Hacienda Pública Española/Review of Public Economics

Manuscript 2426

Association of income and wealth with self-reported health status: Analysis of European countries during the financial crisis.

Laia Maynou PhD

Marc Sáez

guillem lopez-casasnovas

Association of income and wealth with self-reported health status: Analysis of European countries during the financial crisis.

Laia Maynou[1,2,3,4], Marc Saez [5,4,2], Guillem López-Casasnovas[2,6,7]

Laia Maynou ORCID 0000-0002-0447-2959
Marc Saez ORCID 0000-0003-1882-0157
Guillem López-Casasnovas ORCID 0000-0001-8020-9987

[1] Department of Econometrics, Statistics and Applied Economics, Universitat de Barcelona, 08034 Barcelona
[2] Center for Research in Health and Economics (CRES), Universitat Pompeu Fabra, 08005 Barcelona, Spain
[3] Department of Health Policy, London School of Economics and Political Science
[4] CIBER of Epidemiology and Public Health (CIBERESP), 28001 Madrid, Spain
[5] Research Group on Statistics, Econometrics and Health (GRECS), University of Girona, 17003 Girona, Spain
[6] Department of Economics and Business, Universitat Pompeu Fabra, 08005 Barcelona, Spain
[7] Barcelona School of Economics (BSE), Universitat Pompeu Fabra, 08005 Barcelona, Spain

Corresponding author:

Prof. Marc Saez, PhD, CStat
Research Group on Statistics, Econometrics and Health (GRECS), Center for Research in Health and Economics (CRES) and CIBER of Epidemiology and Public Health (CIBERESP)
University of Girona
Carrer de la Universitat de Girona 10, Campus de Montilivi
17003 Girona, Spain Tel 34-972-418338, Fax 34-972-418032
http://www.udg.edu/grecs.htm e-mail: marc.saez@udg.edu

Abstract

Objectives. We evaluate the association between changes in income and wealth (both, real estate and financial wealth, gross and net) and self-perceived health for European Union countries, using a longitudinal sample of individuals before and after the financial crisis.

Methods. We estimated generalized linear mixed models, with a binomial response and a logistic link, for three waves of the Eurosystem Household Finance and Consumption Survey (HFCS) (2011, 2015, 2017), adjusting for family and individual heterogeneity and for temporal trends.

Results. We observe that overall variations in income have a positive and significant impact on changes in self-perceived health during the financial crisis, but not after 2015 (expansion period). As a result, changes in income are important in protecting health during crisis periods. We do not observe an effect of changes in wealth. When comparing the results by country, our findings still hold for most of them, with income being the main driving force behind better self-perceived health. These results are important because changes in individuals' income seem to be more important than net wealth, and are differently affected by the shocks in the economic crisis. Minor effects in changes of net wealth can be found just for the Netherlands and Germany.

Conclusions. We find that, despite the fact that the financial crisis affected European countries differently, in most of them, income, rather than wealth, played an important role in protecting health. However, changes in income were

not relevant in the expansion period. Wealth variation in all the specification types proves to have minor or no effect.

Keywords: self-perceived health; wealth; asset composition; European Union

JEL classifications: I14, D31, P36, N3, B23,

1.- Introduction, literature review and background.

There is an extensive body of literature analyzing socioeconomic inequalities in well-being (for a review, see O'Donnell *et al.*, 2015). A better socioeconomic position, generally related to income, is associated with both higher levels and lower variations in self-reported health. More recently, the availability of administrative data has allowed researchers to add wealth into the analysis. This is a stock variable which may provide a better protective role in stabilizing consumption and welfare from economic shocks and/or income fluctuations, providing an appropriate proxy for long life cycle earnings. Its association to self-perceived health is rather intuitive, even though its influence may be much related to rates rather than levels in causing effects on life satisfaction (through anxiety, depression etc.) and health. Moreover, wealth composition, in terms of real versus financial assets, housing prices or the stock of exchange fluctuations may matter too. The levels of indebtedness, mortgage rates, types of credits and liabilities, duration of the shock may be also important. Feeling 'good' may differ between expansions and economic recessions and the degree of volatility on asset pricing.

The joint role wealth and income have in shaping well-being has been studied to a much lesser extent than income, especially for younger adults. Notable exceptions to this are the work of Poterba *et al.* (2011) in the case of retirement, Schwandt (2018) and Pool *et al.* (2018) for wealth shocks, Finkelstein *et al.* (2013) for wealth, health, and well-being, Liu and Menegatti (2019) for wealth investment and health, and Blázquez and Budria (2018) and Saez *et al.* (2019a)

for wealth shocks in Spain. Among those who investigate the role asset composition plays on determining well-being, a rather aggregate approach is usually taken, i.e., comparing static levels of wealth rather than their variations as the main explanatory factors influencing health.

Given the number of confounding factors that are present, it is extremely difficult to classify all the relevant literature into separate pieces that translate income to wealth and health, and health to well-being. Some studies have mainly focused on (i) the pure income-wealth-health link (Aittomäki *et al.,* 2010; Martikainen *et al.*, 2003: Perel *et al.,* 2006), (ii) the relation between net wealth (i.e., gross wealth minus debt) and its composition (Clayton *et al.,* 2015; Brown *et al.,* 2005; Berger *et al.,* 2015), or (iii) the impact of over-indebtedness (net wealth burden) and individual health status with regard to emotional states associated with depression, stress, anxiety and mental health (Fitch *et al.*, 2007; Bridges *et al*., 2010), declining physical health (Drentea and Lavrakas, 2000), unhealthy behavior (García-Altés *et al.,* 2018; López-Casasnovas, 2018; Averett *et al.*, 2014*)* and suicidal tendencies (Reeves *et al.,* 2014; Bover, 2018). Aittomäki *et al.* (2010) explored how the wealth of an individual or a household affects health through the effects on living conditions as well as through social comparison and experiences of deprivation. From a Finnish survey of men and women aged 45 to 67 years old, all of whom were civil servants, and in a period before the crisis (2001–2007), they found household wealth to have a strong and consistent association with self-reported health, with poor health decreasing as wealth increased. The relationship was only partly attributable to the association of wealth with employment status, household income, work conditions, and

health-related behavior. The association of household income with self-reported health was greatly diminished when considering employment status and wealth, and even further attenuated by work conditions. Benzeval and Judge [23] pay particular attention to the role of long-term income as a proxy for wealth, to conclude that wealth is more important for health than current income, and persistency is more harmful to health than occasional episodes.

Psychological elements may be moderating factors. Bridges and Disney (2001) show that although there is a positive association between subjective measures of financial well-being and psychological well-being, individuals differ in their psychological response to objective household financial situations. Dietz and Haurin (2003) focus their attention on the effects of real assets to note that homeowners are happier and healthier than non-owners. However, the correlation between both variables has some clear confounding factors, such as income and education. In any case, homeowners report higher self-ratings on their physical health even after controlling for age and socioeconomic factors. Regarding net wealth variations, Gathergood (2012) analyzes over-indebtedness to conclude that individuals exhibiting problems repaying their debt obligations also exhibit much poorer psychological health. Using individual-level UK panel data, local house price movements exogenous to individual households are used to establish the causality from problem mortgage debt to psychological health. Interestingly, there seems to exist a sort of ‘social norm effects’ of debt (how extended, how general these problems are) when investigating local bankruptcy and repossession rates.

On the importance of asset composition, Berger *et al.* (2015) analyze data from 1987 to 1994 from the USA National Survey of Families and Households in a series of regression models, to estimate associations of particular types and levels of debt with adult depression symptoms. Results suggest that household debt is positively associated with greater depressive symptoms. However, this association appears to be driven by short-term (unsecured) debt; they found little evidence of associations with depressive symptoms for mid- or long-term debt. In similar terms, Brown *et al*. (2005) explore the association between debt and psychological well-being amongst heads of households using the British Household Panel Survey. Household heads who have outstanding (non-mortgage) credit, and who have higher amounts of such debt, are significantly less likely to report complete psychological well-being. However, this significant association is not found in the case of mortgage debt. Their results highlight the psychological cost associated with the consumer credit culture in Britain.

Turunen and Hiilamo's (2014) systematic literature review of 33 peer-reviewed studies, show serious health effects related to indebtedness. Individuals with unmet loan payments had suicidal ideations and suffered from depression more often than those without such financial problems. Unpaid financial obligations were also related to poorer subjective health and health-related behavior. In a similar vein, Richardson *et al.* (2017) conclude that those with depression are more than twice as likely to be in debt; 42% of those in debt have a mental disorder compared to 18% with no debt. Furthermore, 25% of those with a mental disorder are in debt, compared to 9% in those who are healthy.

