the Netherlands and after 2010 in Italy. In Spain the most deprived during the crisis are the younger and unemployed households.

The most important results of the analysis on the SHARE data are:

- In most countries the probability of financial distress increases between 2007 and 2011 – that is larger fractions of 50+ Europeans found themselves with a low level of liquid assets compared to their (pre-crisis) income. This increase is the largest in the Italy and Spain, and may explain why even 65+ individuals report being less able to meet unexpected expenses in these countries (as we saw in the first part of the report). The probability of being in financial distress decreases with age, education and home-ownership, whereas it is higher for those who do not have a partner, live in large families or are not working.
- Overall, education and home ownership play a protective role during the financial crisis: in some countries (Germany, the Netherlands and Belgium) the gap in the probability of experiencing financial distress between high and low educated substantially widens between 2007 and 2011. The

gap in the probability of experiencing financial distress between renters and home owners increased significantly between 2007 and 2013 for the following countries: Belgium, Switzerland, Germany, Spain and Italy

- In several countries (Spain, the Netherlands, Denmark, France, and Italy) we observe a substantial reduction in average and median home equity in the post crisis period.

The analysis on the Dutch and Italian data yielded the following results:

- Real incomes of Italian households, on average, decreased slightly between 2006 and 2010 and dramatically (average income decreases by 7.33%) between 2010 and 2012. Similar findings are obtained if one considers the EU-SILC data instead of the SHIW data. Moreover according to the SHIW data, in 2012 more Italian households have problems to make ends meet than before. These negative trends especially apply to the self-employed and unemployed and to households with children but not to elderly Italian households.
- On average the financial crisis initially did not affect the incomes of Dutch households nor the percentage of households which have difficulties to make end meet. After 2010, however, we observe a slight downward adjustment of equivalent household income, especially for the self-employed and unemployed and for households with a lower education level. However, this decline is much less pronounced than in Italy.
- If we look at the financial distress indicator, it seems that the effect of the crisis was felt earlier in Italy than in the Netherlands. Indeed, the percentage of financially distressed households in Italy already increases significantly in 2008, while in the Netherlands only in 2011. This upward trend is not visible for households older than 65. For both countries it also holds that in 2012 households younger than 45 are more often distressed than older households.
- The decline in the value of the house during the crisis is more pronounced in the Netherlands than in Italy. Moreover, Dutch households are clearly more indebted than Italian households, which makes them vulnerable to downward adjustments in house prices. Indeed, in the Netherlands we also observe a sharp increase in the proportion of households whose mortgage is underwater (with negative home equity) from 2009 to 2013.
- Unlike the Dutch dataset, the Italian dataset contains some interesting information on durable and nondurable consumption expenditures, as well as on total (financial and real) wealth. The main findings are presented in a separate appendix – and summarised in a box at the end of this summary. The time pattern of real equivalent total expenditure is similar to that of real equivalent income: again we find a very large drop in 2012. Expenditures on durable goods dropped between 2006 and 2012 even more than income. The decline in expenditures on nondurable goods was less pronounced. It should be noted that the negative trend in total expenditures is most dramatic for the unemployed. On the other hand, expenditures by elderly households did not decline between 2006 and 2012. Of particular interest is the evolution of net wealth, that dropped in 2008, but stabilized or even recovered after that, suggesting that Italian consumers switched from considering the negative income shock temporary to permanent around 2010 and even increased precautionary savings, particularly in 2012 (in the midst of the government debt crisis).
- The Dutch survey contains not only economic variables but also information on beliefs and expectations. The outcomes we have considered include expectations on the household economic situation in 5 years from now, how difficult it is to obtain a loan, an indicator for whether the mortgage is underwater, house price expectations and risk aversion. Again the main outcomes of these country specific analyses have been summarized in a separate appendix. It turns out that already in the run-up to the crisis expectations on the economic situation and on house prices declined and, as the crisis intensified, Dutch households became increasingly pessimistic.
- Dutch households (except the highly educated) also report that since the start of the crisis it has become more difficult to obtain a loan. The proportion of home owners whose mortgage is

underwater remained constant in the first years of the crisis but increased dramatically in the last couple of years, especially for households in the age class 36-45 and for employees who are more likely to have taken a large mortgage in the past. In 2013 over 12% of Dutch home owning households had a mortgage debt that exceeded the value of their house. This result can be attributed to the large decline in house prices (around 20% since the start of the financial crisis) coupled with the fact that the Netherlands has a mortgage debt to GDP ratio among the highest in Europe.

Overall our report highlights the spread and persistence of the Great Recession – in such different countries as Italy and the Netherlands most households still find major difficulties keeping up their living standards, fall into arrears and complain about limited access to credit. The only group that has been little affected by the recession in most countries considered in this study are the retirees – the social safety net worked out well for them, but failed to protect working age and young individuals irrespective of the social welfare system characterizing their countries (the typical Mediterranean family-based system or the more Northern state-based system).

The evidence we gathered is consistent with the notion that increased uncertainty has led households to increase precautionary savings, particularly in the second part of the recession (the so-called sovereign debt crisis) – partly as a result of a fall in house prices and its consequences on credit – partly as a result of increased unemployment risk.

In the light of the evidence we present, policies aimed at reducing uncertainty, improving labour market functioning and promoting access to credit are clearly much needed in Europe. Different countries may wish to target different groups of the population and to choose different structural, fiscal and monetary (where available) policy instruments. But a strong policy response is still needed if the pre-recession living standards are to be recovered.

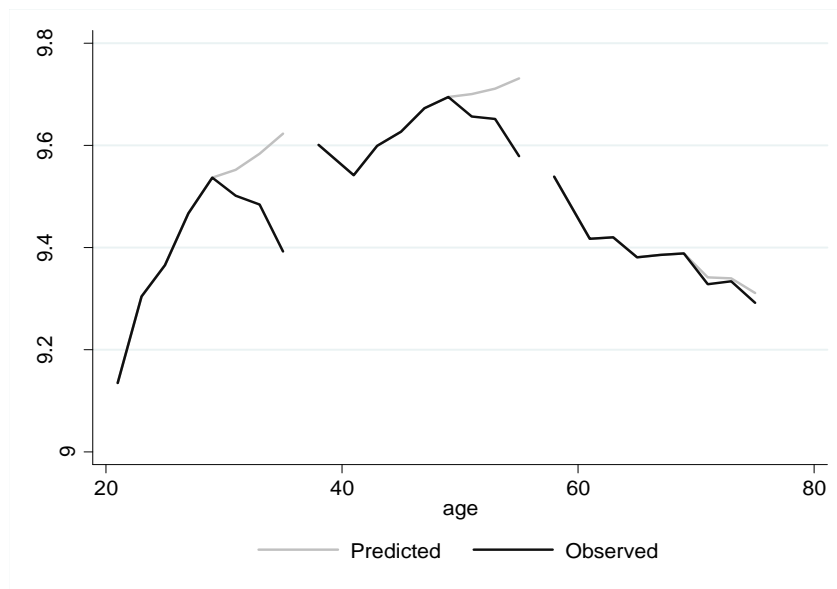
FOCUS: CONSUMPTION AND NET WEALTH IN ITALY DURING THE GREAT RECESSION

One of the reasons for household saving is to accumulate a buffer stock of wealth to sustain living standards in the future and insure against idiosyncratic negative shocks (Cagetti, 2003). An interesting question to ask is to what extent households use this wealth stocks to mitigate the effects of the Great Recession on their consumption levels.

We focus here on Italy and borrow from a recent analysis about consumption during the Great Recession in this country (Celidoni, De Nadai and Weber, 2015): the empirical evidence, based on the Survey of Household Income and Wealth, shows how households used their wealth to sustain their consumption levels during the crisis.

Following Attanasio and Weber (1994), the authors analyse age profiles of household consumption, net wealth and income: we focus here on the first two outcomes. To identify the effect of the recession they distinguish between a *control period* of relative stability (from 1995 to 2006) and a *treatment period* (from 2008 to 2012) that corresponds to the crisis. By specifying a life-cycle consistent consumption function, the method used allows to investigate the changes in the estimated age profiles that took place during the treatment period. More precisely, to capture cohort-specific structural movements in consumption profiles during the crisis, the authors include year cohort-dummies for the treatment period. The corresponding coefficients can be interpreted as the deviations of the cohort-specific consumption profile during that particular treatment year from the pre-crisis predictions.

Figure 1. Non-durable consumption (logarithm)

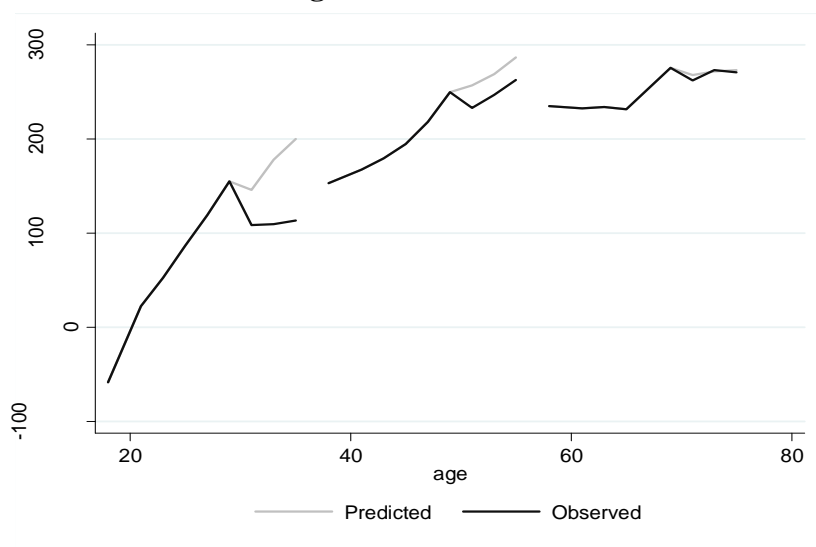


Note: Cohorts displayed: 1975-79 1955-59 1935-39

Figure 1 shows the profiles estimated for non-durable household consumption for three birth cohorts (1975-79, 1955-59 and 1935-39). In the figure, ‘Observed’ denotes fitted values when the treatment dummies are set to 1 for the relevant year and cohort; ‘Predicted’ represents what the model predicts when all the treatment cohort dummies are set to zero. We notice that in 2012 the estimated consumption drop for the youngest cohort is about 23.1%, for those born between 1955 and 1959 non-durable consumption drops to a lesser extent by 15.3%, for the oldest cohort non-durable consumption decreases by a mere 2%.

Of particular interest is Figure 2 that shows the effects of the recession on net wealth. The youngest cohort, that was on a steeply ascending net wealth path, saw a reduction in net wealth in 2008, followed by minor changes in 2010 and 2012. A possible interpretation is that in 2008 young consumers used their financial wealth (or even borrowed) to sustain consumption, while in 2010 and 2012 they revised their assessment on the transitory nature of the recession and allowed expenditure to bear the brunt of the income drop. The older working age cohort displayed in Figure 2 behaved in a similar way: individuals born between 1955 and 1959 used their savings in 2008, but later started accumulating wealth for precautionary motives while cutting non-durable consumption. No significant recession effects on net wealth or non-durable consumption are estimated for the oldest cohort suggesting that losses on financial assets did not play much of a role. However, when one considers the real wealth losses due to house price falls, that mostly affected older cohorts (not shown in the graph), one comes to the conclusion that even the post retirement cohort increased their precautionary savings after 2008.

Figure 2. Net wealth



Note: Cohorts displayed: 1975-79 1955-59 1935-39

References

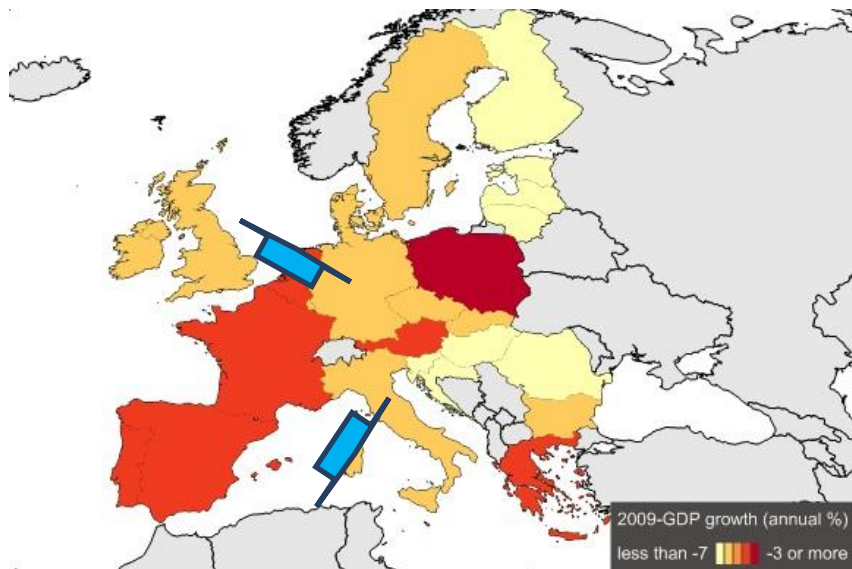
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- Cagetti, Marco (2003): Wealth Accumulation Over the Life Cycle and Precautionary Savings. *Journal of Business & Economic Statistics*, 21.
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1. INTRODUCTION

In recent years European economies have gone through the worst recession since the 1930s. The financial crisis has affected job security, earnings, statutory retirement ages, replacement rates and even real retirement income in many European countries. Moreover, the unemployment rate rose, there was a reduction in household consumption, the expectations about the stock market and housing prices became more pessimistic, as well as those on the economic situation.

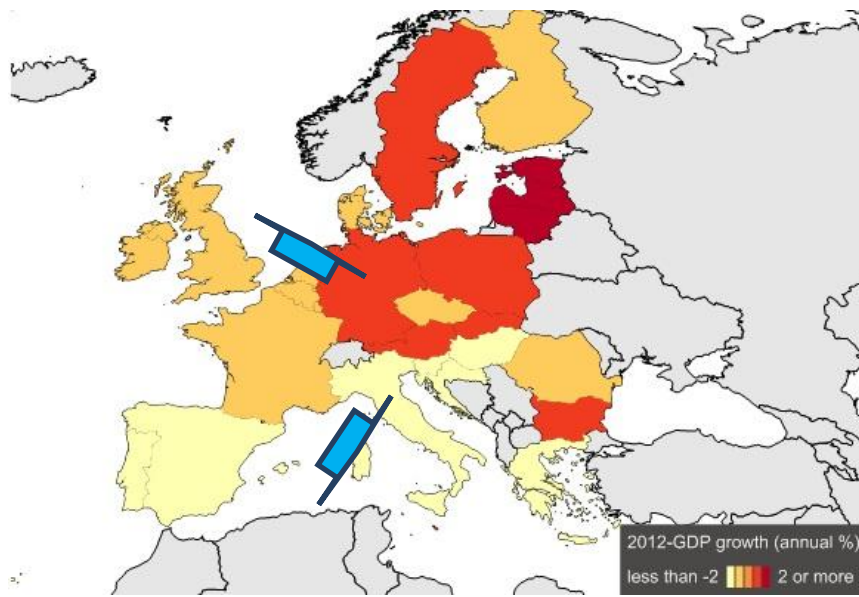
The financial crisis, which soon led to an economic crisis, had a dramatic and long lasting impact on gross domestic product (GDP) in Europe. In 2009, GDP fell in real terms in many countries of the European Union as we can see in Figure 1.1. In 2012 GDP declined the most in Southern European countries (see figure 1.2). Figure 1.3 shows that between 2008 and 2009 GDP per capita decreased more in the United States than in Europe. However, the US recovered more quickly after 2009.

Figure 1.1 GDP growth rate 2009 within EU



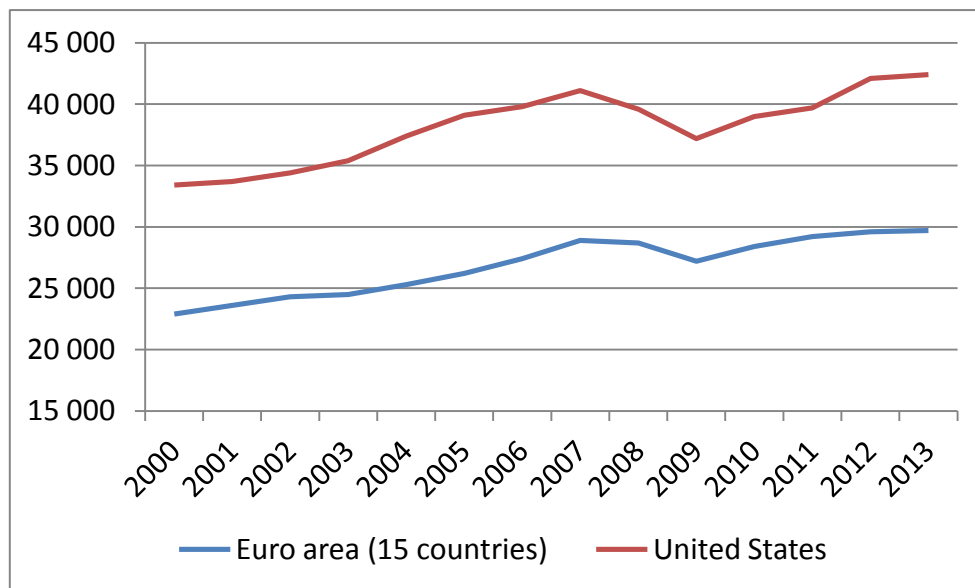
Source: OECD

Figure 1.2 GDP growth rate 2012 within EU



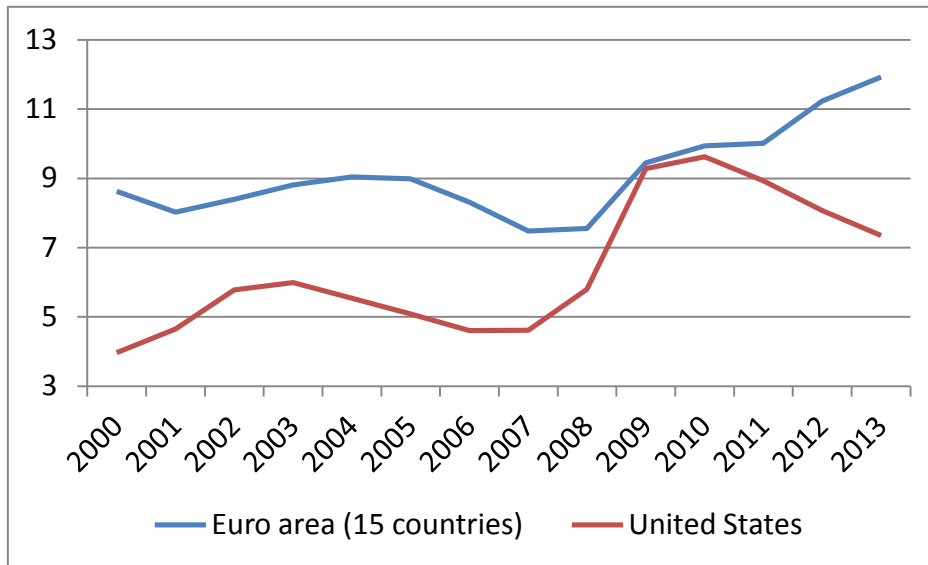
Source: OECD

Figure 1.3 REAL GDP per capita (PPS EU15)



Source: Eurostat

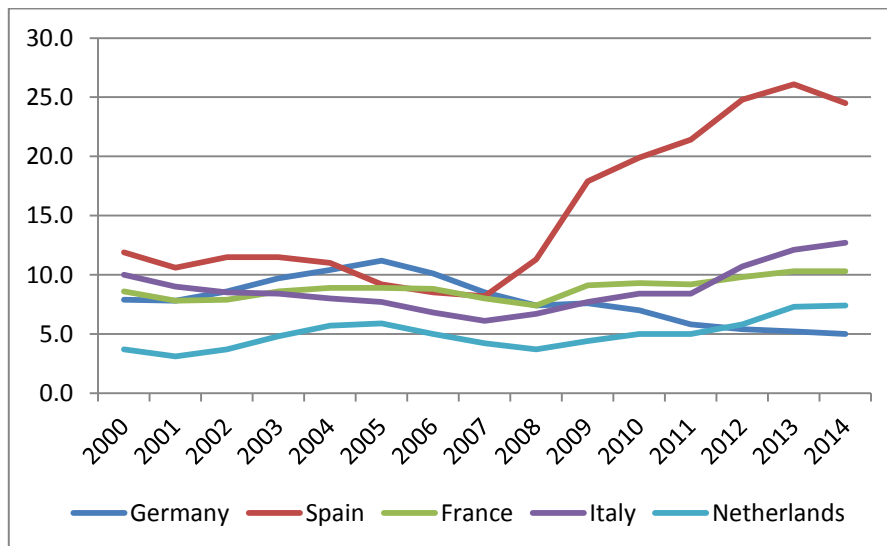
Figure 1.4 Unemployment rate in Europe and US



Source: Eurostat

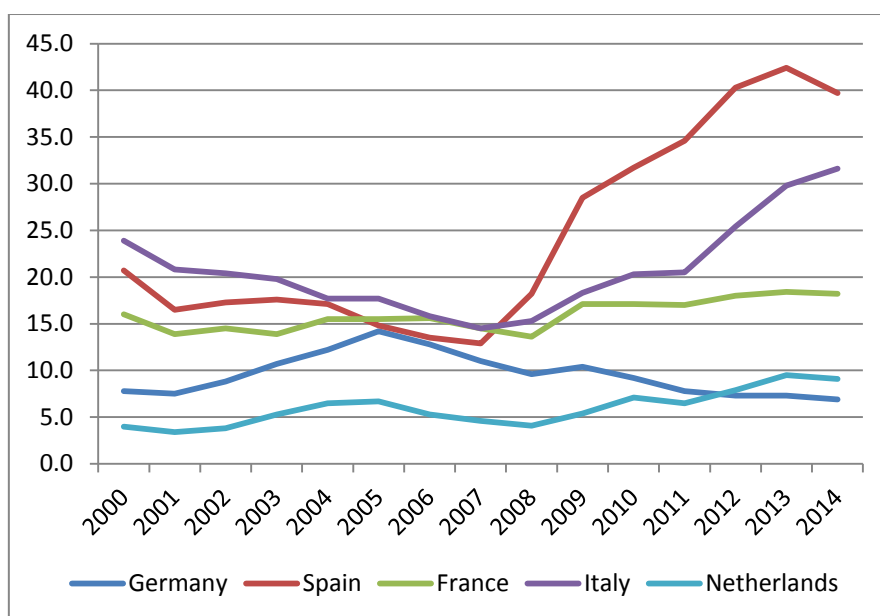
In the United States the unemployment rate grew between 2008 and 2010, and then decreased, as observed in Figure 1.4; in Europe it increased a year later and continued to grow until 2013. Southern European countries exhibit higher unemployment rates: in Figure 1.5 we can observe the unemployment rate of five European countries: Spain, Italy, France, Germany and the Netherlands. From 2008 onwards the unemployment rate of Spain increased sharply, above all among young individuals (see Figure 1.6); the effects of the recession are dramatic in Spain and Italy, the countries with the highest youth unemployment rate during the Great Recession.

Figure 1.5 Unemployment rates within Europe



Source: Eurostat

Figure 1.6 Youth unemployment rate (age 15-29)



Source: Eurostat

The financial crisis has also led to temporary layoffs and dismissals have affected senior workers in most European countries. Both financial and real wealth have been severely hit by falls in stock, bond and housing prices. However, the current financial crisis has had an impact on the lives of many, but by no means all, households. We can expect the impact to be overall stronger in some countries, but to vary a lot across households. The availability of micro data allows us to compare economic well-being indicators across and within countries in the period before and after the crisis and study which groups of the population were most affected by it.

Macro data show that consumers have cut spending. In some countries we also observe increased household savings. This may suggest that households have perceived the crisis to have permanent effects, but precautionary savings can also have increased in response to the increased uncertainty, so the aggregate data are muted on the permanent or temporary nature of the macro shock affecting Europe, as indeed on the degree of risk-sharing that has taken place. Beliefs and perceptions have probably been altered by the crisis (Giuliano and Spilimbergo, 2014, document how beliefs are generally affected by growing up in a recession). Household survey data from European countries can help shed light on whether consumers have perceived the macro shock to have a permanent or temporary nature.

We can expect the impact of the crisis to vary a lot across households. The availability of micro data allows us to compare economic well-being indicators across and within countries in the period before and after the crisis and study which groups of the population were most affected by it.

In this report, we start by analysing the effects of the crisis on European households using data from the EU-Statistics on Income and Living Conditions (EU-SILC) and the Survey of Health, Ageing and Retirement in Europe (SHARE). EU-SILC collects comparable household-level information on income distribution and social inclusion in 26 European countries. The survey is particularly suitable for our study as it covers both the pre- and post-crisis period, with yearly repeated cross-sectional data from 2006 to 2012. We focus on the five largest economies of continental Europe, namely Italy, Spain, France, Germany and the Netherlands, and we exploit the information on household financial well-being. In particular, the survey provides information on income and on a set of indicators of material deprivation, including over-indebtedness and the ability to face large or unexpected expenses, which can be used to assess the effects of

the financial crisis on European households. We then study the effects of the financial crisis on the economic conditions of older Europeans using data from the second, fourth and fifth waves of SHARE. Data collection for the second wave took place before the start of the crisis, in 2006/7, while data for the fourth and fifth wave were collected in 2010/11 and 2013 respectively. We analyse financial well-being of older adults in Europe using both subjective and objective indicators, namely the self-reported ability to make ends meet, financial distress and the value of the house. In addition to the five largest economies of continental Europe, SHARE allows us to cover also Sweden, Denmark, Belgium, Switzerland, Austria and the Czech Republic.

Finally, we carry out a more detailed analysis focusing on two European countries, namely Italy and the Netherlands, which differ greatly in terms of welfare systems and family ties. The micro data we use are taken from the Survey on Household Income and Wealth (SHIW) for Italy and from the DNB Household Survey (DHS) for the Netherlands. Both surveys are panel studies covering both the pre-crisis and the crisis period and contain comparable information on both objective and subjective indicators of household economic conditions. In addition, SHIW collects also information about durable and non-durable expenditure of Italian households. The DHS data, on the other hand, include not only economic variables but also information on beliefs and expectations. This is an important feature of the dataset: if the adverse economic effects of the crisis induce households to review their consumption, labour market participation or wealth holdings, but do not affect preferences, it is reasonable to expect to observe a reverse pattern once the European economy will recover. On the other hand, if beliefs and preferences change, the economic downturn is more likely to have long lasting effects on household budgeting.

The report is organized as follows. Section 2 shows the results coming from the analysis of the European household financial well-being based on EU-SILC data. Section 3 focuses on the older Europeans and draws data from SHARE. Section 4 documents the findings obtained by comparing Italy and the Netherlands and based on the data collected by SHIW and DHS. Finally, Section 5 and Section 6 summarize the results of country-specific analyses run for Italy and the Netherlands by exploiting the richness of SHIW and DHS respectively.

2. EVIDENCE FROM EU-SILC DATA

2.1 INTRODUCTION TO THE DATA AND DESCRIPTIVE STATISTICS

In this study we use data from the European Union Statistics on Income and Living Conditions (EU-SILC), which are provided by Eurostat. This is a comprehensive micro-level data set in which many European countries participate. To be precise, countries that are ultimately involved in EU-SILC are the 28 EU countries and Iceland, Norway, Switzerland and Turkey. The five countries that are relevant for our study participated either from 2004 onwards, i.e. France, Italy and Spain, or from 2005 onwards, i.e. Germany and the Netherlands.

The reference population of EU-SILC is all private households and their current members residing in the territory of the country at the time of data collection. Persons living in collective households and in institutions are generally not included in the selected samples. EU-SILC provides two types of data: cross-sectional data pertaining to a given time or a certain time period with variables on income, poverty, social exclusion and other living conditions, and longitudinal data pertaining to individual-level changes over time which are observed periodically over a four-year period. As we will explain later it is only possible to exploit the former type of data, which implies that we cannot perform panel data analysis. This is an important limitation of the analysis. At the same time, the data set contains extensive information about the characteristics of each household, so that we can control for demographic and socioeconomic variables and also look for potential interaction effects. Information was collected both at the household level and at the personal level. The household respondent is the person from whom household level information is obtained. Ideally, this is the person responsible for the accommodation. If he or she was not available for interview, the household member aged 16 and over who was in the best position to provide the information was chosen.

Interviews were used to collect data. Each country is responsible for the set-up of its own questionnaire; for the national questionnaires we refer to the website of Eurostat.¹ Moreover, in the Netherlands also data from administrative registers were used, avoiding the need to interview all members aged 16 and over in each sample household. Much flexibility was allowed regarding the sample design. All countries used the form of a rotational design to interview a sample of households: the sample used for any year consists of 4 replications, which have been in the survey for 1-4 years. Each replication stays in the survey for four years: every year one of the four replications from the previous year is dropped and a new one is added. An exception is France where a nine-year panel, including nine rotational groups, is used.

EU-SILC provides information in separate files for each year. However, these files cannot be linked with each other; personal and household identifiers are randomized for each data file. In this way, files cannot be linked across years, which means that households cannot be followed over time. An alternative would be to use available longitudinal files which include only one to four years per household, but for our purposes we cannot base our analysis on such a short time period. Hence, we can only consider the separate files as independent samples over the years. However, as also noted by Iacovou et al. (2012), we know that some households will be present in the data for only one year, while for other households there will be repeated observations. In order to calculate appropriate standard errors for regression estimates, we should take this clustering into account but this is not possible with the current structure of the data. We do compensate for possible model misspecification by using robust standard errors, although this will not solve the problem of time dependent observations. This implies that our standard errors should be viewed with care.

¹ <http://ec.europa.eu/eurostat/web/income-and-living-conditions/quality/questionnaires>

Financial variables have typically non-response problems; to mitigate non-response, we present later on weighted summary statistics using the cross-sectional weights provided by EU-SILC.

EU-SILC has a modular structure with 4 modules that collect different information on the household as a whole and at the individual level, i.e.: household register (D), personal register (R), household data (H) and personal data (P). Housing and living conditions and social exclusion are obtained mainly at the household level, whilst education, health information, labor and income components are collected for each individual aged 16 and over. The first module collects variables such as geographic information and degree of urbanization, module R considers the information for each household member as basic activity and residential status; the third module contains the majority of information about the household, as family composition, income, social exclusion and deprivation; the last module P takes into account all household members aged 16 or more, with variables about education, access to health care, labor information, activity history, calendar of main activities and detailed income information.

Table 2.1.1 Sample size - Households in EU-SILC

	2006	2007	2008	2009	2010	2011	2012
<i>Germany</i>	13799	14153	13312	13087	13079	13512	13145
<i>Spain</i>	12205	12329	13014	13360	13597	13109	12714
<i>France</i>	10036	10498	10418	10603	11044	11360	11999
<i>Italy</i>	21499	20982	20928	20492	19147	19399	19579
<i>Netherlands</i>	8986	10219	10337	9728	10134	10492	10168

Data are collected from both registers and interviews. Using the latter, there are five possible techniques of data collection: face-to-face personal interview (PAPI), computer-assisted personal interviewing program (CAPI), telephone interview (CATI), self-administered by respondent and proxy interview, that refers to personal interview with another member of the household, but priority is given to PAPI and CAPI. In 2011 Italy changed the mode of the interview: from face to face to CAPI based interviews. In Germany self-administered by respondent have substituted PAPI interviews since 2007.

For the “register countries”, as the Netherlands in our sample, the use of telephone interview (CATI) has been allowed, which is possible because of the shorter duration of the questionnaire since a large amount of information is extracted from registers.

<i>Data collection modes by country</i>	
PAPI	Germany (2006), Italy (2006-2010)
CAPI	Spain, France, Italy (2011-2012)
CATI	Spain, Netherlands

Self-administered	Germany (2007-2012)
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We have already referred to the fact that the rules to collect the data in EU-SILC are flexible and allow gathering data with great discretion: some countries collected income as net amount, whilst other countries as gross. Also looking at the income reference period there are differences among countries. The annual income can be referred to a fixed twelve months period preceding the survey, the calendar year, or a moving twelve months immediately before the time of the survey. The greatest benefit in choosing a fixed twelve months reference period is that it provides information in a defined period for all the survey units and assures the maximum comparability. For the countries considered the income reference period must be understood as the calendar year previous to the time of data collection. The gap between the end of the reference income period and the time of the interview has to be limited to 8 months as much as possible, independently of whether the income reference period is fixed for the whole sample or the period is determined from the time of the interview; instead if the income variables are collected from registers the limit is 12 months².

The data cover both the pre-crisis and the crisis period (2006-2012). We are interested to analyze material deprivation and social exclusion before and during the Great Recession in the five countries considered. To this aim we look at economic variables such as equivalent household real disposable income, poverty and social exclusion (measured as the ability to face unexpected financial expense, over-indebtedness, and an indicator of material deprivation)³.

The first variable we will exploit is the total disposable household income; it is net of taxes on wealth, regular inter-household cash transfer paid, tax on income and social insurance contributions. Nominal values are deflated using a set of exchange rates based on Eurostat PPP and exchange rate data. The exchange rates computed adjust for the difference in the purchasing power of money across countries and over time, using Germany in year 2005 as reference. We equalize income amounts using the square root of the household size to take into account economies of scale. As already noticed, income data are not collected using a single standard survey instrument, which generates differences in terms of income definitions across countries that have to be taken into account when comparing the five countries selected. Especially, since 2008 the amounts of social benefits actually received by the households over the reference year are collected directly from the three main Benefit funds in France: the national family allowances fund (CNAF), the national old-age insurance fund (CNAV) and the central agricultural social insurance fund (CCMSA). To ensure comparability among countries, we consider only French income from 2008.

Beyond income, we also consider other indicators of household well-being. First, households are asked if they can afford unexpected expenses above a certain threshold with their own resources. This threshold stated in the question varies across countries and years and corresponds to the national poverty level. It should be noted that the exact formulation of the question differs a bit across countries, which again hampers cross-country comparisons. Second, we then define households being over-indebted if they claim to fall behind with payments in at least one of the following items: mortgage or rent payments, utility bills and hire purchase instalments or other loan payments. Finally, we use the indicator of material deprivation developed by Eurostat and based on the declared inability to afford some of the items considered by most people to be desirable for an adequate life. The indicator equals one if the household cannot afford at least three out of the following nine items:

² In Italy some observations are recorded in the first quarter of the year later the year of the survey, so the interval between the end of the income reference period and the time of data collecting is more than twelve months.

³ See the Appendix for a detailed description of all the outcome variables used in this report.

- to face large unexpected expenses
- one week's holiday away from home every year
- a meal with meat, chicken or fish (or vegetarian equivalent) every second day
- to keep the home adequately warm
- mortgage or rent payments, utility bills, hire purchase instalments or other loan payments
- a telephone (including mobile phones)
- a colour TV
- a washing machine
- a car

We do not consider as deprived those households who do not own a durable good for reasons other than their affordability (i.e. the household does not need or does not want the good). Moreover, we combine the measure of deprivation with income quartiles, to avoid classifying as deprived households with high income levels. In particular, households whose equivalent income is in the top quartile of the income distribution are considered as not deprived.

We focus on demographic and socioeconomic characteristics referred to the head of household, that is the male in presence of a couple, otherwise the one who provides household-level information. In Eurostat the household is defined as a person living alone or a group of people who live together in the same dwelling, sharing expenditures including the joint provision of the essentials of living and having common arrangements. The ideal “household respondent” is considered to be the person responsible for the dwelling, but may differ from the one responding to the household questionnaire.

The next tables present some weighted summary statistics of the outcomes of interest and the socio-economic and demographic variables that we will use in the analyses. Age, gender, marital status, education level and employment status refer to the head of the household. Household composition accounts for one person households, two or more adults without children, single parent households with one or more dependent children, households with one dependent child, two or more dependent children and families with only no dependent children. Dependent children are defined as household members not employed or inactive, such as students, permanently disabled, in compulsory military community. The educational classification is based on the International Standard Classification of Education (ISCED); *low education* includes the non-educated⁴, pre-primary education and lower secondary education; *secondary and post-secondary education* considers household heads with upper secondary education or post-secondary non tertiary education, and *university* takes into account individuals with first stage of tertiary education (not leading directly to an advanced research qualification) or second stage of tertiary education (leading to an advanced research qualification).

Table 2.1.2 Summary statistics

⁴ In EU-SILC if the person has no educational qualifications the value of the variable is missing; in our work non-educated individuals are included in the “low education” category.

Outcomes															
	<i>Germany</i>			<i>Spain</i>			<i>France</i>			<i>Italy</i>			<i>The Netherlands</i>		
<i>Log of Real HH Equivalent Income</i>	N	Mean	Std. Dev	N	Mean	Std. Dev	N	Mean	Std. Dev	N	Mean	Std. Dev	N	Mean	Std. Dev
2005	13725	9.682	0.614	12082	9.480	0.707				21325	9.589	0.665	8959	9.808	0.514
2006	14046	9.705	0.631	12233	9.532	0.648				20809	9.607	0.652	10185	9.844	0.513
2007	13247	9.716	0.611	12898	9.543	0.685	10396	9.852	0.536	20768	9.611	0.642	10307	9.879	0.515
2008	13064	9.733	0.588	13053	9.560	0.732	10572	9.884	0.547	20363	9.609	0.665	9706	9.887	0.528
2009	13054	9.740	0.555	13250	9.518	0.742	10996	9.870	0.570	19005	9.612	0.662	10103	9.883	0.516
2010	13472	9.726	0.594	12838	9.457	0.749	11295	9.867	0.574	19234	9.574	0.696	10469	9.864	0.496
2011	13123	9.729	0.563	12453	9.431	0.759	11943	9.872	0.553	19411	9.557	0.681	10148	9.845	0.507

<i>Unexpected expenses</i>	N	Mean	Std. Dev.	N	Mean	Std.Dev.	N	Mean	Std.Dev.	N	Mean	Std. Dev.	N	Mean	Std.Dev.
2006	13727	0.599	0.490	12187	0.689	0.463	9960	0.659	0.474	21499	0.716	0.451	8953	0.743	0.437
2007	14089	0.585	0.493	12318	0.695	0.460	10431	0.648	0.478	20982	0.671	0.469	10163	0.762	0.426
2008	13269	0.612	0.487	12989	0.702	0.457	10371	0.661	0.473	20928	0.680	0.466	10303	0.780	0.414
2009	13031	0.619	0.486	13259	0.639	0.480	10541	0.673	0.469	20492	0.667	0.471	9685	0.787	0.409
2010	13022	0.627	0.484	13477	0.615	0.487	10970	0.666	0.472	19147	0.664	0.472	10093	0.745	0.436
2011	13402	0.621	0.485	13046	0.623	0.485	11269	0.675	0.469	19399	0.605	0.489	10431	0.754	0.431
2012	13050	0.625	0.484	12666	0.586	0.493	11888	0.677	0.468	19579	0.571	0.495	10093	0.751	0.433

<i>Over-indebtedness</i>	N	Mean	Std. Dev.	N	Mean	Std.Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std.Dev.
2006	13070	0.067	0.251	11978	0.056	0.231	9988	0.089	0.284	21499	0.113	0.317	8972	0.050	0.218
2007	13916	0.065	0.246	12098	0.063	0.242	10463	0.091	0.287	20982	0.107	0.309	10164	0.043	0.203
2008	13116	0.060	0.237	12987	0.069	0.253	10397	0.081	0.273	20928	0.140	0.347	10302	0.037	0.189
2009	12960	0.057	0.233	13250	0.093	0.290	10575	0.095	0.294	20492	0.107	0.309	9695	0.042	0.201
2010	12958	0.054	0.226	13472	0.098	0.298	10899	0.093	0.291	19147	0.110	0.313	10107	0.050	0.218
2011	13067	0.053	0.225	13030	0.078	0.268	11189	0.084	0.278	19399	0.123	0.328	10454	0.050	0.218
2012	12825	0.045	0.207	12661	0.092	0.289	11813	0.085	0.278	19579	0.113	0.316	10133	0.051	0.220

<i>Mat. Depriv. (Eurostat)</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	12865	0.131	0.338	11888	0.100	0.301	9914	0.135	0.342	21499	0.132	0.339	8919	0.076	0.265
2007	13660	0.139	0.345	12073	0.088	0.284	10383	0.130	0.336	20982	0.142	0.349	10072	0.069	0.254
2008	12928	0.142	0.349	12987	0.095	0.294	10316	0.131	0.338	20928	0.151	0.359	10240	0.062	0.241
2009	12803	0.141	0.348	13249	0.115	0.319	10482	0.132	0.339	20492	0.143	0.350	9628	0.064	0.244
2010	12763	0.123	0.328	13472	0.133	0.339	10804	0.124	0.330	19147	0.147	0.354	10024	0.083	0.275
2011	12841	0.139	0.345	13024	0.120	0.324	11084	0.122	0.328	19399	0.210	0.407	10372	0.078	0.268
2012	12627	0.132	0.339	12659	0.145	0.352	11685	0.125	0.331	19579	.0236	0.425	10028	0.081	0.272

Control Variables in regressions															
	<i>Germany</i>			<i>Spain</i>			<i>France</i>			<i>Italy</i>			<i>The Netherlands</i>		
<i>Age</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	52.24	15.80	12205	52.86	16.02	9992	51.98	17.39	21499	55.95	16.17	8986	50.64	16.59
2007	14153	52.36	15.77	12329	52.82	16.04	10467	50.54	17.60	20982	56.16	16.11	10219	51.05	16.51
2008	13312	52.30	15.67	12989	52.66	16.01	10400	52.05	17.42	20928	56.30	16.16	10337	51.15	16.54
2009	13087	52.53	15.60	13260	52.78	16.10	10580	52.55	17.13	20492	56.26	16.33	9728	51.15	16.59
2010	13079	53.03	15.81	13477	52.74	16.09	11007	52.51	17.22	19147	56.33	16.16	10134	51.23	16.61
2011	13512	53.42	15.76	13046	53.09	15.93	11304	52.77	17.19	19399	56.80	16.02	10492	51.42	16.59
2012	13145	53.85	15.91	12668	53.47	15.91	11951	52.91	17.25	19579	56.94	15.97	10168	51.69	16.60

<i>Female</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.292	0.455	12205	0.191	0.393	9992	0.260	0.438	21499	0.255	0.436	8986	0.243	0.429
2007	14153	0.286	0.452	12329	0.184	0.387	10467	0.269	0.443	20982	0.257	0.437	10219	0.248	0.432
2008	13312	0.277	0.448	12989	0.202	0.401	10400	0.271	0.445	20928	0.264	0.441	10337	0.251	0.434
2009	13087	0.278	0.448	13260	0.204	0.403	10580	0.272	0.445	20492	0.264	0.441	9728	0.246	0.431
2010	13079	0.276	0.447	13477	0.213	0.409	11007	0.274	0.446	19147	0.271	0.444	10134	0.245	0.430
2011	13512	0.278	0.448	13046	0.220	0.415	11304	0.275	0.446	19399	0.265	0.442	10492	0.246	0.431
2012	13145	0.281	0.450	12668	0.222	0.416	11951	0.276	0.447	19579	0.271	0.444	10168	0.253	0.435

<i>Family size</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	2.112	1.198	12205	2.796	1.239	9992	2.283	1.217	21499	2.461	1.268	8986	2.272	1.311
2007	14153	2.082	1.172	12329	2.752	1.235	10467	2.280	1.322	20982	2.439	1.258	10219	2.261	1.302
2008	13312	2.054	1.160	12989	2.680	1.357	10400	2.254	1.295	20928	2.424	1.263	10337	2.253	1.299
2009	13087	2.034	1.143	13260	2.648	1.333	10580	2.244	1.275	20492	2.414	1.262	9728	2.242	1.293
2010	13079	2.030	1.145	13477	2.617	1.319	11007	2.232	1.290	19147	2.391	1.258	10134	2.230	1.287
2011	13512	2.012	1.125	13046	2.596	1.295	11304	2.229	1.256	19399	2.406	1.259	10492	2.220	1.281
2012	13145	2.003	1.118	12668	2.570	1.276	11951	2.224	1.261	19579	2.391	1.264	10168	2.216	1.283

	<i>Germany</i>			<i>Spain</i>			<i>France</i>			<i>Italy</i>			<i>The Netherlands</i>		
<i>Partner</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.496	0.500	12198	0.672	0.470	9989	0.492	0.500	21499	0.603	0.489	8985	0.504	0.486
2007	14153	0.492	0.500	12327	0.658	0.474	10463	0.460	0.498	20982	0.596	0.491	10218	0.493	0.490
2008	13312	0.478	0.499	12986	0.597	0.490	10383	0.452	0.498	20928	0.587	0.492	10337	0.494	0.492
2009	13087	0.474	0.499	13257	0.590	0.492	10565	0.455	0.498	20492	0.575	0.494	9728	0.493	0.495
2010	13079	0.471	0.499	13476	0.581	0.493	11007	0.428	0.495	19147	0.572	0.495	10134	0.490	0.495
2011	13512	0.464	0.498	13041	0.597	0.491	11303	0.431	0.495	19399	0.572	0.495	10491	0.486	0.496
2012	13145	0.465	0.499	12667	0.584	0.493	11951	0.426	0.495	19579	0.560	0.496	10168	0.478	0.498

<i>Single</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.231	0.422	12198	0.153	0.360	9989	0.278	0.448	21499	0.163	0.370	8985	0.284	0.451
2007	14153	0.236	0.425	12327	0.163	0.370	10463	0.316	0.465	20982	0.164	0.370	10218	0.289	0.453
2008	13312	0.251	0.434	12986	0.206	0.404	10383	0.309	0.462	20928	0.171	0.376	10337	0.292	0.455
2009	13087	0.258	0.437	13257	0.205	0.404	10565	0.301	0.459	20492	0.178	0.382	9728	0.299	0.458
2010	13079	0.261	0.439	13476	0.209	0.407	11007	0.316	0.465	19147	0.176	0.381	10134	0.304	0.460
2011	13512	0.264	0.441	13041	0.194	0.395	11303	0.314	0.464	19399	0.170	0.376	10491	0.306	0.461
2012	13145	0.259	0.438	12667	0.205	0.404	11951	0.320	0.466	19579	0.178	0.382	10168	0.315	0.464

<i>Separated or divorced</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.143	0.350	12198	0.051	0.219	9989	0.103	0.304	21499	0.055	0.228	8985	0.107	0.309
2007	14153	0.144	0.351	12327	0.060	0.237	10463	0.108	0.310	20982	0.060	0.238	10218	0.107	0.310
2008	13312	0.142	0.349	12986	0.072	0.259	10383	0.114	0.318	20928	0.063	0.242	10337	0.107	0.309
2009	13087	0.148	0.355	13257	0.076	0.265	10565	0.122	0.327	20492	0.067	0.250	9728	0.104	0.306
2010	13079	0.144	0.351	13476	0.081	0.272	11007	0.127	0.332	19147	0.073	0.260	10134	0.110	0.313
2011	13512	0.148	0.355	13041	0.080	0.271	11303	0.129	0.335	19399	0.082	0.274	10491	0.116	0.315
2012	13145	0.153	0.360	12667	0.078	0.268	11951	0.129	0.335	19579	0.082	0.274	10168	0.113	0.316

	<i>Germany</i>			<i>Spain</i>			<i>France</i>			<i>Italy</i>			<i>The Netherlands</i>		
<i>Widowed</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.129	0.336	12198	0.125	0.330	9989	0.127	0.333	21499	0.179	0.383	8985	0.105	0.306
2007	14153	0.128	0.335	12327	0.119	0.324	10463	0.116	0.320	20982	0.180	0.384	10218	0.111	0.314
2008	13312	0.129	0.335	12986	0.125	0.331	10383	0.125	0.330	20928	0.180	0.384	10337	0.107	0.309
2009	13087	0.120	0.325	13257	0.129	0.335	10565	0.123	0.328	20492	0.180	0.384	9728	0.104	0.305
2010	13079	0.124	0.330	13476	0.129	0.335	11007	0.130	0.336	19147	0.179	0.383	10134	0.096	0.295
2011	13512	0.124	0.330	13041	0.130	0.336	11303	0.125	0.331	19399	0.176	0.381	10491	0.092	0.295
2012	13145	0.123	0.328	12667	0.133	0.340	11951	0.125	0.331	19579	0.180	0.384	10168	0.094	0.295

<i>Home owner</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.440	0.496	12205	0.825	0.380	9992	0.589	0.492	21499	0.719	0.450	8986	0.555	0.497
2007	14153	0.443	0.497	12329	0.827	0.378	10467	0.563	0.496	20982	0.717	0.450	10217	0.563	0.496
2008	13312	0.440	0.496	12989	0.796	0.403	10400	0.582	0.493	20928	0.716	0.451	10336	0.567	0.495
2009	13087	0.443	0.497	13260	0.793	0.406	10580	0.596	0.491	20492	0.717	0.450	9724	0.570	0.495
2010	13079	0.447	0.497	13477	0.793	0.405	11007	0.587	0.492	19147	0.712	0.453	10127	0.570	0.495
2011	13512	0.450	0.498	13046	0.797	0.403	11304	0.600	0.490	19399	0.717	0.451	10487	0.571	0.495
2012	13145	0.452	0.498	12668	0.792	0.406	11951	0.606	0.489	19579	0.730	0.444	10160	0.566	0.496

	<i>Germany</i>			<i>Spain</i>			<i>France</i>			<i>Italy</i>			<i>The Netherlands</i>		
<i>One Person</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13798	0.386	0.487	12205	0.164	0.370	9992	0.312	0.463	21499	0.287	0.452	8985	0.350	0.477
2007	14153	0.391	0.488	12329	0.173	0.378	10467	0.339	0.474	20982	0.292	0.455	10219	0.352	0.478
2008	13312	0.401	0.490	12989	0.222	0.416	10400	0.347	0.476	20928	0.298	0.458	10336	0.355	0.479
2009	13087	0.404	0.491	13260	0.225	0.418	10580	0.344	0.475	20492	0.303	0.460	9727	0.358	0.479
2010	13079	0.406	0.491	13477	0.228	0.420	11007	0.353	0.478	19147	0.311	0.463	10134	0.361	0.480
2011	13512	0.410	0.492	13046	0.230	0.421	11304	0.342	0.475	19399	0.301	0.459	10492	0.364	0.481
2012	13145	0.411	0.492	12668	0.232	0.422	11951	0.348	0.476	19577	0.311	0.463	10168	0.367	0.482

<i>No children</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13798	0.293	0.455	12205	0.243	0.429	9992	0.293	0.455	21499	0.216	0.412	8985	0.294	0.456
2007	14153	0.297	0.457	12329	0.250	0.433	10467	0.287	0.453	20982	0.216	0.411	10219	0.298	0.458
2008	13312	0.293	0.455	12989	0.247	0.431	10400	0.284	0.451	20928	0.213	0.409	10336	0.300	0.458
2009	13087	0.299	0.458	13260	0.252	0.434	10580	0.291	0.454	20492	0.212	0.409	9727	0.298	0.458
2010	13079	0.299	0.458	13477	0.255	0.436	11007	0.285	0.452	19147	0.212	0.409	10134	0.299	0.458
2011	13512	0.300	0.458	13046	0.253	0.435	11304	0.292	0.455	19399	0.221	0.415	10492	0.300	0.458
2012	13145	0.301	0.459	12668	0.249	0.432	11951	0.289	0.454	19577	0.213	0.410	10168	0.293	0.455

<i>Single parent</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13798	0.0426	0.202	12205	0.0182	0.134	9992	0.0489	0.215	21499	0.0266	0.161	8985	0.0328	0.178
2007	14153	0.0376	0.190	12329	0.0174	0.131	10467	0.0508	0.220	20982	0.0285	0.166	10219	0.0350	0.184
2008	13312	0.0360	0.186	12989	0.0180	0.133	10400	0.0492	0.216	20928	0.0299	0.170	10336	0.0341	0.182
2009	13087	0.0361	0.187	13260	0.0181	0.133	10580	0.0506	0.219	20492	0.0315	0.175	9727	0.0331	0.179
2010	13079	0.0362	0.187	13477	0.0232	0.150	11007	0.0512	0.220	19147	0.0348	0.183	10134	0.0332	0.179
2011	13512	0.0361	0.186	13046	0.0262	0.160	11304	0.0523	0.223	19399	0.0324	0.177	10492	0.0358	0.186
2012	13145	0.0364	0.187	12668	0.0279	0.165	11951	0.0513	0.221	19577	0.0317	0.175	10168	0.0391	0.194

	<i>Germany</i>			<i>Spain</i>			<i>France</i>			<i>Italy</i>			<i>The Netherlands</i>		
<i>1 dep. Child</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13798	0.103	0.304	12205	0.227	0.419	9992	0.127	0.333	21499	0.179	0.383	8985	0.103	0.304
2007	14153	0.100	0.299	12329	0.224	0.417	10467	0.115	0.319	20982	0.178	0.383	10219	0.100	0.300
2008	13312	0.105	0.306	12989	0.204	0.403	10400	0.115	0.319	20928	0.176	0.381	10336	0.092	0.288
2009	13087	0.098	0.297	13260	0.207	0.405	10580	0.114	0.318	20492	0.177	0.381	9727	0.095	0.294
2010	13079	0.094	0.292	13477	0.204	0.403	11007	0.115	0.319	19147	0.168	0.374	10134	0.097	0.296
2011	13512	0.099	0.298	13046	0.204	0.403	11304	0.117	0.321	19399	0.176	0.381	10492	0.095	0.293
2012	13145	0.095	0.293	12668	0.207	0.405	11951	0.114	0.317	19577	0.177	0.382	10168	0.095	0.294