On the effects of wealth changes, Pool *et al.* (2018) explore how a sudden loss of wealth—a negative wealth shock—may take a significant mental health toll and leave fewer monetary resources for health-related expenses. With limited years remaining to regain lost wealth in older age, the health consequences of these negative wealth shocks may be long-lasting. Among US adults aged 51 years and older, a loss of wealth over two years was associated with an increased risk of all-cause mortality. By estimating how the marginal utility of consumption varies with health, from data on permanent income, health in older people and people of a similar elderly age, and a proxy for utility with measures of subjective well-being, Finkelstein *et al.* (2013), find that the marginal utility of consumption declines as health is felt to deteriorate. This has a substantial effect on the optimal levels of health insurance benefits and life-cycle savings. This latter issue is taken up by Liu and Menegatti (2019) studying how health and wealth investments react to the presence of random returns, distinguishing the case where only the level of health investment is chosen from the case where both health and wealth investments are chosen. The authors show that this reaction depends mainly on certain features of preferences: cross-prudence/imprudence in wealth, cross-prudence/imprudence in health, and the value of the indices of relative prudence in wealth and in health being larger or smaller than the threshold in determining optimal choices.

Building on previous literature, the objective of this paper is to evaluate the association between the variations in income and wealth (aggregated and disaggregated into real estate and financial wealth) and variations in self-perceived health in those European Union (EU) countries which form part of the

Eurosystem's Household Finance and Consumption Survey (HFCS) in the three available waves (2011, 2015, 2017). We take advantage of a rich and unique dataset covering the financial crisis suffered in Europe which, in turn, created a plethora of inferences on its effects on European's health (see Saez *et al.,* 2019b*,* for a critical review) and which refers to variables related to wealth (see Schwandt, 2018; Turunen and Hiilamo, 2014; Bover *et al.*, 2014, among many others).

We meet our objective by considering different levels of wealth and the variation of its two main components – real estate wealth and financial wealth, gross and net wealth —on variations in self-perceived health. As explanatory variables, we include variables at the family level: (i) number of family members; (ii) number of family members who work; and (iii) property regime of the family dwelling (not owned by the family-reference category—or owned by the family). We also include control variables at the individual level: gender, age, educational level, occupation, and marital status. We anchor each estimate of the net wealth and income levels at the start of the periods: 2011-2015 for the recession period and 2015-2017 for the recovery.

Our contribution to the existing literature is twofold. First, we use variations in our estimates instead of levels, thus capturing the importance of time variation. Second, we exploit a rich dataset of EU countries over three periods of time (2011, 2015, 2017), allowing us to investigate the effect of an economic recession first and an expansion later (see Appendix 1 on data for each country).

The remainder of this paper is structured as follows. Section 2 describes the data and methodology used in our analysis. Results are presented in Section 3, and Section 4 concludes the paper with a discussion and concluding remarks.

2.- Methods

2.1.- Data Sources

We use data from the Eurosystem's Household Finance and Consumption Survey (HFCS)[1], a longitudinal database that collects household-level data on households' finances and consumption. It is a random sample of households within each EU country. We considered thirteen European countries (Austria, Belgium, Cyprus, Germany, Finland, France, Italy, Luxembourg, the Netherlands, Portugal, Slovenia, Slovakia and Spain) which form part of the HFCS in the three available waves allowing for the panel format of the data. We make use of wave 1 in the middle of the financial crisis (2011), wave 2 at the very end of it (2015) and wave 3 for the full recovery (2017)[2]. The HFCS provides detailed information on the assets, debts, income, and spending of the European household units included in the countries's samples. It also contains socioeconomic and demographic information at the household level. The longitudinal nature allows us to follow a set of households at various points in time. More importantly, this survey is the only source of data that provides information on the wealth of those European families over time, allowing us not only to focus on wealth levels, but also on its composition (housing or financial assets). Our study sample for each

[1] https://www.ecb.europa.eu/pub/economic-research/research-networks/html/researcher_hfcn.en.html

[2] HFCS wave 1 corresponds to interviews done between 2010 and 2011, wave 2 between 2013 and 2015 and wave 3 in 2017.

country includes the members of families who were interviewed in at least two waves of the HFCS and who were interviewed both before and after the crisis.

2.2.- Statistical matching

The HFCS does not provide data related to self-reported health status. For this reason, we matched it with the 2011, 2015 and 2017 releases of the cross-section sample survey of the EU Statistics on Income and Living Conditions (EU-SILC)[3] EU-SILC provides microdata on income, poverty, social exclusion and living conditions in the EU.

Although in both surveys the subjects come from the same population (i.e., the thirteen EU countries named above), they do not overlap. In fact, in some cases they could be the same subjects, but we do not know because the individual identifiers are not the same. For this reason, we do not carry out a record linkage, of identical units, but a statistical matching, linking records from two different sources that correspond to 'similar' units (Leulescu *et al.,* 2013).

In fact, we made the assumption that a subject residing in a given country and interviewed in a given year would have, on average, the same data related to the self-reported health status as those subjects from the same country interviewed in the same year, with the same sex, the same age with a maximum difference of 5 years, and the same educational level, employment and marital status.

[3] https://ec.europa.eu/eurostat/web/microdata/european-union-statistics-on-income-and-living-conditions

As Leuescu and Agafitei (2013) point out, matching procedures can be regarded as an imputation problem. Among the different imputation methods, we chose to perform multivariate matching without replacement, using a genetic search algorithm (Sekhon, 2011). The genetic search algorithm determines the weight each covariate is given in the optimal balance. Balance is determined by examining cumulative probability distribution functions of a variety of standardized statistics (including t-tests and Kolmogorov-Smirnov tests) (Sekhon, 2011).

To match the HFCS and EU-SILC databases we used the Matching package (Sekhon, 2011) in the free software R (version 4.1.2) (2023). Specifically, we matched the databases using the matching variables of gender, age (with a margin of +/- 5 years), educational level, employment status, marital status, year of survey and country.

2.3.- Variables

2.3.1.- Outcome Variables

In the EU-SILC, respondents were asked to rate their health in one of the following five categories: ‘very good’, ‘good’, ‘fair’, ‘poor’ or ‘very poor’. From this, we constructed our outcome variables, variation in self-perceived health between 2011 and 2015 and between 2015 and 2017. We categorized both variables into 'improved or maintained' (taking value 0) and 'worsened' (taking value 1).

2.3.2.- Explanatory Variables

Our key explanatory variables were the variation in gross and net wealth. In addition to this, we considered the variation of its two main components: real estate wealth and financial wealth. We also considered the variation in total debt and real income. In the latter case, this was to compare it with the difference in the wealth variables. Based on existing literature, wealth and income variables are expected to be positively related with better self-perceived health, while debt is expected to be negatively related (Saez *et al.*, 2019a).

As the explanatory variables of control, we included variables at the family level:

(i) number of family members

(ii) number of family members who work

(iii) property regime of the family dwelling (not owned by the family -reference category- or owned by the family)

We also included control variables at the individual level: sex, age, level of education, occupation, and marital status.

Finally, we included the level of the variables of wealth, debt and income in 2011 (in the model that analyzes the variation between 2011 and 2015) and in 2015 (in the model of the variation between 2015 and 2017).

2.4.- Statistical analysis

2.4.1.- Specification of the model

We specified a generalized linear mixed model with binomial response and a logistic link,

$$\log\left(\frac{\Pr ob\left(Y_{ij}=1\right)}{1-\Pr ob\left(Y_{ij}=1\right)}\right)=h_{ij} \qquad \{1\}$$

where Y denoted the response variable (1 for worsened, 0 otherwise), the subscript *i* denoted an identifier of the study subject and the family to which the subject belonged, *j* the country where the subject was interviewed, and η_{ij} a linear predictor for subject *i*.

In the linear predictor for each subject in the model, we incorporated the variables that might explain the variation in self-reported health, the explanatory variables described above (i.e., observed confounders) as well as two unstructured random effects to control for unobserved confounders. In particular, we considered individual heterogeneity, associated with each family to which the individual belonged, and country heterogeneity, associated with the country where the subject was interviewed.

2.4.2.- Inference

We used a mixed design, with subjects observed at different moments in time. As we have said, in this design there is individual heterogeneity and country

heterogeneity. The problem is that both heterogeneities are not constant over time. Thus, it could be that this time-varying heterogeneity could be correlated with the explanatory variables. As a consequence, the standard estimators (for example, fixed effects, random effects, even GMM estimators) will be inconsistent (Greene, 2018). In addition, there could be a problem called 'spurious state dependency' (Heckman 1981a and 1981b). There is no inherent dynamic behaviour in the dependent variable but the disturbances are autocorrelated, probably because there are observed individual characteristics or unobserved individual heterogeneity which, when omitted, create a (spurious) relationship between the past and future values of the dependent variable. All this leads to inconsistent estimates.

All these problems can be solved using a Bayesian approach. In particular, we followed the Integrated Nested Laplace Approximation (INLA) approach (Rue *et al.,* 2009 and 2017; Gómez-Rubio, 2020), within a (pure) Bayesian framework.

As is known, a problem with Bayesian inference is that the results are not invariant to the choice of the priors. Fortunately, this problem was solved in the INLA approach. In this sense, we used priors that penalize complexity (PC priors). These priors are robust in that they do not have an impact on the results and, furthermore, they have an epidemiological interpretation (Simpson *et al.,* 2017).

2.4.3.- Endogeneity

It is known that some of the explanatory variables and, in particular, income, could be endogenous variables, since there could be a bidirectional relationship in

changes in the explanatory variable and changes in self-perception of health. It is also known that if instrumental variables are used, consistent estimators would be obtained. In our case, the problem is that we do not have good instruments. For example, we cannot use lagged values of the variable, since the database of explanatory variables does not provide such information. For this reason, we chose to use the strategy of Montes-Rojas and Galvao (2014), which consists of using informative priors distributions to model endogeneity. In particular, we have used the same PC priors explained above.

All analyses were made with the free software R (version 4.1.2) (2023) through the INLA package (Rue *et al.,* 2009; R INLA project, 2023).

3.- Results

3.1.- Descriptive

Table 1 (a to f) reports the descriptive statistics of the variable of interest by country and year (2011, 2015, 2017). Overall (Table 1a), the net wealth, total real assets, real estate assets and debt followed a similar pattern. These decreased from 2011 to 2015 and then increased from 2015 to 2017. Financial assets and income, however, remained relatively stable from 2011 to 2015, but then increased in 2017. The magnitudes of these variables were different across countries.

The change in self-perceived health is presented in Table 1g. Twenty-one percent of the sample reported a worsening of their self-perceived health from 2011 to 2015 and 17% from 2015 to 2017. Slovakia, Portugal, Germany and Italy have the highest percentages of worsened health between 2011-2015 while for 2015-2017 this is Portugal, Slovenia and Germany. Meanwhile, the countries with the lowest percentage of worsened health are Cyprus, Finland and Luxembourg for 2011-2015 and Italy, Belgium and Cyprus for 2015-2017.

3.2.- Regression results

Our dependent variable is the variation in the self-perceived health between the two periods (2011-2015 and 2015-2017). A positive sign in the association with an explanatory variable, other things (the control factors) being equal, means a worsening of the subject's health. The three columns in Table 2 for 2011-2015 and for 2015-2017 provide the results from the different model specifications. Since the estimators of the parameters were transformed to odd ratios, values below 1 mean improvements in health with regard to the base departure year.

To test the endogeneity of the explanatory variables, we used the Wu-Hausman test. In all cases, with the exception of income, we could not reject the null hypothesis of non-endogeneity of the variable. For this reason, we used a structured PC-prior only for this variable.

For all countries at 95% significance, we observe an important effect: a positive percentage change in income during the recession period (2011-2015) reducing

the probability of individuals declaring a worsened health (Odds ratio=0.848 for the whole sample and almost all the specifications). However, the effect disappears when the economic situation improves (2015-2017). This result is expected since the improvement is, in itself, an indicator of the recovery. The variation of total debt also shows a significant and negative effect (odds ratio=0.991). A positive percentage change in debt reduces the probability of reporting worsened health in the recession period (2011-2015). This result in debt shows an unexpected sign but it could be the result of a delay effect of having issued debt from a previous more optimistic time interval. It is interesting to see how the effect changes between the two periods (recession vs expansion), losing statistical significance for the most recent one.

For higher confidence intervals, 90% significance, the effect of a percentage change in total gross real and estate assets are positive and significant in the expansion period (2015-2017), showing an increase in reporting worsened health. However, the magnitude of the effects is very small.

Results for each country (Table 3) exhibit similar patterns: the importance of income change in the recession period, particularly in the cases of Austria, Belgium, Finland Netherlands, Slovenia and Slovakia, with an effect that disappears thereafter, and a lack of significance of changes in total debt, net and for assets composition. Some minor effects result from changes of net wealth, albeit only in the cases of Netherlands and Germany, during the crisis period. This effect, however, disappears over time.

These results are important because changes in individuals' income seem to be more important than net wealth, and they are differently affected by the shocks

in the economic crisis. Even if the financial crisis affected the European countries differently, in most of them income played an important role in protecting health. However, changes in income prove not to be relevant in the expansion period. Wealth variation in all the specification types shows minor or no effects. All indicate that self-perceived health is very sensitive to short-term income variations, with flow variables dominating the stock variations.

4.- Discussion

The objective of this paper was to evaluate the association between variations in income and wealth (aggregated and disaggregated into real estate and financial wealth) and variations in self-perceived health in a set of thirteen EU countries. We reached our goal by taking advantage of a rich and unique dataset: three waves (2011, 2015, 2017) of the HCFS covering both the financial crisis in Europe and the subsequent expansion period.

Our results show that changes in individuals' income seem to be more important than net wealth to explain variations in self-perceived health in the EU countries, and, in particular, in the recession period. Even if the financial crisis affected the European countries differently, in most of them, income changes played an important role in protecting health. However, changes in income prove not to be relevant in the expansion period. Wealth variation in all the specification types shows minor or no effects. All indicate that self-perceived health is very sensitive to short-term income variations, with flow variables dominating over the stock

variables. Our results are in line with previous literature showing the importance income has on self-perceived health (see Aittomäki *et al.,* 2010; Benzeval, 2001).

The importance of analysing inequality and the corresponding economy-wide distributions of asset positions as potential sources of individuals' economic instability has been reaffirmed by recent macroeconomic events. In this sense, the distribution of specific components of wealth has important implications for a family exposure to systemic risk and eroding welfare. At the aggregate level, the distribution of home equity, i.e., the net value of housing (excluding the mortgage debt), has transpired to play a crucial role for an assessment of potentially adverse feedback loops. For instance, an economy with a large fraction of households who finance the value of their homes with low levels of home equity is particularly vulnerable to declines in house prices.

Another relevant area of analysis is the potential cross-country asymmetries in responses to measures taken during the crisis at the European level. The HFCS provides the empirical foundation to establish this analysis. As mentioned earlier, housing wealth and mortgage debt are major items on the average balance sheets of households in countries in the Euro area, but with some cross-country heterogeneity of wealth and debt portfolios. For example, 45% of households in Austria and Germany own their main residence, as such, income and rents have a major influence. Mediterranean countries, on the other hand, have much higher homeownership rates, (e.g., Spain 82% and Italy 69%), as a result, mortgage interest rates and house prices are more important there. This, however, cannot be translated automatically to individual welfare since in these last two countries

the rates of adult children living with their homeowner parents are very high. Housing wealth amounts twice the average gross household income in Germany and more than five times the average gross household income in Spain. However, in general, heterogeneity across households exceeds heterogeneity across countries. On the other hand, financial rather than real wealth is more important in the Netherlands, Belgium and Germany. The differences between mean and median values of net wealth show higher inequalities in France, Spain, Belgium and Austria.

The cross-country differences in the HFCS data suggest that when analysing the heterogeneity in European household portfolios, we should consider the influence gross and net wealth and not just income, have on health (like it is for consumption and investment). As is reflected in wealth levels and composition, this influence may be different across countries. For instance, the data distinguishes between the value of housing and the value of financial assets while mortgage debt is relevant as a predominant gross liability item on household balance sheets.

Portfolio restrictions are an important feature too. Most household debt is secured by real estate. This explains the importance of the explicit consideration of restrictions between the value of real estate and the amount of debt secured by real estate. Portfolio items on a household balance sheet differ by their degree of liquidity. Owner-occupied housing is a major asset for households in Europe, but transactions involving this asset tend to imply considerable cost adjustments. The maturity dimension of assets and liabilities on the household balance sheet plays

a role in the type of risk exposure for households. An example is the distinction between long-term fixed-rate debt and short-term or adjustable-rate debt. The consumption responses resulting from changes in short-term interest rates may vary strongly across countries, depending on the maturity structure of the outstanding debt on the household balance sheets.

Cross-country differences in unemployment insurance schemes, public and private health insurance schemes, bankruptcy regulations, volatility of asset prices and returns, and inflation risk, may also have an influence related to the uncertainty about the sustainability of the position of the individuals' financial stance, which is then reflected on health and welfare. This effect does not result just from wealth changes shaping insecurity and anxiety, but also from changes in the affordability of health care in financial hardship and/or lack of social protection.

Financial protection is central to universal health coverage and a core dimension of health system performance. The financial and economic crisis tested the ability of the Member States. Voluntary health insurance in some countries may either increase (because of a deterioration in the public coverage) or decrease (because of a lack of out-of-pocket money for health care), with some effects on health. The WHO identifies catastrophic health spending when the out-of-pocket amount a household pays for health care exceeds a predefined share of its ability to pay for health care, which may make it difficult for the household to meet other basic needs. Financial strain is a great stressor that can be linked to health because of the resulting inability to manage one's income which can

subsequently provoke stress, anxiety, and a feeling of helplessness. It has also been reported that individuals experiencing financial strain are more likely to have unhealthy behaviors. We need, therefore, to compare the prevalence of financial strain among individuals among different welfare state typologies, and to examine whether the relationship between financial strain and health status differs by welfare state regime (Artacoz *et al.,* 2021; Pinilla and González-López-Valcárcel, 2020).