<i>2+ dep. Children</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13798	0.133	0.339	12205	0.206	0.404	9992	0.180	0.384	21499	0.175	0.380	8985	0.170	0.376
2007	14153	0.121	0.326	12329	0.195	0.396	10467	0.173	0.378	20982	0.170	0.375	10219	0.169	0.375
2008	13312	0.112	0.315	12989	0.186	0.389	10400	0.164	0.370	20928	0.169	0.375	10336	0.173	0.378
2009	13087	0.112	0.316	13260	0.194	0.396	10580	0.163	0.369	20492	0.171	0.376	9727	0.171	0.376
2010	13079	0.107	0.310	13477	0.194	0.396	11007	0.157	0.364	19147	0.169	0.375	10134	0.168	0.374
2011	13512	0.103	0.304	13046	0.197	0.398	11304	0.159	0.366	19399	0.170	0.375	10492	0.165	0.371
2012	13145	0.103	0.304	12668	0.200	0.400	11951	0.161	0.368	19577	0.171	0.377	10168	0.164	0.370

<i>No dep. Children</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13798	0.043	0.203	12205	0.142	0.349	9992	0.039	0.195	21499	0.117	0.321	8985	0.050	0.218
2007	14153	0.054	0.225	12329	0.141	0.348	10467	0.035	0.183	20982	0.116	0.320	10219	0.045	0.208
2008	13312	0.053	0.224	12989	0.123	0.328	10400	0.042	0.200	20928	0.113	0.317	10336	0.046	0.210
2009	13087	0.051	0.221	13260	0.103	0.304	10580	0.037	0.190	20492	0.106	0.307	9727	0.045	0.206
2010	13079	0.057	0.231	13477	0.095	0.294	11007	0.039	0.193	19147	0.105	0.306	10134	0.041	0.197
2011	13512	0.053	0.224	13046	0.090	0.286	11304	0.037	0.189	19399	0.100	0.300	10492	0.041	0.198
2012	13145	0.054	0.226	12668	0.085	0.278	11951	0.037	0.189	19577	0.097	0.294	10168	0.041	0.199

	<i>Germany</i>			<i>Spain</i>			<i>France</i>			<i>Italy</i>			<i>The Netherlands</i>		
<i>Low education</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.167	0.373	12185	0.596	0.491	9992	0.410	0.492	21.499	0.610	0.488	8.835	0.323	0.468
2007	14153	0.152	0.359	12313	0.587	0.493	10466	0.388	0.487	20.982	0.606	0.489	10.075	0.324	0.468
2008	13312	0.153	0.360	12975	0.565	0.496	10394	0.375	0.484	20.928	0.593	0.491	10.221	0.302	0.459
2009	13087	0.147	0.354	13249	0.570	0.495	10576	0.373	0.484	20.492	0.582	0.493	9.660	0.296	0.456
2010	13079	0.153	0.360	13469	0.557	0.497	10985	0.367	0.482	19.147	0.572	0.495	10.059	0.293	0.455
2011	13512	0.140	0.347	13024	0.562	0.496	11183	0.302	0.459	19.399	0.569	0.495	10.402	0.284	0.451
2012	13145	0.140	0.347	12667	0.550	0.498	11817	0.291	0.454	19.579	0.552	0.497	10.088	0.284	0.451

<i>Secondary/ Post sec. Educ</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.572	0.495	12185	0.180	0.384	9992	0.393	0.488	21499	0.285	0.451	8835	0.382	0.486
2007	14153	0.583	0.493	12313	0.180	0.384	10466	0.395	0.489	20982	0.288	0.453	10075	0.381	0.486
2008	13312	0.576	0.494	12975	0.188	0.391	10394	0.402	0.490	20928	0.299	0.458	10221	0.388	0.487
2009	13087	0.567	0.496	13249	0.184	0.387	10576	0.403	0.491	20492	0.309	0.462	9660	0.392	0.488
2010	13079	0.567	0.496	13469	0.191	0.393	10985	0.399	0.490	19147	0.321	0.467	10059	0.380	0.485
2011	13512	0.570	0.495	13024	0.190	0.392	11183	0.458	0.498	19399	0.317	0.465	10402	0.388	0.487
2012	13145	0.566	0.496	12667	0.193	0.395	11817	0.458	0.498	19579	0.329	0.470	10088	0.376	0.484

<i>University</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.262	0.440	12185	0.224	0.417	9992	0.198	0.398	21499	0.105	0.307	8835	0.295	0.456
2007	14153	0.265	0.441	12313	0.233	0.423	10466	0.217	0.412	20982	0.106	0.308	10075	0.294	0.456
2008	13312	0.271	0.445	12975	0.247	0.432	10394	0.223	0.417	20928	0.108	0.311	10221	0.310	0.463
2009	13087	0.285	0.452	13249	0.247	0.431	10576	0.224	0.417	20492	0.109	0.311	9660	0.312	0.463
2010	13079	0.280	0.449	13469	0.252	0.434	10985	0.234	0.423	19147	0.108	0.310	10059	0.328	0.469
2011	13512	0.290	0.454	13024	0.248	0.432	11183	0.240	0.427	19399	0.114	0.318	10402	0.328	0.469
2012	13145	0.295	0.456	12667	0.257	0.437	11817	0.251	0.434	19579	0.119	0.324	10088	0.340	0.474

	<i>Germany</i>			<i>Spain</i>			<i>France</i>			<i>Italy</i>			<i>The Netherlands</i>		
<i>Employee</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.514	0.500	12203	0.471	0.499	9992	0.484	0.500	21.499	0.359	0.480	8.939	0.592	0.492
2007	14153	0.490	0.500	12328	0.477	0.500	10467	0.486	0.500	20.982	0.366	0.482	10.171	0.600	0.490
2008	13312	0.507	0.500	12985	0.472	0.499	10400	0.492	0.500	20.928	0.370	0.483	10.295	0.588	0.492
2009	13087	0.510	0.500	13260	0.431	0.495	10580	0.475	0.499	20.492	0.366	0.482	9.728	0.569	0.495
2010	13079	0.511	0.500	13477	0.432	0.495	11007	0.462	0.499	19.147	0.367	0.482	10.134	0.559	0.497
2011	13512	0.521	0.500	13046	0.426	0.495	11304	0.462	0.499	19.399	0.371	0.483	10.492	0.558	0.497
2012	13145	0.524	0.500	12668	0.406	0.491	11951	0.460	0.498	19.579	0.369	0.483	10.168	0.560	0.496

<i>Self-employed</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.056	0.231	12203	0.115	0.319	9992	0.059	0.235	21499	0.144	0.351	8939	0.082	0.274
2007	14153	0.052	0.222	12328	0.120	0.325	10467	0.064	0.245	20982	0.143	0.350	10171	0.085	0.279
2008	13312	0.046	0.210	12985	0.117	0.322	10400	0.055	0.228	20928	0.142	0.349	10295	0.088	0.283
2009	13087	0.037	0.188	13260	0.107	0.309	10580	0.064	0.245	20492	0.137	0.344	9728	0.097	0.297
2010	13079	0.036	0.187	13477	0.103	0.304	11007	0.065	0.246	19147	0.137	0.344	10134	0.100	0.300
2011	13512	0.043	0.202	13046	0.093	0.290	11304	0.071	0.257	19399	0.129	0.336	10492	0.097	0.296
2012	13145	0.039	0.192	12668	0.091	0.287	11951	0.075	0.263	19579	0.132	0.339	10168	0.100	0.300

<i>Retired</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.315	0.464	12203	0.262	0.440	9992	0.357	0.479	21499	0.337	0.473	8939	0.190	0.392
2007	14153	0.326	0.469	12328	0.261	0.439	10467	0.361	0.480	20982	0.336	0.472	10171	0.184	0.387
2008	13312	0.319	0.466	12985	0.249	0.433	10400	0.373	0.484	20928	0.332	0.471	10295	0.189	0.391
2009	13087	0.321	0.467	13260	0.251	0.434	10580	0.372	0.483	20492	0.327	0.469	9728	0.196	0.397
2010	13079	0.322	0.467	13477	0.245	0.430	11007	0.362	0.481	19147	0.322	0.467	10134	0.194	0.395
2011	13512	0.317	0.465	13046	0.251	0.433	11304	0.364	0.481	19399	0.329	0.470	10492	0.196	0.397
2012	13145	0.319	0.466	12668	0.253	0.435	11951	0.367	0.482	19579	0.321	0.467	10168	0.192	0.394

	<i>Germany</i>			<i>Spain</i>			<i>France</i>			<i>Italy</i>			<i>The Netherlands</i>		
<i>Unemployed</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.064	0.245	12203	0.046	0.210	9992	0.053	0.224	21499	0.029	0.166	8939	0.015	0.123
2007	14153	0.072	0.258	12328	0.043	0.204	10467	0.044	0.204	20982	0.023	0.150	10171	0.011	0.102
2008	13312	0.069	0.254	12985	0.056	0.231	10400	0.045	0.207	20928	0.025	0.157	10295	0.010	0.099
2009	13087	0.074	0.262	13260	0.106	0.308	10580	0.054	0.225	20492	0.035	0.183	9728	0.014	0.117
2010	13079	0.071	0.256	13477	0.116	0.320	11007	0.058	0.234	19147	0.036	0.187	10134	0.017	0.130
2011	13512	0.062	0.241	13046	0.124	0.330	11304	0.049	0.216	19399	0.046	0.209	10492	0.016	0.126
2012	13145	0.061	0.240	12668	0.139	0.346	11951	0.049	0.216	19579	0.049	0.217	10168	0.021	0.145

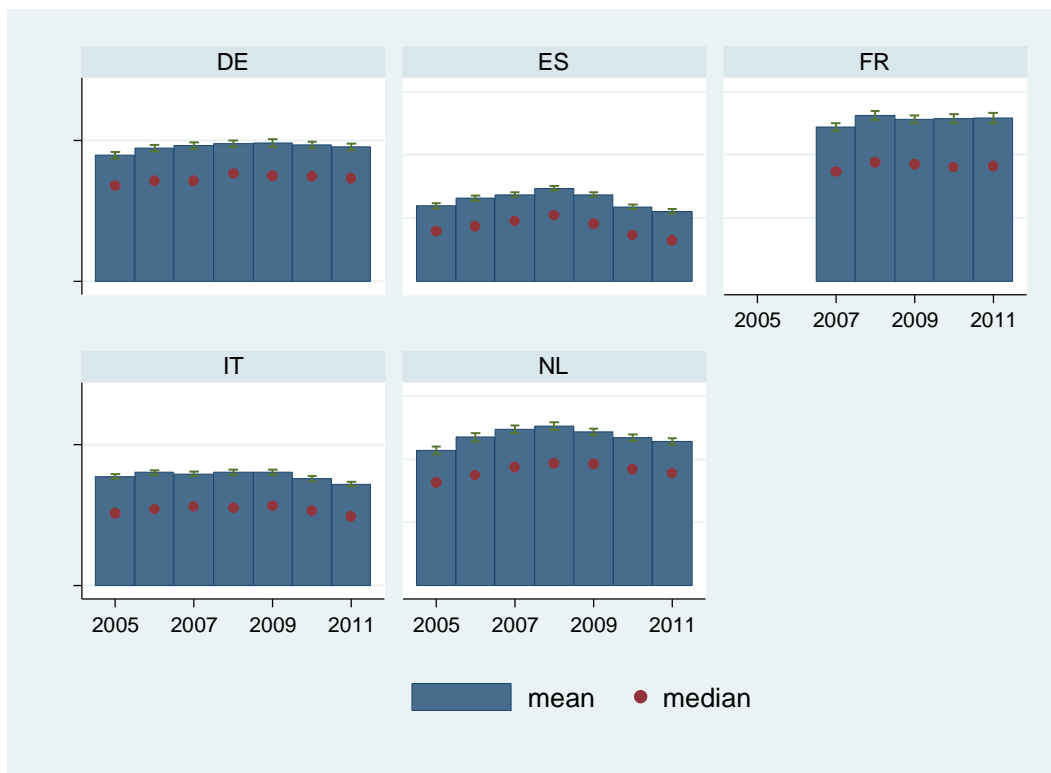
<i>Other</i>	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
2006	13799	0.051	0.220	12203	0.106	0.307	9992	0.047	0.211	21499	0.131	0.338	8939	0.121	0.326
2007	14153	0.061	0.239	12328	0.100	0.300	10467	0.045	0.207	20982	0.132	0.338	10171	0.121	0.326
2008	13312	0.059	0.236	12985	0.105	0.306	10400	0.035	0.184	20928	0.131	0.338	10295	0.125	0.331
2009	13087	0.058	0.234	13260	0.104	0.306	10580	0.036	0.185	20492	0.135	0.342	9728	0.124	0.329
2010	13079	0.060	0.237	13477	0.103	0.304	11007	0.054	0.225	19147	0.138	0.344	10134	0.130	0.337
2011	13512	0.058	0.233	13046	0.106	0.308	11304	0.054	0.227	19399	0.125	0.331	10492	0.133	0.339
2012	13145	0.058	0.233	12668	0.111	0.314	11951	0.049	0.215	19579	0.129	0.335	10168	0.127	0.333

Looking at Table 2.1.2 we can see that the average age of the household head is similar across countries, with the exception of Italy, where the sample is older, with a mid-age of about 56 years old. Average family size decreases considerably in Spain, but also in France, Italy and the Netherlands, between 2006 and 2012. Spain and France show a downward trend in the proportion of married or cohabiting couples in the sample. The fraction of singles rises sharply in Spain; in The Netherlands there are many singles and this proportion is still rising. In Germany, compared to the other countries, there are many divorced people. Regarding the housing tenure status, there are some cross-country differences. The home-ownership rate is especially high in Spain and Italy. Germany and the Netherlands have the highest percentage of tenants, and in the latter country, compared to the other countries, the share of owner who pay a mortgage is higher. Among the homeowners, in 2012 the percentage of households who pay a mortgage on the main dwelling is 86 percent in The Netherlands, while only 18 percent in Italy. France has a larger proportion of households whose accommodation is rented at a reduced rate. In none of the countries we observe a clear trend for households who do not have children, for families with a single parent and for households with dependent children. In Spain the number of households with no dependent children shows an interesting downward trend over time. There are dramatic cross-country differences in the education level of the household head. The fraction of individuals with low education is very high in Italy and Spain; in France the percentage of low educated households decreases between 2006 and 2012. The Netherlands presents an upward trend for individuals with a high education, with first or second stage of tertiary education. Germany is the only country where employment rises over time. In Italy the employment rate is constant at a low rate. In Spain the employment rate is falling quite dramatically. The fraction of self-employed in France and the Netherlands rises, while it falls in the other countries. For the retired, there is no clear trend in any of the countries. For unemployment, instead, we observe dramatic cross-country differences. The unemployment rate in Spain exhibits a dramatic upward trend, rising by 5 percentage points between 2008 and 2009. In Italy the unemployment rate increases slightly but remains quite low, even lower than in Germany. The fraction of households in the category “other”, as for example students, disabled and inactive persons, is higher in Italy and The Netherlands, compared to the other countries.

2.2 EQUIVALENT HOUSEHOLD REAL INCOME

Table 2.1.2 and Figure 2.2.1 show the trend of equivalent disposable real annual income for the five countries. Figure 2.2.1 reports both median and average income (plus its 95% confidence interval). The reference period is the calendar year prior to the interview. In Germany and France average income does not change much between 2008 and 2011. However, Spain experiences in the same period a dramatic drop of about 13 percent in average income. In Italy and the Netherlands the crisis seems to affect household income later than in the other countries: in both countries average income decreases by about 5% between 2009 and 2011 (see Table 2.1.2). However, contrary to Italy, mean income in the Netherlands rose considerably between 2005 and 2008 (8 percent).

Figure 2.2.1 Equivalent Household Real Annual Income



INCOME REGRESSION RESULTS

In this section we will discuss country specific regression results where the outcome of interest is the logarithm of equivalent household real annual income. The following control variables are included in the regressions: year dummies, dummy variables indicating the age class, gender, marital status, education level, and employment status of the household head. Age is calculated at the time of the interview and the reference category of the age class dummies is the group of households headed by individuals aged 35 or less. The marital status binary indicators are *single*, *separated* or *divorced* and *widowed*; the reference category refers to household heads having a partner. We add household composition indicators to further control for different family type effects. We take into account six family types: *one person*, that considers households with only one component, *single parent* households, households with one *dependent child*, families with *two or more dependent children*, and households with *no dependent child* but only independent children. The reference category is households with two or more members but no children. Education accounts for three levels: *low education*, the baseline, *secondary or post-secondary education* and *first or second stage of tertiary education*. Employment status distinguishes between *self-employed*, *retired*, *unemployed*, *other* with *employed* as reference category. In the “other” category we include students, individuals undertaking further training, with unpaid work experience, individuals permanently disabled, unfit to work, persons in compulsory military community or service, those fulfilling domestic tasks and care responsibilities and other inactive persons. The dummy *owner* is equal to one if the household owns a house and zero otherwise, e.g. in the case of tenants or subtenants and those whose accommodation is provided free of charge. We control also for different time periods to observe the time dynamic during the years considered.⁵

⁵ Year dummies refer to the time of the interview, except for the disposable income, that refers to the previous year in respect of the date of the interview, as already noted.

Table 2.2.1 Logarithm of Equivalent Household Real Annual Net Income

	Germany		Spain		France		Italy		Netherlands	
	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err
agecl36_45	0.126***	0.006	0.016*	0.009	0.149***	0.007	0.122***	0.007	0.138***	0.005
agecl46_55	0.155***	0.007	0.096***	0.009	0.249***	0.007	0.212***	0.007	0.205***	0.005
agecl56_65	0.124***	0.008	0.117***	0.010	0.314***	0.010	0.341***	0.008	0.187***	0.006
agecl66_75	0.110***	0.010	0.023*	0.012	0.287***	0.013	0.291***	0.010	0.193***	0.009
agecl76	0.135***	0.011	-0.042***	0.012	0.265***	0.013	0.267***	0.010	0.171***	0.009
Female	-0.092***	0.006	-0.161***	0.008	-0.115***	0.007	-0.193***	0.006	-0.071***	0.006
Single	-0.014**	0.007	0.052***	0.008	-0.035***	0.006	0.035***	0.006	0.060***	0.005
separated_divorced	-0.062***	0.007	-0.004***	0.011	0.016**	0.008	0.034***	0.009	0.056***	0.007
widowed	0.115***	0.009	0.220***	0.010	0.120***	0.010	0.175***	0.007	0.222***	0.008
one_person	-0.161***	0.007	-0.157***	0.009	-0.189***	0.008	-0.185***	0.006	-0.211***	0.006
single_parent	-0.317***	0.010	-0.399***	0.018	-0.356***	0.012	-0.460***	0.014	-0.423***	0.010
dep_child	-0.105***	0.006	-0.007***	0.007	-0.063***	0.007	-0.061***	0.005	-0.099***	0.005
dep_2more_child	-0.237***	0.006	-0.194***	0.008	-0.184***	0.007	-0.240***	0.006	-0.243***	0.005
nodep_child	0.044***	0.007	0.262***	0.007	0.061***	0.010	0.283***	0.005	0.069***	0.007
secondary_postsecondary_educ	0.114***	0.006	0.266***	0.006	0.150***	0.005	0.280***	0.004	0.094***	0.004
first_second_stage_tertiary_educ	0.348***	0.006	0.515***	0.006	0.476***	0.006	0.598***	0.006	0.329***	0.004
selfemployed	0.041***	0.012	-0.476***	0.011	0.028**	0.013	-0.041***	0.005	0.049***	0.008
retired	-0.314***	0.008	-0.216***	0.009	-0.138***	0.009	-0.269***	0.007	-0.199***	0.006
unemployed	-0.586***	0.008	-0.528***	0.010	-0.314***	0.010	-0.705***	0.014	-0.235***	0.014
Other	-0.547***	0.010	-0.421***	0.011	-0.425***	0.014	-0.447***	0.009	-0.285***	0.006
owner	0.162***	0.004	0.194***	0.006	0.197***	0.004	0.171***	0.004	0.212***	0.004
dyear_2006	0.017***	0.006	0.045***	0.008			0.013**	0.005	0.037***	0.006
dyear_2007	0.029***	0.006	0.074***	0.008			0.008	0.005	0.068***	0.005
dyear_2008	0.043***	0.006	0.128***	0.008	0.023***	0.006	0.028***	0.006	0.076***	0.006
dyear_2009	0.042***	0.006	0.102***	0.008	0.019***	0.006	0.030***	0.006	0.081***	0.005
dyear_2010	0.028***	0.006	0.049***	0.008	-0.004	0.006	-0.005	0.006	0.054***	0.005
dyear_2011	0.020***	0.006	0.034***	0.008	-0.003	0.006	-0.027***	0.006	0.036***	0.005
Constant	9.655***	0.010	9.308***	0.011	9.599***	0.009	9.383***	0.008	9.657***	0.007
Observations	93,730		88,697		54,993		140,913		69,014	
R-squared	0.301		0.257		0.309		0.277		0.333	
Adj R-squared	0.301		0.257		0.309		0.277		0.332	
p-val F-test year dummies	0.000		0.000		0.000		0.000		0.000	

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors

Table 2.2.1 summarizes for each country the main regression results. As we said before, the standard errors should be viewed with care as they underestimate the extent of sampling variation in the estimated coefficients. Since the EU-SILC dataset does not contain a unique household identifier we are not able to compute standard errors which are clustered at the household level. It turns out that the age income profile differs substantially across countries. Before we discuss the results we like to point out that the age coefficients should be interpreted with care because we do not control for generation effects. In Germany and the Netherlands, young households have an income which is lower than that of the other age groups, *ceteris paribus*: this difference amounts to about 13 percent in Germany and 19 percent in the Netherlands. Contrary to Germany and the Netherlands, the relationship between income and age is hump-shaped in Spain, i.e. the young (<45) and the (very) old (>=66) have considerably lower income than the middle-aged. The age-income gradients in Italy and France are remarkably similar: average income rises up to age 55 and then decreases slightly after that age.

In all countries female headed households have a lower equivalized income than male headed households. This gender gap in equivalized income is more pronounced in Spain and Italy than in the other countries. Obviously there is also a strong positive relationship between income and education, especially in the Southern European countries.

The effect of socio-economic status (employee, self-employed, retired, unemployed and other) on income differs quite a bit across countries. These differences can be explained by differences in social insurance systems but also by the fact that the EU-SILC questions on socio-economic status are country specific. One should therefore interpret the country specific differences in the effect of socio-economic status with care. In all countries except Spain self-employed households have more or less the same income than households head by an employee. In Spain equivalized income of the self-employed is 38% $(=(\exp(-0.476)-1)*100)$ lower than that of employees. Retirees have also a lower income than employees although this income differential is relatively small in France (about 13%) and relatively high in Germany (27%) and Italy (24%). The unemployed are also worse off than employees. This difference is very large in Italy (51%), Germany (44%) and Spain (41%) and relatively small in the Netherlands (21%) and in France (27%).

For all countries it holds that the trends in the year dummy coefficients are very similar to the ‘raw’ trends presented in Figure 2.2.1. In a sensitivity analysis we also consider an alternative specification which only includes time dummies for the crisis period.

INCOME INTERACTIONS

In this section we study if some groups of the population are more affected by the crisis than others. To this aim we add to the regression, one by one, interactions between the year dummies and some relevant variables: age classes, education, household composition, employment, marital status and home-ownership. The next figures show for each country how the marginal effects of each variable on income evolve over time. We only display the time evolution of the marginal effects if the interaction terms are both statistically and economically significant.

The first variable taken into account is the household equivalent real income; we want to capture heterogeneous effects across different groups.

Age

The age classes refer to the age of the head of the household. In Germany the youngest individuals are the ones with the lowest income. Also for households whose head is younger than 66 income decreased in 2010;

for those aged between 46 and 55 income decreased also in 2011, and for the age class 66-75 income decreased slightly only in 2011. Income of older households (≥ 75) rose by about 8 percent between 2006 and 2010. This might reflect the role of the public pension system in protecting this age group from adverse economic conditions. In Spain we observe a dramatic decline in income from 2008 onwards for households with a head younger than 66. Especially young households (< 36) are hit the most in that period with a decrease of about 20 percent. Italian households headed by individuals aged 55 or less are the most affected by the crisis: they experienced on average an income drop of at least 10 percent between 2008 and 2011. For the youngest Italian households this income drop is even larger (around 15%). Like in all other countries we consider in this study, average income of older Italian households (≥ 66) remained fairly constant during the crisis. Average income of Dutch young households is also affected by the recession but to a much lesser extent than in Italy and Spain (-5%).

Figure 2.2.2 Logarithm of equivalent household income and age – Germany

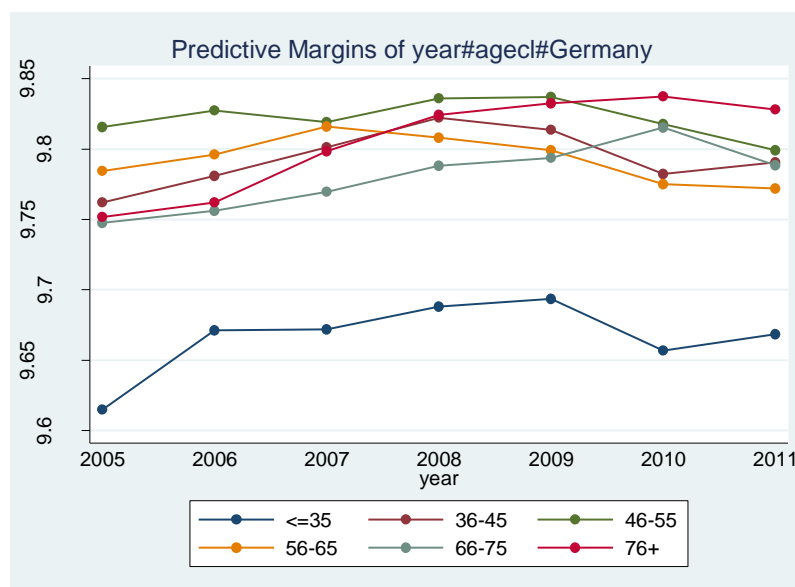


Figure 2.2.3 Logarithm of equivalent household income and age – Spain

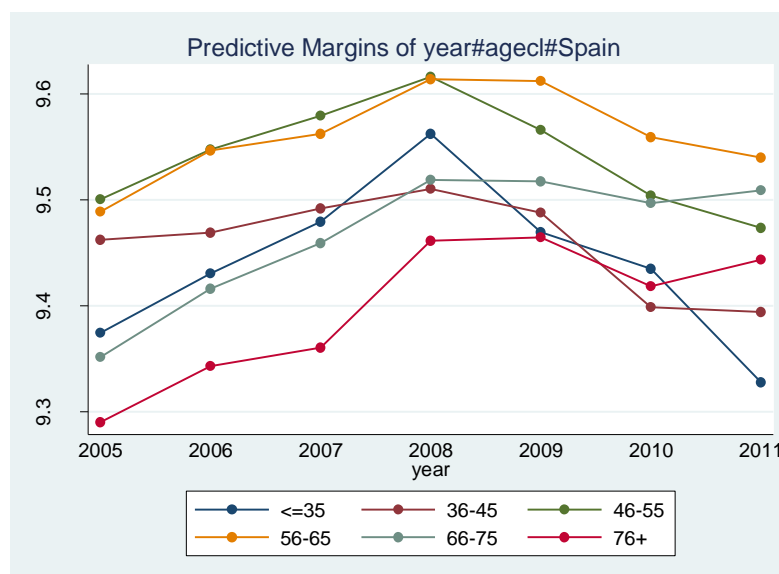


Figure 2.2.4 Logarithm of equivalent household income and age – Italy

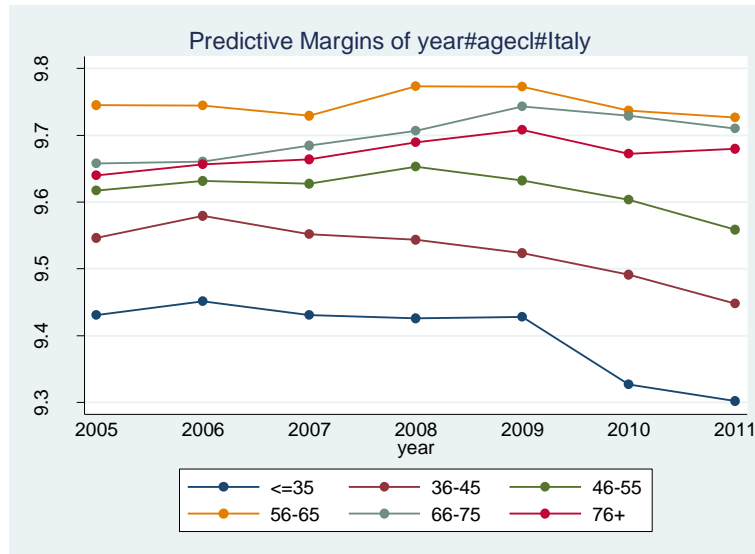
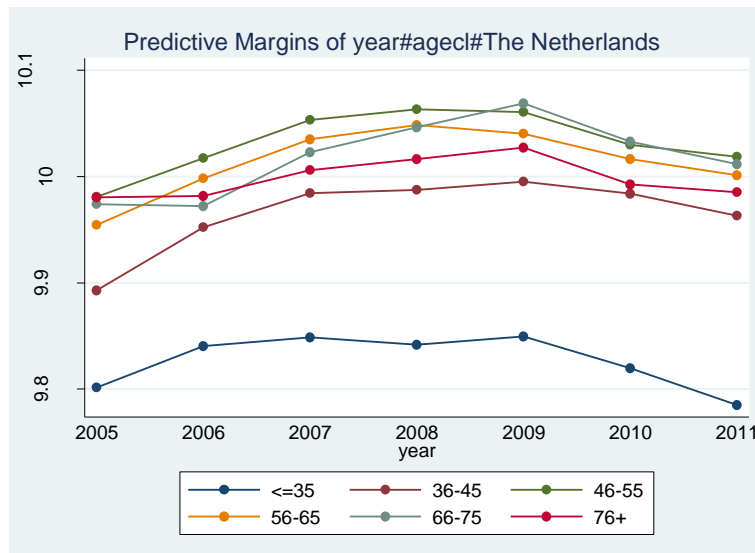


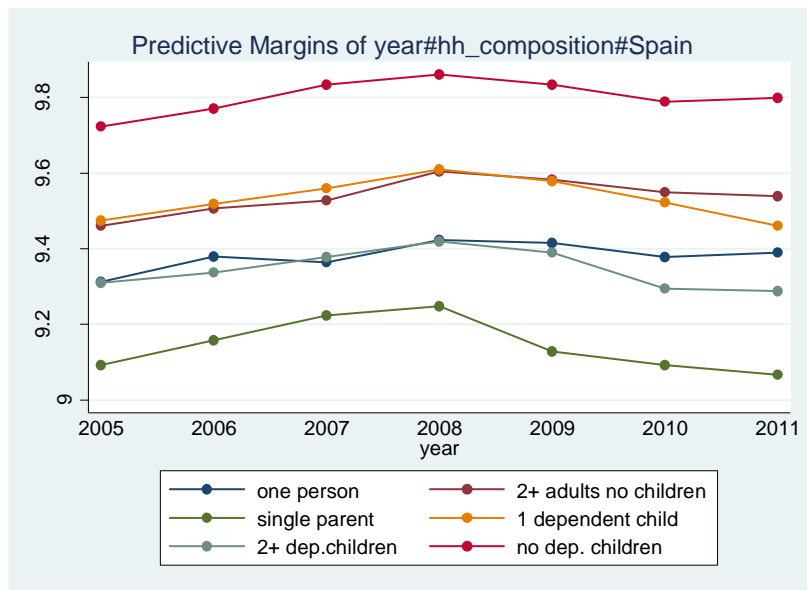
Figure 2.2.5 Logarithm of equivalent household income and age – The Netherlands



Household composition

The interactions between year dummies and household composition controls are statistically and economically significant only for Spain. After 2008 especially single parents experienced the worst drop in income (around 10%). Also households with dependent children decreased their income, after 2009, but to a lesser extent.

Figure 2.2.6 Logarithm of equivalent household income and household composition – Spain



Employment status

In the interaction between time dummies and employment status we find that, considering equivalent real income, the Great Recession affected households whose head is self-employed in every country. In particular in Germany income of the self-employed dropped by 10 percent between 2007 and 2011, while no time trends can be found looking at employed, retired and unemployed individuals. In Spain income of the unemployed decreased dramatically, by more than 30 percent. The income pattern for the self-employed is less clear cut, it decreases in 2009 and 2010 and increases afterwards. In France we find similar results, i.e. during the crisis income decreased for the self-employed.

Figure 2.2.7 Logarithm of equivalent household income and employment status – Germany

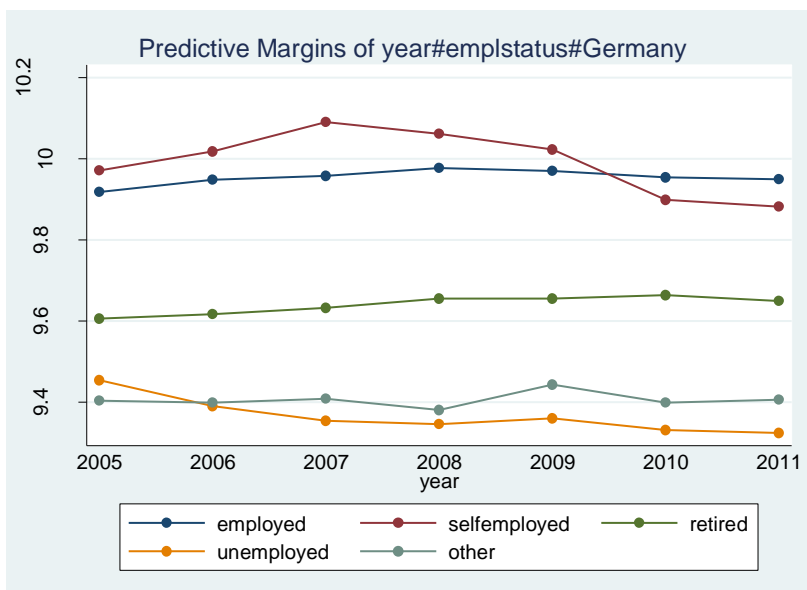


Figure 2.2.8 Logarithm of equivalent household income and employment status – Spain

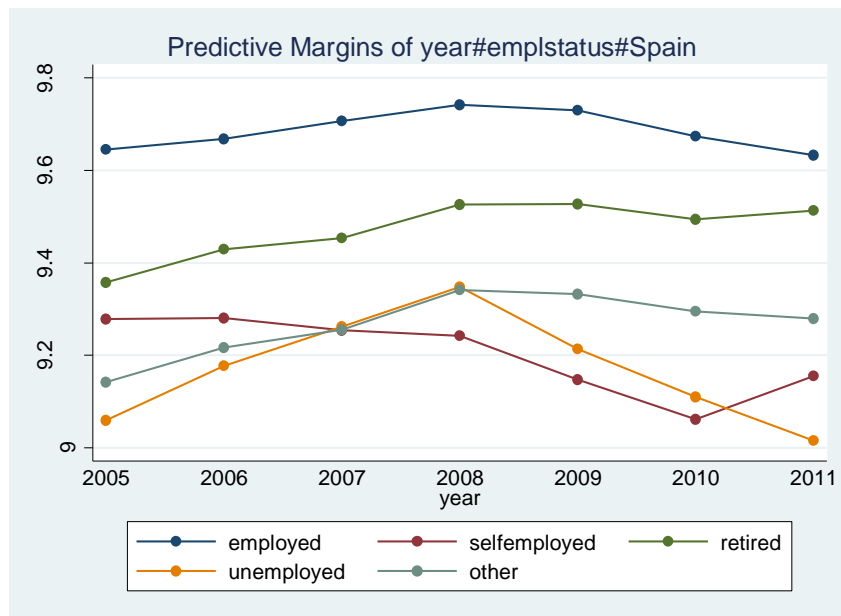
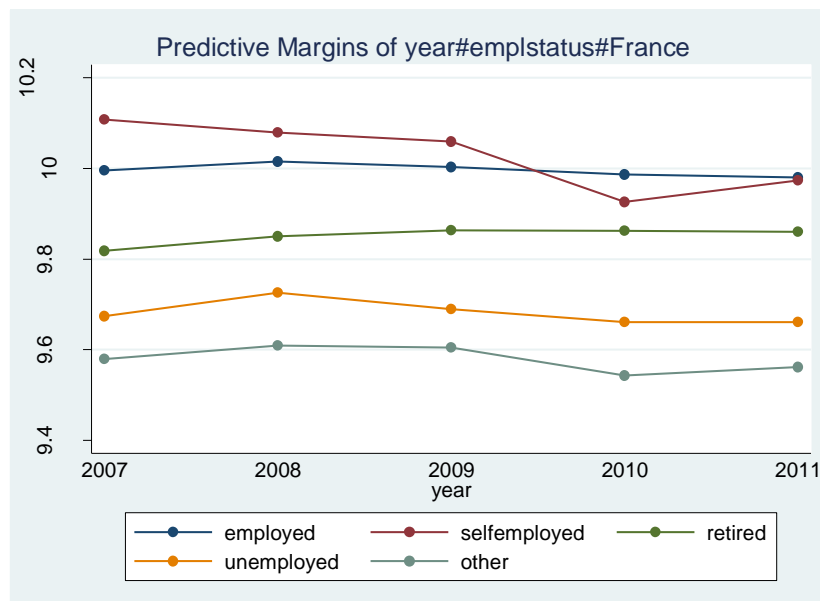


Figure 2.2.9 Logarithm of equivalent household income and employment status – France



Marital status

In Germany widowed individuals have significantly higher equalized income compared to the others. In Germany during the recession income for households whose head is separated or divorced decreases since the beginning of the crisis. No crisis effects are observed for widowed and married individuals. In Spain and Italy especially married, separated, divorced and singles are hit by the crisis. In Italy the greater fall occurred one year later than in Spain.

Figure 2.2.10 Logarithm of equivalent household income and marital status – Germany

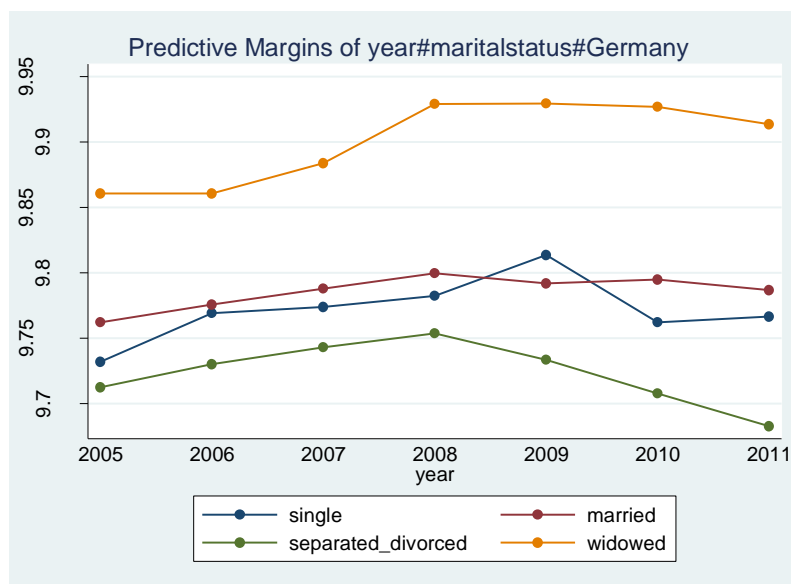


Figure 2.2.11 Logarithm of equivalent household income and marital status – Spain

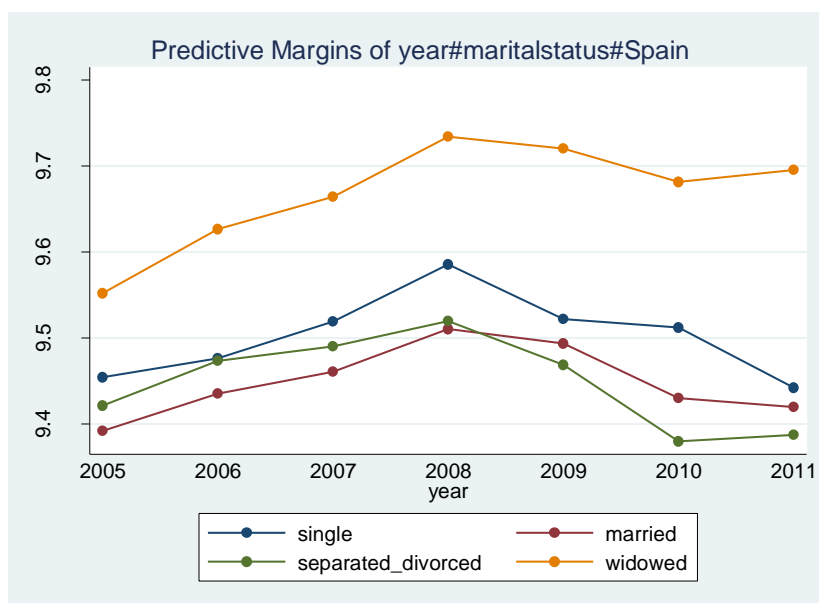
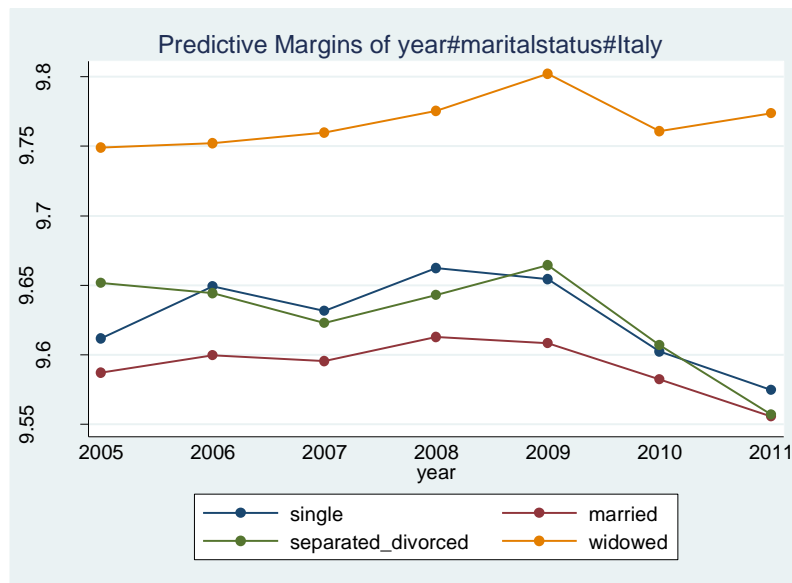


Figure 2.2.12 Logarithm of equivalent household income and marital status – Italy



Home-ownership

In Germany and in the Netherlands there are no large differences in the effects of the recession between home-owners and tenants: for both the decrease in income is small. In Spain renters are more affected: they experience an income drop of about 18%, while for home-owners this is less than 10%. Also in Italy tenants suffer more than home-owners in terms of household income, especially after 2009.

Figure 2.2.13 Logarithm of equivalent household income and home-ownership – Germany

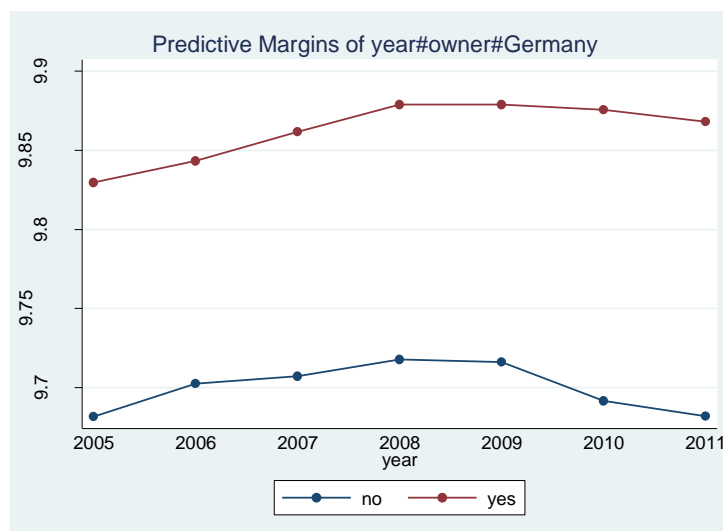


Figure 2.2.14 Logarithm of equivalent household income and home-ownership – Spain

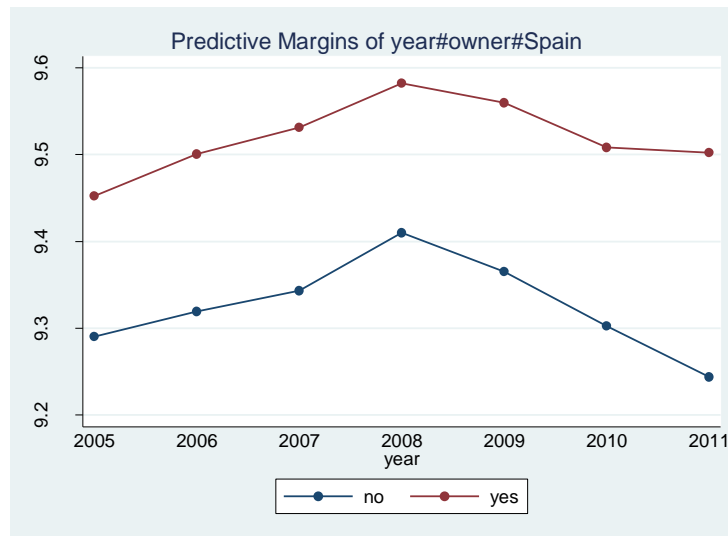


Figure 2.2.15 Logarithm of equivalent household income and home-ownership – Italy

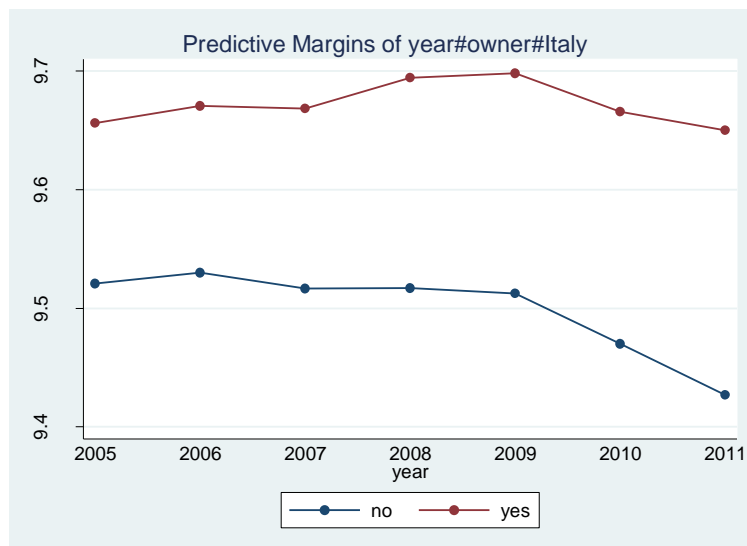
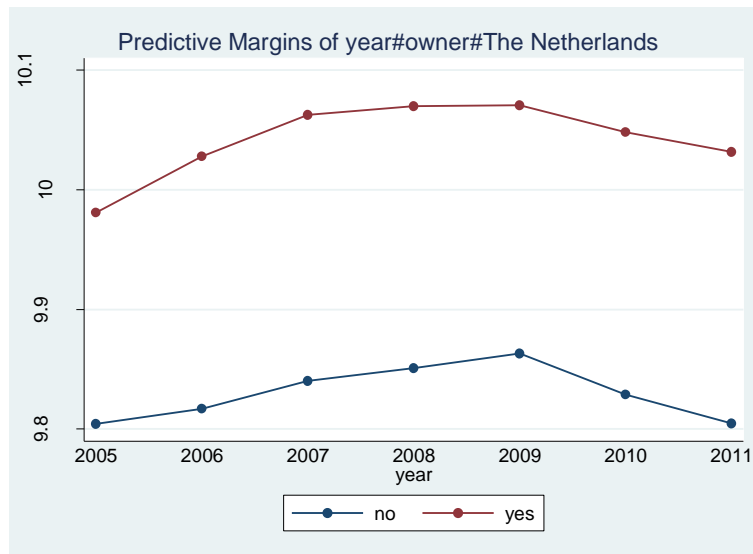


Figure 2.2.16 Logarithm of equivalent household income and home-ownership – The Netherlands



2.3 CAPACITY TO FACE UNEXPECTED FINANCIAL EXPENSES

Figures 2.3.1 and 2.3.2 represent the proportion of households who declare they cannot afford an unexpected required expense and are not able to pay for it with their own resources. We can observe that the percentage of households who cannot afford an unexpected expense increases significantly in Spain and Italy during the Great Recession. From the first year of the crisis the percentage rises by about 12 percent in Spain and 10 percent in Italy, where the effects of the recession became more marked since 2011. The proportion rises in the Netherlands after 2009. In Germany and France, there are no significant differences comparing the pre-crisis and the crisis period, as for disposable income.

Figure 2.3.1 Proportion of household who declare that they cannot afford an unexpected expense – Spain and Italy

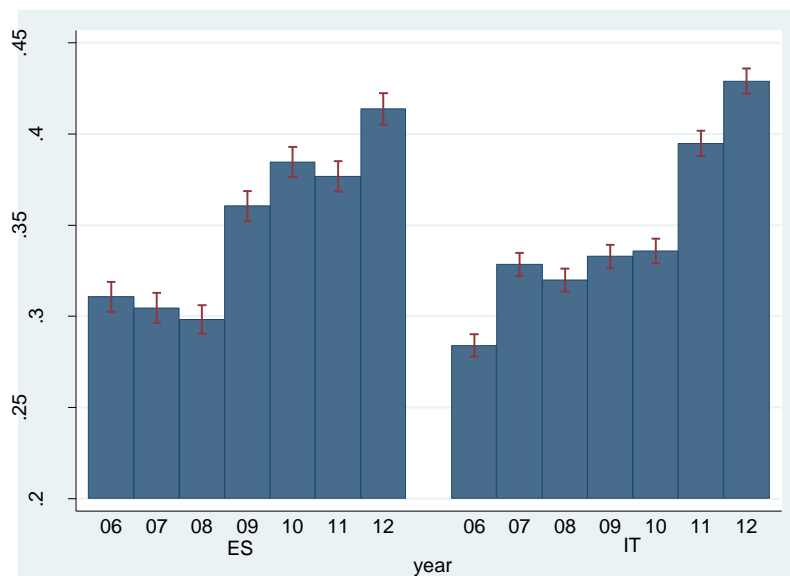
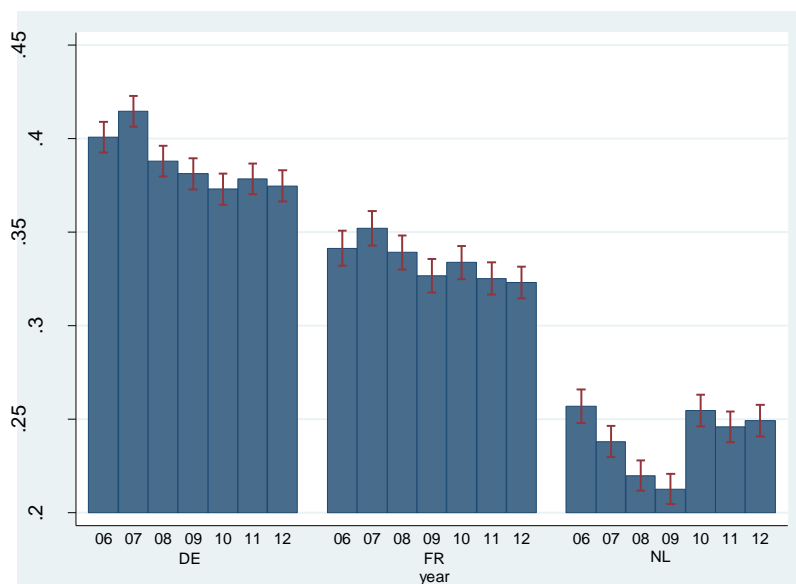


Figure 2.3.2 Proportion of household who declare that they cannot afford an unexpected expense – Germany, France and the Netherlands



REGRESSION RESULTS

We regress the capacity to sustain an unexpected expense on the same set of covariates as for equivalent household real income. The regression results are summarized in Table 2.3.1. The coefficients should be interpreted in the following way: the higher the coefficients, the higher the probability that one can cope with unexpected financial expenses.

In the Netherlands, Germany and France the ability to face unexpected financial expenses increases monotonically with age. The age gradient is especially pronounced in the Netherlands: Dutch older households (≥ 66) are about 20 percentage points more likely to deal with unexpected expenses than young households (< 36). This difference is much lower in Spain (3%-points) and in Italy (6%-points). In Spain this relationship is hump-shaped. Notice that this result is in line with the fact that in Spain the age-income profile is also hump-shaped.

Female-headed households are less able to sustain unforeseen expenditures than male headed households. The gender gap in this inability is similar across countries. Not surprising, there is also a positive relationship between this ability and education. The education gradient is rather similar across countries except for the Netherlands where it is less pronounced. As expected the Spanish unemployed are about 25 percentage points less likely to cope with unexpected expenses than Spanish employees. This marginal effect is more or less similar in the other countries albeit somewhat stronger in Germany. For all countries it holds that retirees are slightly less able to deal with unexpected expenses than employees. We have seen before that the Spanish self-employed have considerably lower equivalized income than Spanish employees. It is therefore rather surprising that the Spanish self-employed have fewer problems to cope with unexpected expenses than Spanish employees. Not surprisingly, home-owners have fewer troubles to pay for unexpected expenses than renters.

For all countries it holds that the trends in the year dummy coefficients coincide with those presented in Figures 2.3.1 and 2.3.2. Italy has higher year dummies coefficients than the other countries. Table 2.3.1

suggests that Italy is hit the most by the recession and then Spain; but looking at the income variable (cf. Table 2.2.1) the effects of the recession are more pronounced in Spain. Results of Table 2.3.1 also suggest that in the Netherlands, Germany and France, we do not observe large effects of the Great Recession on the ability to face unexpected financial expenses.