One of the strengths of this research is the dataset we used. The amount of detail in the HFCS dataset related to assets and wealth is greater than any other cross-country dataset like the EU-SILC. As a result, our analysis benefits from a set of variables that allow us to better understand the asset portfolio of the individuals

As a limitation, even if we used a panel format dataset for this study, causal inferences cannot be drawn due to potential endogeneity (unobserved factors). It remains unclear in this study if the burden comes from over-indebtedness rather than indebtedness changes. This may then impair an individual's health in the long run leading to financial difficulties. These unobserved factors may result in a higher risk of being unemployed or employed in a low-income job, to name some features that we have been unable to control for among the countries analysed. This could be the cause of relevant changes in perceived health. However, the assumed causation behind the strong association is possibly reversed or – even more plausibly – bi-directional.

Another possible limitation could reside in the statistical matching. Following this procedure does not mean, in any way, that, in our case, an individual's health is

determined solely by the covariates used (i.e., gender, age, education, employment, marital status, and country of residence). No doubt there are other determinants, some of them unobserved. However, in the specified models we have tried to control for them, including random effects that capture heterogeneity (individual and country), both time-invariant and variant. On the other hand, matching could lead to some misclassification (information bias). However, first of all, this is non-differential (i.e., it occurs when errors in classification occur to the same degree regardless of outcome) and, furthermore, the matching method that we have used meets the validity criteria indicated by Rässler (2002), namely : (1) the marginal and joint distributions of variables are preserved in the statistical matching file; (2) the correlation structure and higher moments of the variables are preserved after statistical matching; (3) the true joint distribution of all variables is reflected in the statistical matching file.

Authors' Contribution: G.L. had the original idea for the paper. M.S. designed the study. The bibliographic search and the writing of the introduction were carried out by G.L. The methods and statistical analysis were chosen and performed by L.M. and M.S. The tables were created by L.M. All authors wrote the results and the discussion. The writing and final editing was carried out by all authors. Finally, all authors reviewed and approved the manuscript.

Funding: This work was partly funded by the project 'ECO2017-88609-R' of the European Regional Development Fund (FEDER) and the project 'ECO2012-47496' of the Agencia Estatal de Investigación (AEI) and by an unrestricted grant from the Obra Social 'La Caixa'.

Acknowledgement: This study was carried out within the 'Cohort-Real World Data' subprogram of CIBER of Epidemiology and Public Health (CIBERESP). We would like to thank the Household Finance and Consumption Network (HFCN) for gving us access to the Eurosystem's Household Finance and Consumption Survey, and Eurostat for allowing us access to the EU Statistics on Income and Living Conditions (EU-SILC). We appreciate the comments of two anonymous reviewers of a previous version of this work who, without doubt, helped us to improve our work. The usual disclaimer applies.

Conflicts of Interest: The manuscript is an original contribution that has not been published before, whole or in part, in any format, including electronically. All authors will disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations that

could inappropriately influence or be perceived to influence their work, within three years of beginning the submitted work.

Data availability: We used Eurosystem's Household Finance and Consumption Survey for the European Union sample of countries, from data available at the European Central Bank and the EU Statistics on Income and Living Conditions (EU-SILC), from Eurostat.

Ethics: This article does not contain any studies performed by any of the authors using human participants or animals.

Bibliographical references

Artacoz L, Cortès-Franch I, Escribà-Agüir V, García-Benavides F. Financial strain and health status among European workers: Gender and welfare state inequalities. *Front Public Health.* **2021**, 9:616191. doi: 10.3389/fpubh.2021.616191.

Aittomäki, A.; Martikainen, P.; Laaksonen, M.; Lahelma, E.; Rahkonen, O. The Associations of Household Wealth and Income with Self-Rated Health—A Study on Economic Advantage in Middle-Aged Finnish Men and Women. *Soc. Sci. Med.* **2010**, *71*, 1018–1026.

Averett, S.L.; Smith, J.K. Financial Hardship and Obesity. *Econ. Hum. Boil*. **2014**, *15*, 201–212.

Benzeval, M.; Judge, K. Income and Health: The Time Dimension. *Soc. Sci. Med.* **2001**, *52*, 1371–1390.

Berger, L.M.; Collins, J.M.; Cuesta, L. Household Debt and Adult Depressive Symptoms in the United States. *J. Fam. Econ. Issues* **2015**, *37*, 42–57.

Blázquez, M.; De Madrid, U.A.; Budría, S.; Iza, U.A.D.N.A. The Effects of Over-indebtedness on Individual Health. *Rev. Hacienda Pública Española* **2018**, *227*, 103–131.

Bover, O.; Casado, J.M.; Costa, S.; Du, Caju, P.; McCarthy, Y.; Sierminska, E.; Tzamourani, P.; Villanueva, E.; Zavadil, T. *The Distribution of Debt across Euro Area Countries: The Role of Individual Characteristics, Institutions and Credit Conditions*; European Central Bank Working Paper Series; European Central Bank: Frankfurt, Germany **2014**; p. 1639.

Bover, O. Income risk asymmetries and consumption: the dynamics of inequality in the Spanish Survey of Household Finances. In Proceedings of the Opening lecture, XXV Encuentro de Economía Pública, Valencia, Spain, 25–26 January 2018.

Bridges, S.; Disney, R. Debt and Depression. *J. Health Econ.* **2010**, *29*, 388–403.

Brown, S.; Taylor, K.B.; Price, S.W. Debt and Distress: Evaluating the Psychological Cost of Credit. *J. Econ. Psychol*. **2005**, *26*, 642–663.

Clayton, M.; Liñares-Zegarra, J.; Wilson, J.O. Does debt affect health? Cross country evidence on the debt-health nexus. *Soc. Sci. Med*. **2015**, *130*, 51–58.

Dietz, R.D.; Haurin, D.R. The Social and Private Micro-Level Consequences of Home Ownership. *J. Urban Econ.* **2003**, *54*, 401–450.

Drentea, P.; Lavrakas, P.J. Over the Limit: The Association among Health, Race and Debt. *Soc. Sci. Med.* **2000**, *50*, 517–529.

Finkelstein, A.; Luttmer, E.F.; Notowidigdo, M.J. What Good is Wealth without Wealth? The Effect of Health on the Marginal Utility of Consumption. *J. Eur. Econ. Assoc*. **2013**, *11*, 221–258.

Fitch, C.; Simpson, A.; Collard, S.; Teasdale, M. Mental Health and Debt: Challenges for Knowledge, Practice and Identity. *J. Psychiatr. Ment. Health Nurs*. **2007**, *14*, 128–133.

García-Altés, A.; Ruiz-Muñoz, D.; Colls, C.; Mias, M.; Bassols, N.M. Socioeconomic Inequalities in Health and the Use of Healthcare Services in Catalonia: Analysis of the Individual Data of 7.5 Million Residents. *J. Epidemiol. Community Health* **2018**, *72*, 871–879.

Gathergood, J. Debt and Depression: Causal Links and Social Norm Effects. *Econ. J.* **2012**, *122*, 1094–1114.

Gómez-Rubio, V. *Bayesian Inference with INLA;* Chapman and Hall/CRC: London, UK, **2020**.

Greene, W.H.; *Econometric Analysis, 8th Edition*; Pearson: Boston, London, UK, **2018**, Chapter 5.

Heckman, J. Heterogeneity and state dependence. In Rosen S (ed.), *Studies of Labor Markets. The National Bureau of Economic Research* 4-5, The University of Chicago Press; **1981a**.

Heckman, J. Statistical models for discrete panel data. In Manski CF, McFadden D (eds.), *Structural Analysis of Discrete Data with Econometric Applications.* MIT Press, Cambridge, MA, Chapter 3, **1981b**.

Leulescu, A.; Agafitei, M. Statistical matching: a model based approach for data integration. Methodologies & Working papers. Luxembourg: Publications Office of the European Union, **2013**

Liu, D.; Menegatti, M. Precautionary Investment in Wealth and Health. *J. Risk Insur.* **2019**, *86*,237–255.

López-Casasnovas, G. Socioeconomic Inequalities in Health and the Use of Healthcare Services in Catalonia: Analysis of the Individual Data of 7.5 Million Residents. *J. Epidemiol. Community Health* **2018**, *73*, 97–99.

Martikainen, P.; Adda, J.; Ferrie, J.; Davey, S.; Marmot, M. Effects of Income and Wealth on GHQ Depression and Poor Self Rated Health in White Collar Women and Men in the Whitehall II Study. *J. Epidemiol. Community Health* **2003**, *57*, 718–723.

Montes-Rojas G, Galvao AF. Bayesian endogeneity bias modeling. *Economics Letters* **2014**; 122:36-39. doi:10.1016/j.econlet.2013.10.034.

O'Donnell, O.; Van Doorslaer, E.; Van Ourti, T. Health and inequality. In *Handbook of Income distribution*; Atkinson, A., Bourguignon, F., Eds.; Elsevier: Amsterdam, The Nederland, **2015**; Volume 2B, pp. 1419–1533.

Perel, P.; Langenberg, C.; Ferrie, J.; Moser, K.; Brunner, E.; Marmot, M. Household Wealth and the Metabolic Syndrome in the Whitehall II Study. *Diabetes Care* **2006**, *29*, 2694–2700.

Pinilla J, González-López-Valcárcel B. Income and wealth as determinants of voluntary private health insurance: empirical evidence in Spain, 2008–2014. *BMC Public Health.* **2020**, 20(1):1262. doi: 10.1186/s12889-020-09362-5.

Pool, L.; Burgard, S.A.; Needham, B.; Elliott, M.R.; Langa, K.M.; De Leon, C.F.M. Association of a Negative Wealth Shock With All-Cause Mortality in Middle-aged and Older Adults in the United States. *JAMA* **2018**, *319*, 1341–1350.

Poterba, J.; Venti, S.; Wise, D. The Composition and Drawn on of Wealth in Retirement. *J. Econ. Perspect.* **2011**, *25*, 95–118.

R Core Team, *R. A Language and Environment for Statistical Computing*; R Foundation for Statistical Computing: Vienna, Austria, 2023. Available online: https://www.R-project.org/ (accessed on 9 May 2023).

R INLA Project. Available online: http://www.r-inla.org (accessed on 9 May 2023).

Rässler S. *Statistical matching, a frequentist theory, practical applications and alternative Bayesian approach*. Springer, **2002**.

Reeves, A.; McKee, M.; Gunnell, D.; Chang, S.-S.; Basu, S.; Barr, B.; Stuckler, D. Economic Shocks, Resilience, and Male Suicides in the Great Recession: Cross-National Analysis of 20 EU Countries. *Eur. J. Public Health* **2014**, *25*, 404–409.

Richardson, T.; Elliott, P.; Roberts, R.; Jansen, M. A Longitudinal Study of Financial Difficulties and Mental Health in a National Sample of British Undergraduate Students. *Community Ment. Health J.* **2017**, *53*, 344–352.

Rue, H.; Martino, S.; Chopin, N. Approximate Bayesian Inference for Latent Gaussian Models by Using Integrated Nested Laplace Approximations (with Discussion). *J. R. Stat. Soc. Ser. B* **2009**, *71*, 319–392.

Rue, H.; Riebler, A.; Sørbye, S.H.; Illian, J.B.; Simpson, D.P.; Lindgren, F. Bayesian Computing with INLA: A Review. *Annu. Rev. Stat. Appl*. **2017**, *4*, 395–421.

Saez, M.; Vidiella-Martin, J.; Lopez Casasnovas, G. Impact of the great recession on self-perceived health in Spain: a longitudinal study with individual data. *BMJ Open* **2019a**, *9*, e023258.

Saez, M.; Barceló, M.A.; Saurina, C.; Cabrera, A.; Daponte, A. Evaluation of the biases in the studies that assess the effects of the great recession on health. A systematic review. *Int J Environ Res Public Health* **2019b**, 16(14), 2479.

Schwandt, H. Wealth Shocks and Health Outcomes: Evidence from Stock Market Fluctuations. *Am. Econ. J. Appl. Econ.* **2018**, *10*, 349–377.

Sekhon, J.S. Multivariate and propensity score matching software with automated balance optimization: The Matching package for R. *Journal of Statistical Software* **2011**, *42(7)*, 1-52.

Simpson, D.P.; Rue, H.; Martins, T.G.; Riebler, A.; Sørbye, S.H. Penalising Model Component Complexity: A Principled, Practical Approach to Constructing Priors (with Discussion). *Stat. Sci.* **2017**, *32*, 1–46.

Turunen, E.; Hiilamo, H. Health Effects of Indebtedness: A Systematic Review. *BMC Public Health* **2014**, *14*, 489.

Table 1a. Descriptive statistics. Net wealth (€)

Country	2011	2015	2017
Austria	n=4,920 219,210.63 (261,145.76)[1] 159,911.0 [37,000.0-297,000.0][2]	n=2,356 160,655.65 (230,468.14) 34,757.5 [2,500.0-278,000.0]	n=2,251 253,586.12 (488,217.07) 129,176.5 [5,500.0-295,516.0]
Belgium	n=5,096 263,997.74 (231,486.79) 223,500.0 [114,133.0-357,600.0]	n=2,335 254,809.37 (257,323.14) 221,429.0 [34,841.0-355,000.0]	n=2,313 352,533.98 (627,692.01) 214,925.0 [92,898.8-391,0]
Cyprus	n=1,207 294,355.69 (333,838.14) 236,193.9 [53,035.0-479,093.2]	n=724 237,759.22 (291,842.12) 165,000.0 [17,062.5-373,000.0]	n=719 721,641.59 (1,663,350.14) 261,575.0 [116,963.3-595,119.0]
Germany	n=8,007 217,881.89 (250,248.66) 161,000.0 [28,625.0-322,900.0]	n=3,847 187,536.01 (261,317.27) 90,000.0 [0.0-283,100.0]	n=3,842 434,296.01 (948,669.74) 194,000.0 [39,950.0-479,500.0]
Spain	n=15,120 283,253.87 (287,734.23) 210,354.0 [96,000.0-399,627.0]	n=7,840 260,580.13 (314,889.24) 172,202.5 [16,239-384,582.0]	n=7,831 858,917.17 (4,075,659.49) 160,680.0 [58,417.5-424,700.8]
Finland	n=22,782 211,723.64 (219,909.31) 159,423.6 [59,158.3-295,992.4]	n=2,340 208,075.33 (239,052.91) 140,354.0 [23,549.2-305,890.0]	n=2,340 249,532.19 (350,677.10) 161,305.0 [45,677.5-332,218.0]
France	n=22,744 281,111.75 (282,190.13) 213,511.0 [84,112.0-402,752.5]	n=8,368 196,196.09 (265,785.09) 110,913.0 [7,000.0-287,709.0]	n=8,358 444,076.10 (1,694,048.21) 174,896.0 [53,318.0-369,963.0]
Italy	n=18,534 255,797.77 (240,803.71) 203,000.0 [89,200.0-342,900.0]	n=7,540 209,803.58 (220,835.83) 162,100.0 [27,515.3-300,000.0]	n=7,376 243,814.54 (394,015.82) 144,300.0 [59,000.0-274,500.0]
Luxemburg	n=1,960 425,333.04 (359,736.48) 412,948.0 [101,115.0-679,628.0]	n=1,483 368,143.31 (395,881.58) 283,000.0 [3,000.0-675,000.0]	n=1,462 853,411.05 (1,470,114.54) 549,151.0 [221,402.0-961,488.0]
Netherlands	n=2,826 203,093.23 (185,698.68) 175,100.0 [71,865.9-283,800.0]	n=566 146,120.74 (181,023.59) 111,250.0 [4,000.0-230,012.5]	n=564 135,998.73 (258,511.15) 92.000.0 [2,000.0-220,500.0]
Portugal	n=10,378 142,192.15 (180,914.70) 90,395.0 [41,500.0-174,200.0]	n=6,192 165,645.07 (92,000.0) 92,000.0 [25,000.0-207,000.0]	n=6,081 204,999.04 (586,073.03) 103,200.0 [47,922.5-297,775.0]
Slovenia	n=948 170,328.84 (195,502.30) 118,950.0 [66,000.0-221,184.4]	n=103 138,154.56 (120,601.33) 115,500.0 [47,287.0-206,500.0]	n=102 342,997.75 (1,488,050.67) 76,500.0 [11,500.0-159,400.0]
Slovakia	n=5,072 69,399.22 (110,397.58) 59,015.0 [29,113.4-95,269.5]	n=2,591 72,543.23 (76,816.70) 56,000.0 [30,202.0-90,400.0]	n=2,505 87,131.91 (102,145.41) 61,000.0 [26,942.0-117,033.0]

Notes: First row: n denotes number of observations, Second row mean (standard deviation), Third row: median [First quartile, Q1- Third quartile, Q3]

Table 1b. Descriptive statistics. Total real assets (€)