Table 2.3.1 Capacity to face unexpected expenses

	Germany		Spain		France		Italy		Netherlands	
	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err
agecl36_45	0.038***	0.006	0.038***	0.006	0.050***	0.006	0.055***	0.005	0.031***	0.005
agecl46_55	0.066***	0.006	0.056***	0.006	0.070***	0.006	0.070***	0.005	0.065***	0.005
agecl56_65	0.108***	0.006	0.079***	0.006	0.080***	0.007	0.077***	0.005	0.109***	0.006
agecl66_75	0.134***	0.008	0.044***	0.008	0.082***	0.009	0.062***	0.006	0.186***	0.007
agecl76	0.169***	0.009	0.033***	0.009	0.118***	0.009	0.062***	0.007	0.218***	0.008
Female	-0.069***	0.005	-0.093***	0.006	-0.110***	0.005	-0.086***	0.004	-0.066***	0.005
Single	-0.009	0.006	-0.022***	0.005	-0.009*	0.005	-0.009**	0.004	0.016***	0.005
separated_divorced	-0.119***	0.006	-0.106***	0.007	-0.042***	0.006	-0.041***	0.006	-0.048***	0.006
widowed	0.021***	0.008	0.005	0.007	0.052***	0.007	0.021***	0.005	0.088***	0.007
one_person	-0.044***	0.006	-0.016***	0.006	-0.045***	0.006	-0.033***	0.004	-0.054***	0.006
single_parent	-0.152***	0.009	-0.095***	0.011	-0.183***	0.009	-0.083***	0.008	-0.166***	0.010
dep_child	-0.078***	0.005	-0.048***	0.005	-0.087***	0.006	-0.045***	0.004	-0.044***	0.005
dep_2more_child	-0.094***	0.005	-0.087***	0.005	-0.130***	0.005	-0.098***	0.004	-0.038***	0.004
nodep_child	-0.058***	0.007	0.028***	0.005	-0.056***	0.008	0.043***	0.004	-0.045***	0.007
secondary_postsecondary_educ	0.113***	0.006	0.153***	0.004	0.097***	0.004	0.154***	0.003	0.069***	0.004
first_second_stage_tertiary_educ	0.257***	0.006	0.258***	0.003	0.257***	0.004	0.266***	0.003	0.130***	0.004
selfemployed	0.026***	0.006	0.087***	0.005	0.060***	0.006	0.076***	0.003	0.015***	0.004
retired	-0.047***	0.006	-0.036**	0.006	-0.004***	0.006	0.004***	0.004	-0.066***	0.005
unemployed	-0.362***	0.006	-0.261***	0.006	-0.227***	0.008	-0.301***	0.007	-0.220***	0.014
Other	-0.208***	0.007	-0.130***	0.007	-0.186***	0.008	-0.112***	0.005	-0.150***	0.006
owner	0.191***	0.003	0.171***	0.004	0.236***	0.004	0.190***	0.003	0.202***	0.004
dyear_2007	-0.013**	0.005	0.010*	0.006	0.007	0.006	-0.050***	0.004	0.014***	0.005
dyear_2008	0.013**	0.005	0.030***	0.005	-0.002	0.006	-0.045***	0.004	0.018***	0.005
dyear_2009	0.017***	0.005	-0.007	0.005	0.006	0.006	-0.049***	0.004	0.023***	0.005
dyear_2010	0.016***	0.005	-0.038***	0.005	0.012	0.006	-0.055***	0.004	0.006***	0.005
dyear_2011	0.002	0.005	-0.023***	0.006	-0.001**	0.006	-0.109***	0.004	0.005	0.005
dyear_2012	0.009*	0.005	-0.058***	0.006	-0.002	0.006	-0.148***	0.004	0.006	0.005
Constant	0.440***	0.008	0.507***	0.008	0.474***	0.008	0.525***	0.006	0.600***	0.007
Observations	93,589		89,828		75,253		142,024		68,863	
R-squared	0.233		0.154		0.207		0.145		0.183	
Adj R-squared	0.233		0.154		0.207		0.145		0.183	
p-val F-test year dummies	0.000		0.000		0.0634		0.000		0.000	

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors

Age

According to Figure 2.3.3 the probability that Spanish households were able to face unexpected financial expenses decreases between 2008 and 2010 for all age groups, including older households (66+). This result is a bit at odds with the evidence presented in Figure 2.2.3. According to that figure, equivalized income of older Spanish households did not decline in that period. On the other hand, income of young Spanish households decreased more dramatically during the financial crisis than for the other households.

Figure 2.3.4 suggests that the financial situation of all Italian households, irrespective of age, deteriorated after 2010, when every age class experienced a drop in the probability to sustain an unexpected financial expense. However, the households hit the most are those with a head aged between 36 and 45 years old and older households (76+). Also for Italy these results do not coincide with the age-class specific trends in average income presented in Figure 2.2.4.

Figure 2.3.3 Capacity to face unexpected financial expenses and age – Spain

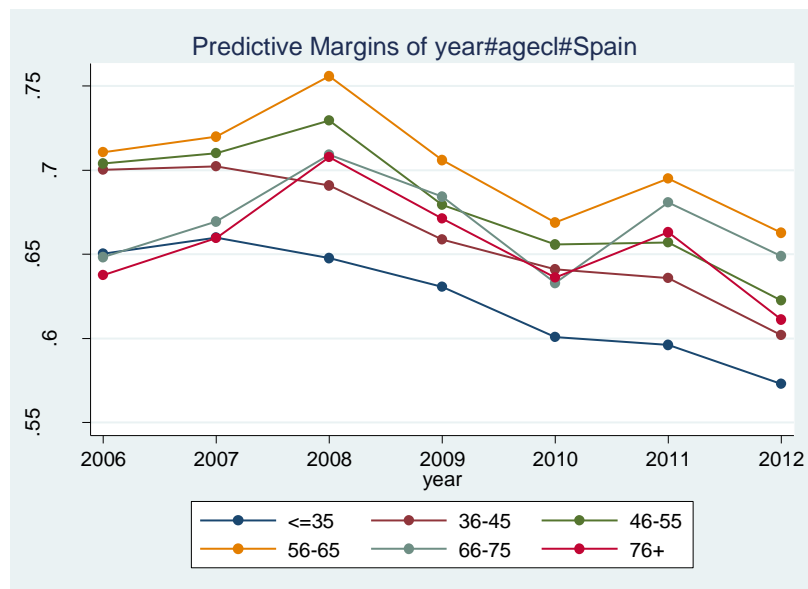
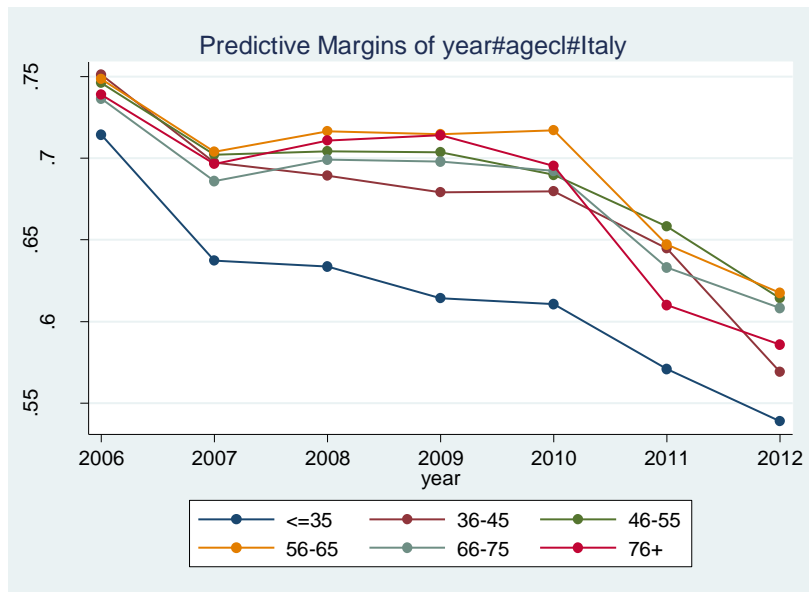


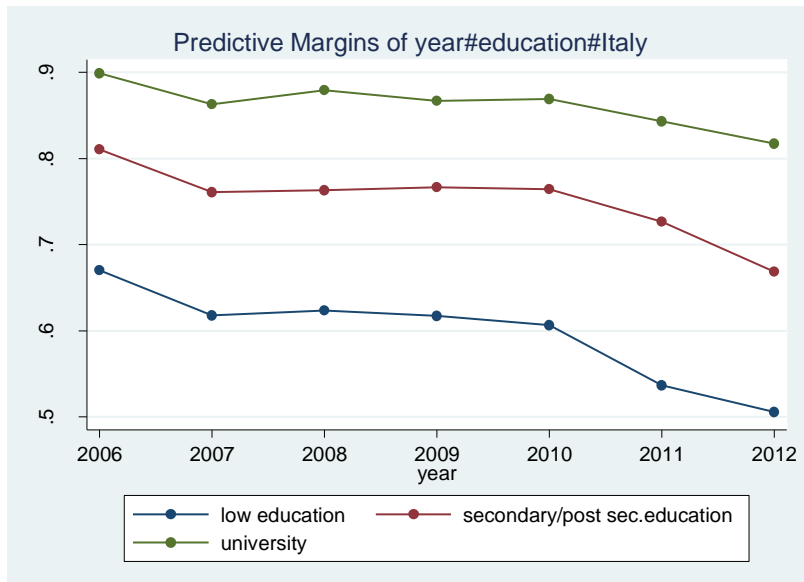
Figure 2.3.4 Capacity to face unexpected financial expenses and age – Italy



Education

Looking at education in Italy, we see that the impact of the crisis is stronger for lower educated households, with no education, primary or lower secondary level of basic education.

Figure 2.3.5 Capacity to face unexpected financial expenses and education – Italy



Household composition

In Spain households headed by a single parent are those most affected by the crisis. This result is more or less in line with the evidence on income presented in Figure 2.2.6. In Italy single parents have a lower ability to face unforeseen expenditures after 2009 in comparison with the other categories. It is also noteworthy that from 2010 onwards one person households had more troubles to pay unexpected financial expenses.

Figure 2.3.6 Capacity to face unexpected financial expenses and household composition – Spain

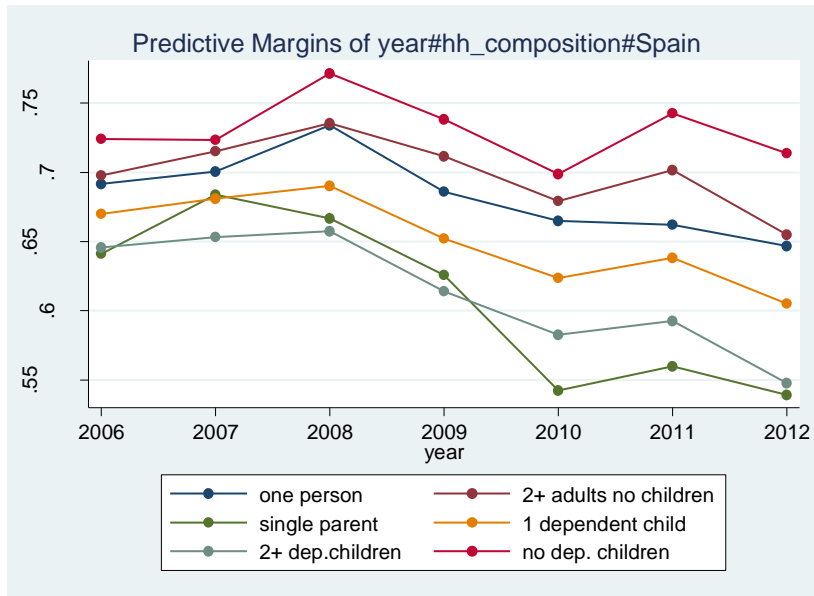
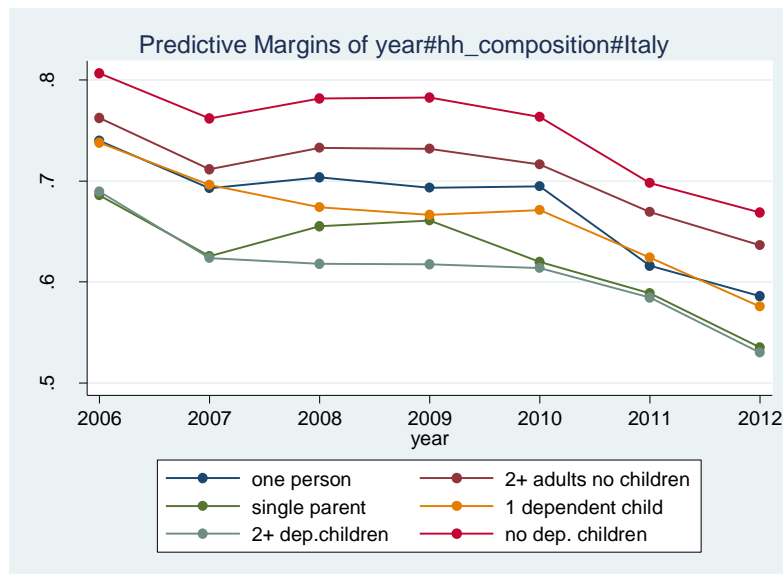


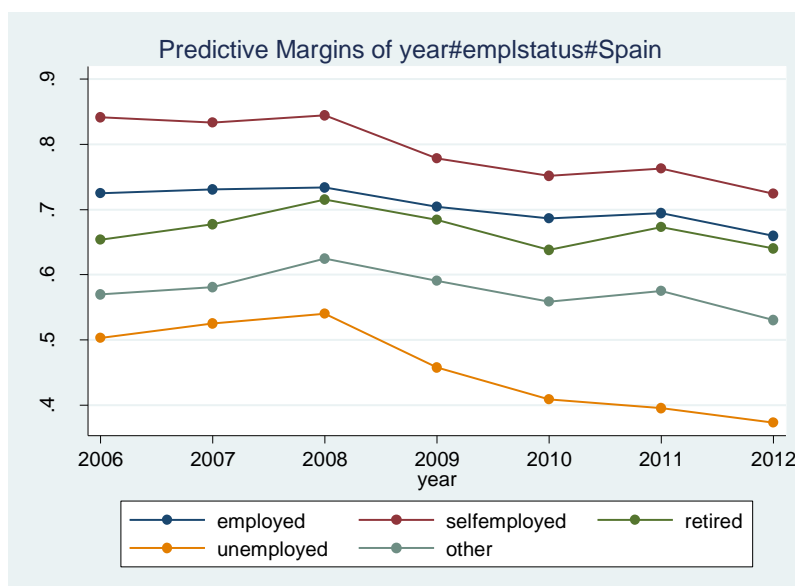
Figure 2.3.7 Capacity to face unexpected financial expenses and household composition – Italy



Employment status

In the previous section we reported that from 2008 onwards equivalized income of the Spanish unemployed decreased more dramatically than for the other socio-economic groups. This result is basically confirmed in Figure 2.3.8 where we display the time trend in the ability to face unexpected financial expenses.

Figure 2.3.8 Capacity to face unexpected financial expenses and employment status – Spain



2.4 OVER-INDEBTEDNESS

The variable over-indebtedness is a dummy equal to one if a household declares being in arrears on mortgage or rent payments, or utility bills, or hire purchase instalments or other loan⁶. The probability of being in over-indebtedness rises in Italy during the recession, especially in 2008, possibly due to an increase in the price of utility bills in the same year. In Spain the probability increased after 2008 and decreased slightly in 2011. Dutch households have experienced a higher probability of being over-indebted from 2009. In Germany and France also the probability of being in over-indebtedness does not increase during the crisis.

⁶ Households who do not have to pay any of these debts, because they do not have such a mortgage, take the value zero in the variable.

Figure 2.4.1 Proportion of over-indebted households – Spain and Italy

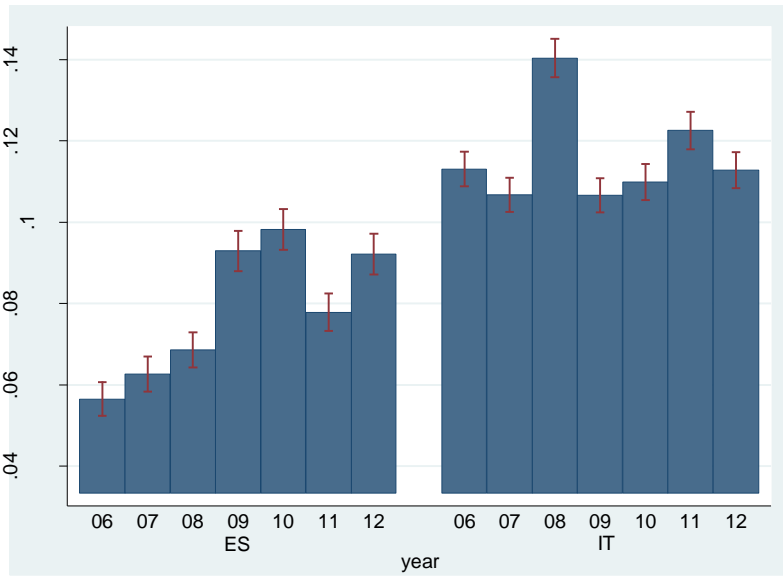
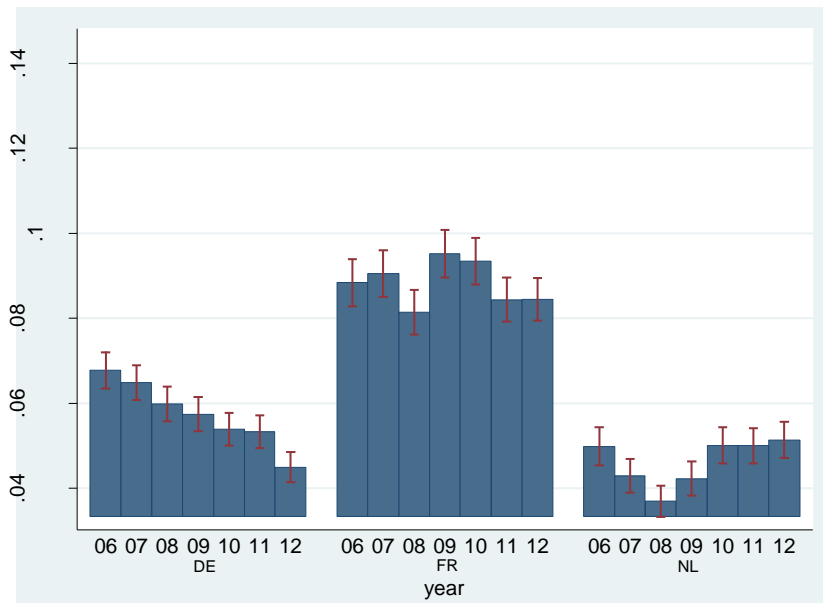


Figure 2.4.2 Proportion of over-indebted households – Germany, France and the Netherlands



REGRESSION RESULTS

Table 2.4.1 presents the results of regression models which explain the probability of experiencing over-indebtedness with the same set of covariates described above, separately for each country. For all countries this probability decreases monotonically with age. The age gradient is more pronounced in Spain than in the other countries. In France and Italy, males are less likely to be over-indebted than females. The opposite is true for Germany and the Netherlands. For all countries (and especially for Spain and Italy) it holds that divorcees and singles have a higher tendency to be in over-indebtedness than married couples. Single parents are also a vulnerable group, especially in France. There is a negative relationship between education level on the one hand and the likelihood of being over-indebted on the other. The education gradient is however less (more) pronounced in the Netherlands (Italy). Being homeowner has a protective role, especially in France, Italy and Spain.

In all countries (especially Italy and France) unemployed households have a much higher probability to be over-indebted than employees. For all countries it holds that the trends in the year dummy coefficients are very similar to the 'raw' trends presented in Figure 2.2.1. In Italy there has been a peak in 2008 in the likelihood of being over-indebted, driven especially by arrears in utility bills. In case of France, the year dummies are not jointly significant.

Table 2.4.1 Over-indebtedness

	Germany		Spain		France		Italy		Netherlands	
	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err
agecl36_45	-0.028***	0.004	-0.021***	0.004	-0.024***	0.004	-0.009**	0.004	-0.008***	0.003
agecl46_55	-0.039***	0.003	-0.036***	0.004	-0.021***	0.004	-0.014***	0.004	-0.017***	0.003
agecl56_65	-0.052***	0.004	-0.056***	0.004	-0.038***	0.005	-0.028***	0.004	-0.034***	0.003
agecl66_75	-0.055***	0.004	-0.071***	0.005	-0.047***	0.005	-0.042***	0.004	-0.050***	0.003
agecl76	-0.057***	0.004	-0.083***	0.005	-0.067***	0.006	-0.067***	0.005	-0.061***	0.004
Female	-0.019***	0.003	-0.002	0.003	0.015***	0.004	0.012***	0.003	-0.006**	0.003
Single	0.010***	0.003	0.021***	0.003	0.010***	0.004	0.018***	0.003	0.009***	0.003
separated_divorced	0.022***	0.004	0.071***	0.005	0.011**	0.004	0.052***	0.004	0.015***	0.004
widowed	0.008**	0.004	0.011***	0.004	-0.029***	0.004	0.002	0.003	-0.013***	0.003
one_person	0.005	0.003	-0.016***	0.003	0.003	0.004	-0.020***	0.003	0.007**	0.003
single_parent	0.054***	0.006	0.047***	0.008	0.120***	0.007	0.051***	0.007	0.052***	0.007
dep_child	0.018***	0.003	0.022***	0.003	0.039***	0.004	0.040***	0.003	0.015***	0.003
dep_2more_child	0.023***	0.003	0.050***	0.003	0.073***	0.004	0.077***	0.003	0.009***	0.002
nodep_child	0.011***	0.003	0.005**	0.003	0.018***	0.005	0.003	0.003	0.016***	0.004
secondary_postsecondary_educ	-0.042***	0.004	-0.023***	0.003	-0.026***	0.003	-0.054***	0.002	-0.014***	0.002
first_second_stage_tertiary_educ	-0.059***	0.004	-0.054***	0.002	-0.066***	0.003	-0.083***	0.002	-0.025***	0.002
selfemployed	0.039***	0.004	0.012***	0.003	0.027***	0.005	0.012***	0.003	0.023***	0.003
retired	0.015***	0.003	0.008**	0.003	0.019***	0.004	-0.005***	0.003	0.012***	0.002
unemployed	0.111***	0.005	0.112***	0.005	0.185***	0.008	0.195***	0.007	0.082***	0.01
Other	0.038***	0.004	0.023***	0.004	0.086***	0.006	0.040***	0.004	0.024***	0.003
owner	-0.018***	0.001	-0.059***	0.003	-0.094***	0.002	-0.099***	0.002	-0.043***	0.002
dyear_2007	-0.002	0.003	0.009***	0.003	-0.006	0.004	-0.000	0.003	-0.004	0.003
dyear_2008	-0.006**	0.003	0.003	0.003	-0.005	0.004	0.036***	0.003	-0.007***	0.002
dyear_2009	-0.008***	0.003	0.020***	0.003	0.003	0.004	0.001	0.003	-0.005*	0.002
dyear_2010	-0.012***	0.003	0.023***	0.003	0.000	0.004	0.005*	0.003	-0.002	0.002
dyear_2011	-0.008***	0.003	0.008***	0.003	0.001	0.004	0.013***	0.003	-0.001	0.002
dyear_2012	-0.013***	0.003	0.019***	0.003	0.001	0.004	0.009***	0.003	0.001	0.003
Constant	0.122	0.005	0.128***	0.005	0.147***	0.005	0.186***	0.004	0.082***	0.004
Observations	91,911		89,364		75,151		142,024		68,990	
R-squared	0.045		0.066		0.109		0.078		0.044	
Adj R-squared	0.0452		0.0659		0.109		0.0782		0.044	
p-val F-test year dummies	0.000		0.000		0.107		0.000		0.004	

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors

INTERACTIONS

Age

In Italy and Spain households headed by individuals younger than 36 tend to report having higher difficulties to repay a debt. This situation worsens during the recession in both countries. In 2009 in Spain the probability of being over-indebted increases for the youngest households, and increases a second time in 2012. For older heads over-indebtedness appears to be relatively stable over time. In Italy we observe a peak in the probability of being over-indebted in 2008 for all age groups, with households whose head is younger than 36 being the most affected. Between 2009 and 2010 the probability decreased for younger households and increased slightly for the other age classes.

Figure 2.4.3 Over-indebtedness and age – Spain

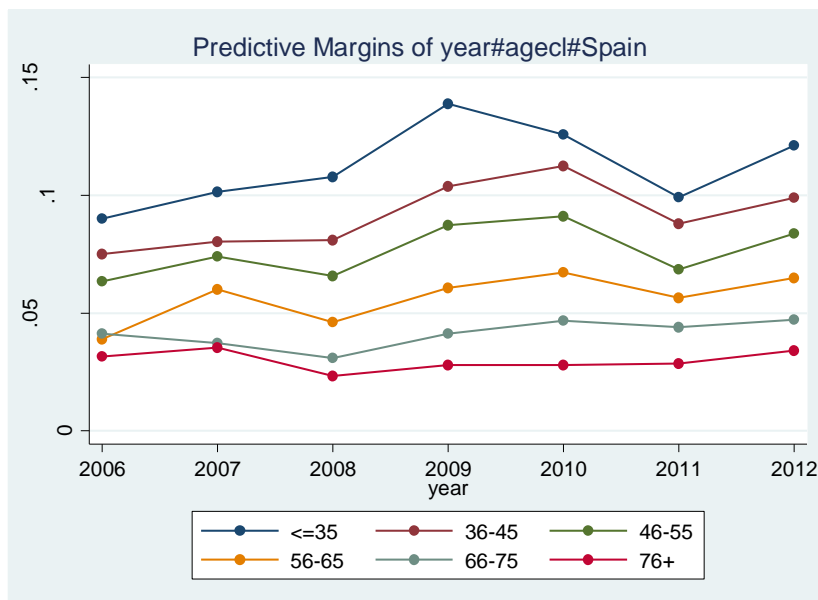
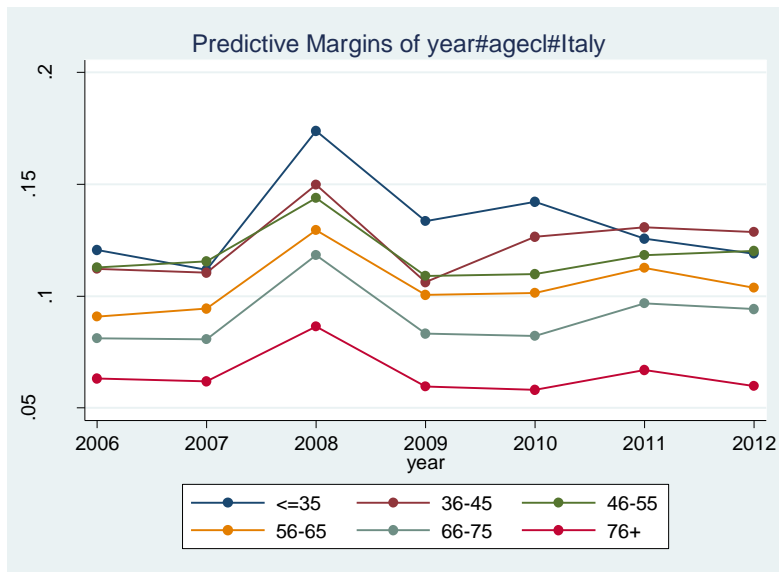


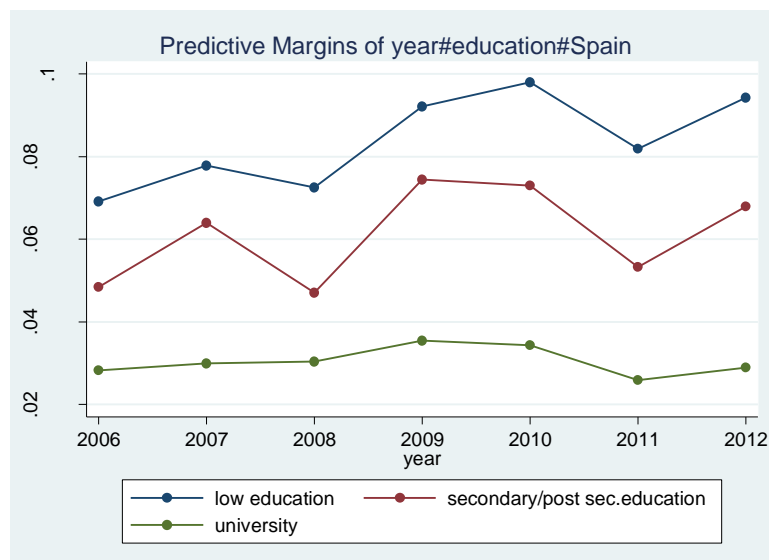
Figure 2.4.4 Over-indebtedness and age – Italy



Education

In Spain households with low education or with secondary and post-secondary education are more affected by the crisis than households whose head has a university degree. Indeed for the latter group the probability is stable over the years. In the first year of the crisis the probability of experiencing over-indebtedness rises for the other two categories, and increases again in 2012.

Figure 2.4.5 Over-indebtedness and education – Spain



Household composition

The interactions with household composition are statistically significant for Spain and Italy, the two countries that suffer the most during the recession. In Spain we observe that single parents report to have more difficulties to pay their debts in 2009, but then the probability sharply falls in 2011. This probability increases for households with two or more dependent children since 2009, decreases in 2011, and increases a second time in 2012. In Italy we notice the 2008 peak, where the probability of being over-indebted rises for every category. We observe a second peak for single parents in 2010.

Figure 2.4.6 Over-indebtedness and household composition – Spain

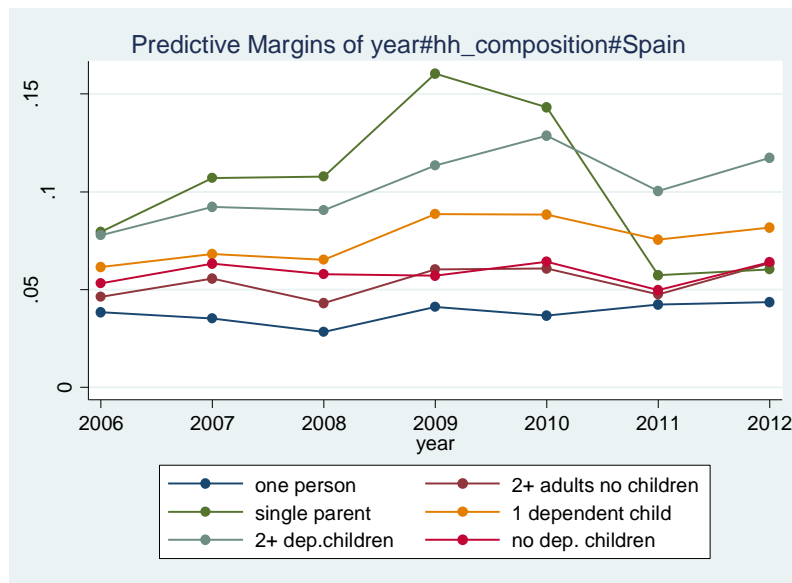
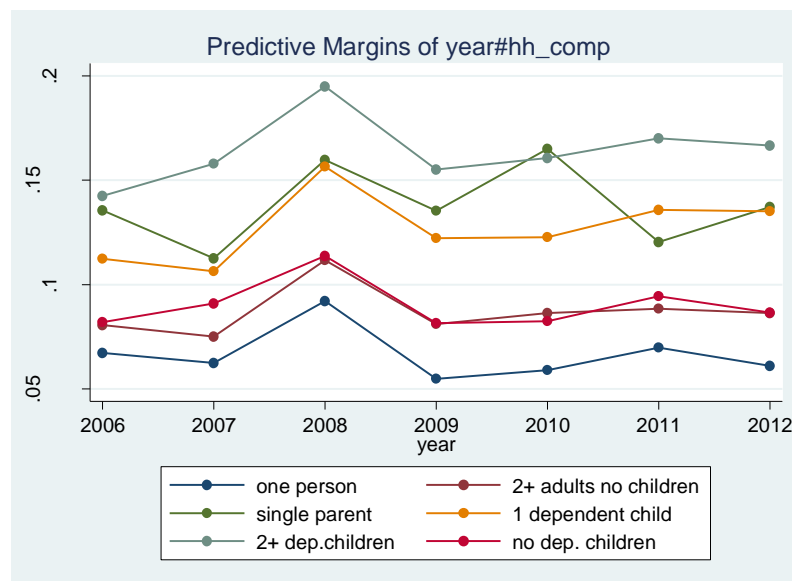


Figure 2.4.7 Over-indebtedness and household composition – Italy



Employment status

When interacting the year dummies with employment status, we find significant effects in Germany, Spain and the Netherlands. In Germany the unemployed are those with a higher probability of being in over-indebtedness, both in the pre-crisis period and in the years of the recession, but in 2012 the probability seems to decrease for them. On the contrary an increase in the difficulties to repay loans is recorded for the self-employed from 2011, and for households in the “other” category after 2009. In Spain the unemployed are more likely to report over-indebtedness after 2008. Self-employed displays an upward trend up to 2010, and the probability rises again in 2012. In the Netherlands unemployed households are increasingly more likely to be over-indebted after 2009, but before that the pattern is less clear cut.

Figure 2.4.8 Over-indebtedness and employment status – Germany

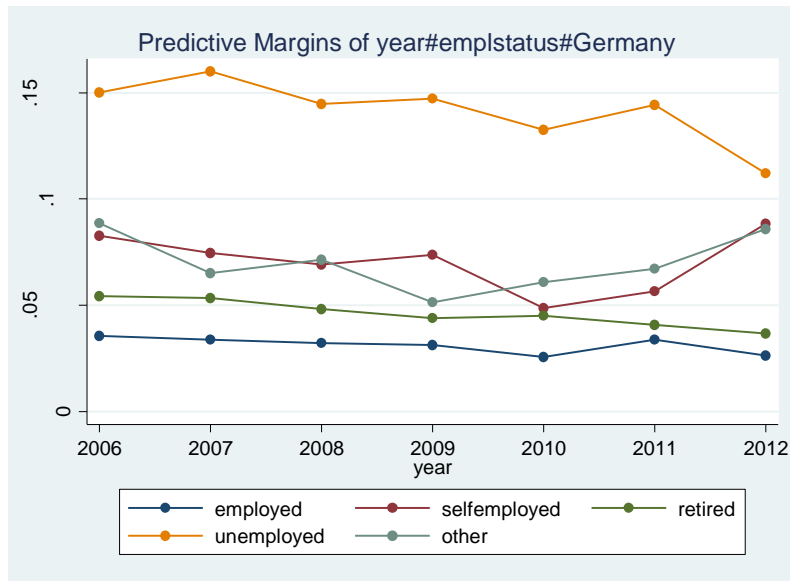


Figure 2.4.9 Over-indebtedness and employment status – Spain

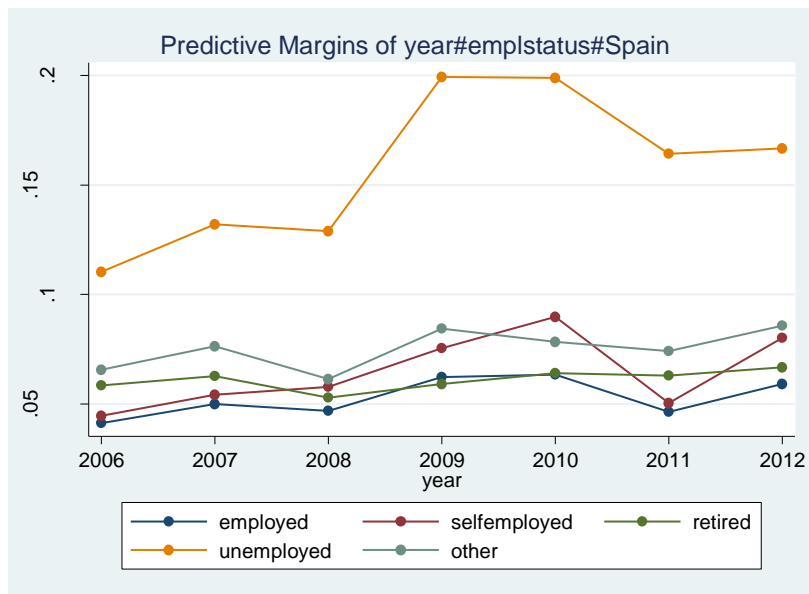
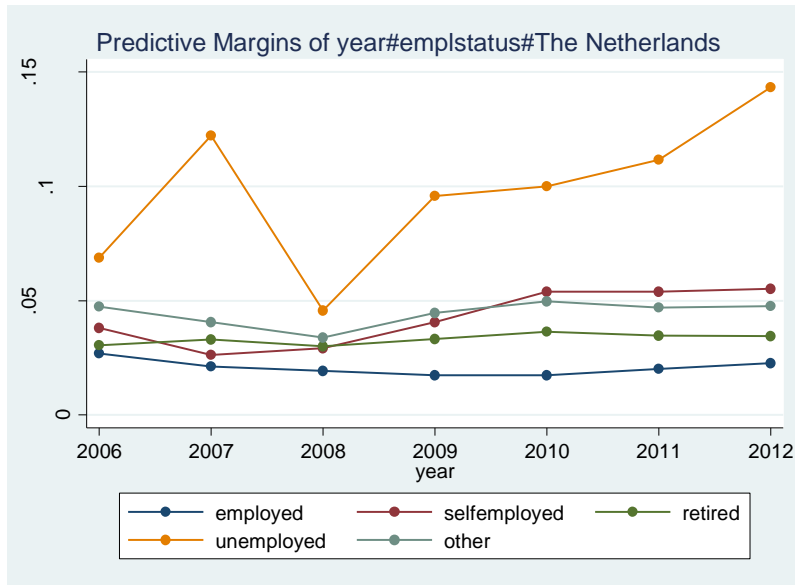


Figure 2.4.10 Over-indebtedness and employment status – The Netherlands



Home-ownership

The interaction terms between the time dummies and tenure status are statistically significant for Germany, Spain and the Netherlands. In each country households who do not own their home have a higher probability to be over-indebted. In Germany we find a slightly downward trend for home-owners over the years. The difference between home-owners and renters drops in 2010 and 2012. In 2011 the probability rises significantly for renters. In Spain we observe the same trend for both groups but with stronger effects for the renters. The probability of having difficulties to repay a debt rises between 2008 and 2010, then falls and increases a second time in 2012. In the Netherlands renters showed a slightly upward trend in the probability of being over-indebted.

Figure 2.4.11 Over-indebtedness and home-ownership – Germany

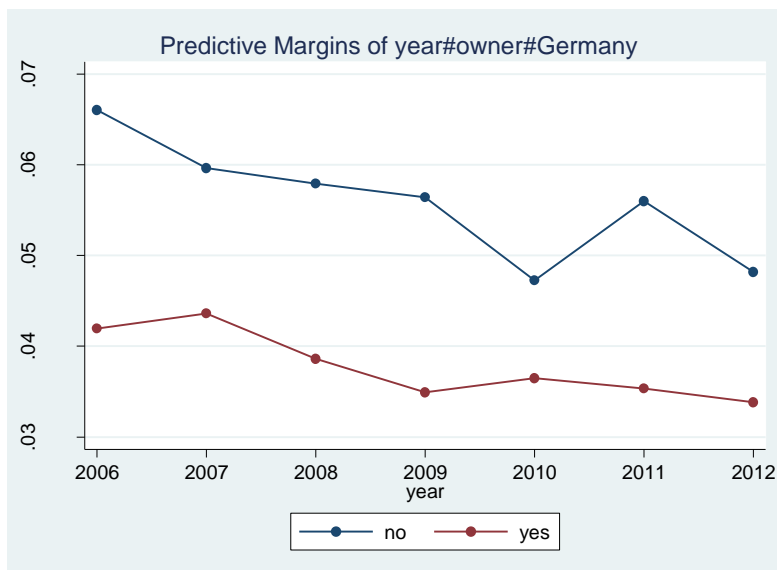


Figure 2.4.12 Over-indebtedness and home-ownership – Spain

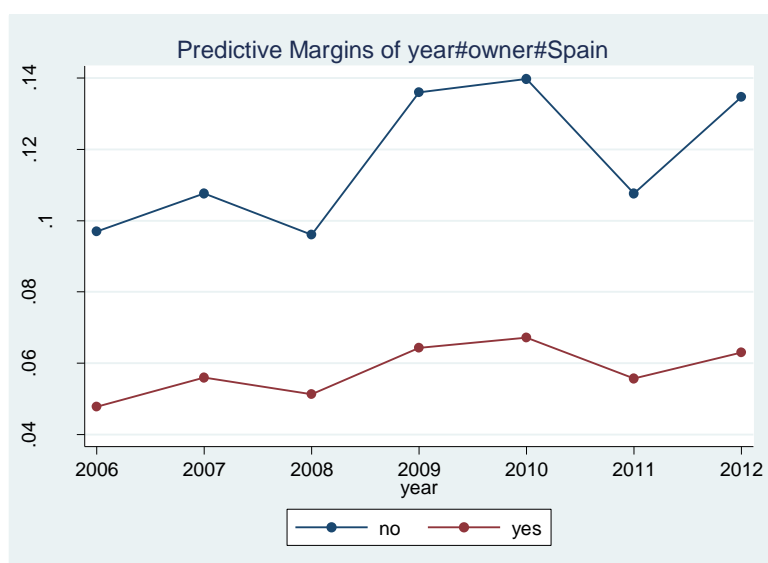
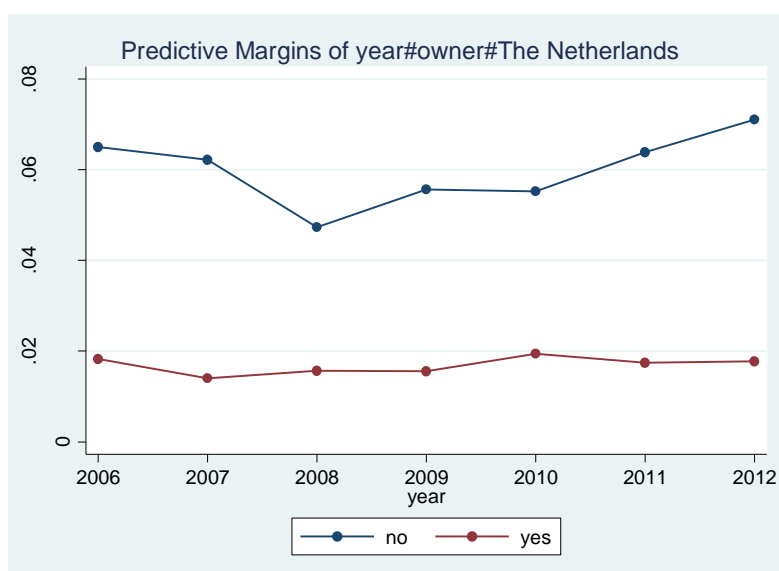


Figure 2.4.13 Over-indebtedness and home-ownership – The Netherlands



2.5 MATERIAL DEPRIVATION - EUROSTAT

We now analyze a measure of material deprivation, which is commonly used by Eurostat. The indicator of material deprivation is equal to one if a household cannot afford at least three of the following nine items:

1. to pay their rent, mortgage or utility bills;
2. to keep their home adequately warm;
3. to face unexpected expenses;
4. to eat meat or proteins regularly;
5. to go on holiday;
6. a television set;

- 7. a washing machine;
- 8. a car;
- 9. a telephone.

Notice that we do not consider as deprived households whose income is in top quartile of the distribution and who do not own a specific item for reasons other than affordability (i.e., the household does not need or does not want the good).

Once again Italy and Spain show huge effects of the recession. In Spain the proportion of deprived households starts to rise in 2009, whereas in Italy the first signal of the crisis is registered in 2008, but the percentage of deprived households rises sharply since 2011. In Germany and France we do not observe a clear trend. Like the other measures of well-being discussed above we observe in the Netherlands an upward jump in the deprivation index between 2009 and 2010.

Figure 2.5.1 Proportion of deprived households – Spain and Italy

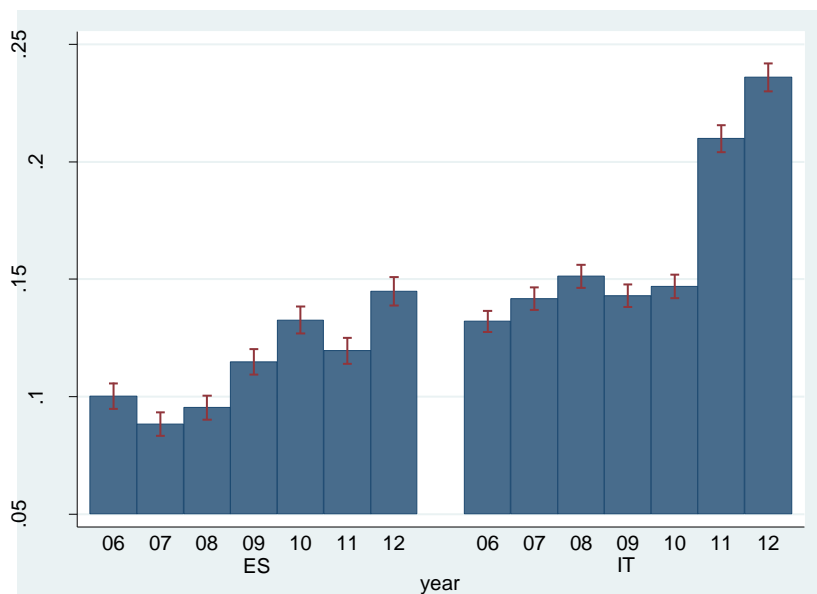
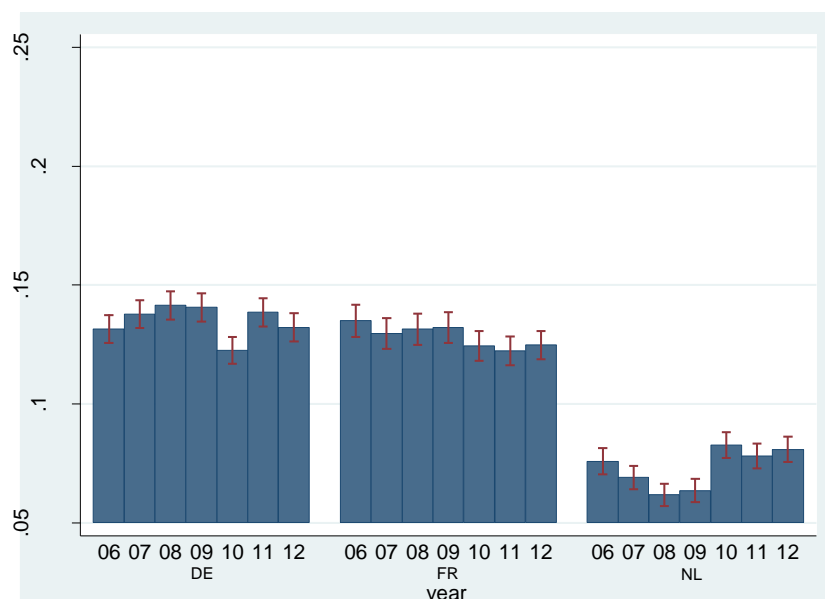


Figure 2.5.2 Proportion of deprived households – Germany, France and the Netherlands



REGRESSION RESULTS

We regress the dummy variable indicating material deprivation on the same set of covariates used in the other regressions (see Table 2.5.1). The age gradient is especially pronounced in the Netherlands, Spain and Germany. The probability of being deprived decreases monotonically with age in all countries except France and Italy. Females and renters are also more often materially deprived than males (especially in France) and home-owners. The effect of home ownership is less dramatic in Germany and the Netherlands. Widowhood is also associated to a lower probability of being deprived.

Again we find that the unemployed are more often deprived than employees and that this effect is less dramatic in the Netherlands. Although their average income is considerably lower, the Spanish self-employed are less often materially deprived than Spanish employees. This is a surprising result.

For all countries except Spain it holds that the trends in the year dummy coefficients are very similar to the 'raw' trends presented in Figures 2.5.1 and 2.5.2. The trend in the year dummy coefficients for Spain is less clear than the upward trend presented in Figure 2.5.1.

Table 2.5.1 Material deprivation (Eurostat)

	Germany		Spain		France		Italy		Netherlands	
	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err	Coeff.	Std.Err
agecl36_45	-0.005	0.004	-0.014***	0.004	-0.008*	0.004	-0.015***	0.004	0.003***	0.003
agecl46_55	-0.011***	0.004	-0.022***	0.004	0.000	0.004	-0.011***	0.004	-0.004***	0.003
agecl56_65	-0.030***	0.005	-0.030***	0.004	-0.010*	0.005	-0.008*	0.004	-0.020***	0.003
agecl66_75	-0.047***	0.006	-0.031***	0.006	-0.008	0.006	-0.004	0.005	-0.073***	0.004
agecl76	-0.063***	0.006	-0.041***	0.006	-0.038***	0.007	-0.016***	0.005	-0.090***	0.005
Female	0.025***	0.004	0.037***	0.004	0.072***	0.004	0.045***	0.003	0.018***	0.003
Single	0.004	0.004	0.034***	0.004	0.007**	0.004	0.012***	0.003	0.003	0.002
separated_divorced	0.060***	0.005	0.076***	0.006	0.022***	0.005	0.033***	0.005	0.034***	0.004
Widowed	-0.048***	0.005	-0.007	0.005	-0.072***	0.005	-0.023***	0.004	-0.043***	0.004
one_person	0.055***	0.004	-0.007	0.004	0.042***	0.004	0.016***	0.003	0.027***	0.003
single_parent	0.110***	0.008	0.072***	0.009	0.129***	0.008	0.068***	0.007	0.092***	0.008
dep_child	0.031***	0.003	0.030***	0.003	0.043***	0.004	0.038***	0.003	0.018***	0.002
dep_2more_child	0.043***	0.003	0.063***	0.003	0.077***	0.004	0.086***	0.003	0.018***	0.002
nodep_child	0.017***	0.004	-0.018***	0.003	0.010**	0.005	-0.031***	0.003	0.006*	0.003
secondary_postsecondary_educ	-0.100***	0.005	-0.061***	0.003	-0.059***	0.003	-0.104***	0.002	-0.031***	0.002
first_second_stage_tertiary_educ	-0.144***	0.005	-0.101***	0.002	-0.116***	0.003	-0.153***	0.002	-0.041***	0.002
Selfemployed	0.009**	0.004	-0.023***	0.003	0.007*	0.004	-0.021***	0.002	0.007***	0.002
Retired	0.048***	0.004	0.032***	0.004	0.030***	0.005	0.009***	0.003	0.053***	0.003
Unemployed	0.392***	0.007	0.190***	0.006	0.255***	0.008	0.307***	0.007	0.134***	0.012
Other	0.178***	0.007	0.073***	0.005	0.167***	0.007	0.100***	0.004	0.107***	0.004
Owner	-0.069***	0.002	-0.113***	0.003	-0.124***	0.003	-0.134***	0.002	-0.074***	0.002
dyear_2007	0.004	0.003	-0.010***	0.004	-0.014	0.004	0.013***	0.003	-0.002	0.003
dyear_2008	0.008**	0.004	-0.025***	0.004	-0.002	0.004	0.022***	0.003	-0.003	0.003
dyear_2009	0.003	0.004	-0.015***	0.004	-0.003	0.004	0.010***	0.003	-0.001	0.003
dyear_2010	-0.007**	0.003	0.001	0.004	-0.015***	0.004	0.016***	0.003	0.001	0.003
dyear_2011	0.014***	0.004	-0.014***	0.004	-0.005	0.004	0.067***	0.003	0.003	0.003
dyear_2012	0.007*	0.004	0.008**	0.004	-0.004	0.004	0.092***	0.003	0.007**	0.003
Constant	0.185***	0.007	0.197***	0.005	0.180***	0.006	0.217***	0.005	0.093***	0.004
Observations	90,486		89,240		74,499		142,024		68,461	
R-squared	0.202		0.103		0.158		0.124		0.124	
Adj R-squared	0.202		0.103		0.158		0.124		0.123	
p-val F-test year dummies	0.000		0.000		0.000		0.000		0.004	

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors

INTERACTIONS

As before, we report only the interactions which are both statistically significant and economically meaningful.

Age

In Germany before the crisis material deprivation was higher for households whose head is younger than 36. After 2010 the measure was higher for households headed by individuals aged between 36 and 55 years. The probability of being deprived sharply increased in 2011 for the age groups 76+ and 56-65.

In Spain we find different age effects using this indicator of deprivation. Older household heads have lower probability of being deprived than the other age classes. During the crisis all age groups experienced an increase in the probability of being deprived. It should be noticed that in 2011 household headed by individuals aged between 46 and 55 or more than 75 did not registered the same rise in material deprivation as the other groups.