Country	2011	2015	2017
Austria	n=4,920 225,846.28 (253,750.16) 164,000.0 [18,000.0-315,000.0]	n=2,356 181,939.55 (237,795.50) 55,885.0 [4,000.0.0-319,951.0]	n=2,351 302,815.66 (1,059,193.00) 94,925.0 [8,000.0-319,250.0]
Belgium	n=5,096 324,759.51 (235,217.24) 276,125.0 [181,000.0-408,000.0]	n=2,335 293,593.02 (261,110.78) 261,584.0 [90,000.0-397,000.0]	n=2,313 435,108.48 (670,135.44) 302,750.0 [174,000.0-468,500.0]
Cyprus	n=1,207 406,045.11 (319,825.98) 335,600.0 [160,000.0-589,500.0]	n=724 301,736.88 (290,570.68) 240,000.0 [74,903.0-447,258.8]	n=719 747,217.25 (1,638,783.19) 317,112.1 [145,000.0-629,898.5]
Germany	n=8,007 282,400.32 (269,287.08) 220,000.0 [65,225.0-404,500.0]	n=3,847 232,915.48 (278,679.49) 150,800.0 [5,000.0-355,000.0]	n=3,842 505,299.74 (1,743,685.14) 260,000.0 [40,000.0-528,250.0]
Spain	n=15,120 356,562.86 (291,757.81) 262,000.0 [153,000.0-484,602.0]	n=7,840 297,548.51 (311,585.92) 205,213.0 [54,422.8-425,496.0]	n=7,831 1,266,082.12 (11,399,665.40) 250,894.0 [114,876.5-625,000.0]
Finland	n=22,782 296,183.34 (232,639.14) 239,073.0 [142,546.7-387,533.5]	n=2,340 272,333.13 (249,099.44) 216,239.0 [92,588.8-392,954.3]	n=2,340 348,804.17 (407,492.79) 253,276.0 [132,858.0-429,971.0]
France	n=22,744 331,528.70 (292,099.41) 256,577.0 [129,913.0.0-453,434.0]	n=8,368 245,495.39 (278,868.42) 177,684.0 [10,010.0-348,832.5]	n=8,358 532,825.50 (1,742,964.62) 228,735.0 [31,000.0-449,234.8]
Italy	n=18,534 249,459.86 (230,741.66) 204,000.0 [91,000.0-329,000.0]	n=7,540 219,831.10 (222,999.61) 175,000.0 [35,000.0-306,000.0]	n=7,376 240,687.80 (346,537.52) 168,000.0 [61,325.0-293,887.5]
Luxemburg	n=1,960 538,659.12 (360,718.50) 520,000.0 [272,759.0-803,430.0]	n=1,483 431,156.21 (400,811.80) 397,000.0 [8,000.0-735,000.0]	n=1,462 1,034,912.19 (1,577,669.64) 728,500.0 [381,750.0-1,143,750.0]
Netherlands	n=2,826 293,492.62 (193,133.83) 257,550.0 [191,827.2-370,900.0]	n=566 199,508.67 (180,179.26) 197,950.0 [12,000.0-281,000.0]	n=564 260,634.67 (257,947.65) 228,050.0 [105,018.0-328,000.0]
Portugal	n=10,378 173,414.43 (190,409.15) 114,724.0 [65,000.0-205,781.4.0]	n=6,192 205,801.71 (230.234.08) 137,101.5 [64,245.0-260,000.0]	n=6,081 267,145.20 (781,950.54) 149,000.0 [82,360.0-266,500.0]
Slovenia	n=948 181,507.82 (196,792.53) 121,750.0 [64,047.3.-229,784.1]	n=103 148,293.01 (128,469.23) 121,000.0 [50,312.0-220,000.0]	n=102 238,382.28 (945,402.51) 106,750.0 [48,053.5-219,625.0]
Slovakia	n=5,072 83,661.70 (90,084.69) 63,250.0 [38,837.4-100,000.0]	n=2,591 75,599.89 (79,829.97) 62,500.0 [35,000.0-96,500.0]	n=2,505 122,538.30 (183,647.33) 84,000.0 [48,000.0-130,519.0]

Notes: First row: n denotes number of observations, Second row mean (standard deviation), Third row: median [First quartile, Q1- Third quartile, Q3]

Table 1c. Descriptive statistics. Total financial assets (€)

Country	2011	2015	2017
Austria	n=4,920 35,876.84 (49,957.19) 16,200.0 [5,500.0-44,481.0]	n=2,356 35,862.36 (49,171.00) 17,772.5 [5,036.8-45,952.0]	n=2,351 41,602.83 (87,397.35) 17,618.0 [5,982.0-44,000.0]
Belgium	n=5,096 66,321.28 (75,354.09) 36,920.0 [9,705.0-97,700.0]	n=2,335 55,765.50 (72,605.28) 25,510.0 [3,800.0-80,400.0]	n=2,313 128,158.99 (299,883.78) 42,947.0 [8,100.0-134,000.0]
Cyprus	n=1,207 50,085.14 (64,300.16) 25,000.0 [9,943.5-66,435.0]	n=724 35,618.16 (58,393.03) 15,157.0 [184.0-36,331.0]	n=719 52,514.33 (198,543.01) 17,800.0 [1,055.0-59,000.0]
Germany	n=8,007 58,585.63 (67,859.46) 34,200.0 [10,050.0-79,900.0]	n=3,847 56,023.23 (68,978.21) 30,000.0 [5,100.0-81,900.0]	n=3,842 112,720.89 (249,369.85) 49,000.0 [12,152.5-126,200.0]
Spain	n=15,120 43,220.26 (65,568.33) 14,000.0 [3,000.0-52,000.0]	n=7,840 43,668.91 (69,864.24) 10,818.0 [750.0-53,542.0]	n=7,831 561,690.71 (7,300,927.70) 25,119.0 [4,000.0-139,000.0]
Finland	n=22,782 33,189.33 (48,822.74) 13,628.0 [4,300.0-40,295.0]	n=2,340 36,787.41 (54,013.27) 14,640.5 [3,212.8-44,473.5]	n=2,340 74,055.42 (211,679.24) 19,564.0 [4,518.8-67,084.3]
France	n=22,744 45,586.00 (65,295.46) 17,911.0 [4,293.0-56,018.0]	n=8,368 37,432.36 (58,862.65) 12,302.0 [1,791.3-45,370.0]	n=8,358 219,322.05 (2,644.701.36) 21,724.5 [4,391.5-76,532.8]
Italy	n=18,534 28,669.77 (41,819.29) 13,000.0 [4,810.3-35,364.1]	n=7,540 26,202.35 (44,867.24) 7,233.0 [1,424.3-32,000.0]	n=7,376 38,865.33 (178,327.22) 9,000.0 [2,000.0-31,145.4]
Luxemburg	n=1,960 69,878.63 (77,358.48) 39,991.0 [11,838.8-104,900.0]	n=1,483 61,003.56 (78,280.66) 25,300.0 [2,149.0-99,766.0]	n=1,462 159,624.44 (519,656.51) 40,000.0 [7,700.0-135,350.0]
Netherlands	n=2,826 56,165.80 (65,333.63) 31,154.0 [11,306.8-75,119.2]	n=566 55,591.56 (64,286.09) 32,095.5 [7,900.0-83,240.0]	n=564 89,943.73 (192,583.36) 34,500.0 [12,000.0-94,798.8]
Portugal	n=10,378 21,953.32 (40,673.67) 5,500.0 [1,000.0-22,800.0]	n=6,192 28,905.65 (47,557.75) 9,000.0 [1,200.0-34,000.0]	n=6,081 36,108.24 (197,176.11) 7,300.0 [1,100.0-30,307.0]
Slovenia	n=948 17,444.61 (29,832.49) 5,794.5 [1,500.0.-21,020.0]	n=103 15,183.25 (23,846.34) 4,179.0 [467.0-19,226.0]	n=102 18,519.99 (41,158.63) 2,301.0 [500.0-12,814.0]
Slovakia	n=5,072 7,469.16 (13,133.37) 3,000.0 [1,000.0-8,159.0]	n=2,591 7,814.47 (17,601.58) 2,707.0 [500.0-7,830.0]	n=2,505 9,545.48 (19,448.36) 3,000.0 [555.3-10,189.0]

Notes: First row: n denotes number of observations, Second row mean (standard deviation), Third row: median [First quartile, Q1- Third quartile, Q3]

Table 1d. Descriptive statistics. Total real state wealth (€)

Country	2011	2015	2017
Austria	n=4,920 288,677.99 (436,088,381.00) 250,000.0 [150,000.0-394,086.0]	n=2,356 143,787.25 (1,048,404.82) 70,000.0 [0,0-300,000.0]	n=2,351 309,238.88 (429,009.51) 259,106.0 [150,000.0-400,000.0]
Belgium	n=5,096 338,793.77 (450,350,426.00) 300,000.0 [200,000.0-420,000.0]	n=2,335 277,276.14 (620,582,749.39) 250,000.0 [125,000.0-400,000.0]	n=2,313 367,159.60 (392,353.77) 320,000.0 [225,000.0-480,000.0]
Cyprus	n=1,207 715,758.32 (63,359,959.0) 480,000.0 [250,000.0-955,024.0]	n=724 388,502.17 (3,027,123.73) 290,344.0 [139,611.0-549,891.0]	n=719 492,738.87 (1,181,237.55) 342,500.0 [189,080.0-562,366.0]
Germany	n=8,007 356,639.96 (2,920,534.02) 290,000.0 [180,000.0-500,000.0]	n=3,847 225,524.29 (657,601.57) 170,000.0 [0.0-390,000.0]	n=3,842 439,697.83 (708,208.86) 350,000.0 [200,000.0-600,000.0]
Spain	n=15,120 532,753.13 (305,576,896.00) 315,629.5 [180,304.0-712,999.8]	n=7,840 544,839.44 (38,107,938.14) 300,000.0 [144,243.0-750,000.0]	n=7,831 433,682.47 (1,862,527.82) 258,139.0 [131,980.5-620,000.0]
Finland	n=22,782 929,935.55 (9,037,003,222.68) 639,426.0 [244,647.0-14,607,226,104.0]	n=2,340 250,532.43 (467,209.74) 211,926.5 [99,174.3-385,894.8]	n=2,340 329,796.92 (313,842.39) 262,678.5 [152,407.0-427,503.0]
France	n=22,744 520,987.37 (14,569,576.59) 309,254.0 [188,893.3-350,000.0]	n=8,368 357,583.95 (18,970,243.10) 200,000.0 [0.0-445,756.8]	n=8,358 366,003.38 (758,118.03) 270,102.0 [172,359.5-483,566.0]
Italy	n=18,534 269,296.75 (495,502,671.16) 220,000.0 [150,000.0-350,000.0]	n=7,540 182,362.75 (271,146.70) 160,000.0 [0.0-300,000.0]	n=7,376 227,826.77 (300,844.83) 200,000.0 [130,000.0-300,000.0]
Luxemburg	n=1,960 821,154.40 (12,425,375.74) 650,000.0 [450,000.0-1,050,000.0]	n=1,483 708,768.62 (12,054,167.38) 600,000.0 [255,000.0-1,019,828.0]	n=1,462 956,038.35 (1,067,753.26) 800,000.0 [540,000.0-1,200,000.0]
Netherlands	n=2,826 1,507,050.09 (528,436,024.79) 275,000.0 [210,000.0-430,000.0]	n=566 669,782.86 (466,822.037.41) 181,500.0 [0.0-266,250.0]	n=564 275,324.30 (188,490.40) 250,000.0 [180,000.0-346,202.6]
Portugal	n=10,378 274,120.77 (313,911,340.86) 150,000.0 [92,704.0-262,500.0]	n=6,192 158,641.59 (459,648,950.79) 125,000.0 [60,000.0-228,530.8]	n=6,081 183,309.68 (258,327.73) 150,000.0 [90,000.0-250,000.0]
Slovenia	n=948 281,682.12 (1,881,781.21) 175,000.0 [100,000.0.-320,000.0]	n=103 125,091.34 (118,923.20) 200,000.0 [120,000.0-281,942.0]	n=102 134,212.52 (426,775.28) 120,000.0 [60,000.0-208,000.0]
Slovakia	n=5,072 148,285.88 (1,209,390.73) 90,000.0 [65,000.0-160,000.0]	n=2,591 52,347.05 (1,281,937.94) 57.566.0 [0.0-89,000.0]	n=2,505 89,637.98 (101,782.76) 80,000.0 [50,000.0-120,000.0]

Notes: First row: n denotes number of observations, Second row mean (standard deviation), Third row: median [First quartile, Q1- Third quartile, Q3]

Table 1e. Descriptive statistics. Total debt (€)

Country	2011	2015	2017
Austria	n=4,920 57,558.09 (75,828.61) 25,980.0 [6,000.0.0-80,000.0]	n=2,356 21,278.89 (52,625.36) 0.0 [0,0-8,232.5.0]	n=2,351 48,041.34 (135,636.26) 19,639.0 [3,000.0-82,000.0]
Belgium	n=5,096 72,125.23 (76,964.98) 45,000.0 [13,218.5-106,960.0]	n=2,335 38,783.65 (68,229.50) 1,200.0 [0.0-50,000.0]	n=2,313 87,227.82 (111,785.51) 66,976.7 [14,000.0-152,117.0]
Cyprus	n=1,207 109,102.08 (100,278.44) 78,500.0 [25,835.0-170,000.0]	n=724 63,977.15 (89,019.01) 20,000.0 [0.0-99,428.5]	n=719 118,760.82 (240,065.51) 87,500.0 [29,000.0-198,000.0]
Germany	n=8,007 80,595.43 (89,232.53) 48,000.0 [10,000.0-125,300.0]	n=3,847 45,379.47 (79,180.04) 1,600.0 [0.0-60,000.0]	n=3,842 90,856.31 (223,776.42) 61,500.0 [10,575.0-155,000.0]
Spain	n=15,120 72,246.24 (78,945.54) 45,000.0 [12,900.0-106,000.0]	n=7,840 36,968,38 (68,593.87) 0.0 [0.0-46,175.0]	n=7,831 71,054.74 (275,229.19) 50,500.0 [11,000.0-118,622.0]
Finland	n=22,782 86,106.97 (81,927.67) 62,718.0 [17,730.0-132,682.0]	n=2,340 64,257.80 (84,169.07) 23,335.5 [0.0-107,642.0]	n=2,340 111,861.93 (165,972.65) 95,276.0 [31,733.3-180,504.0]
France	n=22,744 71,972.90 (81,595.40) 40,902.0 [9,098.5-109,546.0]	n=8,368 49,299.29 (80,341.98) 4,274.0 [0.0-73,631.0]	n=8,358 99,929.58 (199,145.30) 80,520.0 [15,713.0-164,600.0]
Italy	n=18,534 42,834.31 (56,880.70) 17,000.0 [5,000.0-60,050.0]	n=7,540 10,027.52 (32,631.82) 0.0 [0.0-30,000.0]	n=7,376 34,128.36 (91,781.72) 13,000.0 [4,000.0-66,000.0]
Luxemburg	n=1,960 112,003.90 (113,041.27) 72,001.5 [18,000.0-189,775.0]	n=1,483 63,012.90 (104,097.96) 2,500.0 [0.0-92,100.0]	n=1,462 209,291.22 (362,992.40) 140,000.0 [22,000.0-365,921.0]
Netherlands	n=2,826 132,546.54 (95,205.24) 120,000.0 [54,000.0-190,750.0]	n=566 53,387.93 (90,555.27) 0.0 [0.0-82,500.0]	n=564 167,634.72 (169,845.34) 169,500.0 [75,400.0-245,000.0]
Portugal	n=10,378 61,705.31 (60,977.55) 45,900.0 [13,700.0-89,900.0]	n=6,192 40,156.64 (61,107.91) 3,055.0 [0.0-65,000.0]	n=6,081 60,400.77 (83,618.52) 51,575.0 [16,025.0-96,892.5]
Slovenia	n=948 31,460.86 (56,233.71) 8,400.0 [3,000.0.-38,750.0]	n=103 10,138.45 (41,673.10) 0.0 [0.0-7,500.0]	n=102 16,531.12 (49,764.72) 7,305.0 [1,500.0-27,500.0]
Slovakia	n=5,072 30,043.78 (56,700.70) 10,000.0 [2,700.0-32,889.9]	n=2,591 6,131.67 (15,813.07) 0.0 [0.0-2,500.0]	n=2,505 20,256.84 (32,432.30) 11,300.0 [2,500.0-35,000.0]

Notes: First row: n denotes number of observations, Second row mean (standard deviation), Third row: median [First quartile, Q1- Third quartile, Q3]

Table 1f. Descriptive statistics. Income

Country	2011	2015	2017
Austria	n=4,920 44,274.81 (25,669.04) 38,700.0 [24,592.5-58,000.0]	n=2,356 51,017.48 (29,354.91) 46,836.0 [29,776.3-67,930.0]	n=2,351 62,130.93 (65,413.99) 53,382.5 [36,073.5-75,182.8]
Belgium	n=5,096 53,613.57 (30,722.52) 48,300.0 [27,821.8-75,000.0]	n=2,335 57,929.15 (35,545.12) 54,540.0 [30,560.0-82,416.0]	n=2,313 76,122.38 (68,829.25) 61,980.0 [38,000.0-94,910.0]
Cyprus	n=1,207 46,625.67 (29,355.64) 39,400.0 [24,400.0-60,937.7]	n=724 37,718.01 (26,940.57) 34,209.0 [17,955.0-53,158.0]	n=719 50,065.59 (39,129.15) 40,100.0 [26,000.0-62,041.5]
Germany	n=8,007 57,062.65 (32,119.76) 51,400.0 [32,000.0-75,940.0]	n=3,847 54,693.79 (38,762.22) 52,200.0 [25,000.0-81,400.0]	n=3,842 91,783.24 (93,229.39) 72,900.0 [43,600.0-109,500.0]
Spain	n=15,120 40,505.24 (27,702.18) 32,000.0 [20,500.0-51,800.0]	n=7,840 40,248.41 (31,880.85) 32,400.0 [17,600.0-56,493.0]	n=7,831 63,373.16 (216,382.65) 37.200.0 [21,450.0-66,782.0]
Finland	n=22,782 60,327.66 (30,488.61) 56,180.0 [36,543.0-78,288.0]	n=2,340 58,070.82 (34,794.85) 57,377.5 [31,512.5-80,158.0]	n=2,340 83,588.84 (55,492.86) 72,366.0 [50,440.0-102,192.0]
France	n=22,744 47,081.55 (28,213.14) 40,019.0 [26,661.5-59,590.0]	n=8,368 47,118.83 (33,844.10) 41,835.0 [22,770.0-66,435.0]	n=8,358 73,921.93 (110,232.79) 52,025.0 [32,870.0-85,995.0]
Italy	n=18,534 38,572.82 (24,055.00) 32,745.4 [20,789.4-49,693.4]	n=7,540 39,778.58 (27,466.26) 34,638.8 [20,405.2-53,496.7]	n=7,376 42,363.27 (42,230.89) 33,384.1 [19,711.2-53,536.6]
Luxemburg	n=1,960 77,817.58 (34,864.17) 76,450.0 [50,700.0-105,000.0]	n=1,483 54,256.41 (46,622.67) 53,000.0 [0.0-94,400.0]	n=1,462 135,716.68 (145,286.95) 110,000.0 [64,000.0-170,000.0]
Netherlands	n=2,826 56,972.43 (27,495.31) 52,484.3 [36,526.3-71,466.5]	n=566 54,607.49 (31,213.09) 50,066.1 [30,604.3-76,365.2]	n=564 72,768.61 (72,864.02) 62,400.0 [37,937.0-91,700.3]
Portugal	n=10,378 27,528.07 (20,495.31) 20,650.0 [14,200.0-33,570.0]	n=6,192 28,659.21 (23,278.46) 22,500.0 [13,760.0-38,000.0]	n=6,081 36,242.58 (39,814.14) 26,300.0 [15,810.0-44,200]
Slovenia	n=948 33,364.99 (19,724.56) 29,257.9 [19,195.4.-41,224.0]	n=103 27,796.71 (21,068.88) 23,350.0 [15,585.0-33,840.0]	n=102 31,418.31 (25,792.50) 26,800.0 [15,063.0-41,840.0]
Slovakia	n=5,072 17,963.78 (10,647.54) 15,162.5 [11,500.0-20,323.5]	n=2,591 18,125.23 (14,919.23) 16,200.0 [9,900.0-24,000.0]	n=2,505 21,424.21 (25,427.21) 17,759.5 [11,120.0-26,289.0]