Figure 2.5.3 Material deprivation (Eurostat) and age – Germany

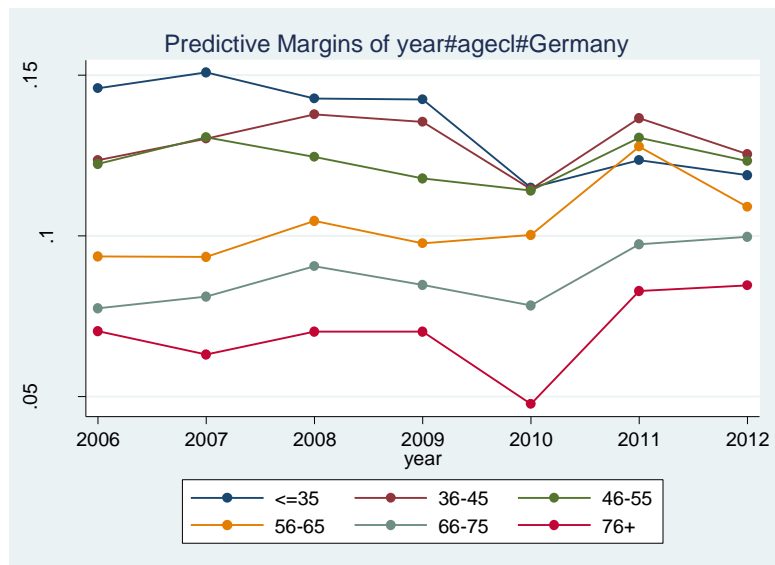
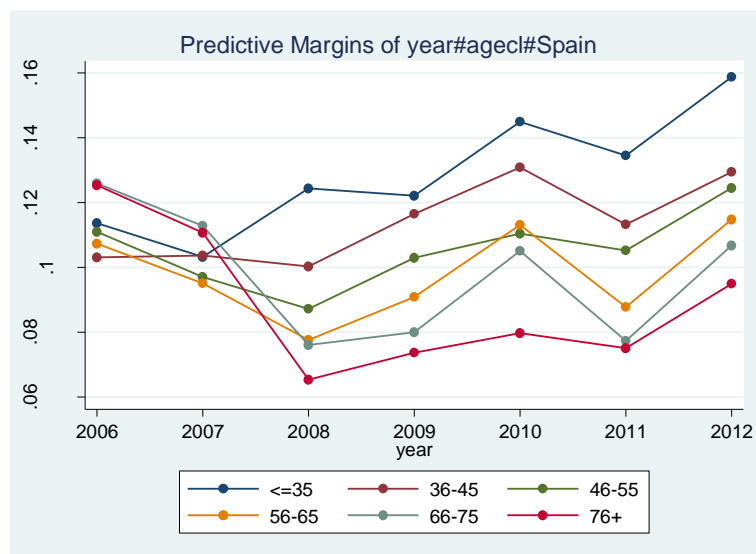


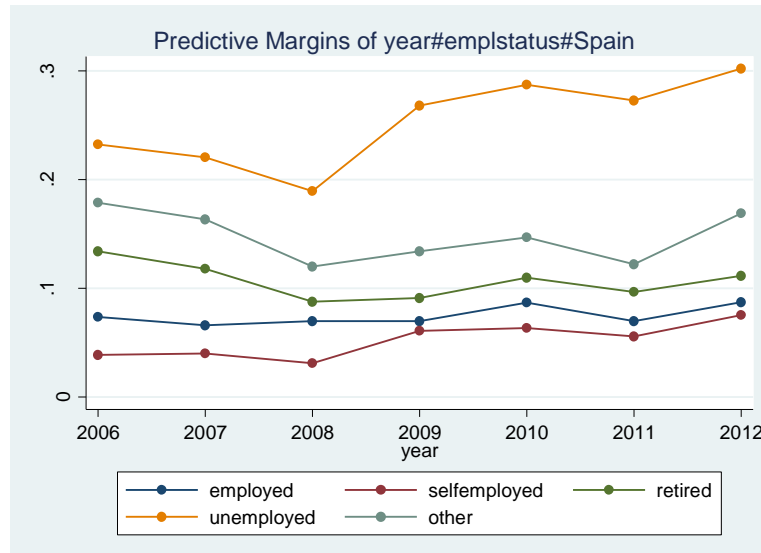
Figure 2.5.4 Material deprivation (Eurostat) and age – Spain



Employment status

Spanish unemployed heads are the most deprived and those more affected by the crisis. The self-employed, despite being the least deprived, experience an increase in the probability of being deprived both in 2009 and 2012. Also for those in the “other” category, the probability rises considerably in 2012.

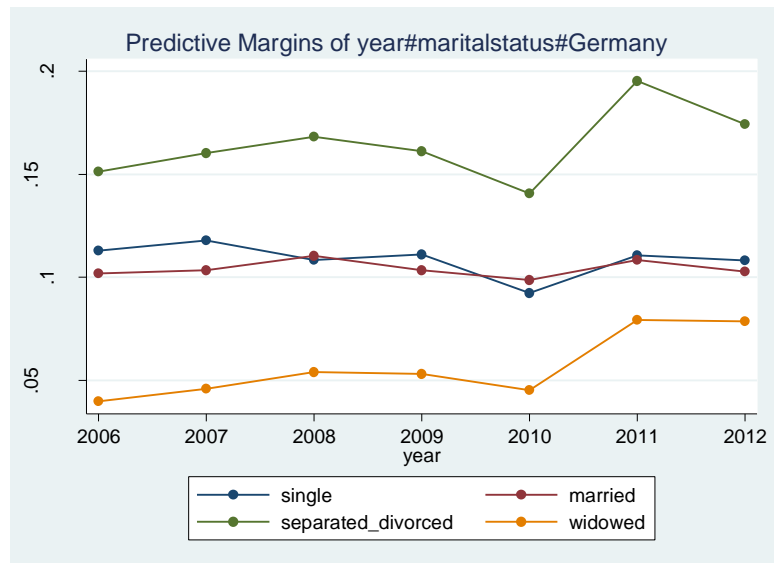
Figure 2.5.5 Material deprivation (Eurostat) and employment status – Spain



Marital status

In Germany separated or divorced households are more likely to be deprived than those who are single, married and widowed. The negative effects of the recession became dramatic in 2011, especially for separated, divorced and widowed, for whom material deprivation increased sharply.

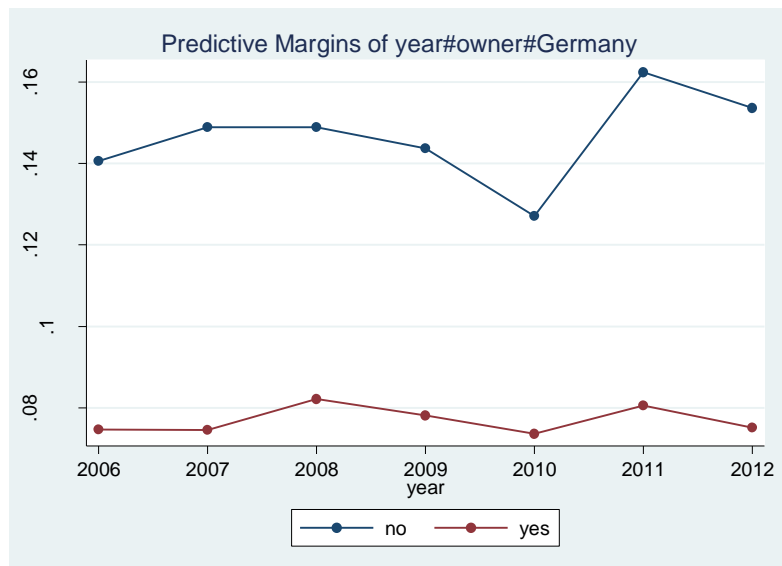
Figure 2.5.6 Material deprivation (Eurostat) and marital status - Germany



Home-ownership

In Germany there are dramatic differences between homeowners and renters, for whom material deprivation rises considerably in 2011.

Figure 2.5.7 Material deprivation (Eurostat) and home-ownership – Germany



3. EVIDENCE FROM SHARE

3.1 INTRODUCTION TO THE DATA AND DESCRIPTIVE EVIDENCE

We draw data from the Survey of Health, Ageing and Retirement in Europe (SHARE). SHARE is a cross-national and panel database containing information on both the economic and non-economic conditions of individuals aged 50 years or over from 20 European countries (plus Israel). Five waves of SHARE data are currently available. They have been collected in 2004/5, 2006/7, 2008/9, 2010/11 and 2013. Whereas the questionnaire of the third wave of SHARE (the one realized in 2008/9 and called SHARELIFE) is structured as a life-history interview collecting information on the whole life of respondents, the questionnaire of the other four waves focuses on respondents' current situation at the time of the interview. Overall, more than 200,000 personal interviews have been realized so far. The first baseline wave of SHARE in 2004/5 was based on a sample of individuals born in 1954 or before. Refreshment samples have been added in the later waves in order to keep the overall sample representative of the current population of individuals aged 50 or over and account for the problem of attrition.

The SHARE questionnaire covers three main areas of interest for ageing research: physical and mental health, socio-economic status and social and family networks. Data are collected by personal interviews managed by a Computer Assisted Personal Interview (CAPI) system.⁷ The SHARE questionnaire is ex-ante harmonized across countries. A generic English version of the questionnaire is first agreed by all country teams involved in the project and then translated in their national languages. This way of proceeding guarantees the full comparability of the questions across countries and it is a key ingredient for meaningful cross-country comparisons. In addition, the design of the SHARE questionnaire and the methodology used in the interviews make SHARE comparable with the U.S. Health and Retirement Study (HRS) and the English Longitudinal Study of Ageing (ELSA). Noticeably, studies in Korea, Japan, China, India, and Brazil are based on the SHARE questionnaire and interviewing protocols.

Our empirical analysis is based on data drawn from the second, the fourth and the fifth waves of SHARE. On the one hand, the second wave, which has been run on 2006/7, will serve to describe the conditions of the elderly before the economic crisis. On the other hand, the fourth and the fifth waves, run in 2010/11 and 2013 respectively, will be used to understand how the elderly reacted to the crisis in the short and in the long run. To this end, we restricted our sample to the countries who participated in the SHARE project in all of these waves. Our sample includes households living in Sweden, Denmark, Germany, The Netherlands, Belgium, France, Switzerland, Austria, Spain, Italy and Czech Republic. For each household we consider the household head, selected according to gender, age and the eligibility to answer the modules of the SHARE questionnaire about the financial and economic condition of the household. Overall, our sample includes 79,723 household-year observations. Table 6.1 breaks down our sample by country and year.

As it is typical of large scale surveys, the SHARE data are affected by the problem of unit and item non-response. Unit non response arises when eligible sample units refuse to participate in the survey. Using sampling design weights fails to account for unit non response. To overcome this limitation, SHARE provides users with calibrated weights calculated according to the procedure developed by Deville and Särndal (1992). Calibrated weights are set to minimize the differences with respect to the sampling design weights and respect a set of known population totals (the calibration margins). Calibration margins vary across countries, gender-age groups and NUTS1 regional areas. All our descriptive analysis will be based on calibrated weights.

⁷ Additional sets of questions can be asked by a paper-and-pencil questionnaire. These questions are limited and their availability can be country- and wave- specific.

Item non response arises when respondents refuse to answer to particular items of the questionnaire, such as those focusing on income and wealth components. On the one hand, item non response reduces the number of the observations that can be actually used in the analysis and it ends up with a loss of precision. On the other hand, if the refusal to answer is not entirely random, a selectivity bias can arise and limit the representativeness of the sample. SHARE data contain imputations for an extensive set of variables to fill in missing values and provide users with a full sample to use in their analyses. Our empirical analysis will exploit whenever possible the imputed data provided by SHARE.⁸

Table 3.1.1

Country	Year			Total
	2006/7	2010/11	2013	
Sweden (SE)	1,876	1,314	3,065	6,255
Denmark (DK)	1,699	1,464	2,688	5,851
Germany (DE)	1,627	1,004	3,642	6,273
Netherlands (NL)	1,751	1,782	2,670	6,203
Belgium (BE)	2,075	3,609	3,829	9,513
France (FR)	1,979	4,031	3,010	9,020
Switzerland (CH)	1,047	2,524	2,027	5,598
Austria (AT)	862	3,652	2,841	7,355
Spain (ES)	1,355	2,120	3,784	7,259
Italy (IT)	1,822	2,223	2,779	6,824
Czech Republic (CZ)	1,906	4,006	3,660	9,572
Total	17,999	27,729	33,995	79,723

To understand the effect of the crisis on the economic conditions of older Europeans we focus on two economic indicators: the presence of financial distress and the value of the house net of any outstanding debt.

We construct the measure of financial distress proposed by Cavasso and Weber (2013). This measure consists of a binary outcome taking on value 1 if (i) the household has financial wealth, net of non-mortgage debt, lower than three months of income and (ii) the household equivalent income⁹ is not in the top third of the distribution. If at least one of these two conditions is not met, the binary outcome takes on value zero. Notice that the distribution of household equivalent income we use to construct the financial distress indicator is country- and wave- specific in order to adjust for variability in taxation and net income levels across countries and over time.

Secondly, for home-owners only, we consider the house value net of any outstanding debt. Looking at the value of the house is important to understand the dynamics of the real wealth of older people during the financial crisis. SHARE respondents are asked “*In your opinion, how much would you receive if you sold your property today?*”. The amounts provided by the respondents are converted in real terms using the PPP exchange rates included in the SHARE data to allow for proper comparison across countries and over time.

Table 3.1.2 collects weighted summary statistics for all the outcomes of interest as well as the control variables used in the regression analysis. Age, gender, marital status, education and employment status refer to the household head. Education is defined as a binary outcome taking on value one if the household head

⁸ For further information on SHARE data and methodology, including calibrated weights and imputations, see Börsch-Supan et al. (2005a, 2005b, 2008 and 2013) and Malter and Börsch-Supan (2013 and 2015).

⁹ Household income is divided by the square root of household size and nominal amounts are PPP-adjusted.

completed the lower secondary or the second stage of basic education as defined by the 1997 International Standard Classification of Education (ISCED 97).

Table 3.1.2

Variable	Observations	Mean	Std. Dev.
Outcomes			
Financial Distress	79,723	0.287	0.453
Log of House Value Net of Outstanding Debt	54,639	11.982	0.804
Control variables in regressions			
SE	79,723	0.029	0.169
DK	79,723	0.018	0.131
DE	79,723	0.267	0.443
NL	79,723	0.048	0.215
BE	79,723	0.034	0.182
FR	79,723	0.197	0.398
CH	79,723	0.025	0.155
AT	79,723	0.027	0.162
ES	79,723	0.131	0.337
IT	79,723	0.192	0.394
CZ	79,723	0.032	0.177
Age less than 55	79,723	0.181	0.385
Age 56-60	79,723	0.183	0.386
Age 61-65	79,723	0.144	0.351
Age 66-70	79,723	0.133	0.340
Age 71-75	79,723	0.128	0.334
Age 76 or over	79,723	0.231	0.421
Female	79,723	0.359	0.480
Partner	79,723	0.602	0.489
Single	79,723	0.084	0.278
Separated or divorced	79,723	0.106	0.308
Widowed	79,723	0.207	0.405
Family size	79,723	2.101	1.060
No children	79,723	0.129	0.335
Low education (Isced0_2)	79,723	0.432	0.495
Employed	79,723	0.273	0.445
Self employed	79,723	0.075	0.264
Retired	79,723	0.515	0.500
Unemployed	79,723	0.026	0.159
Other (student, homemaker or disabled)	79,723	0.110	0.313
Home- Owner	79,723	0.706	0.456

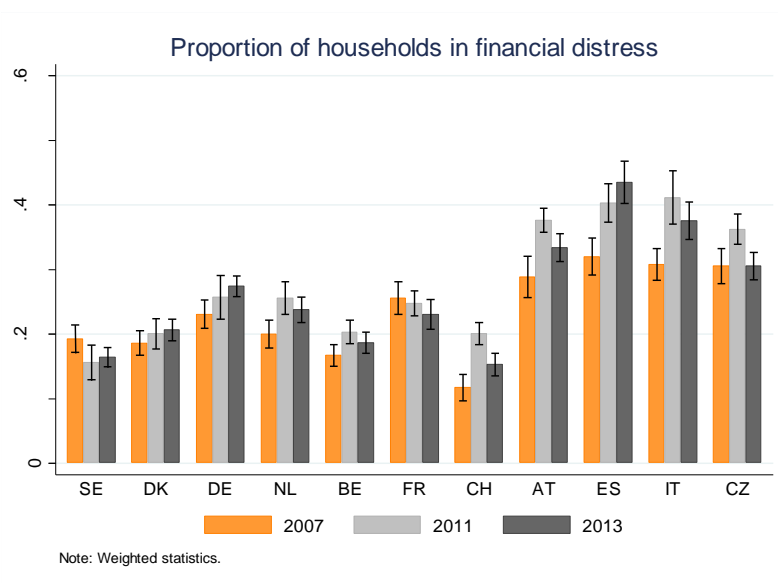
Financial distress

We consider the financial distress indicator proposed by Cavasso and Weber (2013). This indicator is a binary outcome taking on value one if two conditions are met: (1) the household has financial wealth, net of non-mortgage debt, which is lower than three times the household monthly income, (2) the household

equivalent income is not in the top third of the country- and wave- specific distribution. Otherwise, this indicator is equal to zero.

Figure 3.1.1 shows that, on average, the probability of being in financial distress was in 2007 the highest in Austria, Spain, Italy and Czech Republic (around 30%) and the lowest in Switzerland (around 11.5%). With the exception of Sweden and France, in all countries the probability of financial distress increases between 2007 and 2011. This increase is the largest in the Italy and Spain (from +30% to +40%) followed by the Austria (+8.5%), Switzerland, the Netherlands (+6%) and Czech Republic (+6%). Between 2011 and 2013 the incidence of financial distress decreases again a bit in the Netherlands, Belgium, France, Switzerland, Austria, Italy and Czech Republic.

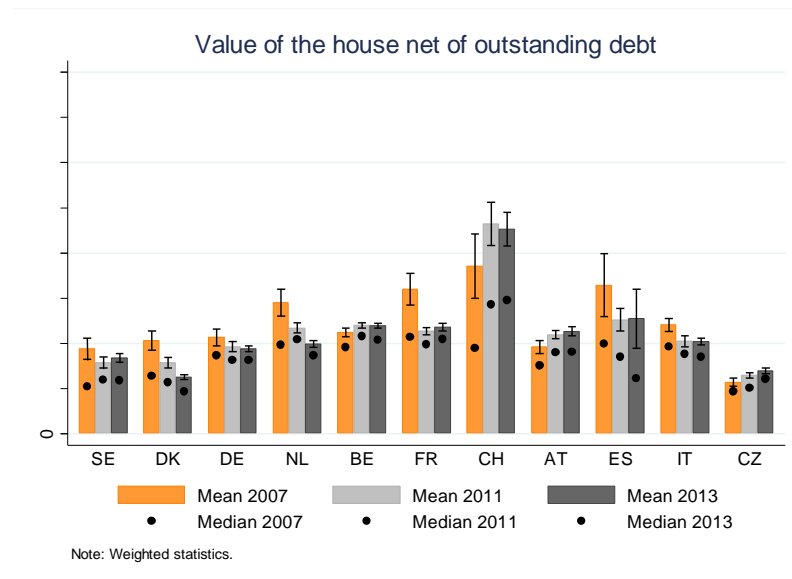
Figure 3.1.1



Value of the house

In Figure 3.1.2 we focus on home-owners and consider the value of their house net of any outstanding debt. Looking at the value of the house is relevant since it is the most important component of the real wealth of older individuals. Amounts are PPP-adjusted and expressed in German euros in 2005. In Spain, the Netherlands, Denmark, France, and Italy we observe a substantial reduction in average and median home equity in the post crisis period. Combining the time dynamics of home equity with the incidence of financial distress gives a more complete picture of the effect of the crisis on the overall economic status of older adults. Between 2007 and 2011, in Spain, Italy and the Netherlands we observe a clear increase in the financial distress measure based on financial wealth and income, which is combined with a reduction in real wealth.

Figure 3.1.2



3.2 REGRESSION RESULTS

In this section we present the estimates of the linear regressions of all our outcomes of interest on a set of explanatory variables. Linear regressions are estimated by Ordinary Least Squares (OLS) and account for the presence of a panel component in our dataset by clustering standard errors at the household level. As before, we included in our sample only the household heads (i.e. one observation per household).

The set of explanatory variables used in our regression models refers to demographic and socioeconomic characteristics. Individual characteristics refer to the household head. Age classes are mainly defined by 5-year intervals. The reference category consists of household heads younger than 56 years old. The highest age-class includes household heads aged 76 or over. We include a dummy variable taking on value one when the household head is female and zero otherwise. We also defined a set of dummies to describe the marital status of the household head: having a partner, which is the reference category, being single, being divorced and being widowed. We also control for the number of individuals in the household and whether respondents and their partners (if any) have children. We account for education through a dummy variable taking on value one whenever the household head completed at most the lower secondary or second stage of basic education (attaining higher levels of education is the reference category). We control for the employment status of the household head by distinguishing among 5 possible states: employee, self-employed, retired, unemployed and other (to indicate household heads who are permanently sick or disabled, homemakers or in other conditions). The explanatory factors also include a dummy variable that equals one if the household owns the house. Finally, we include a full set of time dummies (2007 is the reference category).

We initially pool together all countries and include a full set of country dummies (Germany is the baseline). These linear regressions will be of use to analyze the average time dynamics for all the countries of interest and to assess whether the cross-country differences highlighted in the previous section are still present once we condition on our set of explanatory variables.

Table 3.2.1 reports the results for financial distress. The probability of being in financial distress is lower in Switzerland, Sweden and Belgium and higher in Austria, Spain and Czech Republic. It decreases with age (up to age 75), education and home-ownership, whereas it is higher for those who do not have a partner, live in large families or are not working. Everything else constant, the probability of experiencing financial

distress increases from 2007 to 2011 and then decreases in 2013 but remains higher than before the crisis.

Table 3.2.1: Financial distress

	Coeff.	Std. Err.
SE	-0.119***	0.008
DK	-0.054***	0.008
NL	-0.069***	0.008
BE	-0.096***	0.007
FR	-0.041***	0.008
CH	-0.104***	0.008
AT	0.037***	0.008
ES	0.047***	0.009
IT	0.022**	0.009
CZ	0.027***	0.008
Age 56-60	-0.027***	0.005
Age 61-65	-0.036***	0.006
Age 66-70	-0.023***	0.007
Age 71-75	-0.013*	0.007
Age 76 or over	-0.010	0.007
Female	0.010**	0.004
Single	0.103***	0.008
Divorced	0.142***	0.006
Widowed	0.100***	0.006
Family size	0.037***	0.002
No children	-0.032***	0.006
Low education (Isced0_2)	0.122***	0.004
Self employed	-0.017***	0.006
Retired	0.084***	0.005
Unemployed	0.224***	0.012
Other	0.152***	0.007
Owner	-0.126***	0.004
dyear_2011	0.044***	0.004
dyear_2013	0.026***	0.004
Constant	0.140***	0.010
Observations	79,723	
R-squared	0.113	
Adj R-squared	0.113	
P-val F-test year dummies	0.000	

*Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors clustered at the household level*

In Table 3.2.2 we focus on the value of the house net of any outstanding debt. On average, it is higher in Switzerland and the Netherlands, whereas it is lower in Sweden, Denmark and Czech Republic. It is higher for couples, larger households and self-employed and it increases with education. Interestingly, the coefficients on the time dummies show a significant decrease in the value of the house from before to after the crisis of about 5 percent.

We now estimate the same econometric specifications considered so far but separately by country in order to analyze cross-country differences in the effect of the crisis on the economic conditions of older adults. For

each country and economic indicator of interest we plot the linear prediction (predictive margin) of the average over time calculated on the basis of the fitted model.¹⁰

Table 3.2.2: Logarithm of value of the house net of outstanding debt

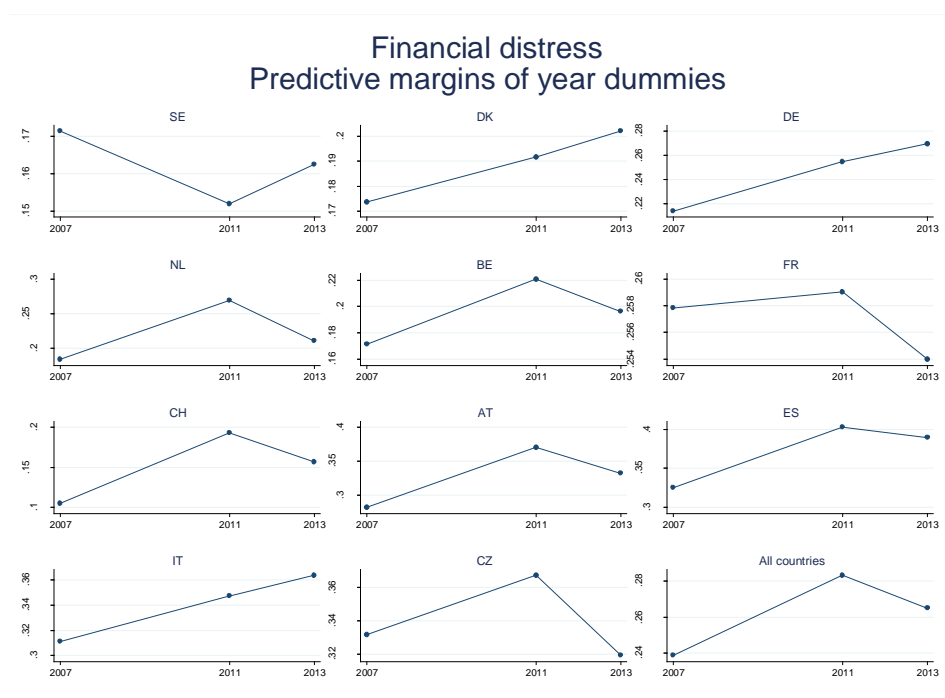
	Coeff.	Std. Err.
SE	-0.288***	0.024
DK	-0.345***	0.022
NL	0.199***	0.021
BE	0.387***	0.016
FR	0.318***	0.017
CH	0.577***	0.024
AT	0.142***	0.019
ES	0.231***	0.019
IT	0.256***	0.018
CZ	-0.349***	0.018
Age 56-60	0.098***	0.012
Age 61-65	0.158***	0.014
Age 66-70	0.199***	0.016
Age 71-75	0.196***	0.017
Age 76 or over	0.185***	0.016
Female	0.060***	0.010
Single	-0.227***	0.021
Divorced	-0.217***	0.016
Widowed	-0.136***	0.013
Family size	0.053***	0.005
No children	0.021	0.015
Low education (Isced0_2)	-0.263***	0.009
Self employed	0.250***	0.015
Retired	-0.001	0.012
Unemployed	-0.127***	0.027
Other	-0.008	0.016
dyear_2011	-0.018**	0.008
dyear_2013	-0.049***	0.008
Constant	11.761***	0.023
Observations	54,639	
R-squared	0.172	
Adj R-squared	0.172	
P-val F-test year dummies	0.000	

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors clustered at the household level

In Figure 3.2.1 we analyze the objective indicator of financial distress. In all countries but Sweden and France (no change) we observe an increase in the probability of being in financial distress between 2007 and 2011, especially in Switzerland, Spain, Austria and the Netherlands. This pattern suggests that older adults might use their wealth to finance their consumption during the first years of the crisis. Between 2011 and 2013 we find a drop in the probability of being in financial distress in the Netherlands, Belgium, Switzerland, Austria, and Czech Republic. As the effects of the economic crisis started to be perceived as permanent, households in these countries adapted their consumption plans to the modified economic environment.

¹⁰ For all the outcomes of interest we tested the null hypothesis that the parameters on the time dummies do not vary across countries. The null hypothesis is always strongly rejected.

Figure 3.2.1

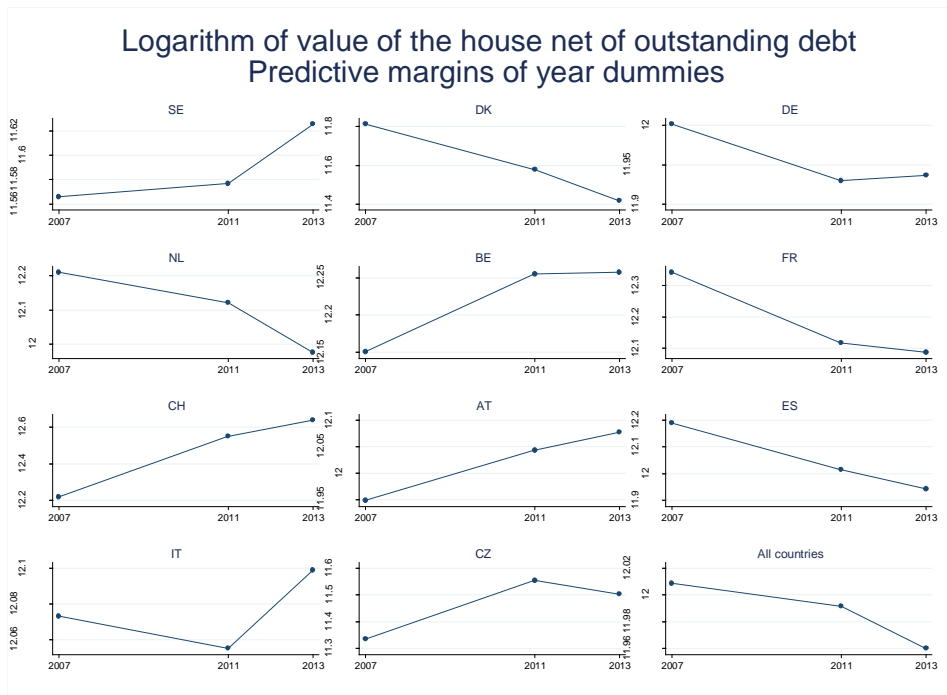


In Figure 3.2.2 we focus on the value of home equity net of any outstanding debt. On average, between 2007 and 2011 the value of the house net of outstanding debt remained rather stable in Sweden, Germany, and Italy and increased in Switzerland, Czech Republic, Belgium and Austria. Considerable drops in housing equity are found in Spain, Denmark, the Netherlands, and France. Between 2011 and 2013 the value of the home equity keeps decreasing in Denmark, the Netherlands and Spain. The figure suggests that the economic crisis produced detrimental effects even on the economic conditions of older households living in countries characterized by effective welfare systems, such as Denmark and the Netherlands. Indeed, our results suggest that during the economic crisis the older households in these countries were faced with an increase in the incidence of financial distress and a reduction of home equity.

3.3 INTERACTIONS

In this section we analyze to what extent the recent financial crisis had different effects on different groups of the population. We run country-specific regressions, in which we add, one at the time, interaction terms between the time dummies and some key socioeconomic characteristics considered in our models. In particular, we consider interaction terms between time dummies and groups defined according to education, employment, marital status and home ownership. We summarize our results by considering the cases in which the interaction terms result to be both statistically and economically significant. For these cases, we report the graphs plotting the linear predictions of the averages of the outcomes of interest over the time period considered.

Figure 3.2.2



Education

Figure 3.3.1 shows that in Germany the gap in the probability of experiencing financial distress between high and low educated substantially widens in the period considered. Whereas it amounts to less than 10 percentage points in 2007, it is almost 15 percentage points in 2011 and it is around 20 percentage points in 2013. The opposite pattern is found in France. Figure 3.3.2 documents that before the crisis French households whose head has a low education level are around 16 percentage points more likely to be in financial distress. In 2013 this gap reduces to less than 10 percentage points.

In the Netherlands, as displayed in Figure 3.3.3, the likelihood of being in financial distress increases by more than 10 percentage points for the group with low education and by around 5 percentage points for the group with high education from 2007 to 2011. Between 2011 and 2013 the probability decreases for both groups but the decline is steeper for the low educated. A similar average time trend can be observed for Belgium (Figure 3.3.4), although the decrease from 2011 to 2013 is approximately the same for the two education groups. In Italy (Figure 3.3.5), financial distress keeps increasing also in 2013 for the low educated. Overall, education seems to act as a buffer for the detrimental effect of the financial crisis.

Figure 3.3.1

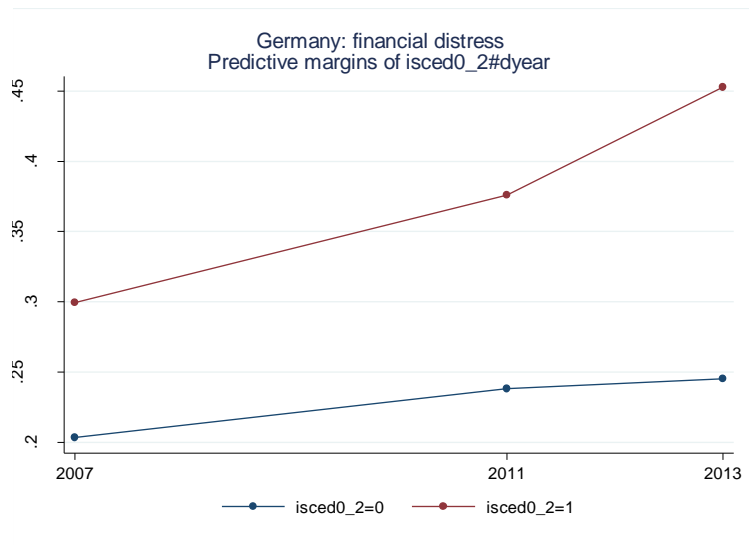


Figure 3.3.2

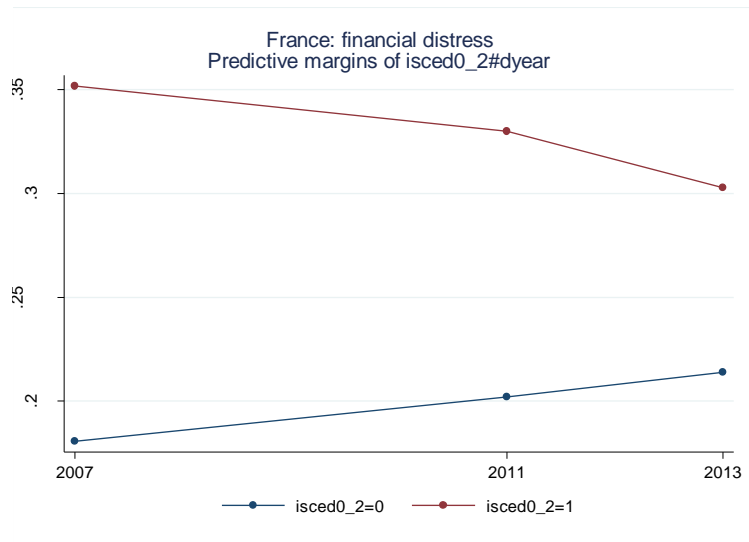


Figure 3.3.3

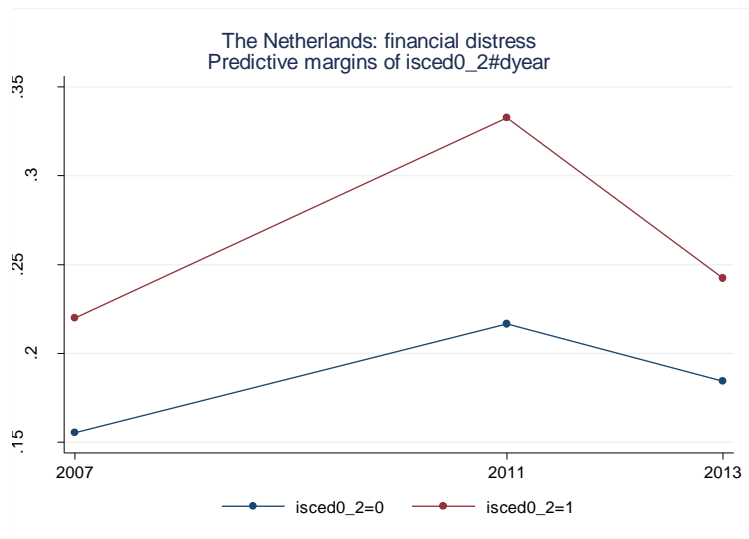


Figure 3.3.4

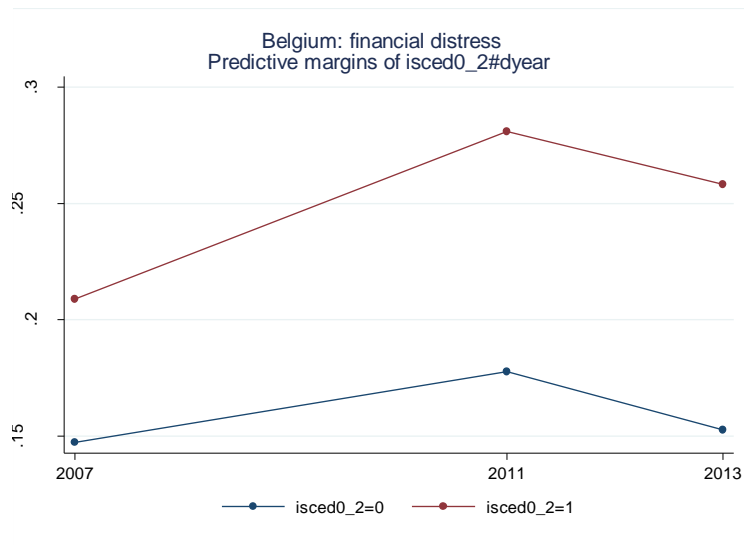


Figure 3.3.5

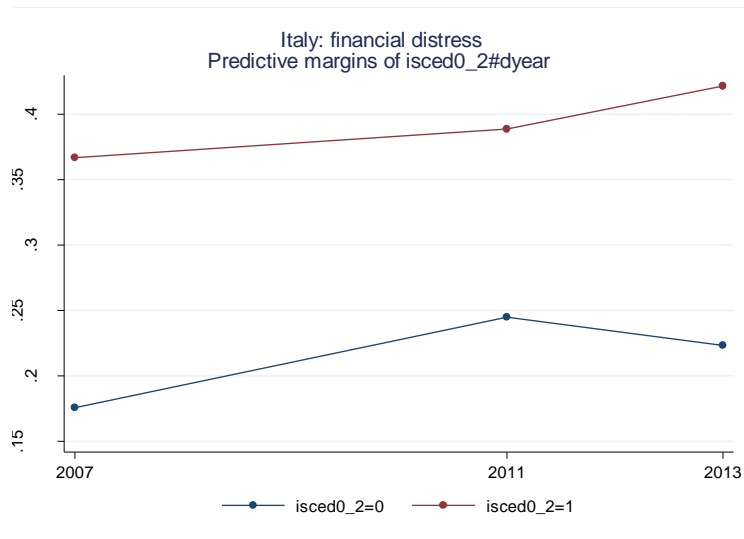


Figure 3.3.6 shows that in Italy the net value of the house on average increases from 2007 to 2013 for the low educated but it decreases for the high educated. This evidence might be explained by the heterogeneity in the housing market and the fact that it is very uncommon for Italian older households to hold a mortgage. During the crisis, the demand for larger and more expensive homes might suffer more than the one for smaller and more affordable ones: low educated households on average own less expensive homes (as confirmed by the difference in the levels of the logarithms shown in Figure 3.3.6) the value of their real wealth might be less sensitive to the adverse effects of the crisis. Figure 3.3.7 shows a similar pattern for Sweden.

Figure 3.3.6

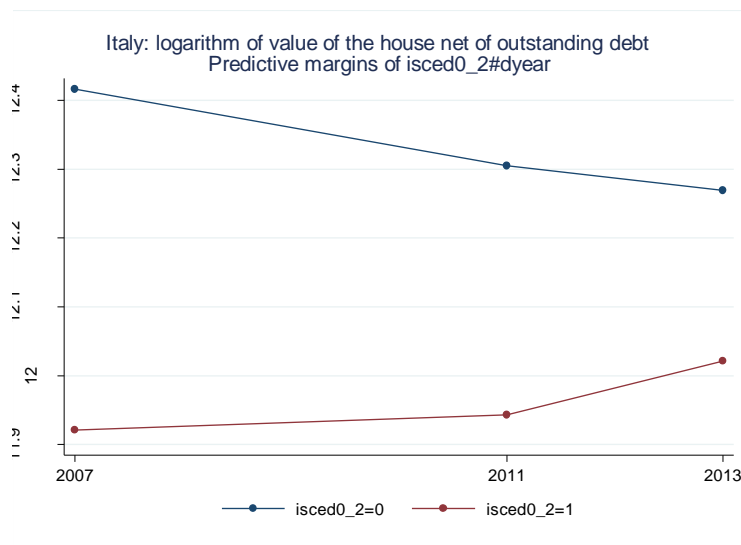
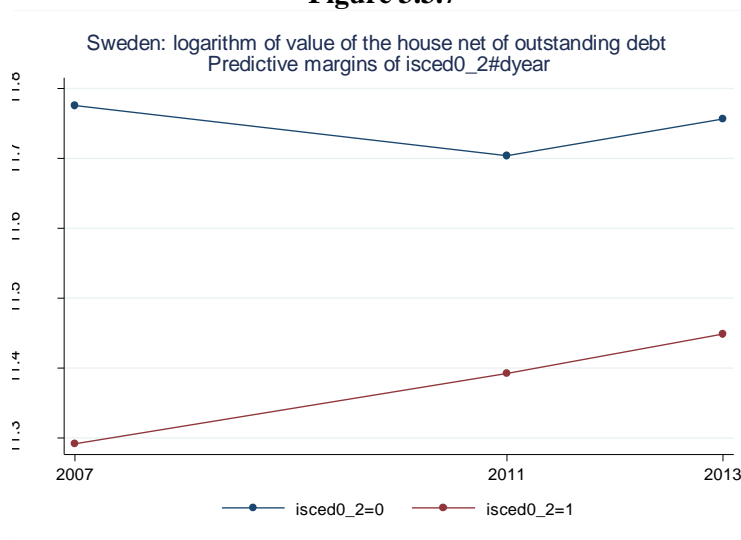


Figure 3.3.7



Employment status

In Figure 3.3.8 we look at the time dynamics of the probability of being financially distressed for German households. Between 2007 and 2011 the probability of being in financial distress shows a large increase for the households whose head is unemployed. In the following years the gap reduces but remains at higher levels than before the crisis. Figure 3.3.9 and 3.3.10 show similar results for Belgium and Switzerland. A caveat is in order when interpreting these results: from Table 3.1.2 one can infer that the category “unemployed” only represents 2.6 percent of the sample and might therefore be too small to draw reliable conclusions.

Figure 3.3.8

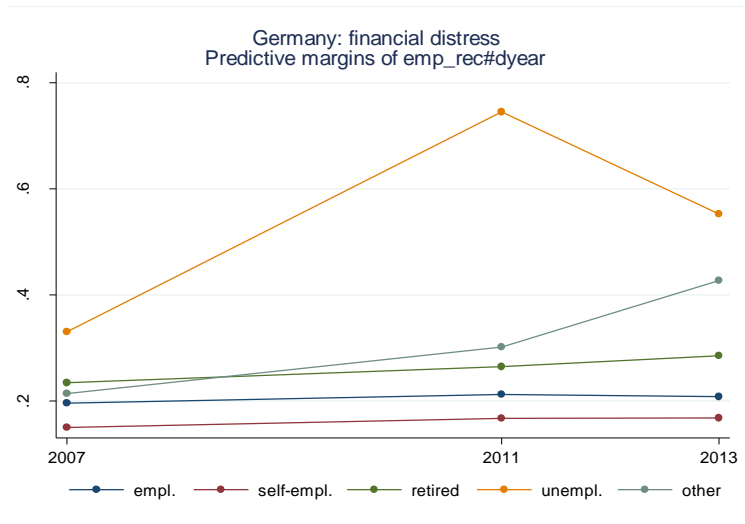


Figure 3.3.9

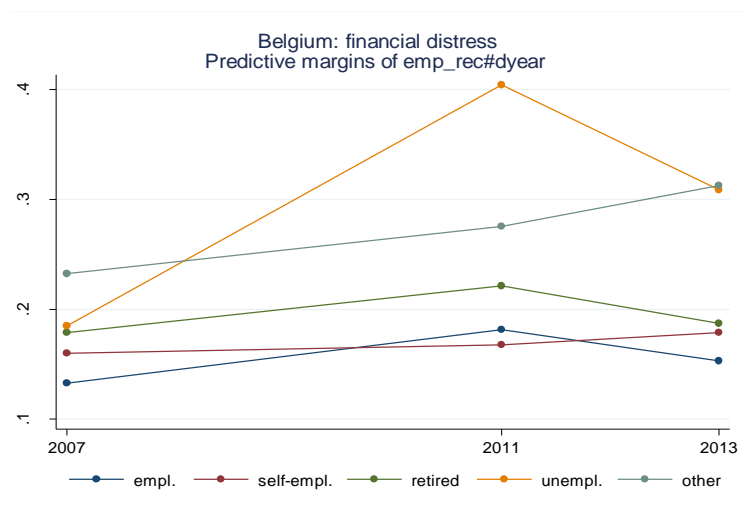


Figure 3.3.10

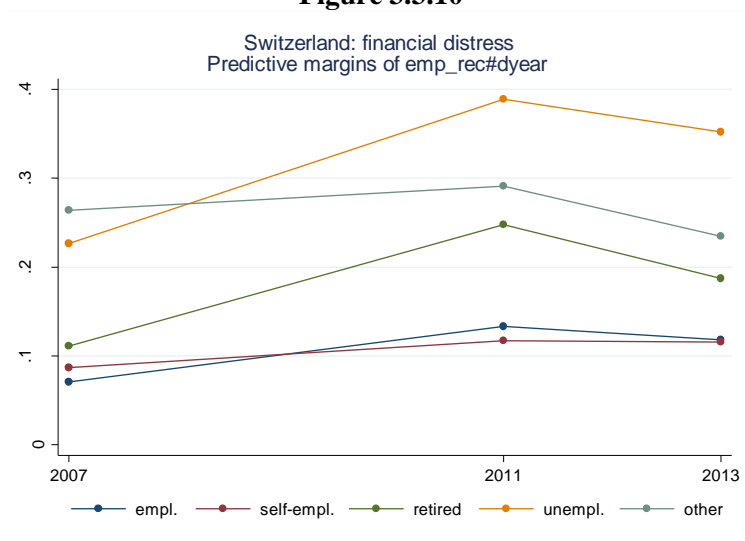
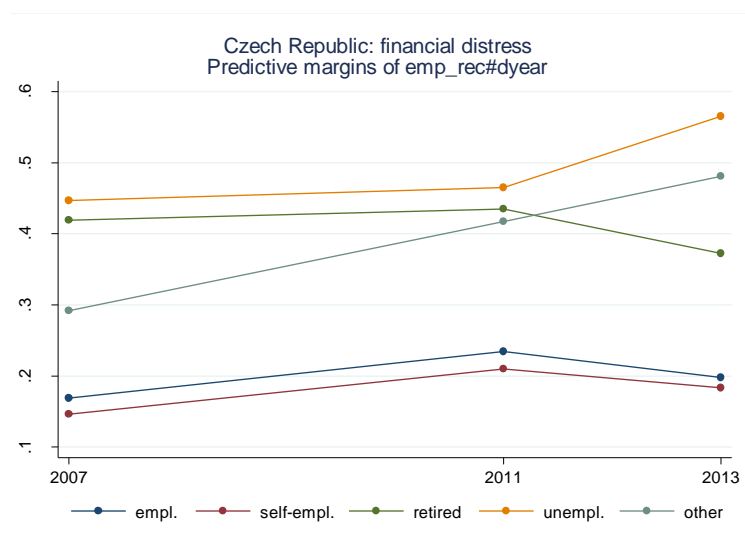


Figure 3.3.11 documents that in Czech Republic the probability of being in financial distress increases slightly for all employment groups from 2007 to 2011 and, if anything, more for those who work. However, in the following years, financial distress becomes more likely for unemployed households by 10 percentage points but it decreases by about 5 percentage points if the household head is retired.

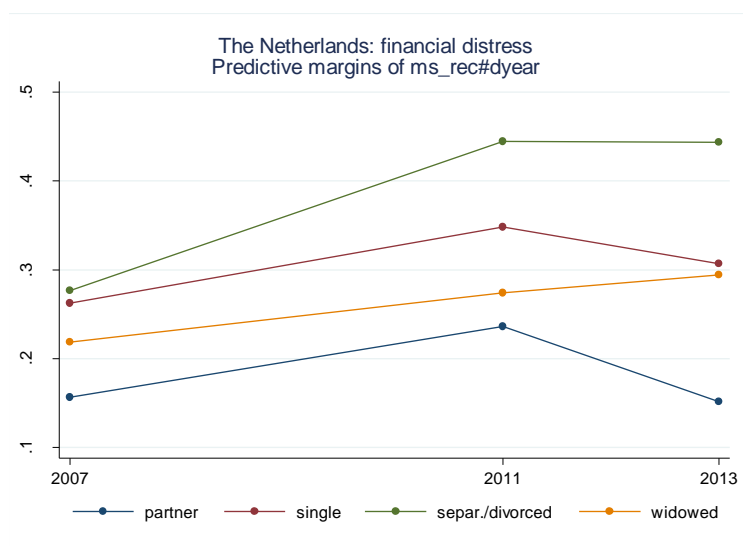
Figure 3.3.11



Marital status

Figure 3.3.12 documents that in the Netherlands the probability of being in financial distress increases more for households whose head is separated/divorced than those whose head has a partner. Before the crisis the difference was less than 15 percentage points and it increases to more than 20 percentage points in 2013. We notice that the gap remains rather constant between 2007 and 2011 and then it increases in the following years. Singles experience a sizeable increase in the probability of financial distress only between 2007 and 2011.

Figure 3.3.12



Home-ownership

Figure 3.3.13 shows that between 2007 and 2011 in Belgium the probability of being in financial distress increased by 10 percentage points for renters. The increase is less than one-fifth for home-owners. In 2007 home-owners are 10 percentage points less likely to be financially distressed, in 2011 the gap is almost 20 percentage points and decreases to 15 percentage points in 2013. A similar pattern is found for Switzerland (see Figure 3.3.14).

Figure 3.3.13

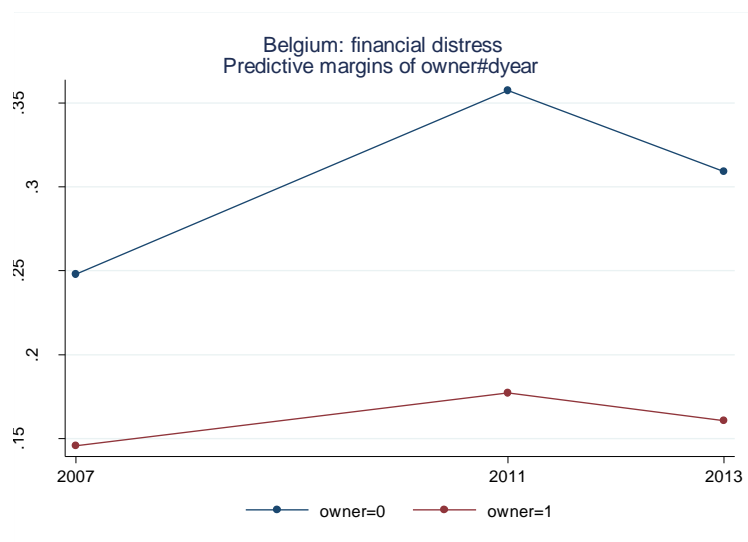


Figure 3.3.14

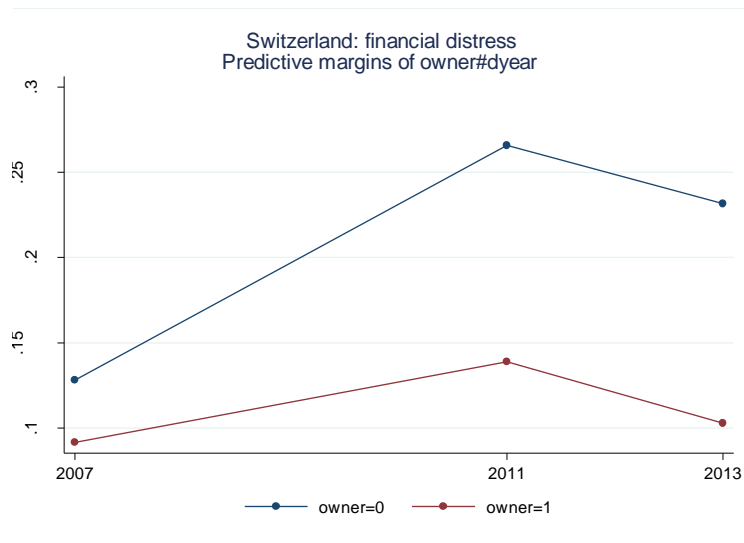


Figure 3.3.15 shows the results for Germany. The gap between home-owners and not home-owners increases between 2007 and 2011 and then remains stable between 2011 and 2013. Finally, Figures 3.3.16 and 3.3.17 show that similar evidence is found for Spain and Italy, respectively. In Spain the probability of being financially distressed for renters increases by 15 percentage points between 2007 and 2011, while the increase for home-owners is around one third. Between 2011 and 2013 the difference between the two groups remains constant. In Italy the time dynamics between 2007 and 2011 is similar to the one found in Spain but in 2013 the gap between the two groups reduces.

Figure 3.3.15

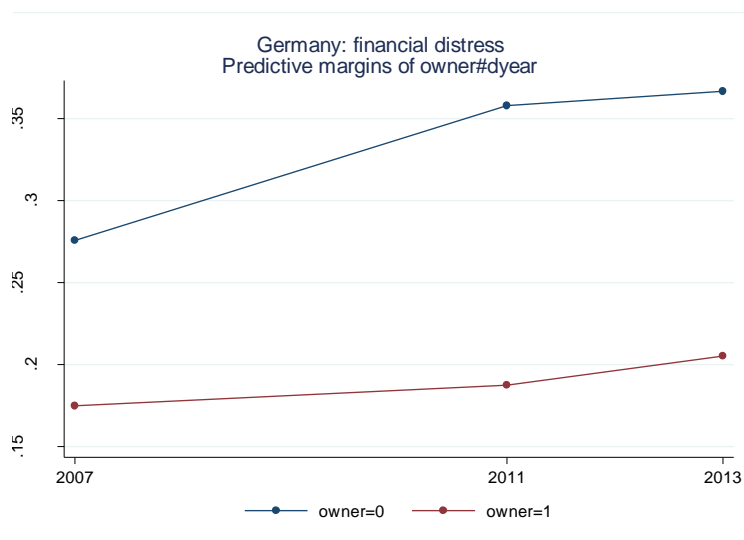


Figure 3.3.16

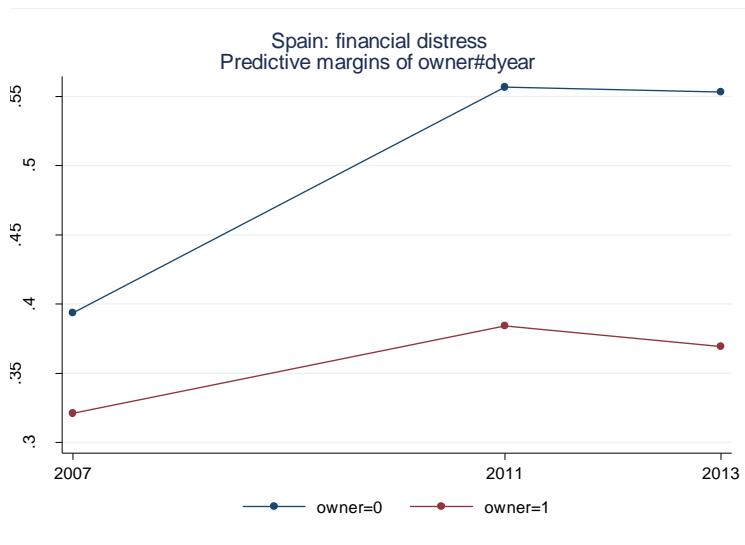
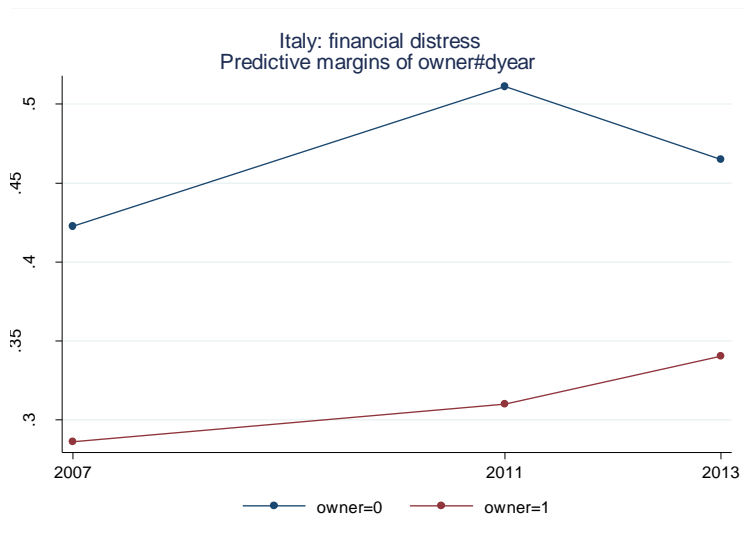


Figure 3.3.17



4. EVIDENCE FROM SHIW AND DHS

4.1 INTRODUCTION TO THE DATA AND DESCRIPTIVE EVIDENCE

The micro data we use are taken from the Survey on Household Income and Wealth (SHIW) for Italy and from the DNB Household Survey (DHS) for the Netherlands.

SHIW - The Survey on Household Income and Wealth

The Survey on Household Income and Wealth (SHIW) is provided by the Bank of Italy and represents one of the most important and main sources of information regarding income, consumption and wealth of Italian households. The Survey started from 1977 but detailed information for longitudinal analysis is available only from 1987; for the period considered in this analysis, the survey is conducted generally every two years¹¹. Data are provided in two versions: historical and annual. The historical database is preferred when conducting longitudinal analysis because it reduces the impact of differences in survey procedures. For our analysis, we will use largely the historical dataset to ensure harmonization over time; when more detailed information is needed it is retrieved from the corresponding annual dataset.

Up to 1987 the survey was conducted with time-independent samples (cross sections) of households. In order to facilitate the analysis of changes in the phenomena being investigated, from 1987 a panel component has been introduced, however due to the low number of households re-interviewed in 1989 (15%), similar studies focus the attention on data from 1989 onwards. We show in Table 4.1.1 the percentage of panel households for each wave from 1989.

Table 4.1.1 Percentage of panel households in SHIW, by year

Survey year												
1987	1989	1991	1993	1995	1998	2000	2002	2004	2006	2008	2010	2012
Sample size - households												
8,027	8,274	8,188	8,089	8,135	7,147	8,001	8,011	8,012	7,768	7,977	7,951	8,151
Panel households as a % of total households												
	14.6	26.7	42.9	44.8	37.3	48.4	45	45	50.9	54.4	58.1	56.6

Source: Bank of Italy (http://www.bancaditalia.it/statistiche/indcamp/bilfait/boll_stat/suppl_05_14.pdf)

The questionnaire used in the survey has a modular structure. It is composed of a general part addressing aspects relevant to all households and a series of additional sections containing questions relevant to specific subsets of households. Data are collected mainly with the aid of computers, using the Computer-Assisted Personal Interviewing program (CAPI). The CAPI was adopted for instance for the 84.4 % of interviews in 2010, for the 90.4 % in 2012. Households provide responses to an electronic questionnaire, which is essentially a computer program that in addition to storing data also performs a number of checks, making it possible to remedy any inconsistencies in the data directly in the presence of the household. The remaining interviews are conducted using paper-based questionnaires (PAPI, Paper-And-pencil Personal Interviewing), which the survey company subsequently transfers to a computer using the CAPI program as the input screen.

¹¹ The only exception is 1998, conducted three years after the previous wave in 1995.

The CAPI survey method reduces the need for post-survey consistency checks of data quality. However, the standard checking procedure is used for interviews conducted with the paper-based questionnaire, for which the CAPI program is used as an input screen in order to exploit its ability to flag inconsistencies. Once the checks have been completed, work begins on imputing missing answers, which could be due to reticence on the part of the respondents or difficulties in replying to the question. It is necessary to impute answers for all the elementary variables that make up the aggregate, since the absence of even one component would prevent calculation of the aggregate (for example, it is necessary to impute fringe benefits such as lunch coupons in order to calculate income from payroll employment).

The amount of imputed data is generally small. Answers have to be imputed for such variables as fringe benefits for employees, revenues for self-employed workers and the value of business equity. Regression models are used to estimate the values to assign to the missing answers on the basis of other available information. In order to avoid an excessive concentration around average values, a random component is added, extracted from a normal variable with a mean of zero and a variance equal to that of the residuals in the regression model. This preserves the mean and the variance of the data actually measured.

Households' respondents are asked to provide information about the household composition, demographics, employment status and education of each household member. Information about assets, liabilities, income and expenditures is also gathered. In our analysis we are especially interested in income and wealth questions, which are affected by non-response (D'Alessio and Faiella, 2002). Non-participation can be a problem because it may produce samples in which the less co-operative sections of the population become under-represented, causing selectivity bias. D'Alessio and Faiella (2002) confirm that non-response in SHIW is not random, and is more frequent among wealthier households. According to their estimates, this generates a bias for average aggregates greater for financial assets (underestimation of 15%-31%) than for income (5%-14%). Comparisons among population subgroups are also affected, the bias is more important among households whose head is self-employed compared to employed individuals.

Several measures have been taken to reduce the effects of non-participation. First, households are sent an advance letter to inform them about the aims and the importance of the survey and to reassure them about the confidential use of their data. Second, respondents are given a toll-free number and the contacts of people taking care of the survey at the Bank of Italy for clarifications. Moreover they are given leaflets and other documents showing the main uses of the survey. Third, ever-greater care is taken in selecting the interviewers. Fourth, the number of addresses each interviewer is given to reach his/her target has been gradually reduced.

In order to limit the effects of unit non-response, the households that cannot be contacted are replaced by others selected randomly in the same municipalities. The substitution is based on a strict protocol which is intended to limit the interviewer's influence over such a process. Moreover, at the end of the survey the sample is post-stratified on the basis of certain individual characteristics of the respondents in order to rebalance the various segments of the population within the sample.

In addition the Bank of Italy provides a set of weights that accounts also for non-response process, in order to reduce the estimation bias.¹² We provide weighted descriptive statistics using specific household sampling weights, PESOFL, designed to reduce the variability due to the different approaches over the years. These weights should grant greater stability to the estimates computed using data from the earliest surveys.

DHS - The Dutch National Bank Household Survey

The Dutch National Bank (DNB) Household Survey is conducted by CentERdata (Tilburg University). This Internet panel survey was launched in 1993 and is still on-going. The sample consists of 2,000 Dutch households. In order to have a representative sample, CentERdata provides a so-called set-top box to those

¹² For further details see Faiella and Gambacorta (2007).

households who do not have a PC. Nonetheless, the sample is not entirely representative for the population of Dutch households. For instance, home owners are overrepresented in the sample. Therefore, sample weights are used in the descriptive statistics to account for it (not in the regression analyses). The sampling weights are based upon income and home ownership.¹³ It turns out that the weighted statistics for the key variables of our analysis (except the homeownership rate)¹⁴ are almost identical to the unweighted ones, reducing the worries due to non-representativeness of the sample. Another problem is that panel attrition has been non-negligible. In order to keep the sample as representative as possible, new households have been added each year.¹⁵

For each wave of the DHS panel, information has been collected by means of five questionnaires: 1) household and work; 2) accommodation and mortgages; 3) health and income; 4) assets, and liabilities and 5) economic and psychological concepts. These questionnaires (except the second one) should be filled out by 'respondents', i.e. those household members who are at least sixteen years old. The housing questionnaire is in principle filled out by the household head. The five questionnaires have been launched at different weeks of the year so that the number of responding households differs across the questionnaires. However, CentERdata also provides the dataset 'general information of the household' which contains (mainly) demographic information on *all* members (also on those who are younger than 16) of those households who responded to at least one of the 5 questionnaires mentioned above.

Important for our purposes are the questions on assets and debts. For most of the 40 asset and debt categories, respondents first indicate whether they own assets or debts of that type. If they do, they are asked a series of questions concerning amounts and the precise nature of each asset in that category. There is virtually no nonresponse in the ownership questions, but there is substantial non-response in some of the questions on the amounts such as stocks, life insurances, shares from a substantial holding, and business equity. To deal with these item-nonresponse problems, we have imputed the amounts of assets held for those of whom we know they own the asset but for whom the amount is unknown. The imputed values are based upon amounts held in adjacent years, and on the use of regression models which relate the observed amounts to household characteristics (see Alessie et al., 2001, for more details). In this study we aggregate the respondent's information on assets and liabilities to the household level.

In this study we analyze the behavior at the household level and we only consider the personal characteristics of the household head. The sample we choose covers both pre-crisis and the crisis periods from 2006 to 2013 onwards. Initially, the sample consists of 14653 household-year observations for which information is reported in the datasets 'General information of the household'. Unfortunately, these datasets do not contain sufficient information on the marital status of the household head. We have retrieved these data from the questionnaires 'household and work', but as a result the sample size is reduced to 9982 household-year observations for which the values of all explanatory variables of the regression analyses (see below) are known.

To compare the effect of the crisis on Dutch and Italian households, in this section we analyze economic indicators available both in SHIW and DHS: the ability to make ends meet, difficulties in making ends meet, the real equivalent household annual income and the value of the house also net of the outstanding debt. In separate sections, we will provide country-specific analyses where we investigate selected outcomes that are collected only in one of the two surveys. In particular, SHIW includes relevant information on consumption and expenditure, while DHS collects data on beliefs and expectations.

¹³ Home ownership is known for all households in the sample. Missing data on disposable household income have been imputed on basis of background variables a couple of variables that are known, such as age, household composition, education, sex, tariff group, and income class. This imputed income variable has also been used in the analysis which will be presented later.

¹⁴ The weighted homeownership rate is equal to 54% (see Table 1 below) and the unweighted one to 71%.

¹⁵ See Teppa and Vis (2012) for more details about the sample refreshment. Nyhus (1996) and Teppa and Vis (2012) describe the set up of this data set and its general quality.

A widely used indicator of financial hardship is the ability to make ends meet. In SHIW respondents are asked if their household income is sufficient to see them through the end of the month; the answering options are *with great difficulty*, *with difficulty*, *with some difficulty*, *fairly easily*, *easily* and *very easily*. Those answers are coded with numbers from 1 to 6, where 1 means ‘with great difficulty’ and 6 ‘very easily’. In DHS the wording of the question is ‘How well can you manage on the total income of your household?’ and the answer is reported on a 1 to 5 scale, in which 1 means ‘very hard’ to 5 ‘very easy’.

In our empirical analysis, we will also use a transformation of these questions by defining ‘difficulties in making ends meet’, which takes value one if the household declares to have great difficulties or difficulties in making ends meet, and zero otherwise.

In SHIW we are able to look at the income dynamics from 1989. The historical dataset contains two definitions of net income (expressed in 2005 prices), with and without income from financial assets. We will use the former in our analysis net of imputed rent. Also in this case, we will deflate nominal amounts into real values using the ISTAT price index. The DHS disposable household income measure is expressed in 2010 prices and is net of income tax, social insurance contributions, health insurance premium and mortgage interest payments and it includes income from financial assets. As usually done in the literature, we account for differences in household composition by using the square root of the household size as equivalence scale for income.¹⁶ Looking at equivalent amounts helps in taking into account demographic changes over time in terms of household composition that might confound the temporal dynamic we are interested in.

Following Cavasso and Weber (2013), we are able to construct a measure of financial distress, to analyze financial fragility of Italian and Dutch households. This indicator takes value one if two conditions are met: (1) the household has financial wealth, net of non-mortgage debt, lower than three months of income and (2) the household equivalent income is not in the top third of the distribution. According to Cavasso and Weber (2013) this indicator is more appropriate since it adds a second condition on income and does not consider *financially distressed* those high income individuals with relatively low level of financial wealth.

For home-owners, we will look also at the dynamics of the house value. To properly compare over time this variable, we use the Residential Property Price Index (reference year: 2007), provided by the European Central Bank, available from 1990 to 2013. Respondents in the SHIW are asked to estimate the value of their home through the following question: ‘In your opinion, how much is your house/flat worth (unoccupied)? In other words, what price could you ask for it today (including any cellar, garage or attic)? Please give your best estimate’. A very similar question is asked in DHS: ‘About how much do you expect to get for your residence if you sold it today?’. In addition to this, we analyze the value of the house net of the outstanding debt¹⁷, adjusted for the Consumer Price Index (reference year: 2010).

We provide in Table 4.1.2 a description of our variables of interest as well as socio demographic information regarding the sample used. Age, gender, household composition, marital and employment status, education level (expressed according to the International Standard Classification of Education) refer to the household head. In the analysis on the DHS data we allow for a full set of education level dummies whereas the analysis on the SHIW data only considers the binary variable *isced0_2* that equals one if the household head completed the lower secondary or second stage of basic education. The employment status variable distinguishes 5 types: 1) employed (i.e. employee); 2) self-employed; 3) retired; 4) Unemployed; Other

¹⁶ The square root equivalence scale is rather similar to the modified equivalence scale as proposed by de Vos and Zaidi (1997).

¹⁷ In case of an endowment mortgage, we subtract the cash value of the life insurance from the mortgage debt outstanding.

(student or home maker). In the DHS data the disabled are included the group ‘unemployed’ whereas the SHIW data categorizes the disabled as ‘other’. Table 4.1.2 provides some (weighted) summary statistics of all relevant variables.

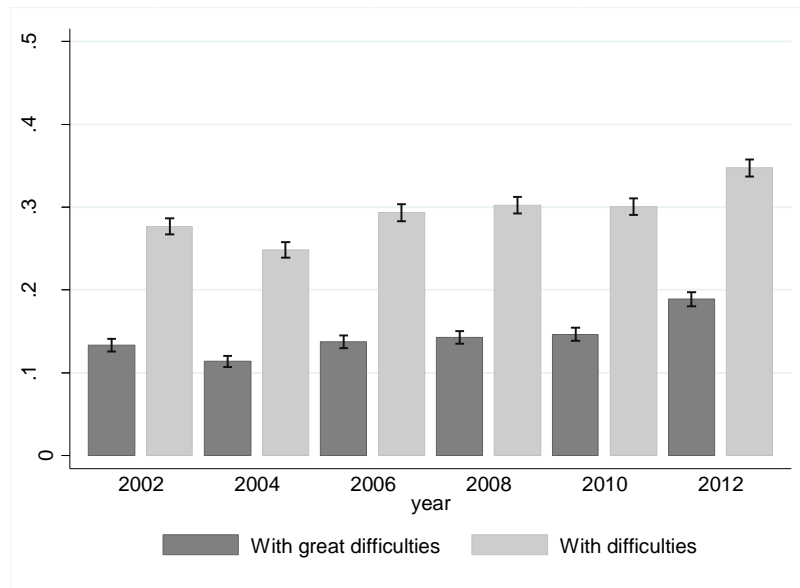
Table 4.1.2 Summary Statistics

	Italy			The Netherlands		
	N	Mean	Std. Dev	N	Mean	Std.Dev
Outcomes:						
Ability to Make Ends Meet	47870	3.058	1.223	8971	3.320	0.898
Difficulties in Making Ends Meet	47870	0.295	0.456	8971	0.155	0.362
Log of Real Household Equivalent Income	94699	9.459	0.615	9982	9.883	0.601
Financial Distress	95704	0.391	0.488	8991	0.273	0.445
Log of House Value	62442	12.08	0.697	6552	12.48	0.481
Log of House Value Net of Outstanding Debt	62338	12.04	0.725	6113	11.97	0.979
Control Variables in regressions:						
Age	95704	56.08	15.58	9982	55.23	15.06
Female	95704	0.217	0.412	9982	0.291	0.454
Partner	95704	0.691	0.462	9982	0.618	0.486
Single	95704	0.096	0.294	9982	0.200	0.400
Separated or Divorced	95704	0.055	0.227	9982	0.108	0.310
Widowed	95704	0.163	0.370	9982	0.074	0.261
Family size	95704	2.740	1.330	9982	2.137	1.182
No children in HH	95704	0.461	0.498	9982	0.733	0.442
Only underage children in HH	95704	0.213	0.410	9982	0.113	0.317
At least One Adult Child in HH	95704	0.326	0.469			
				9982	0.154	0.361
Low education	95704	0.684	0.465	9982	0.298	0.457
Pre-university				9982	0.117	0.322
Senior vocational training				9982	0.172	0.377
Vocational college				9982	0.262	0.440

University				9982	0.150	0.357
Employed	95704	0.382	0.486	9982	0.487	0.500
Self-employed	95704	0.134	0.340	9982	0.057	0.232
Retired	95704	0.435	0.496	9982	0.308	0.462
Unemployed	95704	0.028	0.164	9982	0.107	0.309
Other (Student or homemaker)	95704	0.018	0.133	9982	0.040	0.196
Home Owner	95704	0.669	0.471	9982	0.542	0.498

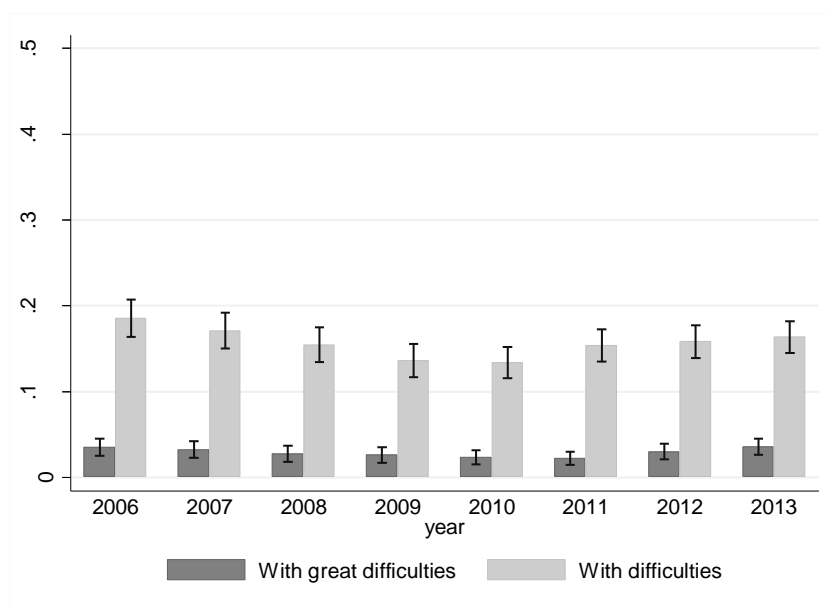
Ability to make ends meet

Figure 4.1.1 Making ends meet - Italy (SHIW)



In 2002 a question about the ability to make ends meet was introduced in the SHIW questionnaire. In Figure 4.1.1 we show the proportion of Italian households declaring having difficulties - first and second answering option combined, *great difficulty* and *difficulty* - or only great difficulties in making ends meet. Looking at the temporal dynamic, we can observe that the Great Recession hit Italian households relatively late compared to other countries, such as the United States, where the negative consequences were perceived also before the burst of the housing bubble and the stock market collapse of 2008 (Petev et al. 2011). Only in 2012 it is possible to notice a significant increase in both the percentage of households declaring having difficulties or great difficulties in making ends meet. Figure 4.1.2 shows that the proportion of households who find it hard or very hard to make ends meet is in general substantially lower in the Netherlands than in Italy but significantly increases after 2010.

Figure 4.1.2 Making ends meet - The Netherlands (DHS)



Equivalent household net real income

SHIW collects information also about household income; we use in particular the historical database to limit the impact of differences in survey procedures over time. In Figure 4.1.3 we show the equivalent household net annual income, from 1989 to 2012, deflated to 2005 prices using the Consumer Price Index for the whole nation (NIC) provided by the Italian National Institute of Statistics (ISTAT). The graph reports both the average and the median net equivalent real annual income by year. Focusing especially on the last decade, we can see that real incomes of Italian households, on average, have increased up to 2006, in 2008 and 2010 they flattened, and decreased dramatically (average income decreases by 7.33% in 2012).

Figure 4.1.3 Equivalent Household Net Real Annual Income (in 2005€) - Italy (SHIW)

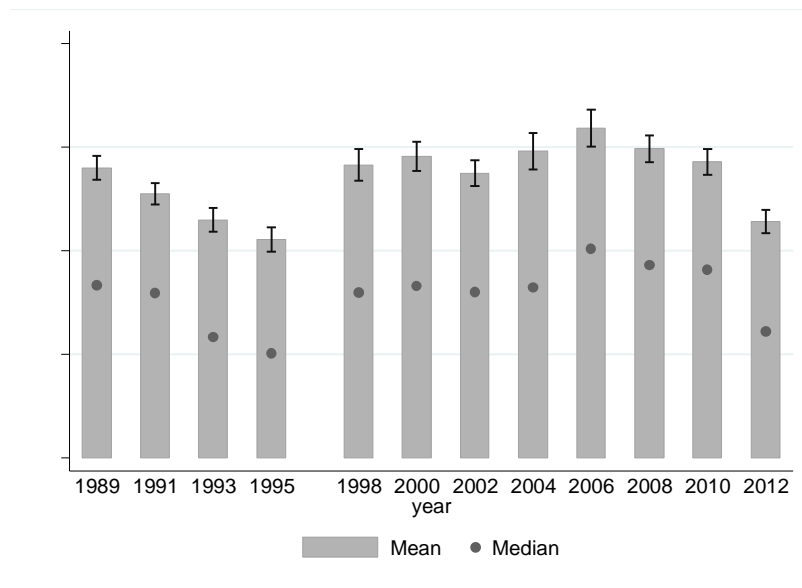
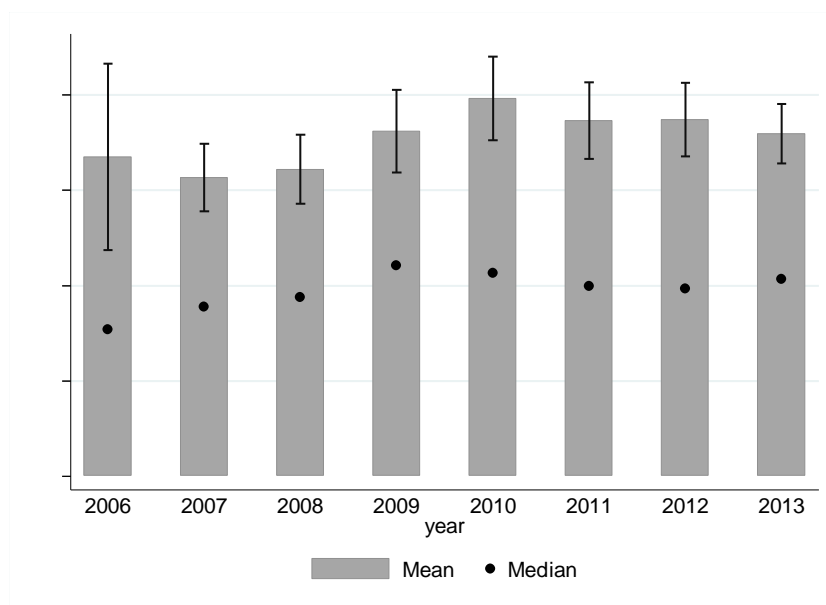


Figure 4.1.4 shows the evolution of income over time for the Netherlands. Although we observe a downward adjustment of equivalent household income after 2010, the decline is much less pronounced than in Italy.

Figure 4.1.4 Equivalent Household Net Real Annual Income (in 2010€) – The Netherlands (DHS)



Financial distress

Following Cavasso and Weber (2013), we propose a measure of financial distress. We recall that this indicator takes value one if two conditions are met: (1) the household has financial wealth, net of non-mortgage debt, lower than three months of income and (2) the household equivalent income is not in the top third of the distribution. Figures 4.1.5 and 4.1.6 show that the effect of the crisis was felt earlier in Italy than in the Netherlands. Indeed, the percentage of financially distressed households in Italy already increases significantly in 2008, while in the Netherlands only in 2011.

Figure 4.1.5 Percentage of household in financial distress - Italy (SHIW)

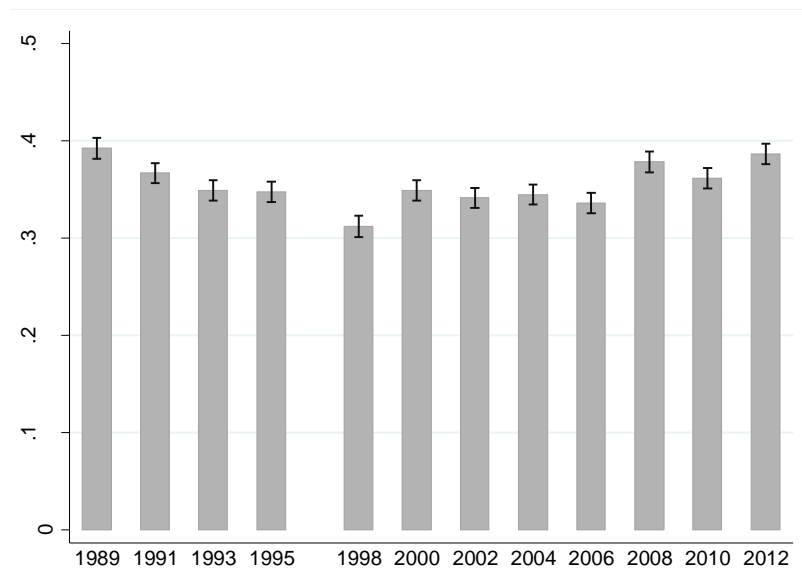
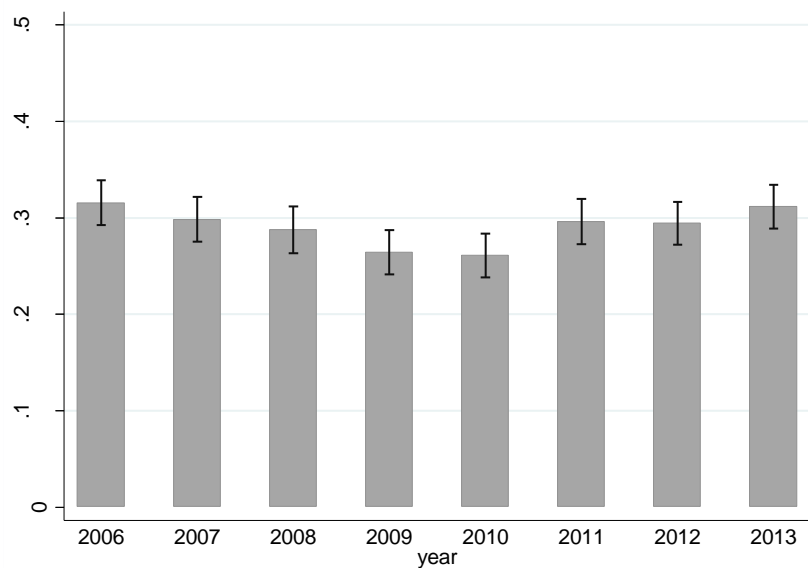


Figure 4.1.6 Percentage of household in financial distress – The Netherlands (DHS)



Value of the house

We focus on a particular subgroup of the population, the home owners, to see how the house value, also net of the outstanding debt, has changed during the crisis period. Figures 4.1.7 and 4.1.8 show the dynamics over time of real house prices in Italy and the Netherlands, respectively. On average, in Italy the value slightly decreases in 2008 compared to the previous year and decreases a second time in 2012. A different time trend is recorded by the median value, which drops in 2008 and stays rather stable till 2012. The pattern is similar when considering the average value of the house net of the outstanding debt; exception is made for the median value that drops significantly also in 2012. In the Netherlands the value of the house both with and without debt starts decreasing in 2010 and consistently declines until 2013. Two interesting facts emerge. First, in contrast to the other indicators of financial hardship, the decline in the value of the house during the crisis is more pronounced in the Netherlands than in Italy. Second, Dutch households are clearly more indebted than Italian households, which makes them vulnerable to fluctuations in house prices. Indeed, in the Netherlands we also observe a sharp increase in the proportion of households whose mortgage is underwater from 2009 to 2012.

Figure 4.1.7 Value of the House (in 2007€) - Italy (SHIW)

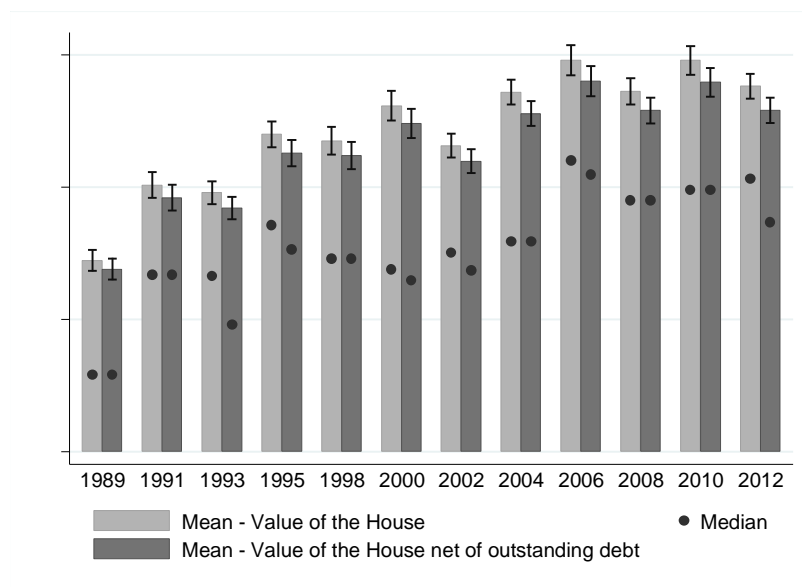
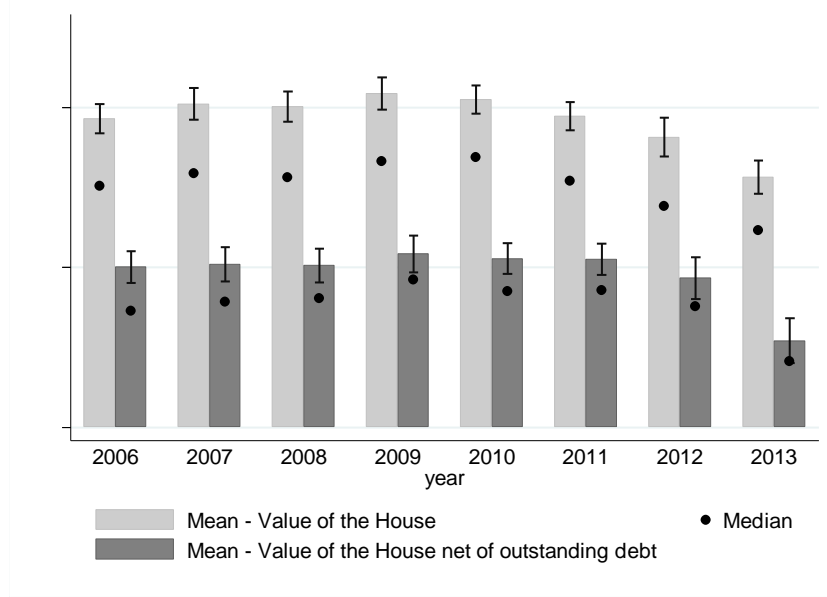


Figure 4.1.8 Value of the House (in 2010€) – The Netherlands (DHS)



4.2 REGRESSION RESULTS

In this section we present the regression results for our outcomes of interest: ability to make ends meet, difficulties in making ends meet, the logarithm of the real equivalent household annual income, the value of the house also net of the outstanding debt. In this first report, we will present our results from a cross-sectional point of view, the longitudinal dimension will be exploited later. We will account anyway for the presence of a panel component in our regression analysis by providing robust clustered (at the household level) standard errors.

In the regressions we control for the following demographic and socioeconomic characteristics. Age classes are defined on the basis of 10-year bands referring to the household head's age (households headed by individuals whose age is strictly lower than 36 is the reference category); *female* is a dummy variable that equals one if the household head is female; we control also for marital status: *single*, *separated* or *divorced* and *widowed* are dummies referring to the household head's marital status with *having a partner* being the reference category. We account for differences in household composition by including among covariates, the number of individuals in the household, *family size*, the absence of children (reference category), the presence of underage (<18) children (*underage children*) or at least one adult child (*atleast1adult child*). Education is also taken into account. For Italy, education is reported in terms of International Standard Classification of Education (ISCED): *isced0_2* is a dummy variable that equals one if the household head completed the lower secondary or second stage of basic education, the reference category is higher education. For the Netherlands, we distinguish between different levels of higher education, as the proportion of respondents with low education is very low. The employment status of the household head is captured by a group of dummies: *selfemployed*, *retired*, *unemployed* and *other*, with employed being the reference category. We also include the covariate *owner*, a dummy that equals one if the household owns the house. Finally we add time dummies (2006 is the reference year) to capture the temporal dynamics, later we will interact those with some socio-demographic characteristics to look at heterogeneous effects among different groups of the population. We will also present estimates when time dummies only for the post-crisis period are used.

In Table 4.2.1 we report OLS estimates when we pool together all waves in which the information about the ability to make ends meet is available for Italy (2002-2012). We use in this first case the categorical variable that ranges from 1 to 6, where '1' corresponds to having great difficulties in making ends meet whereas '6' corresponds to making ends meet very easily. The interpretation of coefficients therefore will be the following: the higher the coefficient the easier is making ends meet. Table 4.2.1 shows that, compared to households headed by individuals whose age is strictly lower than 36, older individuals tend to report less frequently having difficulties in making ends meet. Female is associated with a lower value of our outcome compared to male. Regarding marital status, we can observe that compared to having a partner, being single, separated, divorced or widowed are associated with having more difficulties in making ends meet. Household composition is also significant, in particular the larger the family the lower is the ability to make ends meet and compared to households with no children, the presence of underage children, or at least one adult child is associated with a lower value in the ability to make ends meet variable. Education has a protective role, *isced0_2* in fact is correlated with a lower ability to make ends meet. We control also for employment status: compared to an employed household head, unemployed, retired and other report more difficulties in making ends meet. The dummy *owner* has a positive coefficient, meaning that those households who own their house are more able to make ends meet compared to the non home-owner, typically less wealthy. It is interesting to look at the year dummies, jointly significant according to the F-test (p-value < 0.001). Compared to 2006, the reference year, we can see that the years 2008 and 2012 have negative coefficients, but only the latter is statistically significant, meaning that only in 2012 individuals report on average more difficulties in making ends meet. Similar results about socio-demographic controls

can be observed in the fourth column; when we use only post-crisis year dummies, we can see that the related coefficients are all negative and statistically significant with a stronger effect associated to the year 2012.

In Table 4.2.2 we repeat the same exercise for the Netherlands. Households whose head is self-employed or unemployed find it more difficult to make ends meet, while high education has a protective role. We observe a slight negative trend in the values of the time dummy coefficients after 2010.

Table 4.2.1 Ability to Make Ends Meet - SHIW (2002-2012)

	All year dummies			Post-crisis year dummies		
	Coef.	Std.Err.		Coef.	Std.Err.	
agecl36_45	0.129	0.026	***	0.127	0.026	***
agecl46_55	0.217	0.027	***	0.215	0.027	***
agecl56_65	0.320	0.031	***	0.315	0.031	***
agecl66_75	0.270	0.036	***	0.265	0.036	***
agecl76	0.273	0.038	***	0.266	0.038	***
female	-0.278	0.023	***	-0.277	0.023	***
single	-0.067	0.028	**	-0.068	0.028	**
separated_divorced	-0.186	0.031	***	-0.188	0.031	***
widowed	-0.081	0.028	***	-0.080	0.028	***
family_size	-0.026	0.008	***	-0.026	0.008	***
underage_children	-0.290	0.024	***	-0.291	0.024	***
atleast1adult_child	-0.434	0.021	***	-0.434	0.021	***
iscd0_2	-0.751	0.015	***	-0.750	0.015	***
selfemployed	0.325	0.022	***	0.327	0.022	***
retired	-0.097	0.024	***	-0.095	0.024	***
unemployed	-1.031	0.032	***	-1.031	0.032	***
other	-0.323	0.043	***	-0.318	0.043	***
owner	0.515	0.015	***	0.515	0.015	***
dyear_2002	0.104	0.016	***			
dyear_2004	0.055	0.015	***			
dyear_2008	-0.020	0.015		-0.073	0.013	***
dyear_2010	0.008	0.016		-0.045	0.014	***
dyear_2012	-0.174	0.016	***	-0.228	0.014	***
Constant	3.324	0.036	***	3.377	0.035	***
Observations	47,870			47,870		
R-squared	0.216			0.215		
Adj R2	0.216			0.215		
P-val F-test year dummies	0.0000			0.0000		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level.

Table 4.2.2 Ability to Make Ends Meet - DHS (2006-2013)

	All year dummies			Post-crisis year dummies		
	Coef.	Std.Err.		Coef.	Std.Err.	
agecl36_45	0.055	0.048		0.057	0.048	
agecl46_55	-0.006	0.051		-0.004	0.051	
agecl56_65	0.015	0.055		0.018	0.055	

agecl66_75	0.075	0.071		0.078	0.071	
agecl76	0.008	0.085		0.011	0.085	
female	-0.210	0.044	***	-0.210	0.044	***
single	-0.181	0.058	***	-0.182	0.058	***
separated_divorced	-0.266	0.066	***	-0.266	0.066	***
widowed	-0.048	0.080		-0.048	0.080	
family_size	-0.092	0.028	***	-0.092	0.028	***
underage_children	-0.194	0.075	***	-0.196	0.075	***
atleast1adult_child	-0.198	0.068	***	-0.197	0.068	***
pre-university	0.224	0.060	***	0.224	0.060	***
senior vocational training	0.029	0.051		0.029	0.051	
vocational college	0.292	0.043	***	0.292	0.043	***
university	0.539	0.056	***	0.540	0.056	***
selfemployed	-0.186	0.065	***	-0.187	0.065	***
retired	-0.051	0.054		-0.051	0.054	
unemployed	-0.510	0.065	***	-0.510	0.065	***
other	-0.187	0.114		-0.188	0.114	*
owner	0.325	0.039	***	0.326	0.039	***
dyear_2007	0.019	0.022				
dyear_2008	0.061	0.024	**			
dyear_2009	0.041	0.026		0.015	0.020	***
dyear_2010	0.082	0.028	***	0.055	0.023	***
dyear_2011	0.031	0.028		0.004	0.024	***
dyear_2012	0.019	0.028		-0.008	0.024	
dyear_2013	-0.017	0.029		-0.044	0.025	
Constant	3.360	0.086	***	3.384	0.085	***
Observations	8,971			8,971		
R-squared	0.193			0.193		
Adj R2	0.190			0.190		
P-val F-test year dummies	0.003			0.008		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level.

In Tables 4.2.3 and 4.2.4 we specify a linear probability model where the outcome of interest is having reported difficulties or great difficulties in making ends meet. The interpretation in this case is the following: the higher the coefficient, the more likely is reporting having difficulties/great difficulties in making ends meet. For Italian households, the results are qualitatively the same as when using the continuous measure. Compared to 2006, there is a higher statistically significant probability of reporting difficulties/great difficulties in making ends meet in 2012 and marginally in 2010 (first column). For the Netherlands, the results are by and large the same as in Table 4.2.2, albeit family size is not significant and retirees have greater difficulties making ends meet than the employed. These results are confirmed when accounting for the discrete, 0-1, nature of the dependent variable through a logit model (not presented).

Table 4.2.3 Ability to Make End Meet with difficulty/great difficulty - SHIW (2002-2012)

	All year dummies			Post-crisis year dummies		
	Coef	Std. Err.		Coef.	Std. Err.	
agecl36_45	-0.039	0.010	***	-0.037	0.010	***
agecl46_55	-0.063	0.010	***	-0.062	0.010	***
agecl56_65	-0.072	0.011	***	-0.070	0.011	***

agecl66_75	-0.055	0.013	***	-0.053	0.013	***
agecl76	-0.049	0.014	***	-0.047	0.014	***
female	0.082	0.009	***	0.083	0.009	***
single	0.021	0.010	**	0.021	0.010	**
separated_divorced	0.055	0.011	***	0.055	0.011	***
widowed	0.031	0.010	***	0.031	0.010	***
family_size	0.007	0.003	**	0.007	0.003	**
underage_children	0.086	0.008	***	0.086	0.008	***
atleast1adult_child	0.143	0.008	***	0.143	0.008	***
iscd0_2	0.192	0.005	***	0.192	0.005	***
selfemployed	-0.071	0.007	***	-0.072	0.007	***
retired	0.023	0.009	***	0.023	0.009	***
unemployed	0.391	0.013	***	0.391	0.013	***
other	0.116	0.017	***	0.114	0.017	***
owner	-0.178	0.006	***	-0.178	0.006	***
dyear_2002	-0.028	0.006	***	0.036	0.005	***
dyear_2004	-0.052	0.006	***	0.037	0.005	***
dyear_2008	0.009	0.006		0.082	0.005	***
dyear_2010	0.010	0.006	*	0.209	0.013	***
dyear_2012	0.055	0.006	***	-0.037	0.010	***
Constant	0.236	0.013	***	-0.062	0.010	***
Observations	47,870			47,870		
R-squared	0.145			0.143		
Adj R2	0.144			0.143		
P-val F-test year dummies	0.0000			0.0000		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level

Table 4.2.4 Ability to Make End Meet with difficulty/great difficulty - DHS (2006-2013)

	All year dummies			Post-crisis year dummies		
	Coef.	Std.Err.		Coef.	Std.Err.	
agecl36_45	-0.001	0.018		-0.001	0.018	
agecl46_55	0.014	0.018		0.014	0.018	
agecl56_65	0.002	0.020		0.002	0.020	
agecl66_75	-0.038	0.027		-0.039	0.026	
agecl76	-0.027	0.030		-0.028	0.030	
female	0.047	0.017	***	0.047	0.017	***
single	0.038	0.022	*	0.038	0.022	*
separated_divorced	0.107	0.029	***	0.107	0.029	***
widowed	0.027	0.032		0.027	0.032	
family_size	0.016	0.012		0.016	0.012	
underage_children	0.059	0.031	*	0.059	0.031	*
atleast1adult_child	0.057	0.026	**	0.057	0.026	**
pre-university	-0.025	0.023		-0.025	0.023	
senior vocational training	0.005	0.021		0.005	0.021	
vocational college	-0.072	0.015	***	-0.072	0.015	***
university	-0.074	0.018	***	-0.074	0.018	***
selfemployed	0.080	0.026	***	0.080	0.026	***

retired	0.036	0.021	*	0.036	0.021	*
unemployed	0.195	0.030	***	0.195	0.030	***
other	0.119	0.053	**	0.119	0.053	**
owner	-0.107	0.016	***	-0.107	0.016	***
dyear_2007	0.009	0.011				
dyear_2008	-0.006	0.011	**			
dyear_2009	-0.016	0.012		-0.017	0.009	***
dyear_2010	-0.007	0.012	***	-0.008	0.009	***
dyear_2011	-0.006	0.012		-0.007	0.010	***
dyear_2012	0.008	0.012		0.007	0.010	
dyear_2013	0.019	0.013		0.018	0.011	
Constant	0.123	0.035	***	0.125	0.034	***
Observations	8,971			8,971		
R-squared	0.118			0.117		
Adj R2	0.115			0.115		
P-val F-test year dummies	0.063			0.049		

Note: Significance levels as follows: p -value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level.

We now focus on the logarithm of equivalent household real annual income. Table 4.2.5 reports the results for Italy. Income shows the usual u-shaped relationship with age, the coefficients increase up to agecl56_65 and then decrease. Female, single, the presence of children, low education - isced0_2 - retired, unemployed and other are characteristics associated with lower income compared to the reference category, whereas self-employment and home ownership are significantly associated to higher incomes compared respectively to employed and household who do not own their home. No noticeable differences can be found looking at the second definition of income. Focusing on year dummies, we see that they are jointly significant and have all a negative coefficient, meaning that, on average, real incomes in each year are lower compared to 2006. This confirms what we saw in Figure 4.1.3. If we look at the magnitude of coefficients, we can also observe that larger effects are estimated for dyear_1993, dyear_1995, dyear_1998 and dyear_2012. Those large effects can be explained by the negative shocks that hit the Italian Economy. In September 1992 Italy decided to devalue the Lira and later withdrew from the European Monetary System (ERM), with severe consequences for household welfare. More recently in 2012 we see similar effects in terms of reduced real income: between 2011 and 2012 equivalized income dropped by almost 8 percent.

The results for the Netherlands (Table 4.2.6) show a clear negative effect of the crisis on household income, starting in 2009 and becoming more pronounced in 2013. This effect is robust to the exclusion of the pre-crisis year dummies. It is also interesting to note that widowed individuals are better off than married couples in terms of per adult equivalent income, possibly due to the generosity of survivorship pensions in the Netherlands.

Table 4.2.5 Logarithm of equivalent household real annual net income - SHIW (1989-2012)

	All year dummies			Post-crisis dummies		
	Coef	Std. Err.		Coef	Std. Err.	
agecl36_45	0.093	0.010	***	0.094	0.010	***
agecl46_55	0.187	0.011	***	0.189	0.011	***
agecl56_65	0.247	0.013	***	0.251	0.013	***
agecl66_75	0.163	0.014	***	0.166	0.014	***
agecl76	0.091	0.015	***	0.098	0.015	***
female	-0.181	0.010	***	-0.182	0.010	***

single	-0.078	0.011	***	-0.077	0.011	***
separated_divorced	-0.007	0.015		-0.004	0.015	
widowed	0.059	0.011	***	0.059	0.011	***
family_size	0.036	0.003	***	0.035	0.003	***
underage_children	-0.416	0.009	***	-0.417	0.009	***
atleast1adult_child	-0.377	0.008	***	-0.380	0.008	***
isced0_2	-0.449	0.006	***	-0.451	0.006	***
selfemployed	0.054	0.009	***	0.053	0.009	***
retired	-0.197	0.010	***	-0.201	0.010	***
unemployed	-1.220	0.036	***	-1.225	0.036	***
other	-0.710	0.040	***	-0.711	0.040	***
owner	0.145	0.006	***	0.146	0.006	***
dyear_1989	-0.018	0.009	**			
dyear_1991	-0.017	0.008	**			
dyear_1993	-0.098	0.009	***			
dyear_1995	-0.106	0.009	***			
dyear_1998	-0.055	0.010	***			
dyear_2000	-0.043	0.009	***			
dyear_2002	-0.044	0.009	***			
dyear_2004	-0.024	0.008	***			
dyear_2008	-0.019	0.008	**	0.025	0.007	***
dyear_2010	-0.059	0.009	***	-0.014	0.007	*
dyear_2012	-0.138	0.009	***	-0.094	0.007	***
Constant	9.782	0.014	***	9.739	0.013	***
Observations	94,991			94,991		
R-squared	0.274			0.272		
Adj R2	0.274			0.272		
P-val F-test year dummies	0.0000			0.0000		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level

Table 4.2.6 Logarithm of equivalent household real annual net income – DHS (2006-2013)

	All year dummies			Post-crisis year dummies		
	Coef.	Std.Err.		Coef.	Std.Err.	
agecl36_45	0.105	0.023	***	0.105	0.023	***
agecl46_55	0.142	0.023	***	0.142	0.023	***
agecl56_65	0.157	0.027	***	0.156	0.027	***
agecl66_75	0.164	0.039	***	0.163	0.039	***
agecl76	0.107	0.046	**	0.106	0.047	**
female	-0.157	0.022	***	-0.157	0.022	***
single	-0.013	0.026		-0.013	0.026	
separated_divorced	0.019	0.036		0.019	0.036	
widowed	0.126	0.037	***	0.126	0.037	***
family_size	-0.108	0.012	***	-0.108	0.012	***
underage_children	-0.124	0.035	***	-0.123	0.035	***
atleast1adult_child	-0.073	0.032	**	-0.073	0.032	**
pre-university	0.122	0.030	***	0.122	0.030	***
senior vocational training	0.039	0.024		0.039	0.024	
vocational college	0.200	0.021	***	0.200	0.021	***
university	0.376	0.025	***	0.376	0.025	***

selfemployed	-0.150	0.036	***	-0.150	0.036	***
retired	-0.169	0.032	***	-0.169	0.032	***
unemployed	-0.296	0.032	***	-0.296	0.032	***
other	-0.418	0.058	***	-0.418	0.058	***
owner	0.266	0.019	***	0.266	0.019	***
dyear_2007	0.005	0.015				
dyear_2008	-0.019	0.017				
dyear_2009	-0.043	0.016	***	-0.038	0.013	***
dyear_2010	-0.059	0.017	***	-0.055	0.015	***
dyear_2011	-0.046	0.018	***	-0.041	0.015	***
dyear_2012	-0.036	0.018	**	-0.031	0.016	*
dyear_2013	-0.089	0.020	***	-0.084	0.018	***
Constant	9.917	0.040	***	9.913	0.039	***
Observations	9,982			9,982		
R-squared	0.220			0.220		
Adj R2	0.218			0.218		
P-val F-test year dummies	0.000			0.000		

Note: Significance levels as follows: p -value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level

In Tables 4.2.7 and 4.2.8 we show OLS estimates when financial distress is the outcome of interest. It is interesting to note that, while in Italy age exhibits a u-shaped relationship with financial distress, in the Netherlands the probability of being in financial distress decreases monotonically with age. The results regarding the other sociodemographic characteristics are similar to what we already found using alternative outcomes. We focus especially on year dummies, which show how in Italy financial distress is less likely, compared to 2006, from 1993 to 1998, and more likely to occur from 2008 to 2012. In the Netherlands we observe an increase in the probability of being in financial distress in 2011, which is consistent with the evidence of Figure 4.1.6.

Table 4.2.7 Financial Distress - SHIW (1989-2012)

	All year dummies			Post-crisis dummies		
	Coef	Std. Err.		Coef	Std. Err.	
agecl36_45	-0.043	0.006	***	-0.044	0.006	***
agecl46_55	-0.095	0.007	***	-0.095	0.007	***
agecl56_65	-0.101	0.008	***	-0.100	0.008	***
agecl66_75	-0.054	0.009	***	-0.054	0.009	***
agecl76	-0.037	0.010	***	-0.036	0.010	***
female	0.068	0.007	***	0.067	0.007	***
single	0.037	0.008	***	0.037	0.008	***
separated_divorced	0.044	0.009	***	0.044	0.009	***
widowed	0.024	0.008	***	0.025	0.008	***
family_size	0.019	0.002	***	0.019	0.002	***
underage_children	0.124	0.006	***	0.124	0.006	***
atleast1adult_child	0.141	0.006	***	0.139	0.006	***
iscd0_2	0.229	0.004	***	0.229	0.004	***
selfemployed	-0.068	0.005	***	-0.069	0.005	***
retired	-0.005	0.006		-0.007	0.006	
unemployed	0.108	0.011	***	0.104	0.011	***

other	0.013	0.013		0.011	0.013	
owner	-0.145	0.004	***	-0.145	0.004	***
dyear_1989	0.022	0.007	***			
dyear_1991	-0.009	0.007				
dyear_1993	-0.030	0.007	***			
dyear_1995	-0.029	0.007	***			
dyear_1998	-0.047	0.007	***			
dyear_2000	-0.004	0.007				
dyear_2002	-0.010	0.007				
dyear_2004	0.002	0.006				
dyear_2008	0.044	0.006	***	0.054	0.005	***
dyear_2010	0.032	0.007	***	0.043	0.005	***
dyear_2012	0.059	0.007	***	0.070	0.005	***
Constant	0.229	0.010	***	0.219	0.009	***
Observations	95,704			95,704		
R-squared	0.109			0.108		
Adj R2	0.109			0.108		
P-val F-test year dummies	0.0000			0.0000		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level

Table 4.2.8 Financial Distress - DHS (2006-2013)

	All year dummies			Post-crisis year dummies		
	Coef.	Std.Err.		Coef.	Std.Err.	
agecl36_45	-0.154	0.026	***	-0.154	0.025	***
agecl46_55	-0.184	0.025	***	-0.184	0.025	***
agecl56_65	-0.199	0.027	***	-0.198	0.027	***
agecl66_75	-0.209	0.033	***	-0.209	0.033	***
agecl76	-0.230	0.038	***	-0.230	0.038	***
female	0.041	0.020	**	0.041	0.020	**
single	0.034	0.026		0.033	0.026	
separated_divorced	0.050	0.029	*	0.050	0.029	*
widowed	-0.022	0.033		-0.022	0.033	
family_size	0.027	0.014	*	0.027	0.014	*
underage_children	0.149	0.036	***	0.148	0.036	***
atleast1adult_child	0.106	0.032	***	0.106	0.032	***
pre-university	-0.092	0.025	***	-0.092	0.025	***
senior vocational training	-0.030	0.024		-0.030	0.024	
vocational college	-0.099	0.020	***	-0.099	0.020	***
university	-0.181	0.021	***	-0.181	0.021	***
selfemployed	0.027	0.031		0.027	0.031	
retired	0.029	0.023		0.029	0.023	
unemployed	0.136	0.031	***	0.136	0.031	***
other	0.112	0.050	**	0.111	0.049	**
owner	-0.191	0.019	***	-0.191	0.019	***
dyear_2007	0.011	0.013				
dyear_2008	0.010	0.014				
dyear_2009	-0.007	0.014		-0.014	0.012	
dyear_2010	0.012	0.015		0.005	0.012	
dyear_2011	0.049	0.016	***	0.042	0.013	***

dyear_2012	0.022	0.015		0.015	0.013	
dyear_2013	0.035	0.016	**	0.028	0.014	**
Constant	0.461	0.043	***	0.468	0.043	***
Observations	8,991			8,991		
R-squared	0.145			0.145		
Adj R2	0.143			0.143		
P-val F-test year dummies	0.008			0.003		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level.

In Tables 4.2.9 and 4.2.10 we regress the logarithm of the house value and the logarithm of the house value less the outstanding debt on the same set of covariates we used so far. Here again we focus on year effects. For Italy, compared to 2006, we can see that the house value, deflated to 2007 residential property price, is always lower with the exception of 2010 for both outcomes. The year 2012 shows no statistically significant effect when looking at the overall house value, while a significant decrease is estimated when considering the logarithm of house value less the outstanding debt. We can notice a different picture when including only post-crisis year dummies (not reported but available upon request): compared to the pre-crisis period, the logarithm of the house value and the logarithm of the house value less the outstanding debt are higher in the years 2008-2012. We can however notice that the coefficient associated to the 2012 year dummy is lower compared to 2010 similar to 2008.

In the Netherlands we observe a very strong effect of the financial crisis. The house value starts declining in 2010 and this decline increases every year. Interestingly, when we look at the house value net of the mortgage debt, the decline already begins in 2008 and is larger than the decrease in the house value.

Table 4.2.9 Logarithm of the value of the house - SHIW (1989-2012)

	All year dummies					
	House Value			House Value less Outstanding Debt		
	Coef.	Std. Err.		Coef.	Std. Err.	
agecl36_45	0.081	0.013	***	0.135	0.015	***
agecl46_55	0.139	0.014	***	0.234	0.016	***
agecl56_65	0.166	0.016	***	0.282	0.018	***
agecl66_75	0.108	0.018	***	0.236	0.020	***
agecl76	0.008	0.021		0.145	0.023	***
female	-0.035	0.017	**	-0.039	0.017	**
single	-0.198	0.018	***	-0.167	0.019	***
separated_divorced	-0.081	0.022	***	-0.073	0.023	***
widowed	-0.092	0.018	***	-0.082	0.019	***
family_size	0.043	0.005	***	0.044	0.005	***
underage_children	-0.094	0.012	***	-0.101	0.013	***
atleast1adult_child	-0.083	0.011	***	-0.077	0.011	***
iscsed0_2	-0.452	0.009	***	-0.451	0.009	***
selfemployed	0.179	0.012	***	0.196	0.012	***
retired	-0.002	0.012		0.020	0.012	
unemployed	-0.240	0.025	***	-0.223	0.027	***
other	0.056	0.030	*	0.102	0.030	***

dyear_1989	-0.367	0.013	***	-0.330	0.014	***
dyear_1991	-0.237	0.013	***	-0.210	0.014	***
dyear_1993	-0.245	0.013	***	-0.225	0.014	***
dyear_1995	-0.132	0.013	***	-0.121	0.014	***
dyear_1998	-0.154	0.013	***	-0.132	0.013	***
dyear_2000	-0.083	0.012	***	-0.070	0.012	***
dyear_2002	-0.120	0.012	***	-0.112	0.012	***
dyear_2004	-0.023	0.011	**	-0.031	0.011	***
dyear_2008	-0.020	0.010	*	-0.029	0.011	***
dyear_2010	0.012	0.011		-0.003	0.011	
dyear_2012	-0.012	0.011		-0.044	0.012	***
Constant	12.315	0.020	***	12.149	0.023	***
Observations	62,442			62,338		
R-squared	0.159			0.136		
Adj R2	0.159			0.135		
P-val F-test year dummies	0.0000			0.0000		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level

Table 4.2.10 Logarithm of the value of the house - DHS (2006-2013)

	All year dummies					
	House Value			House Value less Outstanding Debt		
	Coef.	Std.Err.		Coef.	Std.Err.	
agecl36_45	0.130	0.028	***	0.537	0.092	***
agecl46_55	0.202	0.033	***	1.007	0.091	***
agecl56_65	0.308	0.038	***	1.283	0.098	***
agecl66_75	0.349	0.049	***	1.384	0.107	***
agecl76	0.341	0.060	***	1.534	0.118	***
female	-0.052	0.030	*	-0.134	0.063	**
single	-0.137	0.041	***	-0.199	0.088	**
separated_divorced	-0.112	0.049	**	-0.184	0.119	
widowed	0.008	0.049		0.084	0.080	
family_size	0.054	0.018	***	0.060	0.042	
underage_children	0.031	0.046		-0.011	0.101	
atleast1adult_child	-0.024	0.045		-0.076	0.096	
pre-university	0.150	0.045	***	0.008	0.080	
senior vocational training	-0.049	0.037		-0.001	0.064	
vocational college	0.127	0.031	***	0.018	0.054	
university	0.339	0.036	***	0.185	0.062	***
selfemployed	0.158	0.064	**	0.160	0.102	
retired	0.087	0.040	**	0.081	0.061	
unemployed	-0.043	0.048		0.016	0.075	
other	0.044	0.055		0.179	0.089	**
dyear_2007	0.029	0.013	**	-0.041	0.029	
dyear_2008	0.022	0.014		-0.055	0.031	*
dyear_2009	0.028	0.015	*	-0.099	0.036	***
dyear_2010	-0.014	0.019		-0.147	0.036	***
dyear_2011	-0.045	0.017	***	-0.132	0.039	***
dyear_2012	-0.111	0.019	***	-0.187	0.041	***
dyear_2013	-0.176	0.019	***	-0.290	0.040	***

Constant	12.016	0.054	***	10.842	0.135	***
Observations	6,552			6,113		
R-squared	0.197			0.227		
Adj R2	0.193			0.223		
P-val F-test year dummies	0.0000			0.000		

*Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level.*

4.3 INTERACTIONS

In this report we extend our regression analysis to study whether the crisis affected differently different groups of the population. Our approach consists in running several regressions in which we add, one at the time, interaction terms between the year dummies and some key explanatory variables to our main specifications. In particular, we include interaction terms between the year dummies and marital status, home-ownership, employment status, age classes and education level. If these interaction terms are significant, it means that the time trend is different across different groups of the population. In what follows, we present some graphs in which we plot the marginal effects of the interaction terms for those cases in which they are statistically significant and economically meaningful.

Age

We first focus on age classes to see whether the recession effects are stronger for specific age groups of the population. Looking at Figures 4.3.1 to 4.3.4 we can see that in Italy the youngest individuals are those hit the most by the great recession. Household headed by individuals whose age is lower than 35 and in between 46-65 have a higher probability of reporting difficulties/great difficulties in making ends meet (Figure 4.3.2) and show a more marked decrease in household income from 2008 onwards compared to other age classes. Moreover, the Figures suggest that households whose head is older than 65 are barely affected by the crisis. For the Netherlands, we do not find significant age differences in the effect of the crisis for these indicators. Looking at our financial distress indicator, for Italy we can see that after 2008, in addition to households headed by individuals whose age is lower than 35, also for those whose head is younger than 45 the probability of being financially distressed increases. Figure 4.3.5 shows that also in the Netherlands individuals younger than 35 are more in financial distress than those in the other age groups, while people past retirement age are doing relatively well ('level' effect). For the age group 36-45 (and 56-65) financial distress increased substantially between 2009 and 2013. Such a trend is not visible for the other age groups. Figure 4.3.6 shows that in Italy the reported house value less the outstanding debt decreases especially after 2008 for younger households.

Figure 4.3.1 Ability to make ends meet and age - Italy

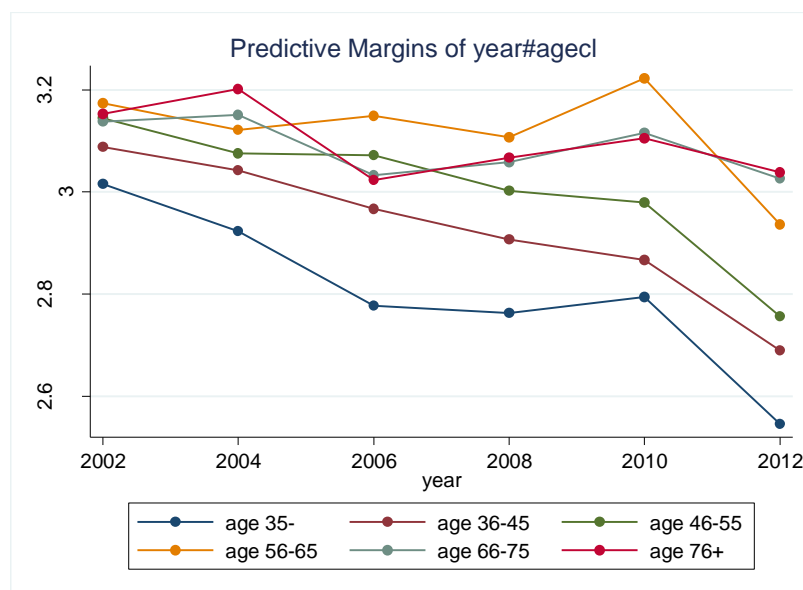


Figure 4.3.2 Difficulties in making ends meet and age - Italy

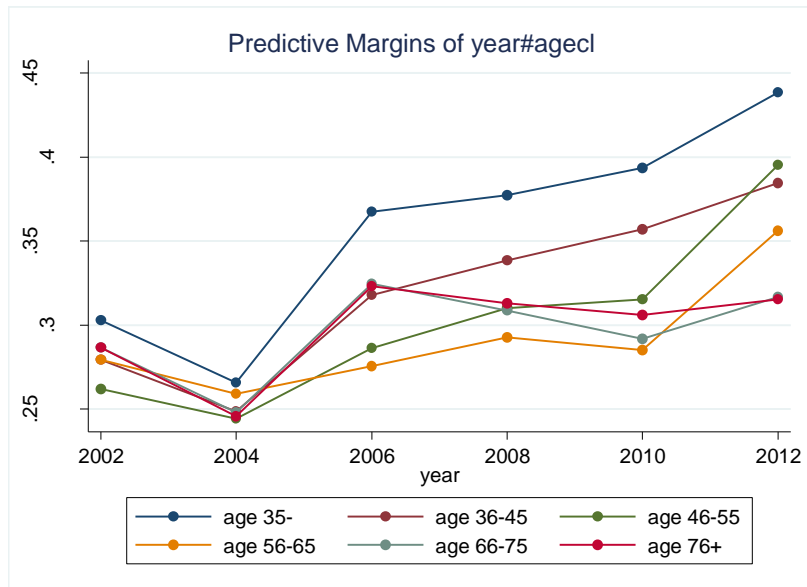


Figure 4.3.3 Logarithm of equivalent household net income by age class - Italy

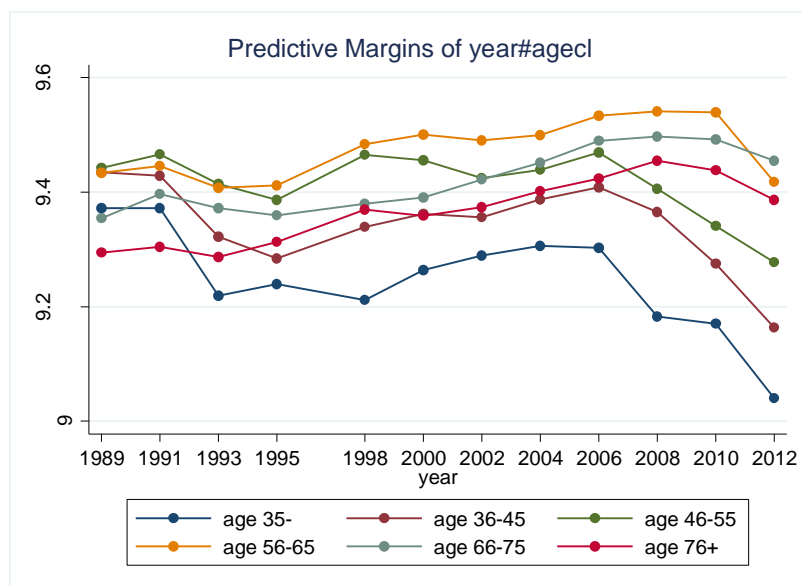


Figure 4.3.4 Financial distress and age - Italy

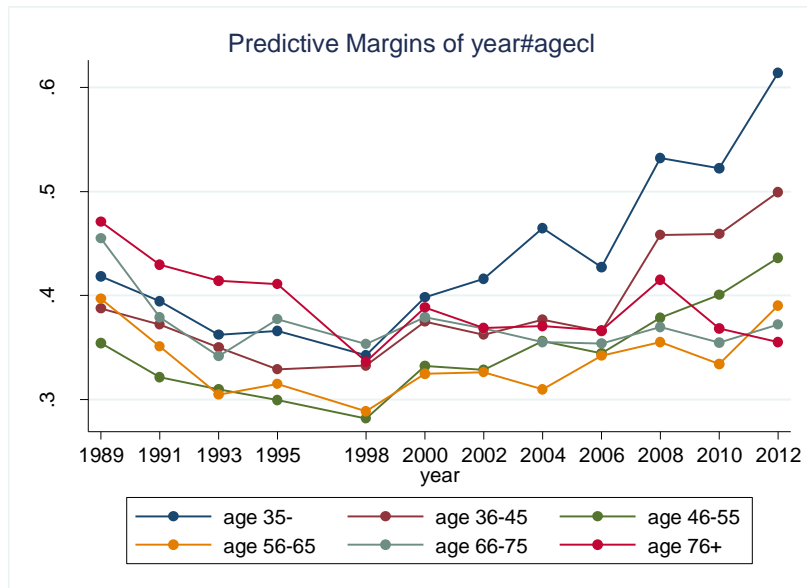


Figure 4.3.5 Financial distress and age – The Netherlands

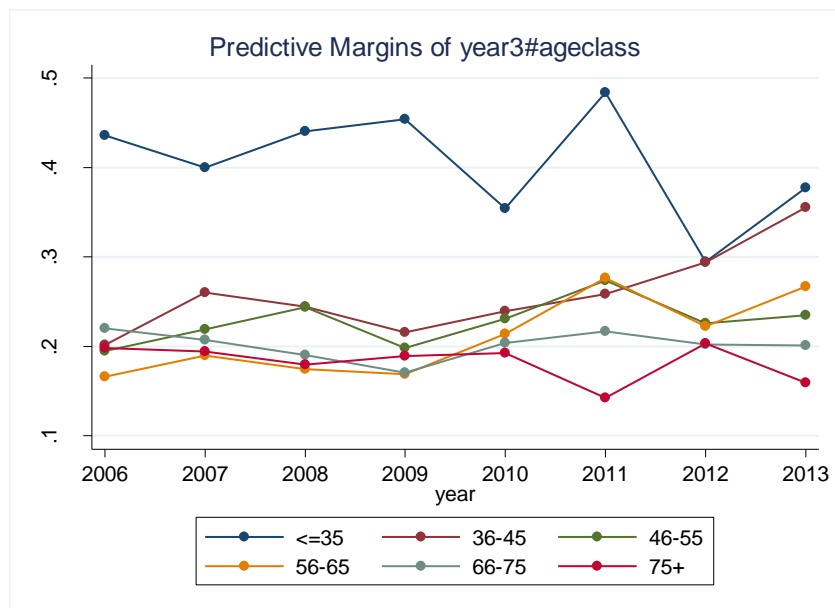
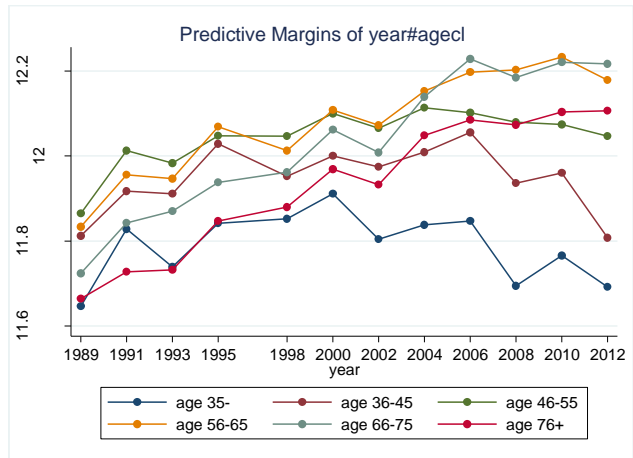
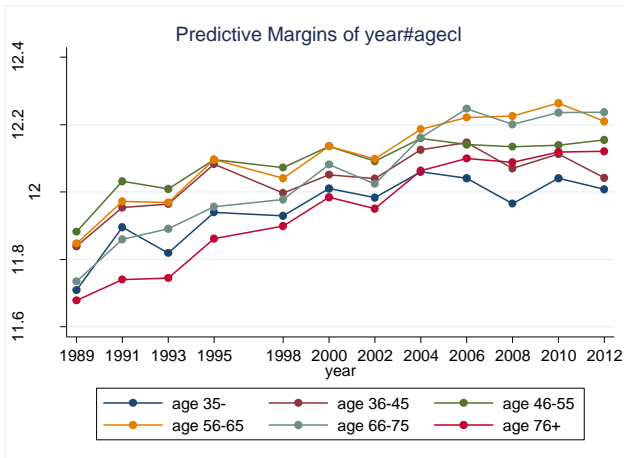


Figure 4.3.6 Logarithm of value of the house - Italy

(a) House Value

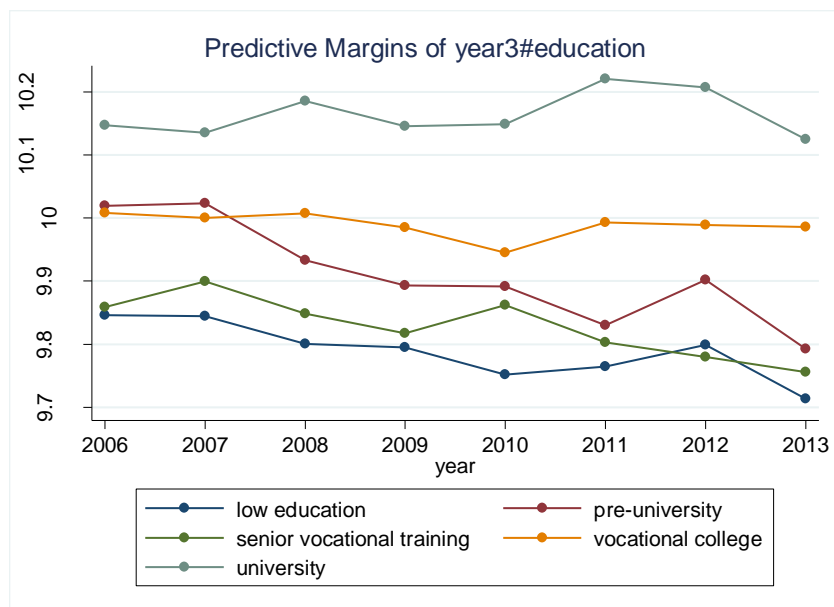
(b) House Value less Outstanding Debt



Education

We now interact year dummies with education, to see whether poorly educated individuals were more exposed to the negative effects of the recession. Statistically significant differences can be observed only for the outcomes displayed. Figure 4.3.7 shows that there has been a general decline in income of Dutch households especially in the last year and that this decline is relatively steep for households with low or pre-university education. For households with a vocational college degree, income appears to be relatively stable over time, except for a slight decline in 2010.

Figure 4.3.7 Logarithm of equivalent household net income and education – The Netherlands



Household composition

Focusing on household composition, we can see that households with underage children reported being less able to making ends meet without difficulties immediately after 2008 (Figure 4.3.8). According to Figure 4.3.9, when we use the binary transformation of the original ability to make ends meet variable, we can notice that in 2012 households with at least one adult child have a higher probability of reporting difficulties/great difficulties in making ends meet. In Figure 4.3.10 we can see a clear trend after 2006: households with only underage children suffer the most of the crisis. For that group equivalized income dropped by 18 percent between 2006 and 2012. This drop was considerably smaller for households without children. Also financial distress (Figure 4.3.11) especially increased for households with underage children.

Figure 4.3.8 Ability to make ends meet and household composition - Italy

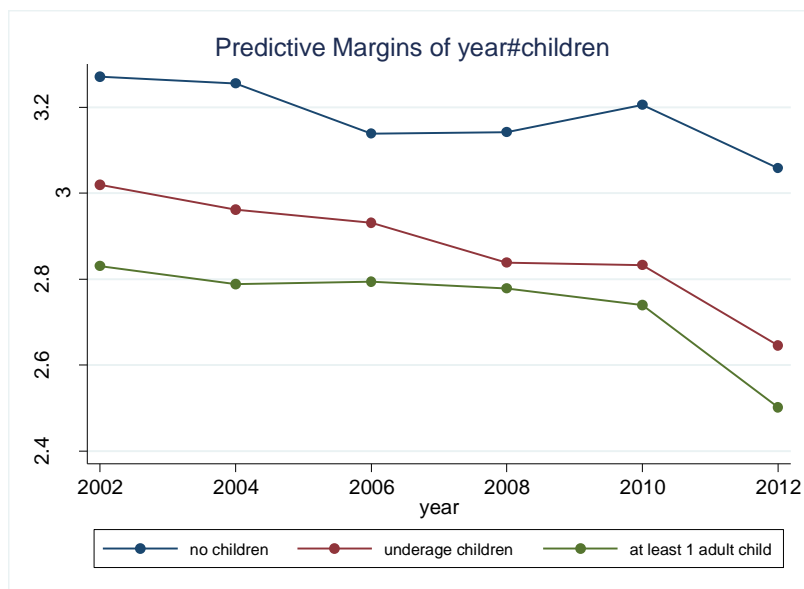


Figure 4.3.9 Difficulties in making ends meet and household composition - Italy

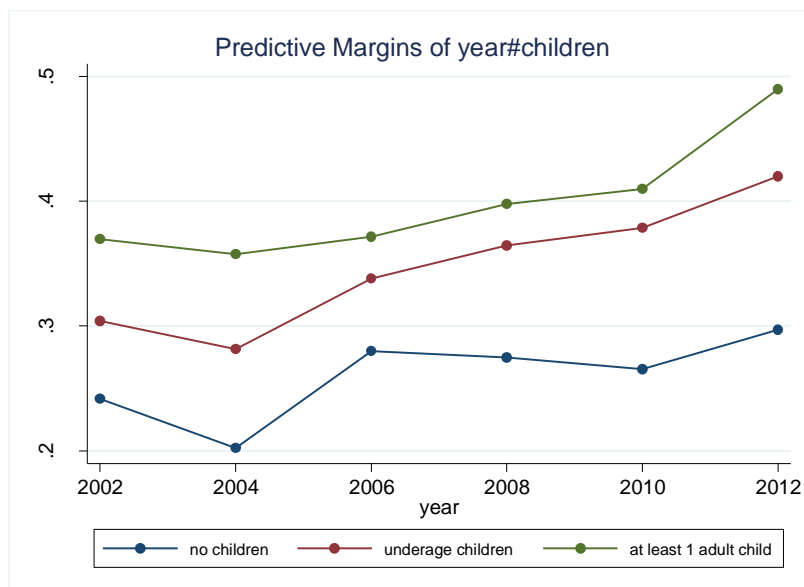


Figure 4.3.10 Logarithm of equivalent household net income and household composition - Italy

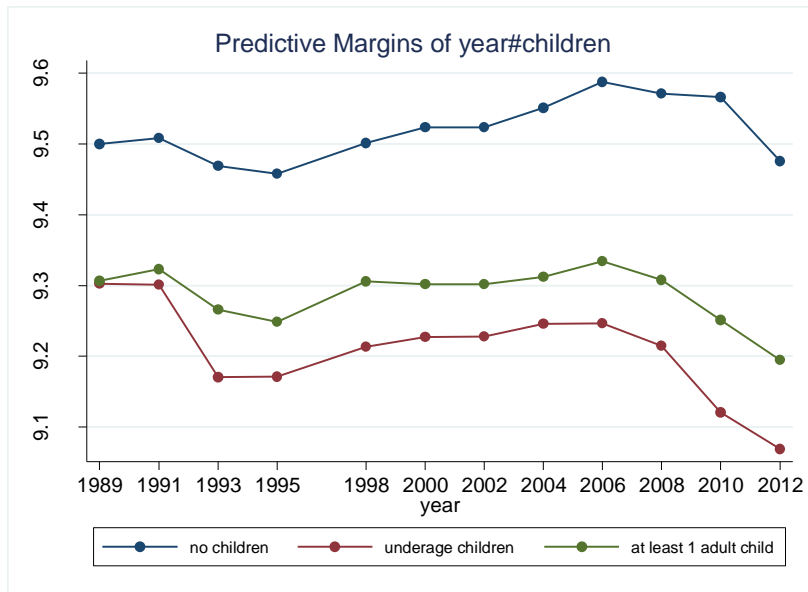
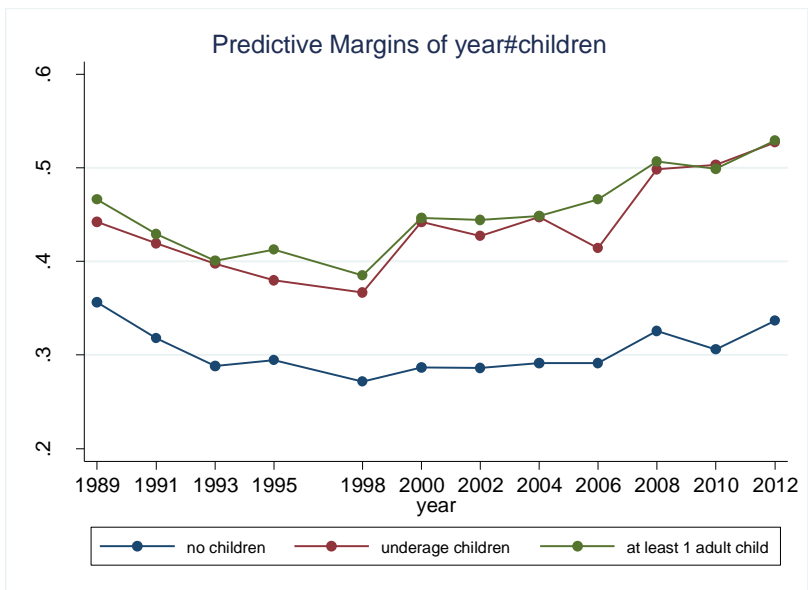


Figure 4.3.11 Financial distress and household composition - Italy



Employment status

Employment status interaction effects show that Italian and Dutch households headed by retired individuals are those who suffer the least in terms of ability to make ends meet (Figures 4.3.12 and 4.3.14). Figure 4.3.13 shows that in the Netherlands the financial situation of the self-employed deteriorated strongly between 2008 and 2012. This result might be due to a composition effect: due to the financial crisis it has become very difficult for job-seekers to find a job as employee. People therefore were ‘forced’ to become self-employed. It should be mentioned that the fraction of self-employed in the labour force has risen since 2006 in the Netherlands. The financial situation of especially the unemployed deteriorated between 2011 and 2013, while it remained fairly stable for retirees and employees.

Figure 4.3.12 Ability to make ends meet by employment status - Italy

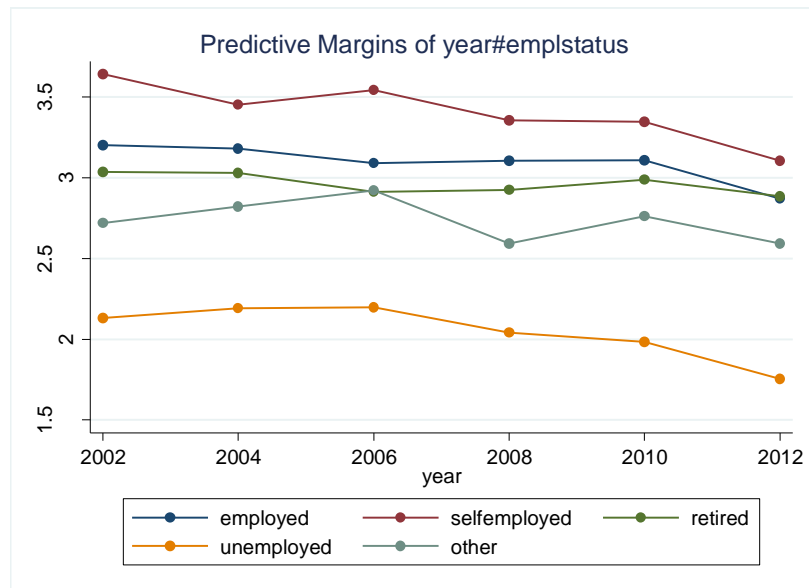


Figure 4.3.13 Ability to make ends meet by employment status – The Netherlands

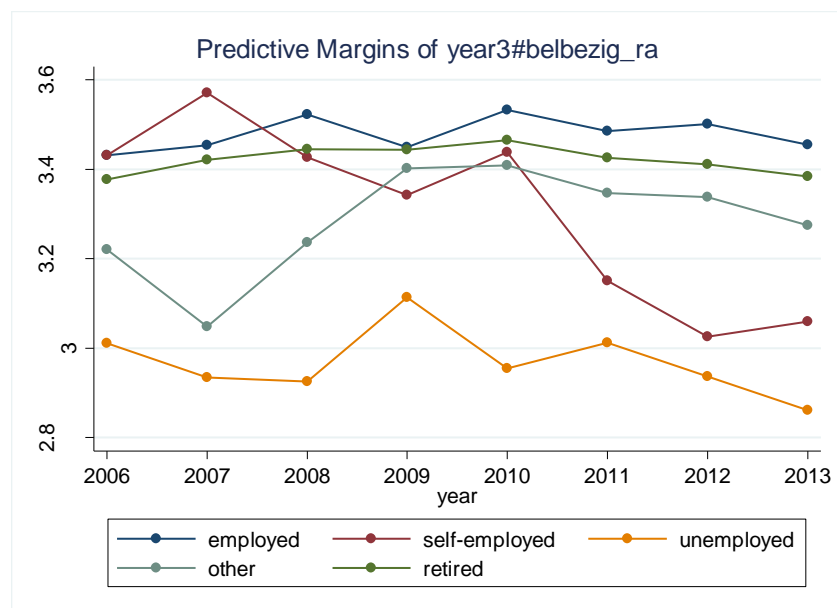
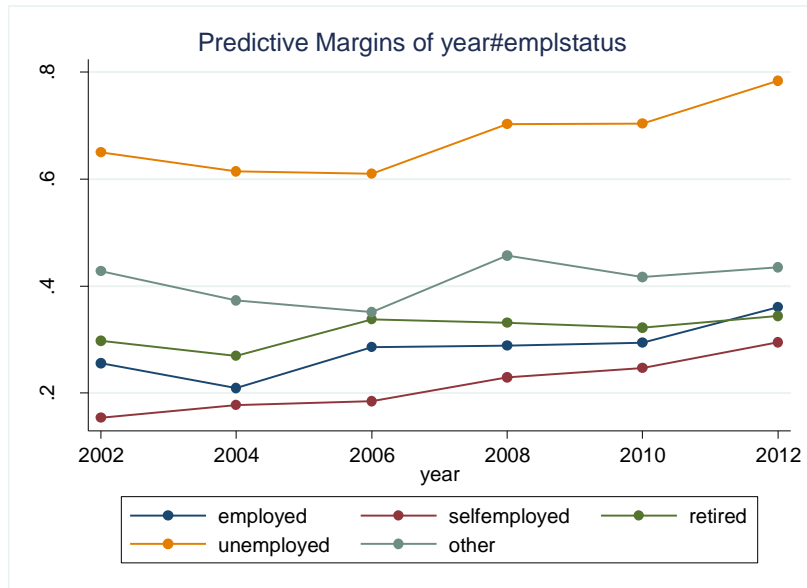


Figure 4.3.14 Difficulties in making ends meet and employment status – The Netherlands



Looking at Figures 4.3.15 and 4.3.16, we can see that, as expected, both Italian and Dutch unemployed individuals are those who suffer the crisis the most registering a marked drop in terms of real income. The income of employees and retirees remain fairly stable over time, although for Dutch retired households we observe a drop in income in 2013. This last finding can be explained by the fact that many Dutch pension funds did not index the pension benefits. For Italy, similar conclusions can be reached by looking at financial distress rather than income (see Figure 4.3.17).

Figure 4.3.15 Logarithm of equivalent household net income and employment status - Italy

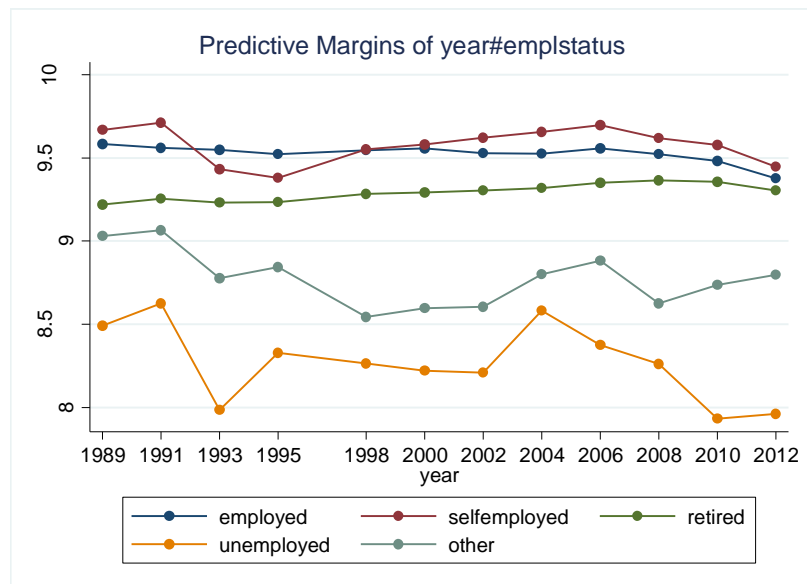


Figure 4.3.16 Logarithm of the equivalent household net income and employment status – The Netherlands

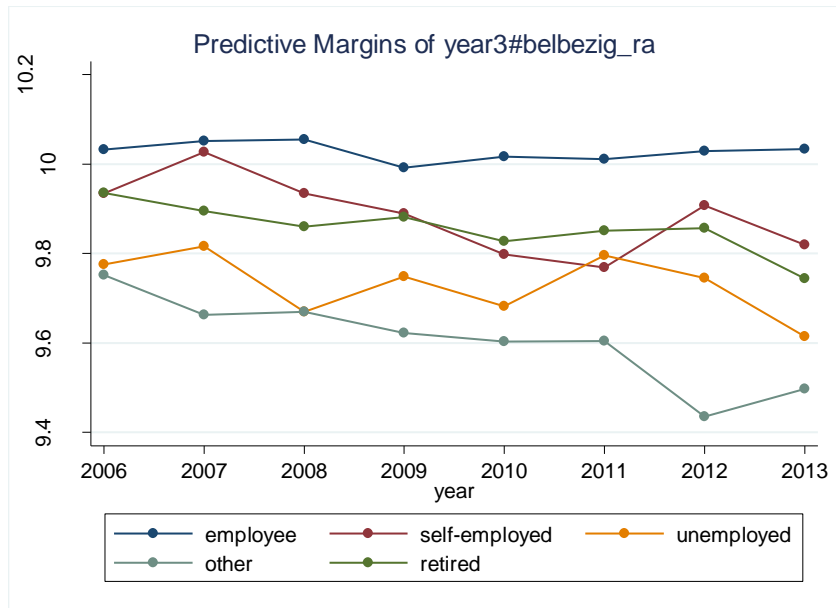
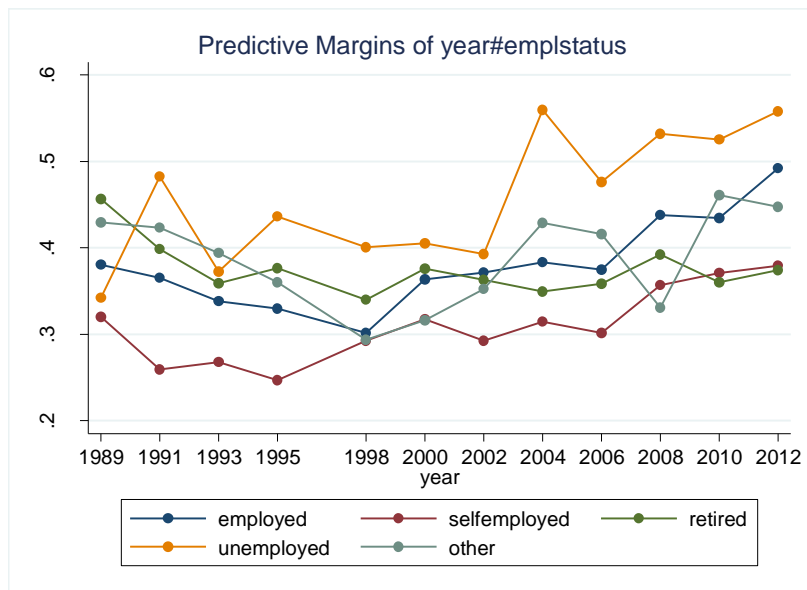


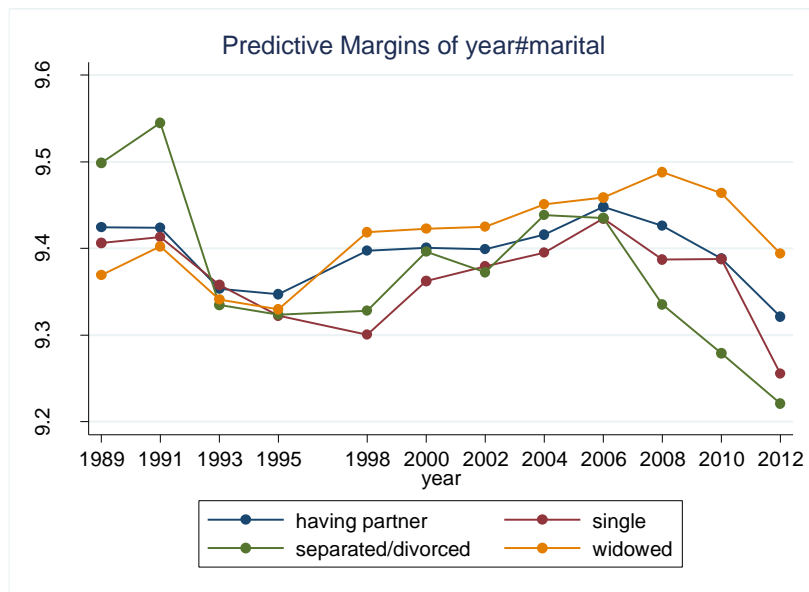
Figure 4.3.17 Financial distress and employment status - Italy



Marital status

Marital status interaction effects show differences in the effect of the crisis only when looking at income of Italian households. Figure 4.3.18 shows the dynamics of real household income, highlighting that the strongest effects of the financial crisis (after 2006) are found for separated or divorced.

Figure 4.3.18 Logarithm of the equivalent household net income and marital status - Italy



Home-ownership

Estimates related to the interaction effects with home ownership show that in the Netherlands before the crisis renters were much more likely to have difficulties in making ends meet than homeowners. However, this difference between owners and renters declined substantially between 2007 and 2010 because house prices decreased considerably from 2008 onwards (Figure 4.3.19).

Looking at Figure 4.3.20, where the income dynamic of Italian households is shown, we can observe that home owners experienced a decrease in income in 2012, households who do not own their house were hit by the crisis also before 2012.

Figure 4.3.19 Difficulties in making ends meet and home-ownership – the Netherlands

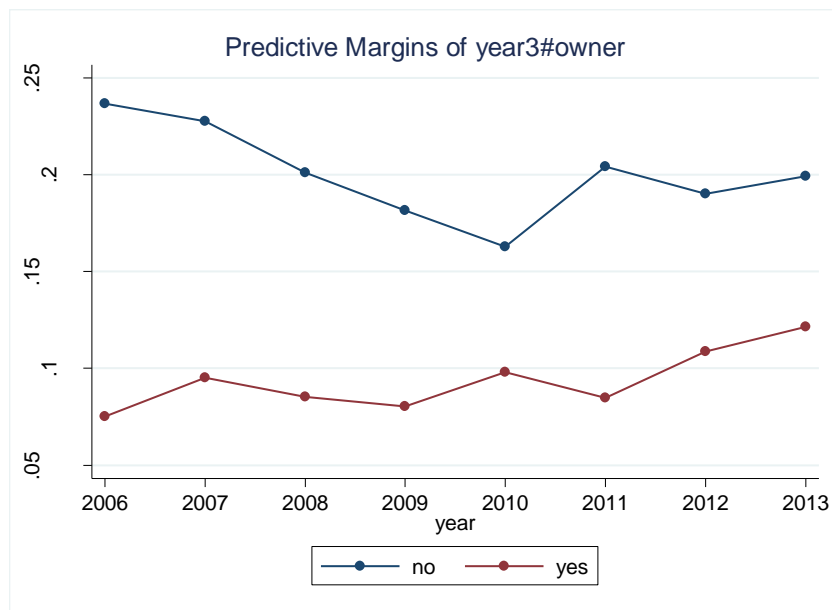
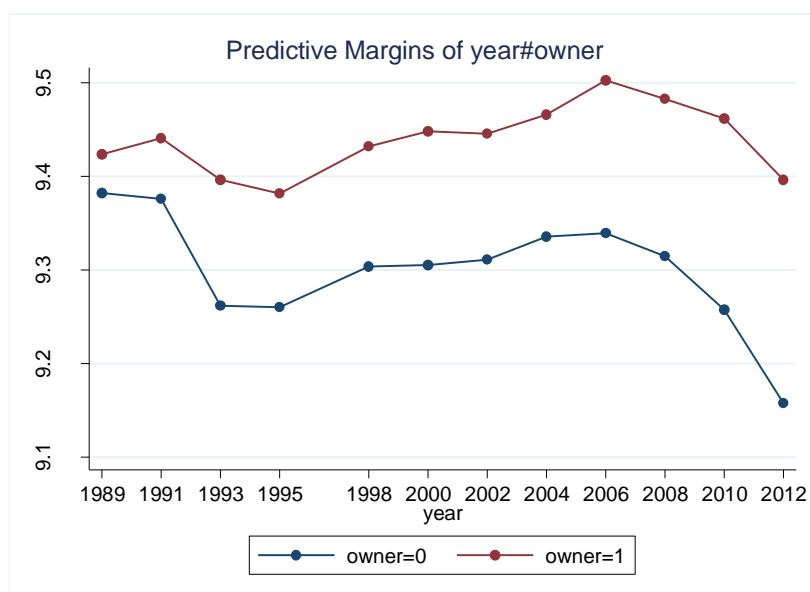


Figure 4.3.20 Logarithm of equivalent household net income and home-ownership - Italy



5.1 DESCRIPTIVE EVIDENCE

The SHIW collects also information about expenditure of Italian households, in this first report we will focus on three aggregates: total, non-durable and durable expenditure.

All these variables are provided in the historical database as annual amounts and are computed on the basis of reported monthly values. Regarding non-durable consumption, individuals are asked to answer the followings:

- *‘You said that the household spends approximately ... in cash per month. [...] How much did the household spend on average per month in 2010 in cash, by credit card, cheque or Bancomat card, on all items? Include all spending, for both food and non-food, and exclude only the following items: items we have just mentioned (purchases of valuables, cars etc., maintenance, alimony, allowances, gifts), extraordinary maintenance of dwelling; rental of dwelling; mortgage instalments, life insurance premiums; contributions to supplementary pension schemes.’*
- *‘What was your monthly rent in 2010, excluding condominium charges, heating and other expenses’¹⁸*

The question about durable expenditure reads as follows:

- *‘What is the total value of the objects bought? (Even if they have not been paid for in full): valuables, means of transport, furniture, furnishings, household appliances, sundry equipment’.*

The aggregate ‘total consumption’ and ‘non-durable consumption’ provided in the historical database contain also imputed rent and non-monetary additional income; here we do not consider those components that are subtracted from the total amount. To take into account demographic changes over time in terms of household composition that might confound the temporal dynamic we are interested in, also in this case, we equalize amounts using the square root of the household size. Nominal values are then deflated using the Consumer Price Index for the whole nation (NIC) provided by the Italian National Institute of Statistics (ISTAT).

Total consumption

In Figure 5.1.1 we can see the temporal dynamic of total equivalent real expenditure. Focusing on the last decade, we can see that total expenditure in Italy has increased in real terms up to 2006, decreases in 2008, flattens in 2010 and decreases again in 2012. This pattern is similar to what we have observed before looking at the equivalent household real income.

We then show the dynamic of total consumption by subgroups of the population, according to different household composition and home ownership. In Figure 5.1.2 where singles are not included, we can see that for all subgroups there has been on average a decrease in total consumption during the recession (2008-2012). Median values show a different pattern: the presence of children in the household seems to be associated to a more marked decrease in terms of total real expenditure in 2012.

In Figure 5.1.3 we show the total real household expenditure by home ownership: according to the figure, household who do not own their home decreased their consumption from 2008, especially in 2012. Home owners instead on average registered decreases in 2008 and 2012, but median values are rather stable over the crisis period.

¹⁸ Up to 2012 respondents were asked about non durable consumption through the ‘catch-all’ question phrased as we reported. In 2012 the same question was asked only to a random subsample, we use the latter for our analysis on consumption to ensure comparability over time.

Figure 5.1.4 compares the average total expenditure by different age classes between 2006 a pre-crisis period and 2012 when Italian households lost a relevant proportion of their resources as consequence of the crisis. The Figure shows that especially households whose head is younger than 65 experienced a drop in real consumption, household headed by 65 years old individual or older, probably retired, have been able to smooth better their consumption.

This heterogeneous effect associated to age is in line with what we have seen so far using alternative welfare indicators, both subjective (ability to make ends meet) and objective (real household income).

Figure 5.1.1 Equivalent household total real consumption - Italy (SHIW)

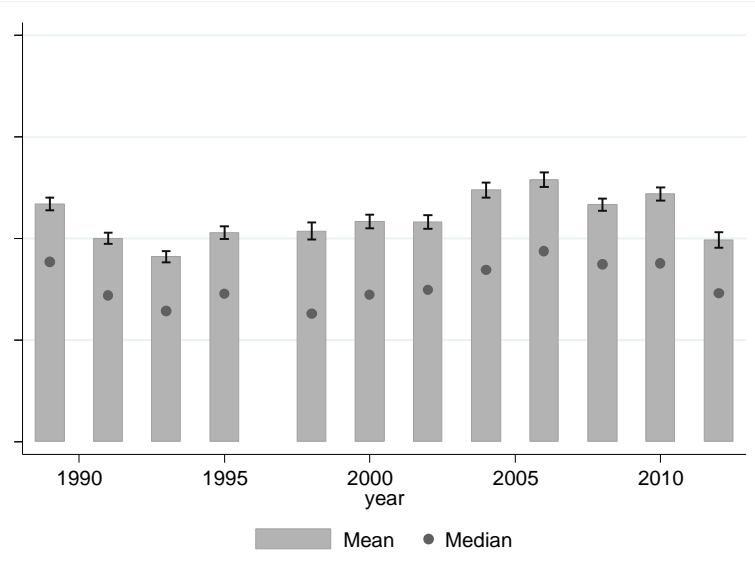


Figure 5.1.2 Equivalent household total real consumption by household composition - Italy (SHIW)

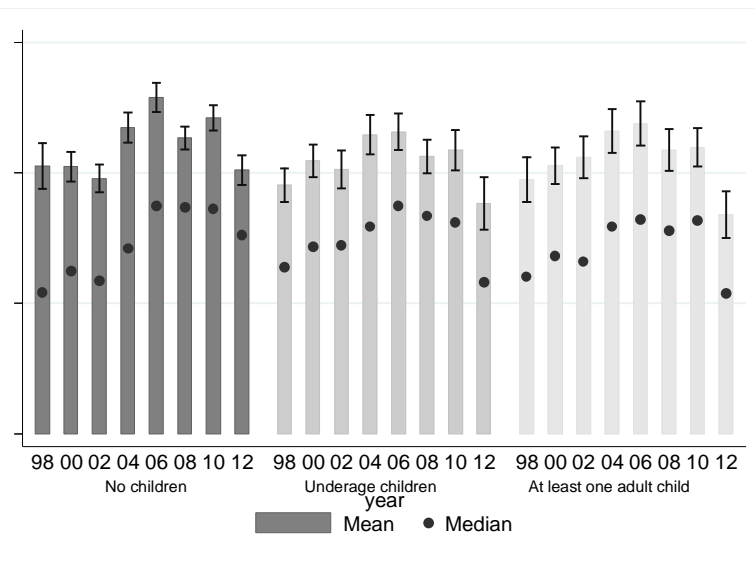


Figure 5.1.3 Equivalent household total real consumption by home ownership - Italy (SHIW)

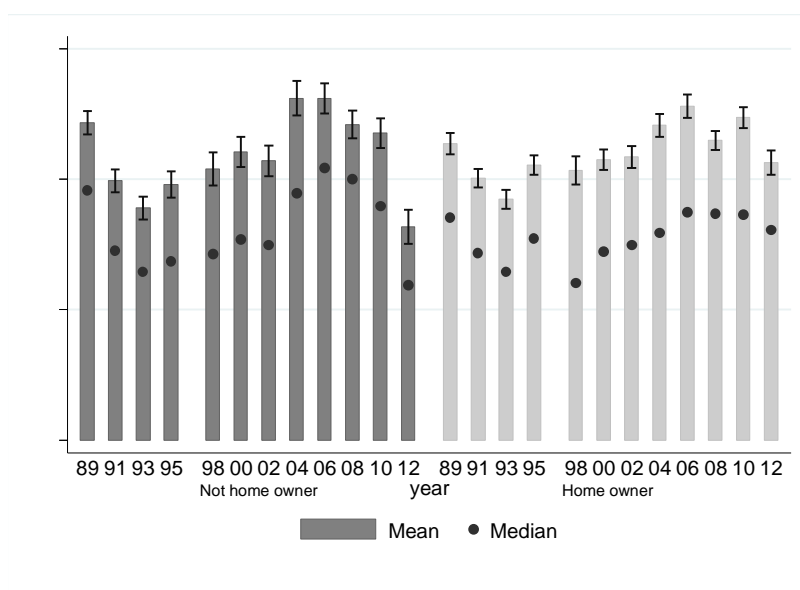
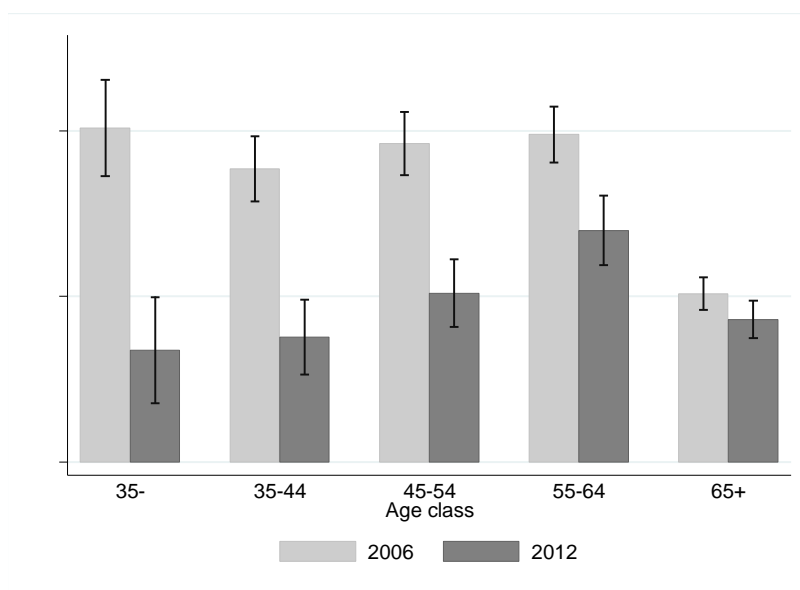


Figure 5.1.4 Equivalent household total real consumption by age class 2006, 2012 - Italy (SHIW)



Non-durable consumption

It is useful to look at other two aggregate of consumption, durable and non-durable expenditure. According to Figure 5.1.5 and focusing on the last decade, we can see also in this case that on average non-durable consumption decreased in 2008 compared to 2006, increased slightly in 2010 and decreased again in 2012. A similar pattern is observed looking at the median value.

Figure 5.1.6 reports the temporal dynamic for subgroups defined on the basis of home ownership: also in this case not-home-owners experienced a relevant drop in terms of non-durable consumption, more important compared to that registered by those who own their house. Figure 5.1.7, which shows non-durable consumption over time for different household composition, does not highlight striking differences among those three groups.

Figure 5.1.5 Equivalent household real non-durable consumption - Italy (SHIW)

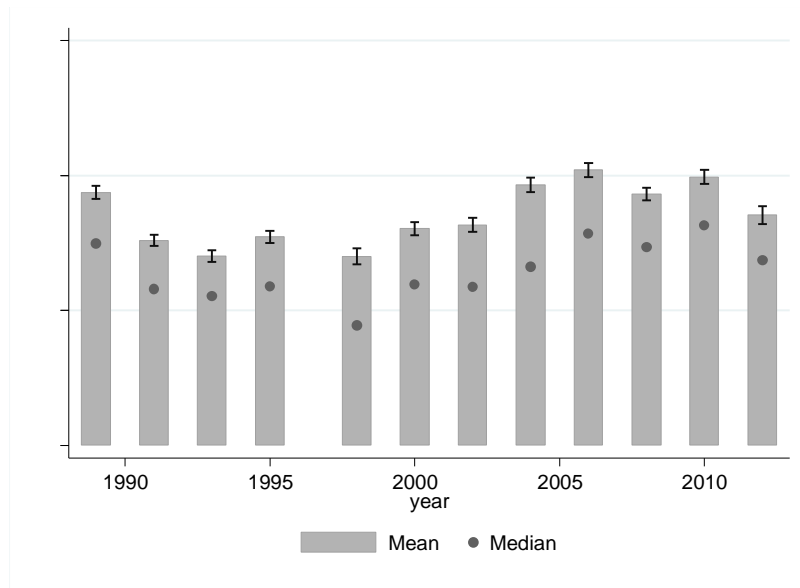


Figure 5.1.6 Equivalent household real non-durable consumption by home ownership- Italy (SHIW)

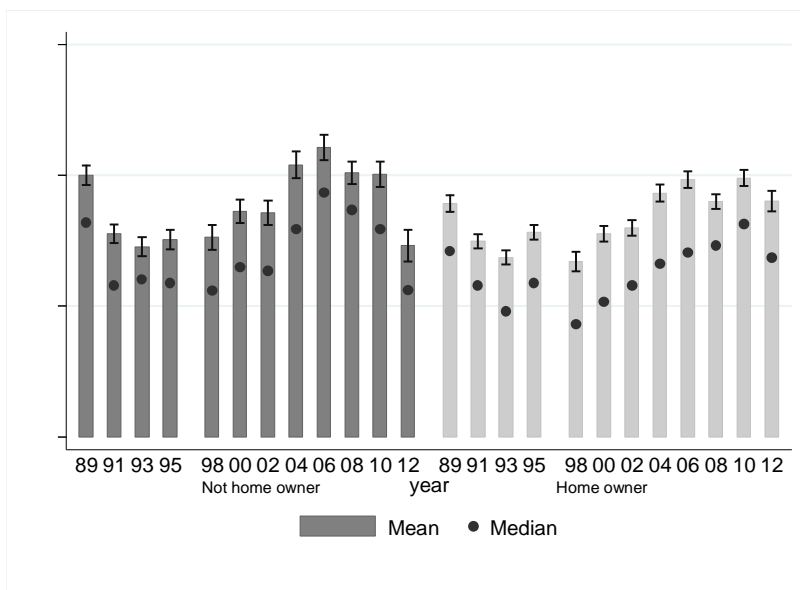


Figure 5.1.7 Equivalent Household Real Non-durable Consumption by household composition - Italy (SHIW)

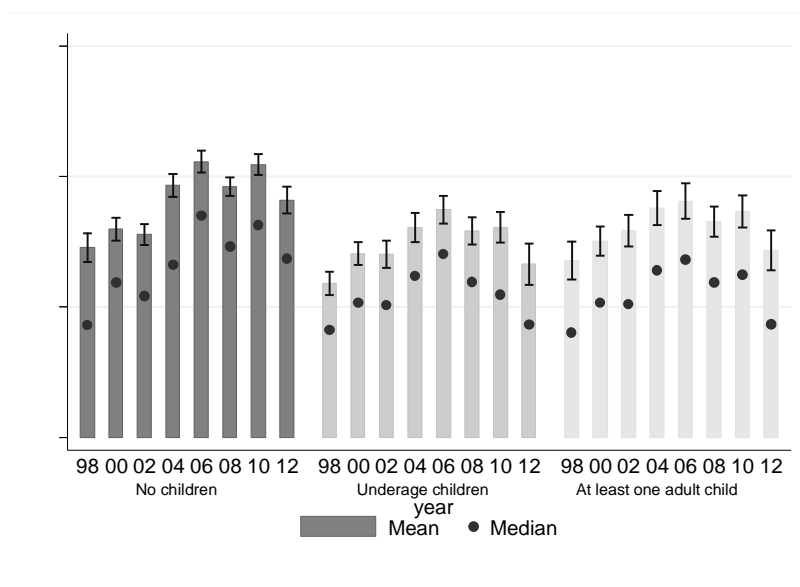
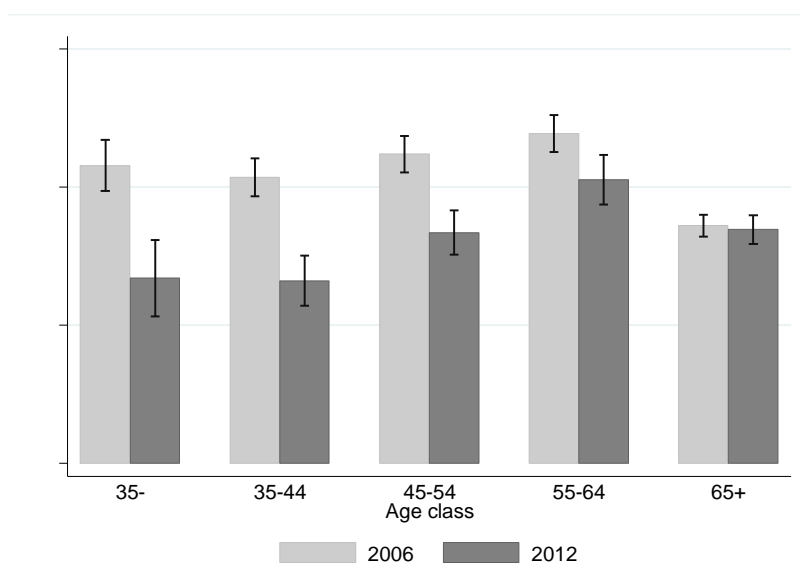


Figure 5.1.8 compares the average consumption for different age classes between 2006 and 2012, a pre-crisis and a post-crisis period. As we observed for total expenditure, relevant decreases are concentrated among households whose head's age is lower than 65.

Figure 5.1.8 Equivalent household real non-durable consumption by age class 2006-2012 - Italy (SHIW)



Durable consumption

Durable expenditure is shown in Figures 5.1.9 and 5.1.10. Especially we report the percentage of households with strictly positive durable expenditure (at the bottom of Figures) and the average value among those buying durables (in the top of Figures). Figure 5.1.9 shows especially that the percentage of households buying durables slightly increased in 2008 and 2010, but the average value of durables significantly decreased after 2008. Figure 5.1.10 proposes the same figure for the years 2006 and 2012 for different age classes: among households headed by individuals aged 35 or lower the percentage of those buying durables decreases, whereas no significant differences can be noticed for older household head. Looking at the top of

the Figure, it can be noticed that the average values of durables decreases for all age classes between 2006 and 2012.

Figure 5.1.9 Equivalent household real durable expenditure - Italy (SHIW)

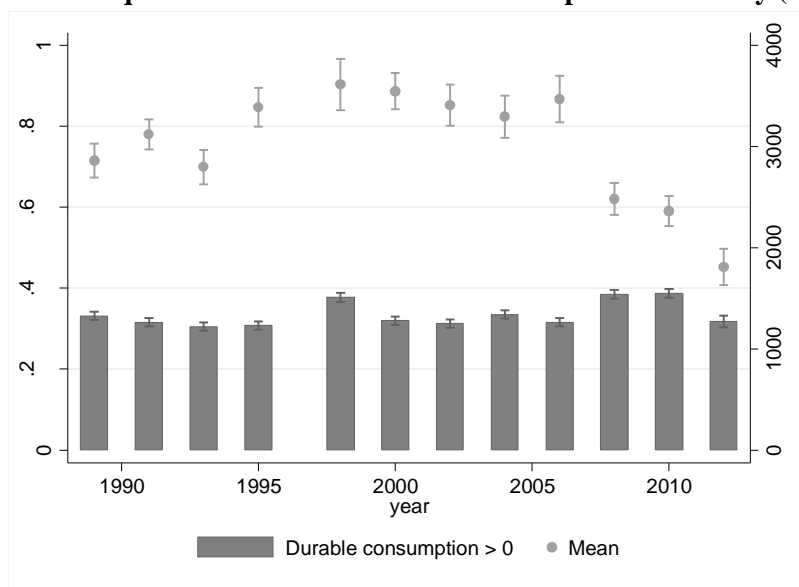
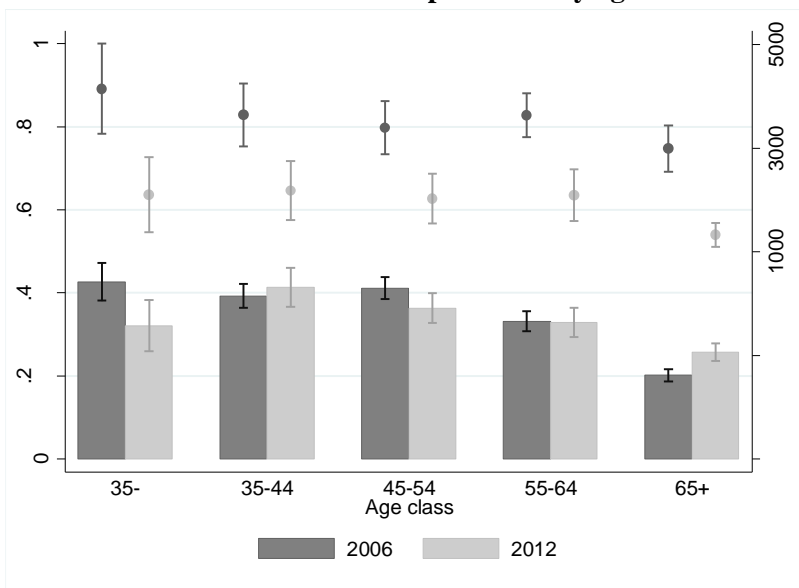


Figure 5.1.10 Equivalent household real durable expenditure by age class 2006-2012 - Italy (SHIW)



5.2 REGRESSION RESULTS

Similarly to what we have done for common variables in SHIW and DHS, we comment here regression results, considering consumption variables as outcome. More precisely we will regress the log of household equivalent real total expenditure, the log of household equivalent real non-durable and durable expenditure as well as a dummy variable taking value one if the household buys durables and zero otherwise on a set of covariates. This set contains age class dummies, female, marital and employment status, household composition, education and home ownership. We also add time dummies (2006 is the reference year) to capture the temporal dynamic, later we will interact those with some socio-demographic characteristics to

look at heterogeneous effects among different groups of the population as we have already done previously. We will also present estimates with time dummies only for the post-crisis period. In Table 5.2.1 we report the summary statistics for the additional variables we consider only in SHIW.

Table 5.2.1. Summary Statistics

	Not weighted			Weighted	
	N	Mean	Std. Dev	Mean	Std. Dev
Outcomes:					
Log of HH Equivalent Real Total Exp	95683	9.127	0.501	9.120	0.512
Log of HH Equivalent Real Non-durable Exp ¹⁹	95683	9.054	0.456	9.045	0.464
Log of HH Equivalent Real Durable Exp	31534	7.051	1.450	7.070	1.468
Percentage of HH with Positive Durable Exp	95683	0.330	0.470	0.331	0.470

Table 5.2.2 shows the regression results when considering the logarithm of equivalent household real annual total expenditure as outcome. In the first column, we can see that, compared to household headed by individuals younger than 36, total consumption increases with age up to 65, then flattens and decreases after 75. The dummy female has negative coefficient meaning that, compared to male headed households, total consumption is lower. No noticeable differences in terms of total expenditure can be found related to marital status with the exception of singles, who consume less compared to married or cohabiting couples. Household composition controls, family size, underage children and at least one adult child, are significant meaning that the equivalence scale used cannot entirely capture composition effects. Low education, *iscsed0_2*, is associated to lower levels of total expenditure compared to high education. Self-employed headed households spend more whereas retired, unemployed and other spend less compared to employed headed households. Home owners here are associated to lower levels of total expenditure, compared to households not owning their house. Year dummies are all significant: compared to 2006, individuals spend always less, especially in 1993 and 1998; from 2008 and 2012, even if the coefficients are negative, they are not very large. In the fourth column we report the regression results when only post-crisis year dummies are included: compared to the pre-crisis period (1989-2006), on average households spend more from 2008-2012. Since 1989-2012 is a rather long period of time where Italy experienced a recession in 1993 and important changes such as the euro introduction in 2002, we propose in Table 5.2.3 the same specification of column four Table 5.2.2, focusing on a more recent period of time from 2002 and 2012. Using only data about the last decade, we can observe that socio-demographic and time effects do not change, but in this case year dummies are no longer jointly significant.

Table 5.2.4 shows regression estimates when the logarithm of equivalent household real annual non durable expenditure is the outcome. Focusing on the first column, we can see that the age pattern is very similar to what we observed for total expenditure. As we already noticed previously female, single, low education, retired unemployed and other are associated to lower levels of expenditure compared respectively to male, married or cohabiting households, high education and employed household head. Looking a time dummies, we can see that, compared to 2006, all coefficients are negative with the exception of 2012 which is statistically not significant meaning that non-durable expenditure level are not different from the reference year. In the fourth column of the same table, we include only post-crisis year dummies: we can see that in

¹⁹ Zero values in non durable expenditure are not considered in the analysis (21 observations in the whole sample)

2008, 2010 and 2012, the non-durable expenditure is higher than the average level in the pre-crisis period (1989-2006). In Table 5.2.5 we restrict the sample to 2002 and 2012, as we did before, and we can see that results are stable, highlighting that non-durable expenditure is slightly higher than the average level in the pre-crisis period (2002-2006).

Table 5.2.2. Logarithm of equivalent household real annual total expenditure - SHIW (1989-2012)

	All year dummies			Post-crisis year dummies		
	Coef	Std. Err.		Coef	Std. Err.	
agecl36_45	0.027	0.007	***	0.030	0.007	***
agecl46_55	0.079	0.007	***	0.083	0.007	***
agecl56_65	0.079	0.009	***	0.085	0.009	***
agecl66_75	0.002	0.010		0.009	0.010	
agecl76	-0.076	0.011	***	-0.066	0.011	***
female	-0.120	0.008	***	-0.121	0.008	***
single	-0.089	0.009	***	-0.088	0.009	***
separated_divorced	0.000	0.011		0.005	0.011	
widowed	-0.011	0.009		-0.011	0.009	
family_size	-0.026	0.002	***	-0.028	0.002	***
underage_children	-0.201	0.007	***	-0.202	0.007	***
atleast1adult_child	-0.148	0.006	***	-0.150	0.006	***
iscsed0_2	-0.315	0.005	***	-0.317	0.005	***
selfemployed	0.080	0.006	***	0.078	0.006	***
retired	-0.118	0.007	***	-0.123	0.007	***
unemployed	-0.490	0.012	***	-0.493	0.012	***
other	-0.235	0.015	***	-0.237	0.015	***
owner	-0.043	0.004	***	-0.041	0.004	***
dyear_1989	-0.047	0.007	***			
dyear_1991	-0.089	0.007	***			
dyear_1993	-0.117	0.007	***			
dyear_1995	-0.076	0.007	***			
dyear_1998	-0.131	0.008	***			
dyear_2000	-0.085	0.007	***			
dyear_2002	-0.086	0.007	***			
dyear_2004	-0.026	0.007	***			
dyear_2008	-0.028	0.006	***	0.043	0.005	***
dyear_2010	-0.028	0.006	***	0.043	0.005	***
dyear_2012	-0.031	0.007	***	0.040	0.005	***
Constant	9.645	0.011	***	9.574	0.010	***
Observations	95,683			95,683		
R-squared	0.190			0.186		
Adj R2	0.190			0.185		
P-val F-test year dummies	0.0000			0.0000		

Note: Significance levels as follows: p -value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level

Table 5.2.3 Logarithm of equivalent household real annual total expenditure - SHIW (2002-2012)

	Post-crisis year dummies 2002-2012		
	Coef	Std. Err.	
agecl36_45	0.023	0.011	***
agecl46_55	0.083	0.012	***
agecl56_65	0.132	0.014	***
agecl66_75	0.069	0.015	
agecl76	-0.006	0.016	***
female	-0.117	0.010	***
single	-0.054	0.012	***
separated_divorced	-0.008	0.013	
widowed	-0.015	0.012	
family_size	-0.031	0.004	***
underage_children	-0.174	0.010	***
atleast1adult_child	-0.141	0.009	***
isced0_2	-0.311	0.006	***
selfemployed	0.088	0.010	***
retired	-0.117	0.010	***
unemployed	-0.478	0.017	***
other	-0.246	0.020	***
owner	-0.043	0.006	***
dyear_2008	0.008	0.005	***
dyear_2010	0.007	0.006	***
dyear_2012	0.003	0.006	***
Constant	9.572	0.015	***
Observations	47,856		
R-squared	0.178		
Adj R2	0.177		
P-val F-test year dummies	0.413		

Note: Significance levels as follows: p -value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level

Table 5.2.4. Logarithm of equivalent household real annual non-durable expenditure - SHIW (1989-2012)

	All year dummies			Post-crisis year dummies		
	Coef	Std. Err.		Coef	Std. Err.	
agecl36_45	0.059	0.006	***	0.060	0.006	***
agecl46_55	0.125	0.007	***	0.127	0.007	***
agecl56_65	0.140	0.008	***	0.144	0.008	***
agecl66_75	0.084	0.009	***	0.089	0.009	***
agecl76	0.021	0.010	**	0.030	0.010	***
female	-0.104	0.007	***	-0.105	0.007	***
single	-0.063	0.008	***	-0.062	0.008	***
separated_divorced	0.009	0.010		0.013	0.010	
widowed	-0.011	0.008		-0.010	0.008	
family_size	-0.028	0.002	***	-0.029	0.002	***
underage_children	-0.173	0.006	***	-0.174	0.006	***
atleast1adult_child	-0.131	0.005	***	-0.134	0.005	***
isced0_2	-0.291	0.004	***	-0.292	0.004	***
selfemployed	0.067	0.006	***	0.065	0.006	***
retired	-0.104	0.006	***	-0.109	0.006	***
unemployed	-0.445	0.011	***	-0.451	0.011	***
other	-0.207	0.014	***	-0.211	0.014	***
owner	-0.063	0.004	***	-0.062	0.004	***
dyear_1989	-0.031	0.006	***			
dyear_1991	-0.087	0.006	***			
dyear_1993	-0.106	0.006	***			
dyear_1995	-0.072	0.006	***			
dyear_1998	-0.153	0.007	***			
dyear_2000	-0.090	0.006	***			
dyear_2002	-0.087	0.006	***			
dyear_2004	-0.027	0.006	***			
dyear_2008	-0.026	0.005	***	0.045	0.004	***
dyear_2010	-0.021	0.006	***	0.050	0.005	***
dyear_2012	0.000	0.006		0.071	0.005	***
Constant	9.492	0.010	***	9.423	0.009	***
Observations	95,683			95,683		
R-squared	0.188			0.181		
Adj R2	0.187			0.181		
P-val F-test year dummies	0.0000			0.0000		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level

Table 5.2.5. Logarithm of equivalent household real annual non-durable expenditure - SHIW (2002-2012)

	Post-crisis year dummies 2002-2012		
	Coef	Std. Err.	
agecl36_45	0.046	0.010	***
agecl46_55	0.117	0.011	***
agecl56_65	0.174	0.012	***
agecl66_75	0.129	0.014	***
agecl76	0.070	0.015	***
female	-0.103	0.009	***
single	-0.041	0.011	***
separated_divorced	-0.004	0.012	
widowed	-0.016	0.011	
family_size	-0.035	0.003	***
underage_children	-0.154	0.009	***
atleast1adult_child	-0.127	0.008	***
isced0_2	-0.289	0.006	***
selfemployed	0.073	0.009	***
retired	-0.101	0.010	***
unemployed	-0.430	0.016	***
other	-0.220	0.019	***
owner	-0.063	0.006	***
dyear_2008	0.011	0.005	**
dyear_2010	0.015	0.005	***
dyear_2012	0.035	0.005	***
Constant	9.443	0.014	***
Observations	47,856		
R-squared	0.175		
Adj R2	0.175		
P-val F-test year dummies	0.000		

*Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level*

Table 5.2.6 reports estimates of a linear probability model, where the outcome is a binary variable that equals one if the household has a strictly positive durable expenditure, and zero otherwise.

Table 5.2.6. Logarithm of equivalent household real positive annual durable expenditure - SHIW (1989-2012)

	All year dummies					
	OLS			LOGIT		
	Coef	Std. Err.		Coef	Std. Err.	
agecl36_45	-0.036	0.007	***	0.847	0.024	***
agecl46_55	-0.047	0.007	***	0.799	0.024	***
agecl56_65	-0.094	0.008	***	0.644	0.023	***
agecl66_75	-0.149	0.009	***	0.481	0.020	***
agecl76	-0.207	0.009	***	0.325	0.016	***
female	-0.028	0.006	***	0.849	0.028	***
single	-0.057	0.007	***	0.760	0.027	***
separated_divorced	-0.009	0.009		0.981	0.041	
widowed	-0.021	0.007	***	0.866	0.035	***
family_size	0.022	0.002	***	1.109	0.010	***
underage_children	-0.038	0.006	***	0.823	0.023	***
atleast1adult_child	-0.041	0.005	***	0.820	0.021	***
isced0_2	-0.096	0.004	***	0.649	0.012	***
selfemployed	-0.003	0.006		0.987	0.024	
retired	-0.042	0.006	***	0.841	0.024	***
unemployed	-0.180	0.009	***	0.412	0.021	***
other	-0.102	0.011	***	0.601	0.041	***
owner	0.029	0.004	***	1.159	0.021	***
dyear_1989	-0.029	0.007	***	0.875	0.031	***
dyear_1991	-0.032	0.007	***	0.859	0.030	***
dyear_1993	-0.032	0.007	***	0.854	0.030	***
dyear_1995	-0.025	0.007	***	0.883	0.031	***
dyear_1998	0.035	0.008	***	1.175	0.042	***
dyear_2000	-0.012	0.007		0.944	0.033	
dyear_2002	-0.006	0.007		0.968	0.033	
dyear_2004	0.019	0.007	***	1.095	0.037	***
dyear_2008	0.071	0.007	***	1.408	0.045	***
dyear_2010	0.072	0.007	***	1.417	0.047	***
dyear_2012	0.000	0.007		1.005	0.035	
Constant	0.457	0.010	***	0.849	0.039	***
Observations	95,683			95,683		
R-squared	0.067			0.0551		
Adj R2	0.0662			95,683		
P-val F-test year dummies	0.0000			0.0000		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level

Looking at column one of Table 5.2.6, we can see that the probability of having a strictly positive durable expenditure decreases with age. Female and single/widowed are less likely to spend on durables compared respectively to male and married or cohabiting couples. Low educated, retired, unemployed and other are also associated to a lower probability of spending on durables compared to high educated and employed

individuals. Home owner instead are more likely to have strictly positive durable expenditure compared to households who do not own their house. Time dummies are not always significant. Especially in the post crisis period, compared to 2006, individuals are more likely to spend on durables in 2008 and 2010, in 2012 no significant differences are found. These results can be partly explained by policy interventions offering fiscal incentives related to durable expenditure. Logit estimates provide similar results. Table 5.2.7 specification, differently from Table 5.2.6, controls only for post-crisis year dummies: also in this case, we can observe that individuals are more likely to spend on durables in 2008 and 2010, in 2012 no highly significant differences are found, compared to the pre-crisis period (1989-2006).

Table 5.2.7. Logarithm of equivalent household real positive annual durable expenditure - SHIW (1989-2012)

	Post-crisis year dummies					
	OLS			LOGIT		
	Coef	Std. Err.		Coef	Std. Err.	
agecl36_45	-0.033	0.007	***	0.859	0.024	***
agecl46_55	-0.043	0.007	***	0.815	0.025	***
agecl56_65	-0.090	0.008	***	0.657	0.023	***
agecl66_75	-0.144	0.009	***	0.493	0.021	***
agecl76	-0.201	0.009	***	0.334	0.016	***
female	-0.028	0.006	***	0.848	0.028	***
single	-0.057	0.007	***	0.763	0.027	***
separated_divorced	-0.007	0.009		0.990	0.041	
widowed	-0.022	0.007	***	0.861	0.035	***
family_size	0.021	0.002	***	1.103	0.010	***
underage_children	-0.038	0.006	***	0.825	0.023	***
atleast1adult_child	-0.042	0.005	***	0.819	0.021	***
iscsed0_2	-0.097	0.004	***	0.646	0.012	***
selfemployed	-0.004	0.006		0.984	0.023	
retired	-0.043	0.006	***	0.838	0.024	***
unemployed	-0.175	0.009	***	0.421	0.022	***
other	-0.098	0.011	***	0.610	0.041	***
owner	0.031	0.004	***	1.169	0.021	***
dyear_2008	0.080	0.005	***	1.472	0.037	***
dyear_2010	0.081	0.006	***	1.480	0.038	***
dyear_2012	0.009	0.005	*	1.049	0.028	*
Constant	0.446	0.009	***	0.805	0.031	***
Observations	95,683			95,683		
Pseudo R-squared	0.065			0.0538		
P-val F-test year dummies	0.0000			0.0000		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level

Restricting the sample to the period 2002-2012, we can see in Table 5.2.8 that results are confirmed: there are no significant differences in terms of durables expenditure in 2012 compared to 2006.

Table 5.2.8. Logarithm of equivalent household real positive annual durable expenditure - SHIW (2002-2012)

	Post-crisis year dummies					
	OLS			LOGIT		
	Coef	Std. Err.		Coef	Std. Err.	
agecl36_45	-0.039	0.011	***	0.838	0.038	***
agecl46_55	-0.030	0.011	***	0.865	0.041	***
agecl56_65	-0.064	0.012	***	0.743	0.040	***
agecl66_75	-0.112	0.014	***	0.586	0.037	***
agecl76	-0.180	0.014	***	0.389	0.026	***
female	-0.012	0.008		0.935	0.040	
single	-0.038	0.010	***	0.837	0.040	***
separated_divorced	-0.006	0.012		0.986	0.053	
widowed	-0.029	0.010	***	0.830	0.044	***
family_size	0.024	0.003	***	1.119	0.016	***
underage_children	-0.026	0.009	***	0.873	0.036	***
atleast1adult_child	-0.048	0.008	***	0.799	0.030	***
iscsed0_2	-0.085	0.006	***	0.684	0.018	***
selfemployed	0.010	0.009		1.040	0.038	
retired	-0.038	0.009	***	0.863	0.036	***
unemployed	-0.184	0.012	***	0.406	0.029	***
other	-0.118	0.015	***	0.538	0.050	***
owner	0.032	0.005	***	1.169	0.031	***
dyear_2008	0.067	0.006	***	1.369	0.036	***
dyear_2010	0.068	0.006	***	1.377	0.038	***
dyear_2012	-0.005	0.006		0.978	0.028	
Constant	0.416	0.014	***	0.703	0.043	***
Observations	47,856			47,856		
R-squared	0.060		Pseudo R2	0.0493		
Adj R2	0.0599					
P-val F-test year dummies	0.0000			0.0000		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level

In Table 5.2.9 we focus on those households with strictly positive durable expenditure and provide estimates for the logarithm of equivalent household real annual durable consumption. We can observe a negative association with age: the older is the household head, the lower is the logarithm of the annual durable consumption. Regarding female, marital status, household composition, education, employment status and home ownership, we find patterns similar to what we have noticed previously. Time dummies in column 1 are not always significant, but looking at the post-crisis period we can observe large negative coefficients, especially in 2012. In column four, where only post-crisis year dummies are included, we can see that results are very similar to column 1. Compared to the pre-crisis period (1989-2006), the logarithm of the equivalent household real annual durable expenditure is lower in 2008, 2010 and 2012.

Estimates do not change also when restricting the sample to the period 2002-2012, see Table 5.2.10.

Table 5.2.9. Logarithm of equivalent household real annual durable expenditure - SHIW (1989-2012)

	All year dummies			Post-crisis year dummies		
	Coef	Std. Err.		Coef	Std. Err.	

agecl36_45	-0.192	0.029	***	-0.193	0.029	***
agecl46_55	-0.228	0.031	***	-0.229	0.031	***
agecl56_65	-0.242	0.037	***	-0.248	0.037	***
agecl66_75	-0.503	0.045	***	-0.512	0.045	***
agecl76	-0.773	0.051	***	-0.782	0.050	***
female	-0.274	0.036	***	-0.274	0.036	***
single	-0.233	0.040	***	-0.237	0.040	***
separated_divorced	-0.040	0.043		-0.042	0.043	
widowed	0.054	0.043		0.055	0.043	
family_size	-0.067	0.010	***	-0.065	0.010	***
underage_children	-0.398	0.028	***	-0.399	0.028	***
atleast1adult_child	-0.219	0.026	***	-0.219	0.026	***
isced0_2	-0.296	0.018	***	-0.295	0.018	***
selfemployed	0.257	0.024	***	0.260	0.024	***
retired	-0.160	0.032	***	-0.155	0.032	***
unemployed	-0.375	0.064	***	-0.367	0.064	***
other	-0.159	0.080	**	-0.158	0.079	**
owner	0.195	0.018	***	0.193	0.018	***
dyear_1989	-0.041	0.039				
dyear_1991	0.157	0.039	***			
dyear_1993	-0.156	0.042	***			
dyear_1995	0.057	0.041				
dyear_1998	0.077	0.040	*			
dyear_2000	0.102	0.040	**			
dyear_2002	-0.012	0.041				
dyear_2004	-0.120	0.040	***			
dyear_2008	-0.258	0.037	***	-0.264	0.026	***
dyear_2010	-0.321	0.038	***	-0.327	0.026	***
dyear_2012	-0.625	0.039	***	-0.630	0.029	***
Constant	7.882	0.048	***	7.886	0.039	***
Observations	31,534			31,534		
R-squared	0.0790			0.0760		
Adj R2	0.0782			0.0752		
P-val F-test year dummies	0.0000			0.0000		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level

Table 5.2.10. Logarithm of equivalent household real annual durable expenditure - SHIW (2002-2012)

	Post-crisis year dummies 2002-2012		
	Coef	Std. Err.	
agecl36_45	-0.173	0.048	***
agecl46_55	-0.192	0.048	***
agecl56_65	-0.148	0.056	***
agecl66_75	-0.358	0.065	***
agecl76	-0.599	0.069	***
female	-0.262	0.046	***
single	-0.127	0.052	**
separated_divorced	-0.077	0.056	

widowed	0.033	0.057	
family_size	-0.058	0.014	***
underage_children	-0.337	0.041	***
atleast1adult_child	-0.192	0.038	***
isced0_2	-0.330	0.025	***
selfemployed	0.231	0.037	***
retired	-0.214	0.045	***
unemployed	-0.456	0.089	***
other	-0.139	0.105	
owner	0.209	0.027	***
dyear_2008	-0.216	0.029	***
dyear_2010	-0.285	0.029	***
dyear_2012	-0.591	0.032	***
Constant	7.751	0.061	***
Observations	16,140		
R-squared	0.0790		
Adj R2	0.0774		
P-val F-test year dummies	0.000		

Note: Significance levels as follows: p -value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level

As we already did before, we perform an additional regression analysis by interacting step-by-step year dummies and socio-demographic characteristics (age class, education, household composition, employment status, marital status and home ownership) to highlight possible heterogeneous effects. We report here only statistically significant interaction effects.

We first focus on age classes to see whether the recession effects for consumption are stronger for specific age groups of the population.

Looking at Figure 5.3.1 to 5.3.4 we can see that the youngest individuals are those registering the most pronounced decreasing dynamic after 2008.

Household headed by individuals whose age is lower than 56 (Figure 5.3.1) have a decreasing expenditure levels after 2008; other age classes do not show similar trends. Looking at non durable expenditure, we can see that after 2008, especially household headed by individuals whose age is lower than 35 experienced a drop both in 2008 and 2012.

Looking at Figure 5.3.3, where we look at the probability of spending on durables, we can see that all age classes are less likely to have strictly positive non-durable expenditure in 2012, especially households whose head is younger than 76. Figure 5.3.4 highlights that, among those buying durables, all age classes report lower expenditure levels.

From Figure 5.3.5 to 5.3.7 we show heterogeneity associated to education: no remarkable differences can be noticed looking at trends during the post-crisis period.

Regarding household composition, we can see in Figures 5.3.8 to 5.3.10 that the presence of children determines a different dynamic during the post-crisis period for the total and the non-durable expenditure.

Heterogeneity associated to employment status is shown in Figures 5.3.11 to 5.3.14. We can see that, as expected, mainly unemployed individuals are those suffering the most during the recession in terms of total, non-durable and durable expenditure.

Looking at marital status effects, we can recognize in Figure 5.3.15 that households, whose head is separated or divorced, are those showing a decreasing trend in equivalent household real annual total expenditure. In Figure 5.3.16 where the variable of interest is non-durable expenditure, we can see that widowed are those who do not change their non durable consumption levels in the post crisis period. A similar pattern can be recognized in Figure 5.3.17, where we report the probability of spending on durables, widowed are more likely to have a strictly positive durable expenditure. In Figure 5.3.18 however it can be noticed that, among those buying durables, all groups are spending less in the post-crisis period.

Home ownership related heterogeneity, that we report in Figures 5.3.19, 5.3.20 and 5.3.21, shows how home owners, after a first drop in 2008, increase their total and non-durable expenditure unlike households who do not own their house. Figure 5.3.21 finally shows that non-home-owners are less likely to buy durables after 2008, whereas home owners after 2012.

Figure 5.3.1 Logarithm of equivalent household real annual total expenditure by age class - SHIW (1989-2012)

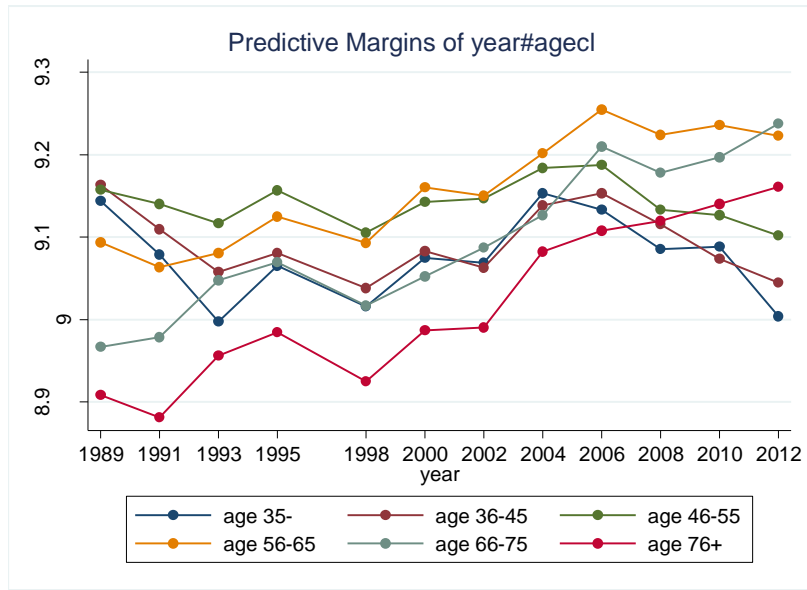


Figure 5.3.2 Logarithm of equivalent household real annual non-durable expenditure by age class - SHIW (1989-2012)

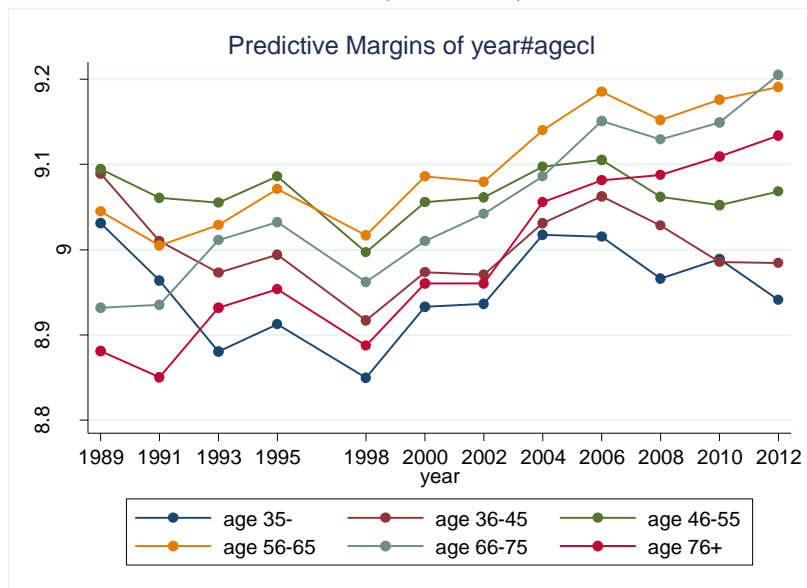


Figure 5.3.3 Logarithm of equivalent household real positive annual durable expenditure by age class - SHIW (1989-2012)

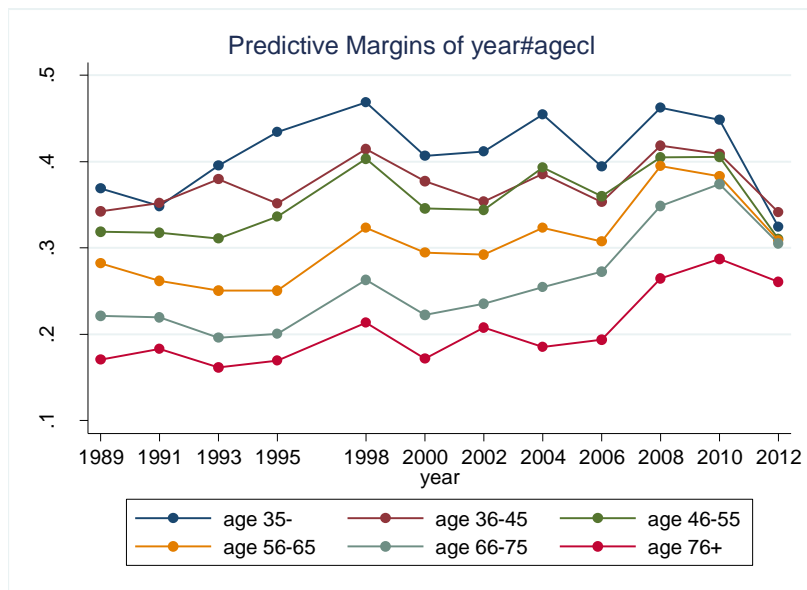


Figure 5.3.4 Logarithm of equivalent household real annual durable expenditure by age class - SHIW (1989-2012)

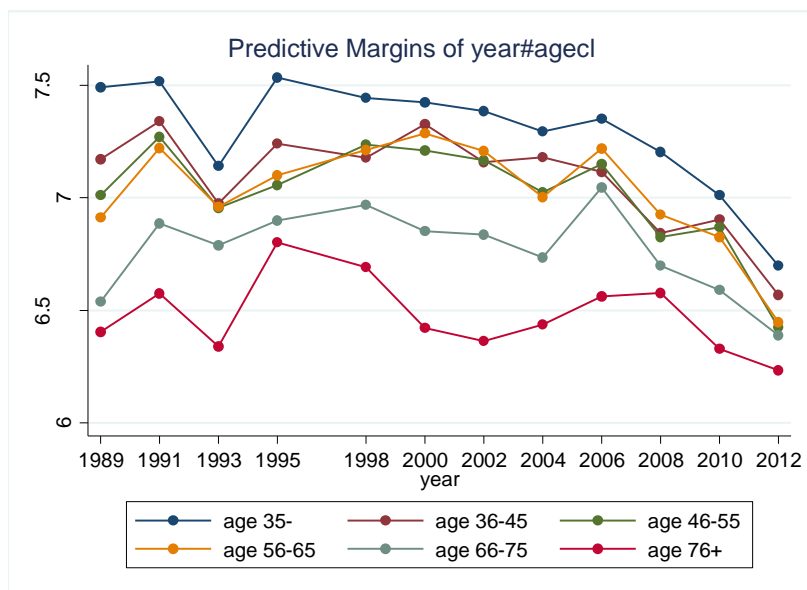


Figure 5.3.5 Logarithm of equivalent household real annual total expenditure by education - SHIW (1989-2012)

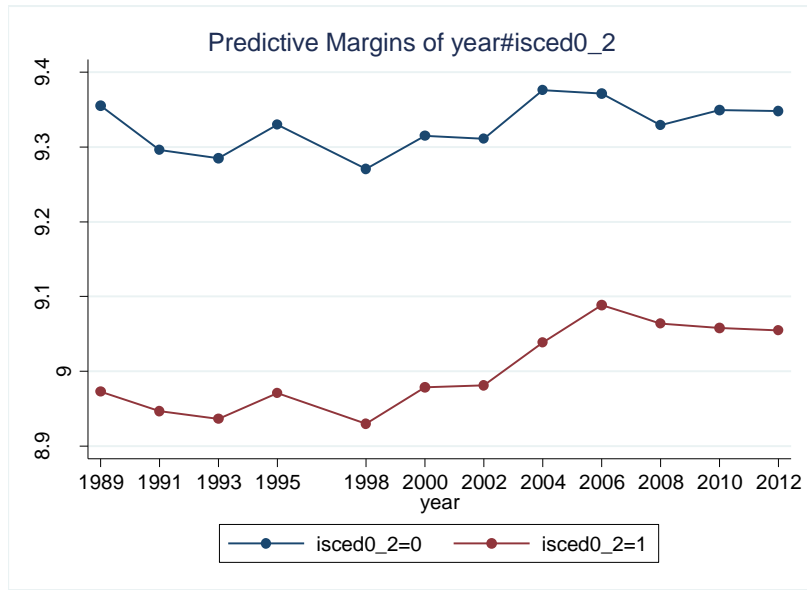


Figure 5.3.6 Logarithm of equivalent household real annual non-durable expenditure by education - SHIW (1989-2012)

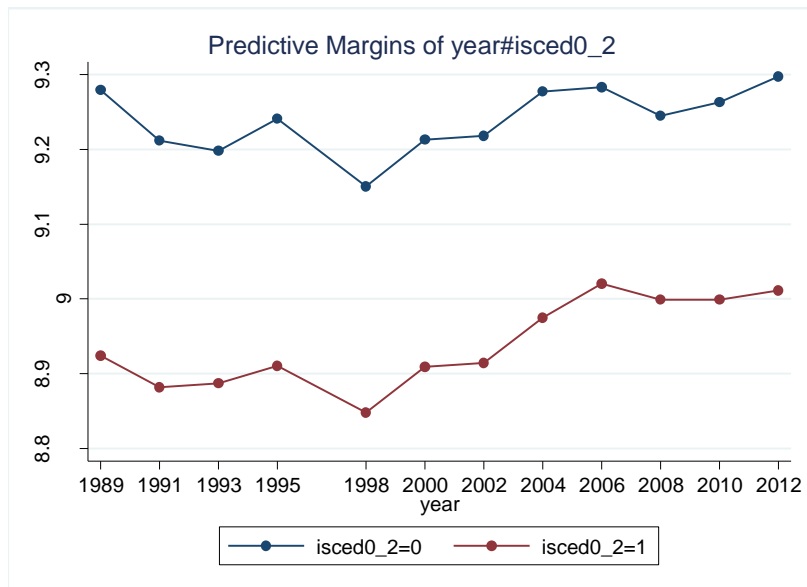


Figure 5.3.7 Logarithm of equivalent household real annual durable expenditure by education - SHIW (1989-2012)

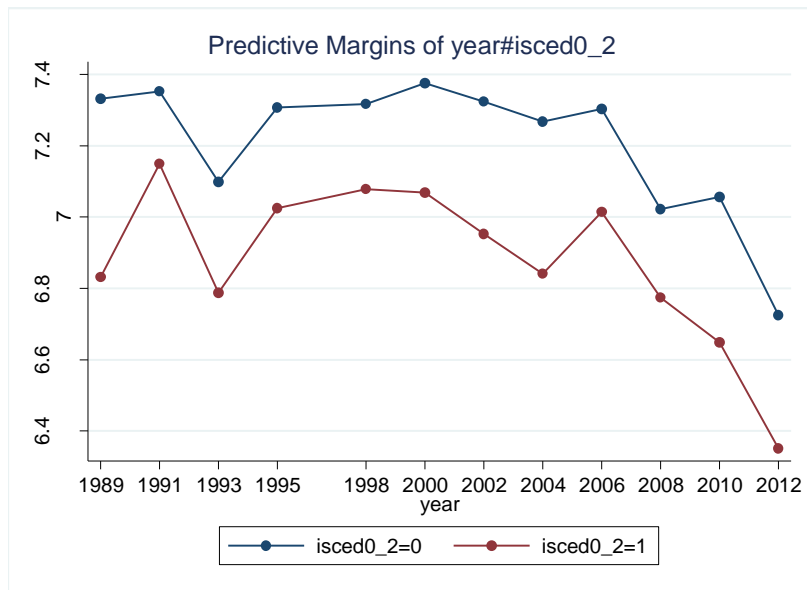


Figure 5.3.8 Logarithm of equivalent household real annual total expenditure by household composition SHIW (1989-2012)

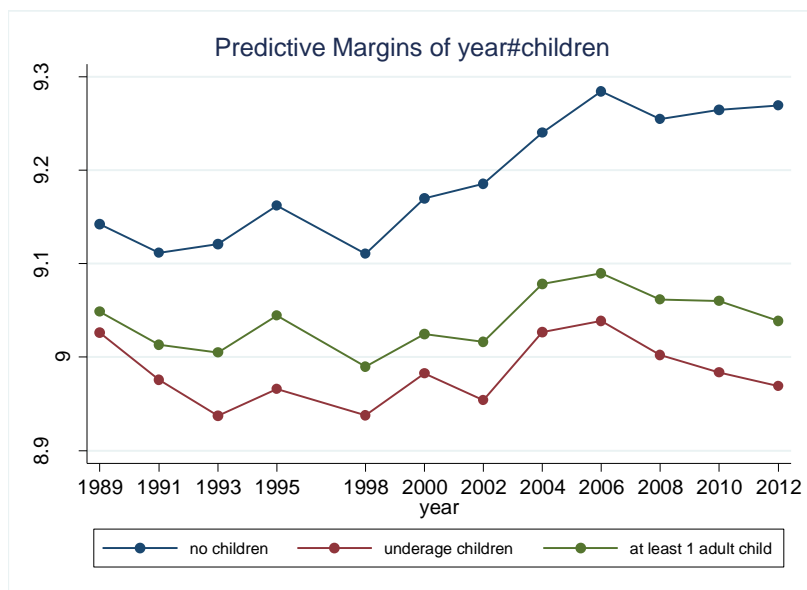


Figure 5.3.9 Logarithm of equivalent household real annual non-durable expenditure by household composition - SHIW (1989-2012)

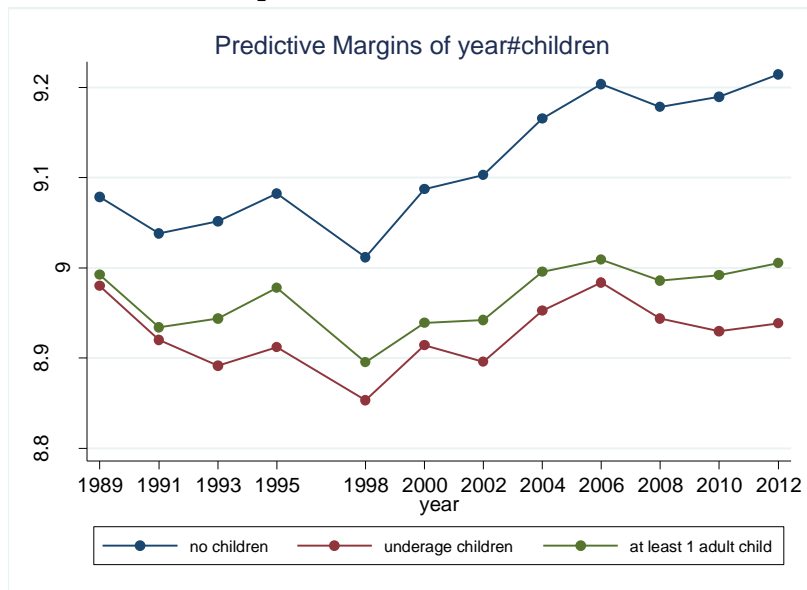


Figure 5.3.10 Logarithm of equivalent household real positive annual durable expenditure by household composition - SHIW (1989-2012)

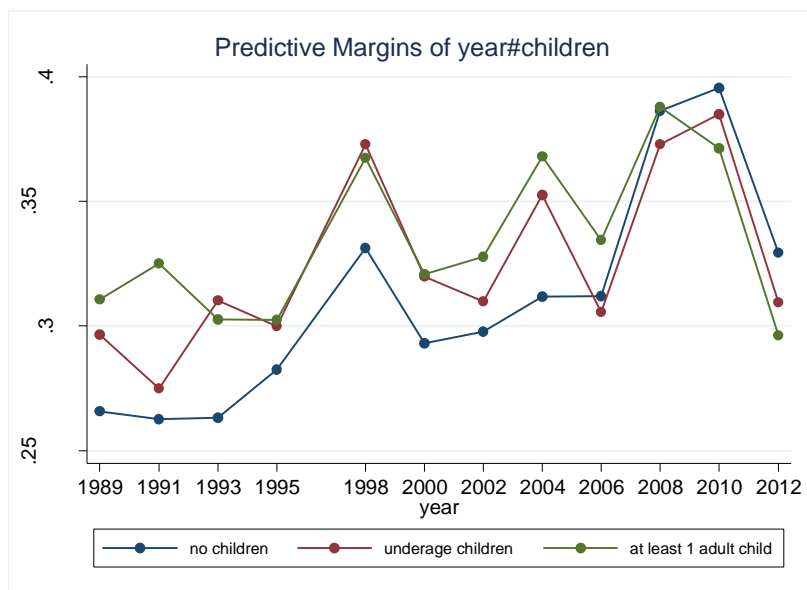


Figure 5.3.11 Logarithm of equivalent household real annual total expenditure by employment status - SHIW (1989-2012)

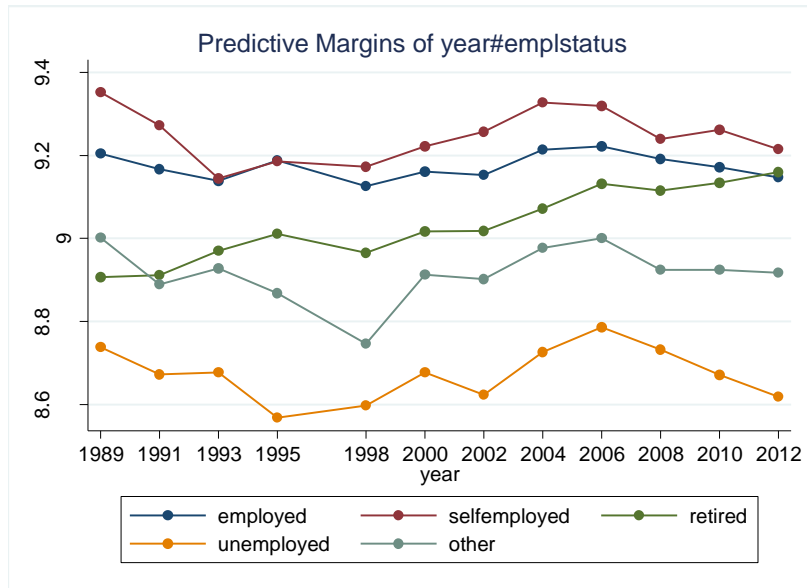


Figure 5.3.12 Logarithm of equivalent household real annual non-durable expenditure by employment status - SHIW (1989-2012)

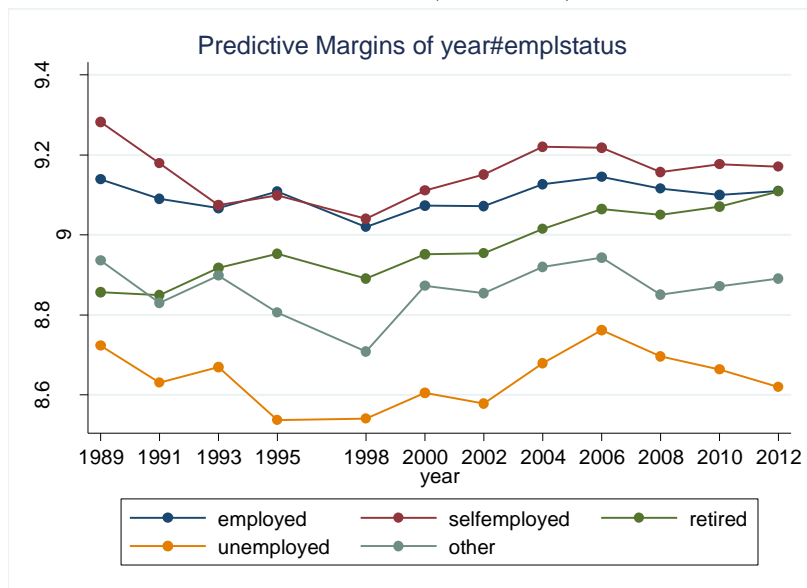


Figure 5.3.13 Logarithm of equivalent household real positive annual durable expenditure by employment status - SHIW (1989-2012)

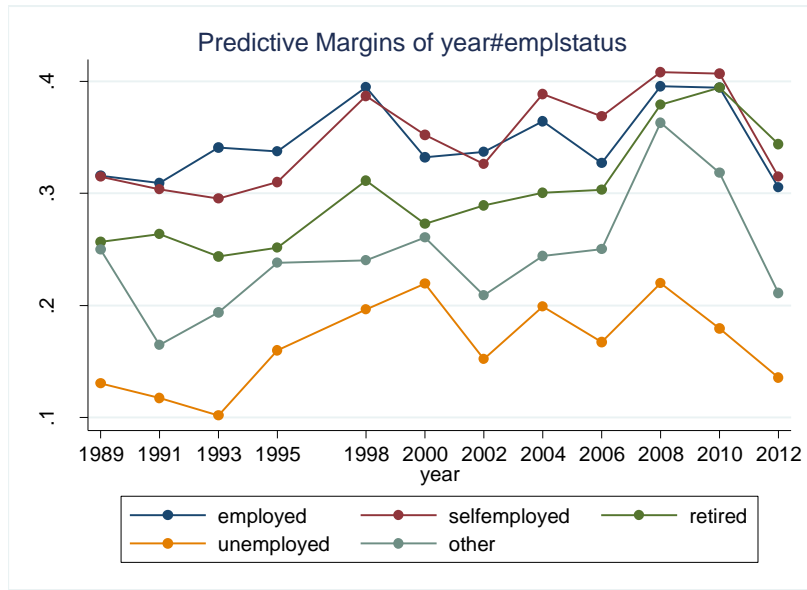


Figure 5.3.14 Logarithm of equivalent household real annual durable expenditure by employment status - SHIW (1989-2012)

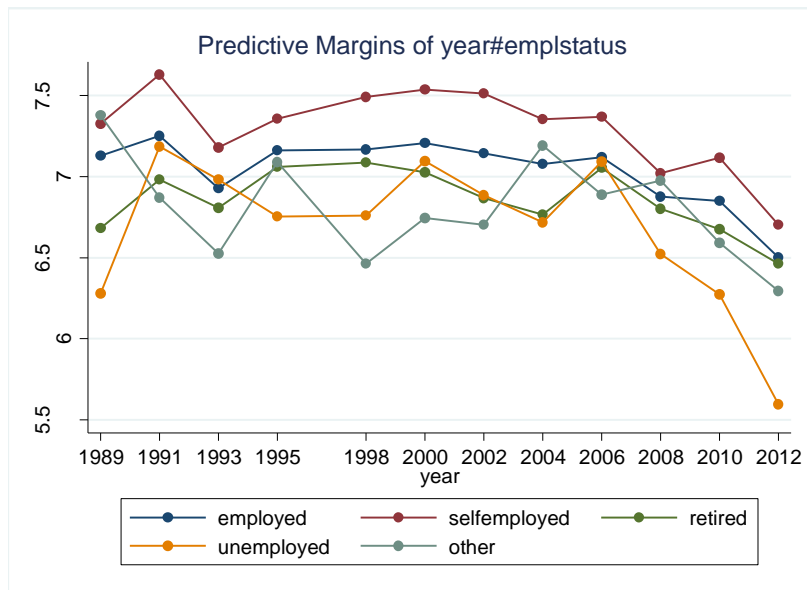


Figure 5.3.15 Logarithm of equivalent household real annual total expenditure by marital status - SHIW (1989-2012)

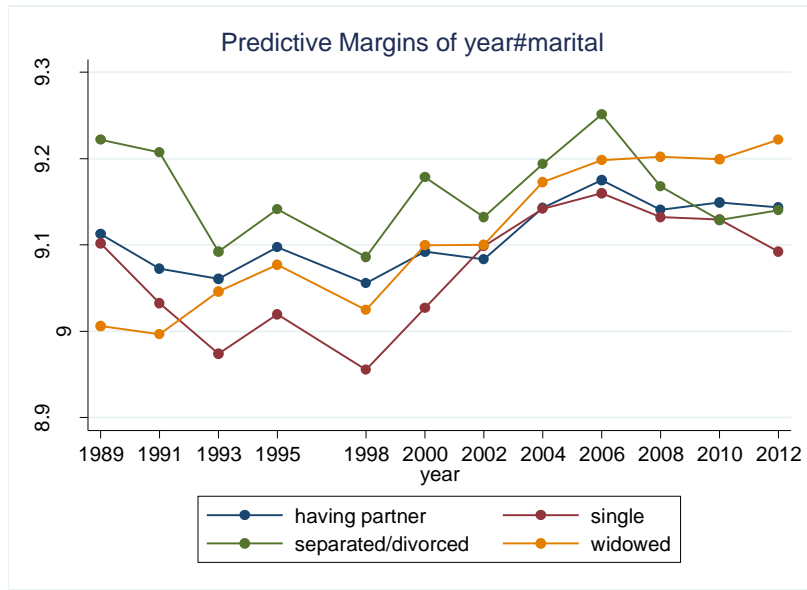


Figure 5.3.16 Logarithm of equivalent household real annual non-durable expenditure by marital status - SHIW (1989-2012)

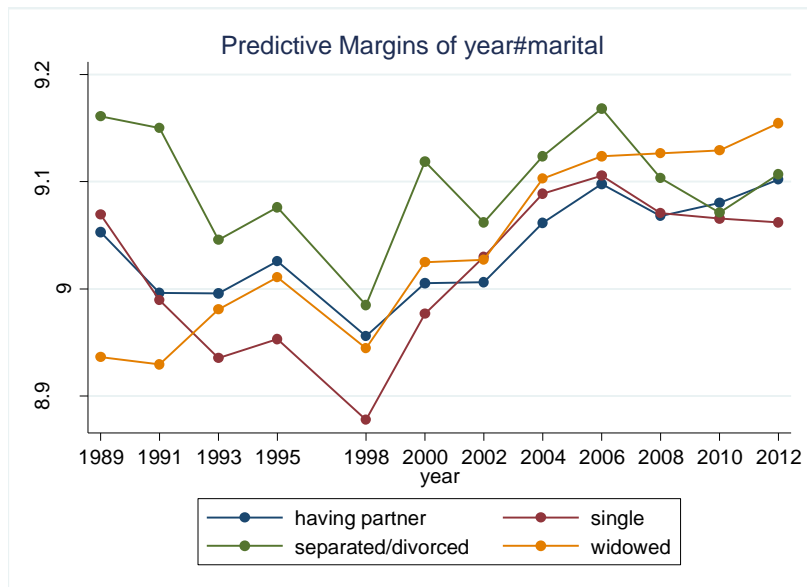


Figure 5.3.17 Probability of spending on durables by marital status - SHIW (1989-2012)

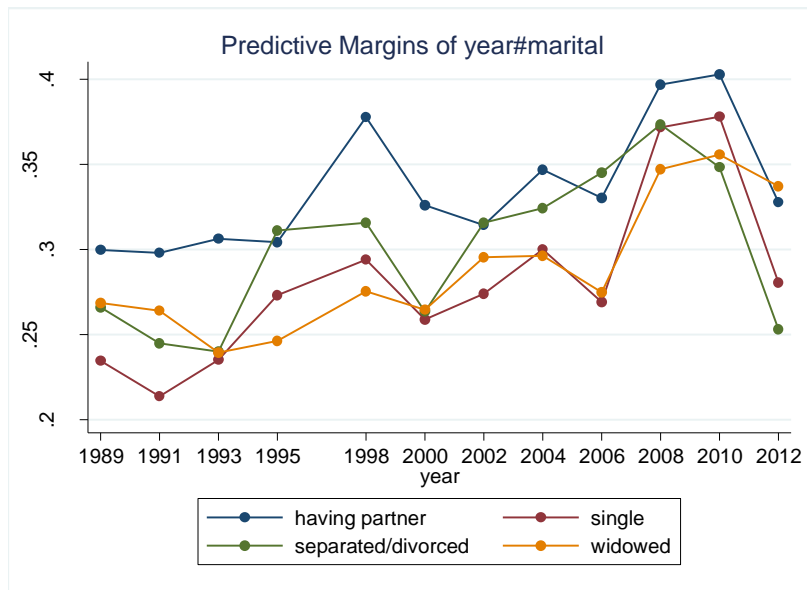


Figure 5.3.18 Logarithm of equivalent household real annual durable expenditure by marital status - SHIW (1989-2012)

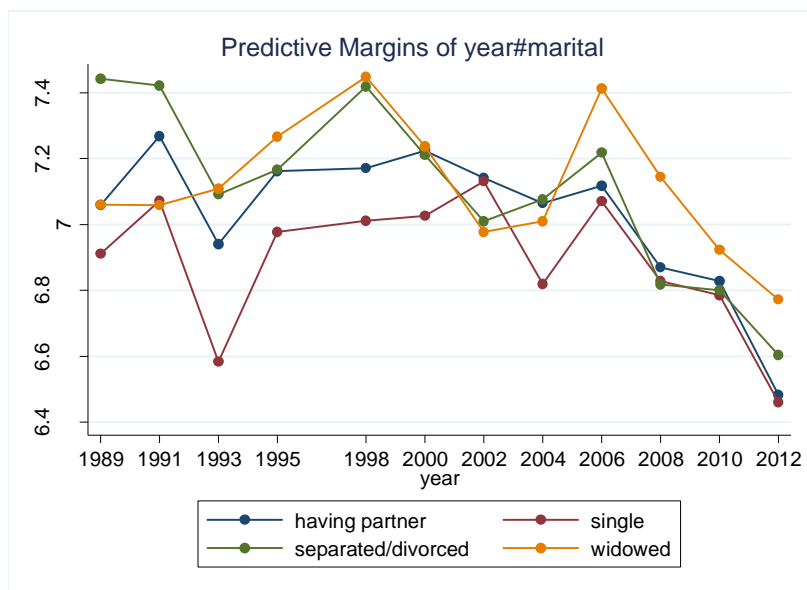


Figure 5.3.19 Logarithm of equivalent household real annual total expenditure by home ownership - SHIW (1989-2012)

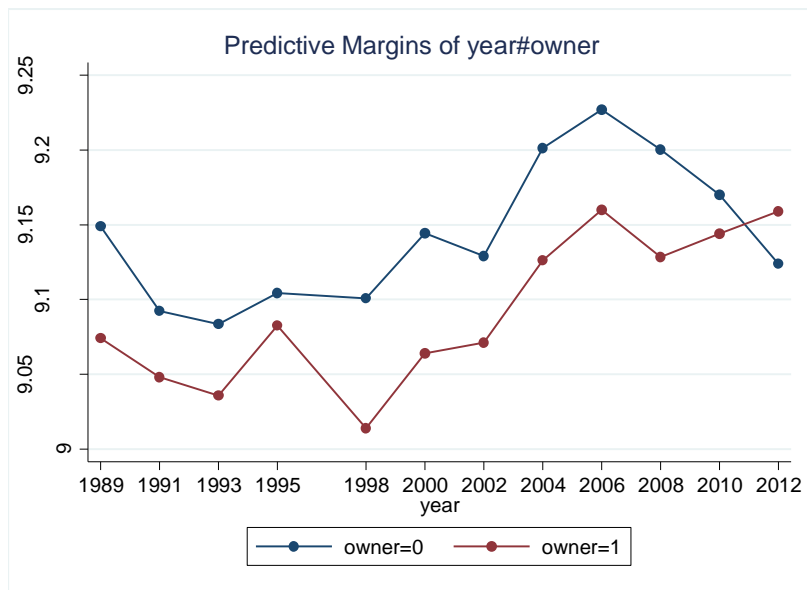


Figure 5.3.20 Logarithm of equivalent household real annual non-durable expenditure by home ownership - SHIW (1989-2012)

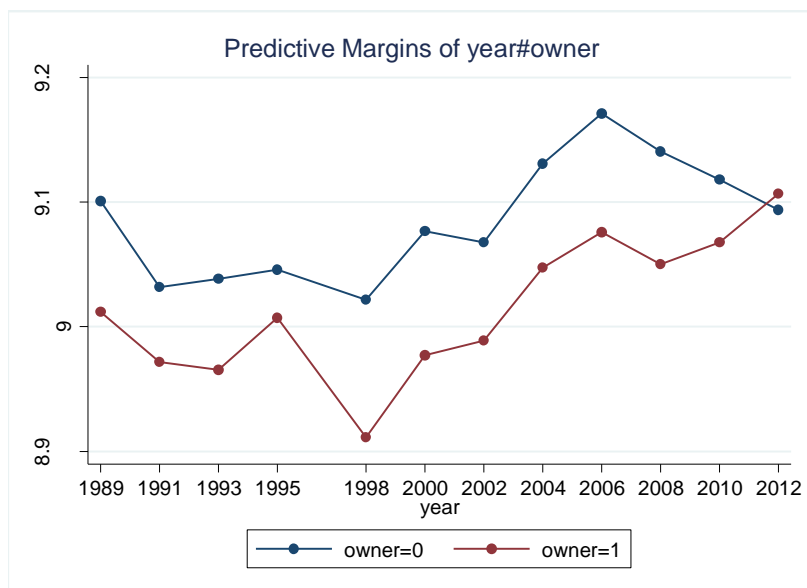
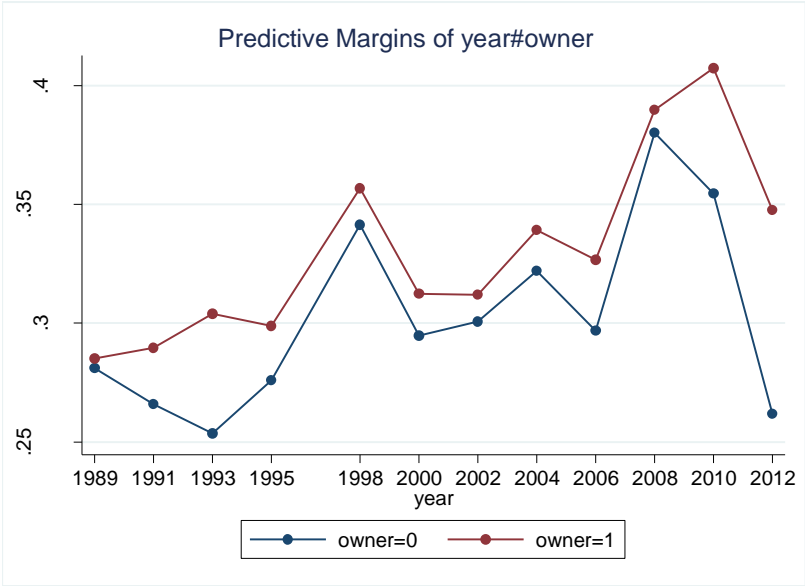


Figure 5.3.21 Logarithm of equivalent household real positive annual durable expenditure by home ownership - SHIW (1989-2012)



6.1 DESCRIPTIVE EVIDENCE

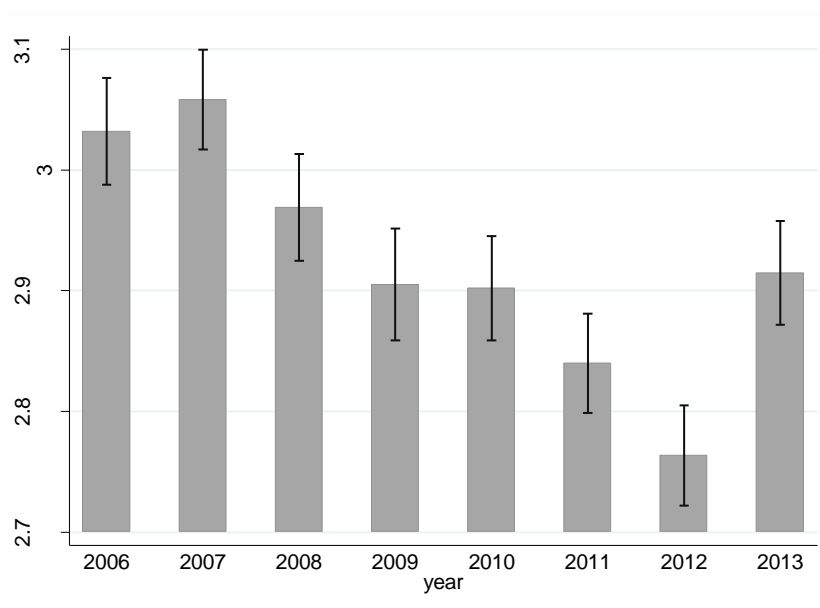
We use micro data from the DNB Household Survey (DHS) to analyze the effects of the crisis on Dutch households. The survey includes not only economic variables but also information on beliefs and expectations. This is an important feature of the datasets: if the adverse economic effects of the crisis induce households to review their consumption, labour market participation or wealth holdings, but do not affect preferences, it is reasonable to expect to observe a reverse pattern once the European economy will recover. On the other hand, if beliefs and preferences change, the economic downturn is more likely to have long lasting effects on household budgeting.

The outcomes we will consider include expectations on the household economic situation in 5 years from now, how difficult it is to obtain a loan, an indicator for whether the mortgage is underwater, house price expectations and risk aversion.

Expected economic situation

The first outcome we analyze is the expected economic situation. Respondents are asked how they think the economic situation of their household will be in five years' time in comparison to the current situation. The answer to this question is reported on a scale that goes from 1 ('much worse') to 5 ('much better'). Therefore, the higher the value, the more optimistic the household is about the economic situation in five years' time. Figure 6.1.1 shows that already in the run-up to the crisis expectations declined and, as the crisis intensified, Dutch households became increasingly pessimistic. In 2013 this downward trend reverses and we observe a significant increase in optimism, although it remains below its pre-crisis level.

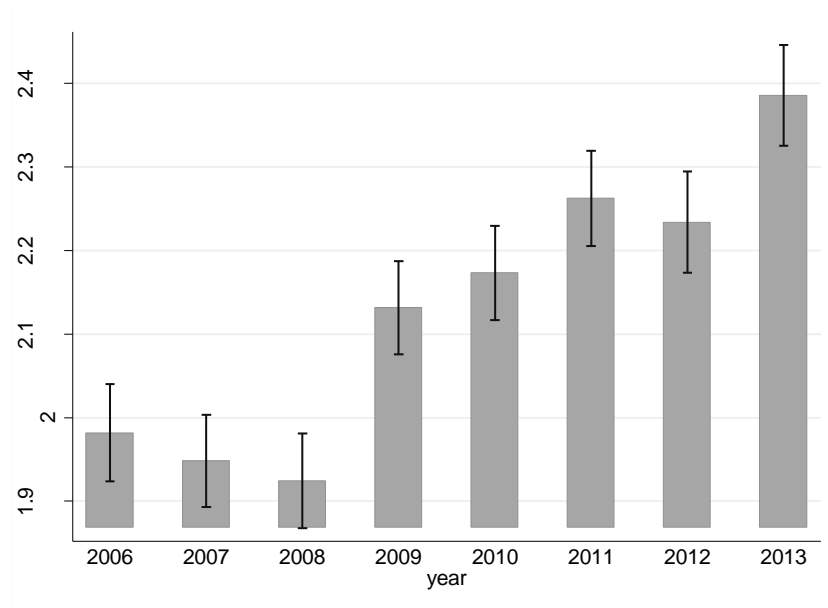
Figure 6.1.1 Expected economic situation - DHS



Difficulty to obtain a loan

The second outcome is how difficult it is to obtain a loan, according to the respondents. The question reads as follow: ‘Do you agree with the following statement? If I want, I can easily obtain a loan’. The possible answers range from 1 ‘totally agree’ to 5 ‘totally disagree’. Therefore, the higher the value, the more difficult it is to obtain a loan. Dutch households report that since the start of the crisis it has become more difficult to obtain a loan (see Figure 6.1.2). It is indeed true that soon after the 2008 financial crisis, banks had to increase their liquidity position and to decrease their leverage. In order to achieve this goal, banks tightened the requirements to obtain a personal loan or a mortgage.

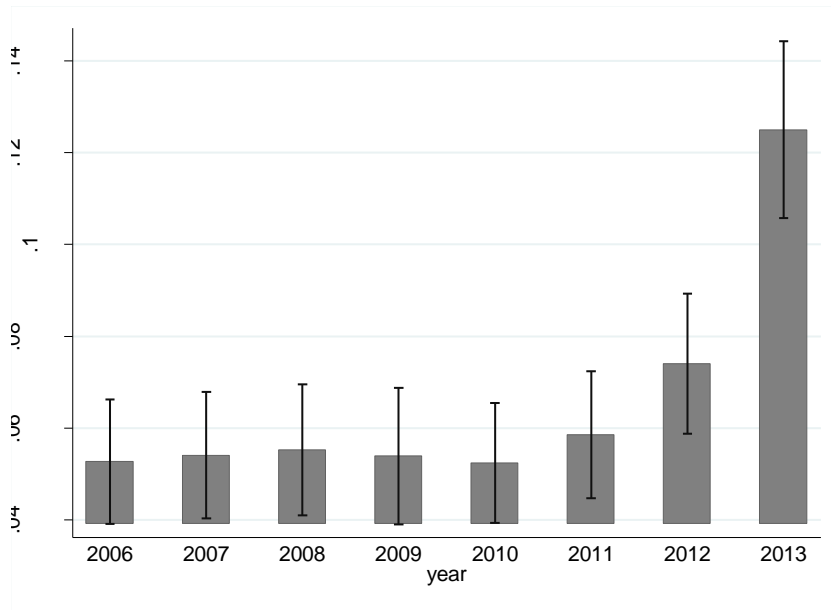
Figure 6.1.2 Difficulty to obtain a loan - DHS



Underwater

For the sample of home-owners, we construct an “underwater” indicator, which is equal to 1 if the value of the house is lower than the outstanding mortgage debt and 0 otherwise. Figure 6.1.3 shows that the proportion of households whose mortgage is underwater remained constant in the first years of the crisis but increased dramatically in the last couple of years. In 2013 over 12% of Dutch households had a mortgage debt that exceeded the value of their house. This result can be attributed to the large decline in house prices in 2012 and 2013 (around 6.5% in both years according to Statistics Netherlands) coupled with the fact that the Netherlands has a mortgage debt to GDP ratio among the highest in Europe.

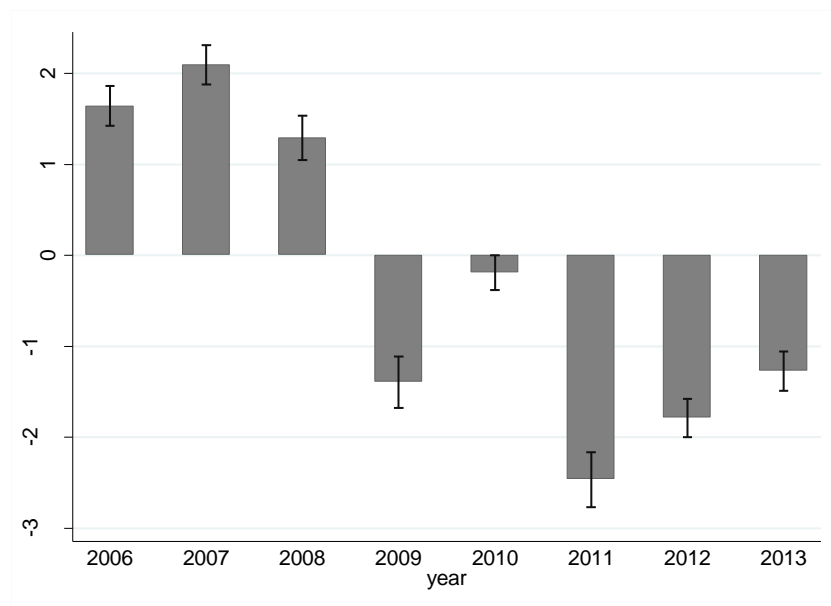
Figure 6.1.3 Underwater - DHS



House price expectations

In the survey households are asked whether they expect their house to increase or decrease in value, or they expect the price to remain the same in the next two years. If the respondents choose "decrease" or "increase", they need to state by how many percentage points. In Figure 6.1.4 we see that with the onset of the crisis Dutch households immediately adjusted their house price expectations. While until 2008 they were expecting the value of their house to increase, already in 2009 we observe a substantial drop in house price expectations, which from positive become negative.

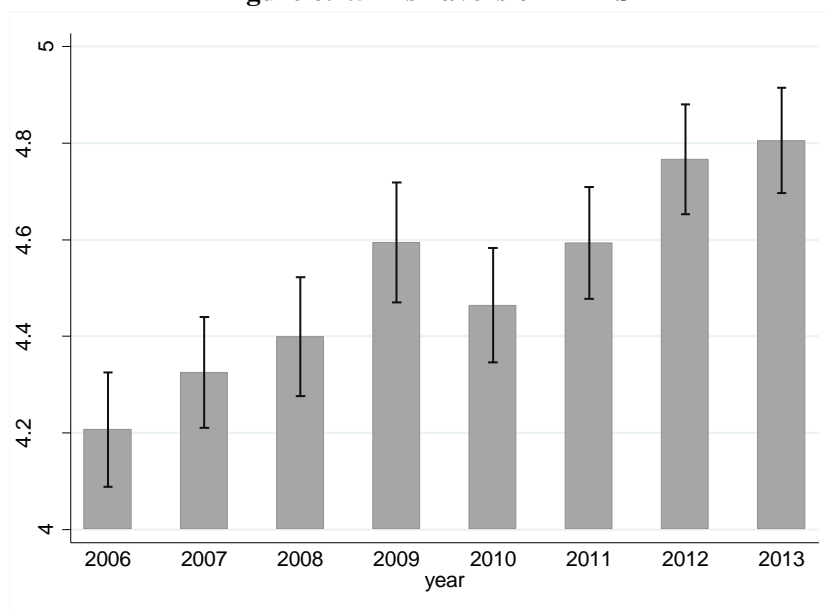
Figure 6.1.4 House price expectations - DHS



Risk aversion

We measure risk aversion with the extent to which the household head agrees with the statement ‘I would never consider investments in shares because I find them too risky’, where 1 means ‘totally disagree’ and 7 means ‘totally agree’. For this outcome, the higher the value, the higher the risk aversion. Figure 6.1.5 shows a clear upward trend in risk aversion throughout the crisis.

Figure 6.1.5 Risk aversion - DHS



6.2 REGRESSION RESULTS

In this section we present (pooled OLS) regression results for our outcomes of interest: expectations on the household economic situation in 5 years from now, how difficult it is to obtain a loan, an indicator for whether the mortgage is underwater, house price expectations and risk aversion. Table 6.2.1 presents summary statistics for these variables. The socioeconomic and demographic characteristics we control for are the same as previously described when comparing common outcomes between Italy and the Netherlands.

Table 6.2.1 Summary Statistics

	N	Mean	Std. Dev	Min	Max
Outcomes:					
Expected economic situation	8539	2.895	0.803	1	5
Difficulty to obtain a loan	8831	2.245	1.140	1	5
Underwater	6552	0.061	0.240	0	1
House price expectations	5854	-0.297	4.079	-50	75
Risk aversion	8435	4.579	2.121	1	7

Table 6.2.2 confirms the time pattern observed in Figure 6.1.1. With the onset of the crisis, Dutch households expected their economic situation to worsen, becoming increasingly pessimistic in the years afterwards. However, in 2013 optimism seems on the rise again, although it remains below its pre-crisis level. Young people are more optimistic than old people and highly educated households have better expectations about their future economic situation.

Table 6.2.2 Expected economic situation - DHS (2006-2013)

	All year dummies			Post-crisis year dummies		
	Coef.	Std.Err.		Coef.	Std.Err.	
agecl36_45	-0.309	0.045	***	-0.309	0.045	***
agecl46_55	-0.582	0.046	***	-0.582	0.046	***
agecl56_65	-0.849	0.047	***	-0.849	0.047	***
agecl66_75	-0.931	0.059	***	-0.932	0.058	***
agecl76	-0.894	0.067	***	-0.894	0.067	***
female	-0.127	0.035	***	-0.126	0.035	***
single	0.106	0.045	**	0.105	0.045	**
separated_divorced	0.075	0.051		0.075	0.051	
widowed	0.078	0.051		0.078	0.051	
family_size	-0.015	0.024		-0.015	0.024	
underage_children	0.037	0.062		0.036	0.061	
atleast1adult_child	0.059	0.057		0.058	0.057	
pre-university	0.096	0.045	**	0.097	0.045	**
senior vocational training	0.018	0.040		0.018	0.040	
vocational college	0.081	0.036	**	0.081	0.036	**
university	0.154	0.041	***	0.155	0.041	***
selfemployed	0.291	0.063	***	0.291	0.063	***
retired	-0.006	0.045		-0.006	0.045	
unemployed	-0.094	0.050	*	-0.095	0.050	*
other	0.022	0.072		0.022	0.072	
owner	0.056	0.030	*	0.056	0.030	*
dyear_2007	0.060	0.023	***			
dyear_2008	0.001	0.027				
dyear_2009	-0.041	0.028		-0.061	0.022	***
dyear_2010	-0.037	0.029		-0.058	0.023	**
dyear_2011	-0.062	0.029	**	-0.083	0.023	***
dyear_2012	-0.137	0.029	***	-0.158	0.024	***
dyear_2013	-0.070	0.030	**	-0.091	0.025	***
Constant	3.506	0.073	***	3.527	0.072	***
Observations	8,539			8,539		
R-squared	0.204			0.203		
Adj R2	0.201			0.201		
P-val F-test year dummies	0.000			0.000		

Note: Significance levels as follows: p -value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level.

Table 6.2.3 shows that, as a consequence of the financial crisis, since 2009 it has become increasingly more difficult to obtain a loan for Dutch households. Obtaining a loan is relatively more difficult for the self-

employed and unemployed, who have little economic certainty about their future income, while it is easier for home-owners who can use their house as a collateral.

Table 6.2.3 Difficulty to obtain a loan – DHS (2006-2013)

	All year dummies			Post-crisis year dummies		
	Coef.	Std.Err.		Coef.	Std.Err.	
agecl36_45	0.083	0.054		0.082	0.054	
agecl46_55	0.114	0.058	**	0.114	0.058	**
agecl56_65	0.053	0.064		0.052	0.064	
agecl66_75	0.273	0.087	***	0.273	0.086	***
agecl76	0.394	0.105	***	0.393	0.105	***
female	0.241	0.054	***	0.241	0.054	***
single	0.150	0.065	**	0.150	0.065	**
separated_divorced	0.264	0.081	***	0.264	0.081	***
widowed	0.150	0.097		0.150	0.097	
family_size	0.008	0.030		0.008	0.030	
underage_children	0.198	0.084	**	0.199	0.084	**
atleast1adult_child	0.127	0.079		0.127	0.079	
pre-university	-0.086	0.078		-0.086	0.078	
senior vocational training	0.042	0.062		0.042	0.062	
vocational college	-0.188	0.052	***	-0.188	0.052	***
university	-0.315	0.060	***	-0.315	0.060	***
selfemployed	0.402	0.079	***	0.402	0.079	***
retired	0.150	0.065	**	0.150	0.065	**
unemployed	0.521	0.081	***	0.521	0.081	***
other	0.363	0.151	**	0.363	0.151	**
owner	-0.518	0.050	***	-0.518	0.050	***
dyear_2007	0.007	0.031				
dyear_2008	-0.010	0.033				
dyear_2009	0.190	0.034	***	0.191	0.025	***
dyear_2010	0.249	0.036	***	0.250	0.029	***
dyear_2011	0.296	0.037	***	0.297	0.030	***
dyear_2012	0.283	0.039	***	0.284	0.032	***
dyear_2013	0.461	0.040	***	0.462	0.034	***
Constant	1.990	0.093	***	1.989	0.093	***
Observations	8,831			8,831		
R-squared	0.183			0.183		
Adj R2	0.180			0.180		
P-val F-test year dummies	0.000			0.000		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level.

Table 6.2.4 reveals that the probability of having an underwater mortgage decreases with age, as older people are likely to have repaid substantial parts of their mortgage. The time dummies confirm an increase in the proportion of households whose mortgage exceeds the value of their house from 2011 onwards.

Table 6.2.4 Underwater (DHS 2006-2013)

	All year dummies			Post-crisis year dummies		
	Coef.	Std.Err.		Coef.	Std.Err.	
agecl36_45	-0.175	0.029	***	-0.175	0.029	***
agecl46_55	-0.236	0.028	***	-0.235	0.028	***
agecl56_65	-0.275	0.027	***	-0.275	0.027	***
agecl66_75	-0.283	0.028	***	-0.283	0.028	***
agecl76	-0.281	0.028	***	-0.280	0.028	***
female	0.021	0.015		0.021	0.015	
single	-0.022	0.019		-0.022	0.019	
separated_divorced	-0.024	0.018		-0.024	0.018	
widowed	-0.027	0.013	**	-0.027	0.013	**
family_size	-0.016	0.009	*	-0.015	0.009	*
underage_children	-0.004	0.023		-0.004	0.023	
atleast1adult_child	0.023	0.022		0.023	0.022	
pre-university	0.004	0.011		0.004	0.011	
senior vocational training	0.001	0.014		0.001	0.014	
vocational college	0.014	0.009		0.014	0.009	
university	0.027	0.012	**	0.027	0.012	**
selfemployed	-0.007	0.020		-0.007	0.020	
retired	-0.015	0.009	*	-0.015	0.009	*
unemployed	-0.031	0.011	***	-0.031	0.011	***
other	-0.029	0.012	**	-0.029	0.012	**
dyear_2007	0.005	0.008				
dyear_2008	0.015	0.009	*			
dyear_2009	0.015	0.010		0.009	0.007	
dyear_2010	0.017	0.010	*	0.010	0.008	
dyear_2011	0.025	0.010	**	0.018	0.009	**
dyear_2012	0.053	0.011	***	0.047	0.010	***
dyear_2013	0.070	0.012	***	0.064	0.011	***
Constant	0.297	0.033	***	0.303	0.033	***
Observations	6,552			6,552		
R-squared	0.137			0.137		
Adj R2	0.133			0.133		
P-val F-test year dummies	0.000			0.000		

Note: Significance levels as follows: p -value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level.

Table 6.2.5 shows that house price expectations decrease with age, confirming the finding that young people are more optimistic than old people already revealed in Table 6.2.2. In 2009 we observe a sharp decline in expectations, consistent with the evidence of Figure 6.1.4.

Table 6.2.5 House price expectations (DHS 2006-2013)

	All year dummies			Post-crisis year dummies		
	Coef.	Std.Err.		Coef.	Std.Err.	
agecl36_45	-0.074	0.254		-0.077	0.256	
agecl46_55	-1.002	0.237	***	-1.009	0.238	***
agecl56_65	-1.315	0.267	***	-1.324	0.267	***

agecl66_75	-1.543	0.317	***	-1.554	0.317	***
agecl76	-1.651	0.373	***	-1.659	0.373	***
female	-0.090	0.180		-0.084	0.180	
single	-0.059	0.244		-0.066	0.244	
separated_divorced	-0.474	0.325		-0.463	0.325	
widowed	-0.332	0.341		-0.329	0.341	
family_size	-0.058	0.128		-0.054	0.128	
underage_children	0.140	0.341		0.133	0.341	
atleast1adult_child	-0.167	0.356		-0.179	0.356	
pre-university	0.292	0.236		0.305	0.236	
senior vocational training	0.142	0.219		0.148	0.219	
vocational college	0.173	0.207		0.172	0.207	
university	0.067	0.239		0.069	0.239	
selfemployed	0.661	0.239	***	0.654	0.239	***
retired	0.377	0.213	*	0.373	0.214	*
unemployed	0.765	0.270	***	0.761	0.270	***
other	0.305	0.414		0.307	0.411	
dyear_2007	0.569	0.155	***			
dyear_2008	-0.171	0.177				
dyear_2009	-3.027	0.192	***	-3.158	0.170	***
dyear_2010	-1.688	0.164	***	-1.819	0.138	***
dyear_2011	-3.970	0.206	***	-4.100	0.188	***
dyear_2012	-3.325	0.168	***	-3.456	0.147	***
dyear_2013	-2.926	0.183	***	-3.056	0.162	***
Constant	2.380	0.404	***	2.511	0.406	***
Observations	5,854			5,854		
R-squared	0.179			0.177		
Adj R2	0.175			0.173		
P-val F-test year dummies	0.000			0.000		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level.

Table 6.2.5 confirms the standard results that women are more risk averse than men and that households whose head is self-employed or highly educated are relatively less risk averse. Interestingly, risk aversion shows a consistent positive trend over time, with the exception of year 2010. This finding implies that the onset of the financial crisis and the uncertainty that surrounded it induced Dutch households to increase their level of risk aversion.

Table 6.2.5 Risk aversion (DHS 2006-2013)

	All year dummies			Post-crisis year dummies		
	Coef.	Std.Err.		Coef.	Std.Err.	
agecl36_45	-0.100	0.119		-0.092	0.119	
agecl46_55	0.007	0.129		0.014	0.129	
agecl56_65	0.064	0.144		0.075	0.144	
agecl66_75	0.132	0.176		0.141	0.176	
agecl76	0.250	0.215		0.262	0.214	
female	0.749	0.103	***	0.750	0.103	***
single	-0.163	0.134		-0.165	0.134	

separated_divorced	-0.130	0.158		-0.130	0.158	
widowed	-0.219	0.178		-0.218	0.178	
family_size	-0.031	0.068		-0.029	0.068	
underage_children	0.037	0.178		0.025	0.178	
atleast1adult_child	0.133	0.163		0.135	0.163	
pre-university	-0.532	0.147	***	-0.530	0.147	***
senior vocational training	-0.201	0.122	*	-0.199	0.122	
vocational college	-0.369	0.113	***	-0.368	0.113	***
university	-0.920	0.135	***	-0.918	0.135	***
selfemployed	-0.298	0.148	**	-0.298	0.148	**
retired	0.212	0.137		0.211	0.137	
unemployed	0.075	0.143		0.074	0.143	
other	0.081	0.258		0.076	0.258	
owner	-0.361	0.092	***	-0.360	0.092	***
dyear_2007	0.156	0.065	**			
dyear_2008	0.237	0.071	***			
dyear_2009	0.429	0.077	***	0.295	0.061	***
dyear_2010	0.262	0.079	***	0.128	0.065	**
dyear_2011	0.377	0.082	***	0.243	0.068	***
dyear_2012	0.540	0.082	***	0.406	0.067	***
dyear_2013	0.601	0.081	***	0.468	0.068	***
Constant	4.584	0.206	***	4.705	0.203	***
Observations	8,435			8,435		
R-squared	0.067			0.067		
Adj R2	0.0642			0.0636		
P-val F-test year dummies	0.000			0.000		

Note: Significance levels as follows: p-value *** < 0.01, ** < 0.05, * < 0.1. Robust Standard Errors clustered at the household level.

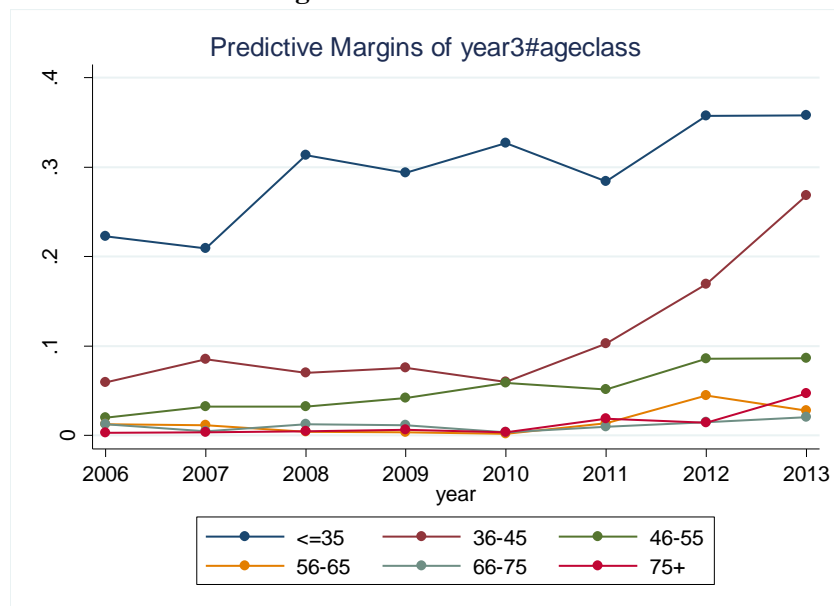
6.3 INTERACTIONS

We now extend our regression analysis to study whether the crisis affected differently different groups of the population. Our approach consists in running several regressions in which we add, one at the time, interaction terms between the year dummies and some key explanatory variables to our main specifications. In particular, we include interaction terms between the year dummies and marital status, home-ownership, employment, age classes and education level. If these interaction terms are significant, it means that the time trend is different across different groups of the population. We only focus on those cases in which the interaction terms are statistically significant and economically meaningful.

Age

We first focus on age to analyze whether the effects of the crisis are stronger for specific age groups of the population. Figure 6.3.1 shows that the increase in the proportion of households whose mortgage is underwater that we previously documented is especially driven by relatively young households, whose head is aged between 36 and 45. This result could probably be attributed to the fact that these households are more likely to have recently bought a house and have only repaid a small fraction of their mortgage.

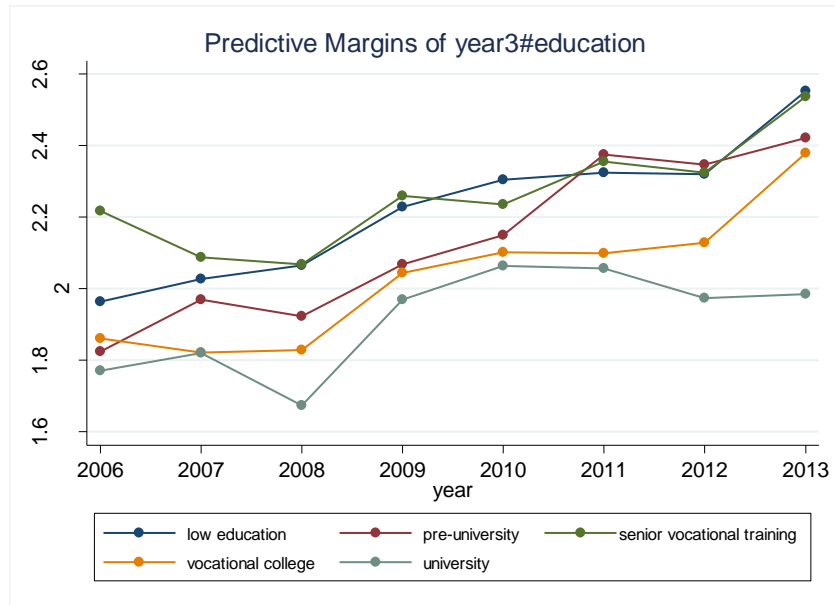
Figure 6.3.1 Underwater



Education

Next, we interact year dummies with education levels to assess whether low educated households were more exposed to the negative effects of the crisis. Statistically significant differences can be observed only for the difficulty to obtain a loan. Figure 6.3.2 shows that in 2009 there is a clear increase in the difficulty to obtain a loan for all education groups. Interestingly, this trend continues throughout the crisis years for all education groups besides households with university education.

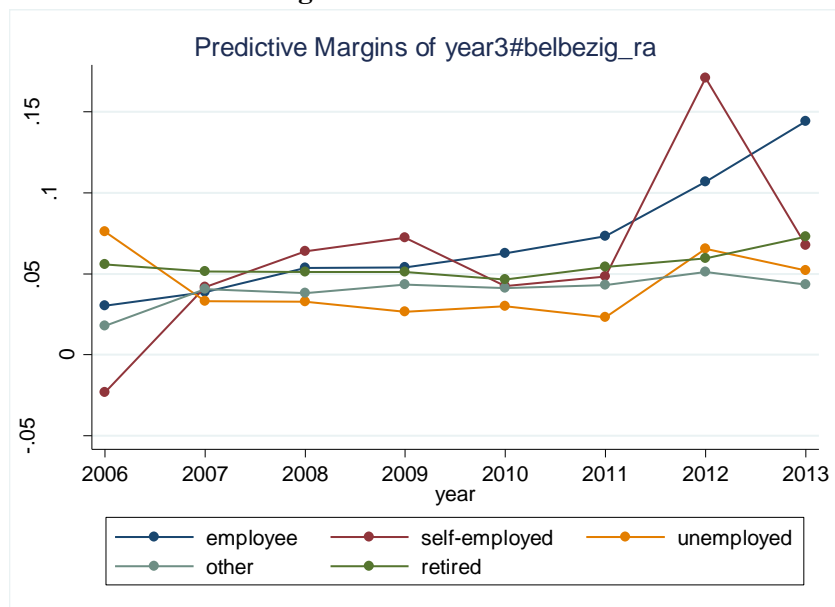
Figure 6.3.2 Difficulty to obtain a loan



Employment status

Employment status interaction effects show that the probability of being underwater increases throughout the crisis especially for the employees, who are more likely to have taken out a larger mortgage in the past (Figure 6.3.3).

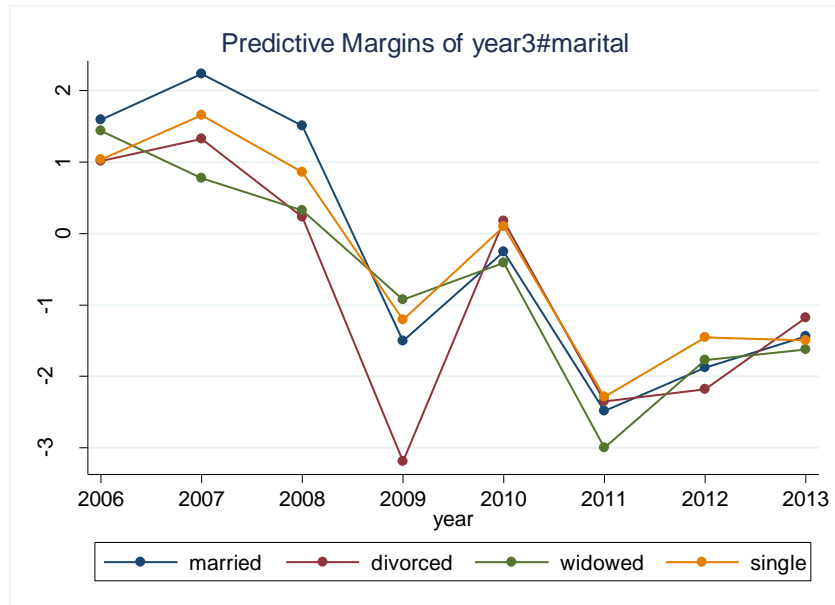
Figure 6.3.3 Underwater



Marital status

Figure 6.3.4 shows a substantial drop in house price expectations in 2009 for all demographic groups and for the divorced in particular.

Figure 6.3.4 House price expectations



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APPENDIX: OUTCOME VARIABLES CONSIDERED IN THE REPORT

Section 2: EVIDENCE FROM EU-SILC DATA			
Outcome	Country	Source	Description
Real Household Equivalent Income (logarithm)	DE, ES, FR, IT, NL	EU-SILC	Total disposable household income is net of taxes on wealth, regular inter-household cash transfer paid, tax on income and social insurance contributions. Nominal values are deflated using Eurostat PPP and exchange rate data. The exchange rates computed adjust for the difference in the purchasing power of money across countries and over time, using Germany in year 2005 as reference. The equivalence scale used is the square root of the household size. Income data are not collected using a single standard survey instrument, this generates differences in terms of income definitions across countries, see official documentations (http://ec.europa.eu/eurostat/web/income-and-living-conditions).
Ability to face an unexpected financial expense	DE, ES, FR, IT, NL	EU-SILC	Households are asked if they can afford unexpected expenses above a certain threshold with their own resources. The threshold varies across countries and survey years, it corresponds to the national poverty line. For further details see official EU-SILC documentation.
Over-indebtedness	DE, ES, FR, IT, NL	EU-SILC	This indicator takes value one if the household claims to fall behind with payments in at least one of the following items: mortgage or rent payments, utility bills and hire purchase instalments or other loan payments. For further details see official EU-SILC documentation.
Material deprivation	DE, ES, FR, IT, NL	EU-SILC	This measure of material deprivation takes value one if the household declares to be unable to afford at least three out of the following nine items (considered by most people to be desirable for an adequate life): to face large unexpected expenses, one week's holiday away from home every year, a meal with meat, chicken or fish (or vegetarian equivalent) every second day, to keep the home adequately warm, mortgage or rent payments, utility bills, hire purchase instalments or other loan payments, a telephone (including mobile phones), a colour TV, a washing machine and a car. Households who do not own a durable good for reasons other than their affordability are not considered deprived. Households whose equivalent income is in the top quartile of the income distribution are considered as not deprived.

Section 3: EVIDENCE FROM SHARE			
Outcome	Country	Source	Description

Financial Distress	AT, BE, CH, CZ, DE, DK, ES, FR, IT, NL, SE	SHARE	This indicator takes value one if two conditions are met: (1) the household has financial wealth, net of non-mortgage debt, lower than three months of income and (2) the household equivalent income is not in the top third of the distribution. See Cavasso and Weber (2013) “The effect of the great recession on the wealth and financial distress of 65+ Europeans”. In Active Ageing and Solidarity Between Generations in Europe. First Results from SHARE after the Economic Crisis, edited by A. Börsch-Supan, M. Brandt, H. Litwin and G. Weber, pp. 27-36. De Gruyter: Berlin.
House Value Net of Outstanding Debt (logarithm)	AT, BE, CH, CZ, DE, DK, ES, FR, IT, NL, SE	SHARE	Only for home-owners. Respondents are asked “In your opinion, how much would you receive if you sold your property today?”. The amounts provided are converted in real terms using the PPP exchange rates included in the SHARE data.

Section 4: EVIDENCE FROM SHIW AND DHS			
Outcome	Country	Source	Description
Ability to Make Ends Meet	IT	SHIW	Respondents are asked if their household income is sufficient to see them through the end of the month. Answering options are with great difficulty, with difficulty, with some difficulty, fairly easily, easily and very easily. Answers are coded with numbers from 1 to 6, where 1 means ‘with great difficulty’ and 6 ‘very easily’.
	NL	DHS	Respondents are asked ‘How well can you manage on the total income of your household?’. The answer is reported on a 1 to 5 scale, in which 1 means ‘very hard’ to 5 ‘very easy’.
Difficulties in Making Ends Meet	IT	SHIW	Based on 'Ability to make Ends meet'. Binary variable taking value one if the respondent declares to have great difficulties or difficulties in making ends meet, and zero otherwise.
	NL	DHS	Based on 'Ability to make Ends meet'. Binary variable taking value one if the respondent declares to (very) hardly manage on the household total income, and zero otherwise.

Real Household Equivalent Income (logarithm)	IT	SHIW	<p>Net disposable household annual income from the historical database. The aggregate includes: compensation of employees, pensions and other transfers, net income from self-employment and entrepreneurial income, property income (imputed rent excluded), for further details see official documentation (https://www.bancaditalia.it/statistiche/tematiche/indagini-famiglie-imprese/bilanci-famiglie/documentazione).</p> <p>Nominal amounts deflated using the Consumer Price Index for the whole nation (NIC) provided by the Italian National Institute of Statistics (ISTAT) (Reference year: 2005). Amounts are divided by the square root of the household size.</p>
	NL	DHS	<p>The disposable household income measure is expressed in 2010 prices and is net of income tax, social insurance contributions, health insurance premium and mortgage interest payments and it includes income from financial assets. Amounts are divided by the square root of the household size.</p>
Financial Distress	IT, NL	SHIW, DHS	<p>This indicator takes value one if two conditions are met: (1) the household has financial wealth, net of non-mortgage debt, lower than three months of income and (2) the household equivalent income is not in the top third of the distribution. See Cavasso and Weber (2013) “The effect of the Great Recession on the wealth and financial distress of 65+ Europeans”. In <i>Active Ageing and Solidarity Between Generations in Europe. First Results from SHARE after the Economic Crisis</i>, edited by A. Börsch-Supan, M. Brandt, H. Litwin and G. Weber, pp. 27-36. De Gruyter: Berlin.</p>
House Value (logarithm)	IT	SHIW	<p>Only for home-owners. Respondents are asked to estimate the value of their home (Question: ‘In your opinion, how much is your house/flat worth (unoccupied)? In other words, what price could you ask for it today (including any cellar, garage or attic)? Please give your best estimate’). Stated values are deflated using the Residential Property Price Index (reference year: 2007), provided by the European Central Bank.</p>
	NL	DHS	<p>Only for home-owners. Respondents are asked to answer the following: ‘About how much do you expect to get for your residence if you sold it today?’. Stated values are adjusted for the Consumer Price Index (reference</p>

			year: 2010).
House Value Net of Outstanding Debt (logarithm)	IT	SHIW	Only for home-owners. The House Value Net of Outstanding Debt is computed by subtracting from the stated House Value the declared amount the household would have had to repay to extinguish the mortgage. The values are deflated using the Residential Property Price Index (reference year: 2007), provided by the European Central Bank.
	NL	DHS	Only for home-owners. In case of an endowment mortgage, the cash value of the life insurance from the mortgage debt outstanding is subtracted.

Section 5: COUNTRY SPECIFIC PART: ITALY, EVIDENCE FROM SHIW

Outcome	Country	Source	Description
Total expenditure (logarithm)	IT	SHIW	<p>Annual expenditure data are drawn from the historical database. Imputed rents and non-monetary additional income are subtracted from the total amount. For further details see official documentation (https://www.bancaditalia.it/statistiche/tematiche/indagini-famiglie-impres/bilanci-famiglie/documentazione).</p> <p>Nominal values are deflated using the Consumer Price Index for the whole nation (NIC) provided by the Italian National Institute of Statistics (ISTAT). Amounts are divided by the square root of the household size.</p>
Non-durable expenditure (logarithm)	IT	SHIW	<p>Annual expenditure data are drawn from the historical database. Imputed rent and non-monetary additional income is subtracted from the provided aggregate. Up to 2012 respondents were asked about non-durable consumption through a <i>catch-all</i> question. In 2012 the same question was asked only to a random subsample, we use the latter for our analysis on consumption to ensure comparability over time. For further details see official documentation</p> <p>(https://www.bancaditalia.it/statistiche/tematiche/indagini-famiglie-impres/bilanci-famiglie/documentazione).</p>

			Nominal values are deflated using the Consumer Price Index for the whole nation (NIC) provided by the Italian National Institute of Statistics (ISTAT). Amounts are divided by the square root of the household size.
Households with positive durable expenditure	IT	SHIW	Binary indicator based on annual durable expenditure data drawn from the historical database. The indicator takes value one if the household has a strictly positive durable expenditure, and zero otherwise.
Durable expenditure (logarithm)	IT	SHIW	Annual expenditure data are drawn from the historical database. Durable expenditure includes consumption of transport equipment (net of sales earnings) and consumption of other durables. For further details see official documentation (https://www.bancaditalia.it/statistiche/tematiche/indagini-famiglie-imprese/bilanci-famiglie/documentazione). Nominal values are deflated using the Consumer Price Index for the whole nation (NIC) provided by the Italian National Institute of Statistics (ISTAT). Amounts are divided by the square root of the household size.

Section 6: COUNTRY-SPECIFIC PART: THE NETHERLANDS, EVIDENCE FROM DHS

Outcome	Country	Source	Description
Expectations on the household economic situation in 5 years from now	NL	DHS	Respondents are asked how they think the economic situation of their household will be in five years' time in comparison to the current situation. The answer to this question is reported on a scale that goes from 1 ('much worse') to 5 ('much better').
How difficult it is to obtain a loan	NL	DHS	Respondents are asked the following: 'Do you agree with the following statement? If I want, I can easily obtain a loan'. The possible answers range from 1 'totally agree' to 5 'totally disagree'.

Mortgage is underwater	NL	DHS	For the sample of home-owners, the underwater indicator equals 1 if the value of the house is lower than the outstanding mortgage debt and 0 otherwise.
House price expectations	NL	DHS	Households are asked whether they expect their house to increase or decrease in value, or they expect the price to remain the same in the next two years. If the respondents choose "decrease" or "increase", they need to state by how many percentage points.
Risk aversion	NL	DHS	Risk aversion is based on the following question asked to the household head 'I would never consider investments in shares because I find them too risky', the answering options range from 1 to 7, where 1 means 'totally disagree' and 7 means 'totally agree'.