Notes: First row: n denotes number of observations, Second row mean (standard deviation), Third row: median [First quartile, Q1- Third quartile, Q3]

Table 1g. Descriptive statistics. Poor health and worstened health

Country	2011	2015		2017	
	Poor health	Poor health	Get worse 2015 from 2011	Poor health	Get worse 2017 from 2015
Austria	1,589 - 32.3%	719 - 30.5%	483 - 20.5%	515 - 21.9%	411 - 17.5%
Belgium	1,264 - 24.8%	602 - 25.8%	474 - 20.3%	423 - 18.9%	284 - 12.3%
Cyprus	274 - 22.7%	117 - 16.2%	106 - 14.6%	118 - 16.4%	96 - 13.3%
Germany	2,842 - 35.5%	1,323 - 34.4%	877 - 22.8%	1.068 - 27.8%	826 - 21.5%
Spain	4,082 - 27.0%	2,336 - 29.8%	1,693 - 21.6%	1,402 - 17.9%	1,135 - 14.5%
Finland	6,949 - 30.5%	676 - 28.9%	442 - 18.9%	468 - 20.0%	405 - 17.3%
France	7,164 - 31.5%	2,678 - 32.0%	1,799 - 21.5%	2,073 - 24.8%	1,638 - 19.6%
Italy	6,468 - 34.9%	2,616 - 34.7%	1,704 - 22.6%	892 - 12.1%	723 - 9.8%
Luxemburg	476 - 24.3%	380 - 25.6%	282 - 19.0%	392 - 26.8%	256 - 17.5%
Netherlands	690 - 24.4%	145 - 25.6%	113 - 19.9%	130 - 23.1%	98 - 17.3%
Portugal	5,314 - 51.2%	3,276 - 52.9%	1,560 - 25.2%	2,554 - 42.0%	2,049 - 33.7%
Slovenia	437 - 46.1%	41 - 39.6%	20 - 19.6%	30 - 29.1%	23 - 22.3%
Slovakia	1,531 - 30.2%	1,023 - 39.5%	733 - 28.3%	601 - 24.0%	478 - 19.1%

Notes: Number of subjects – Percentage

Table 2.- Main results (all countries)

Dep var: Change to poor health	2011 to 2015			2015-2017		
% change in total real assets 2015-2011	1.0002			1.000003		
	(0.999-1.001)			(0.999-1.00001)		
% change in total financial assets 2015-2011		1.00001			1.0000002	
		(0.999-1.0003)			(0.999-1.000001)	
% change in total real estate wealth 2015-2011		0.999			1.0001	
		(0.999-1.00001)			(0.999-1.0001)	
% change in total debt 2015-2011	0.991	0.991		0.999	0.999	
	(0.987-0.995)	(0.987-0.995)		(0.999-1.0000002)	(0.999-1.0000002)	
% change in income 2015-2011	0.840	0.840	0.836	1.000002	0.999	1.00002
	(0.828-0.852)	(0.828-0.852)	(0.819-0.853)	(0.980-1.0005)	(0.899-1.0005)	(0.980-1.0005)
% change in net wealth 2015-2011			0.9990			0.999
			(0.999-1.0001)			(0.999-1.000001)
N	120865	120865	120865	46285	46285	46285

Notes: 90% significance, 95% significance. Coefficients are reported as odds ratios. Models adjusted by age, gender, education, employment status, marital status, number of family members, number of working members, property status and main explanatory (net wealth and income) in 2011 or 2015.

Table 3. Results by countries

Dep var: Change to poor health	2011 to 2015			2015-2017		
Austria						
% change in total real assets 2015-2011	1.0002			1.00002		
	(0.996-1.004)			(0.999-1.00004)		
% change in total financial assets 2015-2011		1.002			0.999	
		(0.999-1.003)			(0.999-1.00002)	
% change in total real estate wealth 2015-2011		0.970			1.0004	
		(0.014-1.030)			(0.999-1.001)	
% change in total debt 2015-2011	0.995	0.995		1.00001	1.00001	
	(0.981-1.009)	(0.981-1.009)		(0.999-1.0001)	(0.999-1.0001)	
% change in income 2015-2011	0.769	0.762	0.761	1.0001	1.0002	1.0002
	(0.695-0.842)	(0.686-0.838)	(0.695-0.827)	(0.990-1.005)	(0.989-1.0001)	(0.990-1.005)
% change in net wealth 2015-2011			0.999			0.999
			(0.998-1.001)			(0.999-1.00001)
N	4921	4921	4921	2356	2356	2356
Belgium						
% change in total real assets 2015-2011	1.001			1.00001		
	(0.997-1.005)			(0.999-1.0001)		
% change in total financial assets 2015-2011		1.0002			0.999	
		(0.999-1.001)			(0.999-1.000003)	
% change in total real estate wealth 2015-2011		0.999			1.0001	
		(0.999-1.00003)			(0.999-1.001)	
% change in total debt 2015-2011	0.994	0.994		1.0000002	1.0000002	
	(0.982-1.005)	(0.982-1.005)		(0.999-1.00001)	(0.999-1.0001)	
% change in income 2015-2011	0.670	0.676	0.663	1.001	1.001	1.001
	(0.600-0.740)	(0.600-0.752)	(0.589-0.737)	(0.990-1.012)	(0.990-1.012)	(0.990-1.012)
% change in net wealth 2015-2011			1.001			1.00001
			(0.999-1.003)			(0.999-1.00004)
N	5126	5126	5126	2335	2335	2335

Cyprus						
% change in total real assets 2015-2011	1.001			0.999		
	(0.991-1.011)			(0.999-1.0001)		
% change in total financial assets 2015-2011		1.001			1.00002	
		(0.996-1.007)			(0.999-1.00003)	
% change in total real estate wealth 2015-2011		0.982			1.0001	
		(0.927-1.041)			(0.999-1.0004)	
% change in total debt 2015-2011	0.989	0.989		1.0003	1.0003	
	(0.965-1.013)	(0.966-1.013)		(0.999-1.001)	(0.999-1.001)	
% change in income 2015-2011	0.860	0.868	0.856	1.0004	1.0001	1.001
	(0.592-1.128)	(0.580-1.156)	(0.599-1.113)	(0.989-1.010)	(0.990-1.0102)	(0.989-1.011)
% change in net wealth 2015-2011			1.001			0.999
			(0.996-1.007)			(0.999-1.00001)
N	1222	1222	1222	724	724	724
Germany						
% change in total real assets 2015-2011	0.996			0.999		
	(0.992-0.999)			(0.999-1.00001)		
% change in total financial assets 2015-2011		0.999			0.999	
		(0.998-1.0003)			(0.999-1.00001)	
% change in total real estate wealth 2015-2011		0.968			0.999	
		(0.934-1.004)			(0.995-1.00004)	
% change in total debt 2015-2011	0.997	0.997		1.00001	1.00001	
	(0.991-1.004)	(0.990-1.003)		(0.999-1.00003)	(0.999-1.00003)	
% change in income 2015-2011	0.839	0.838	0.824	0.999	0.999	0.999
	(0.762-0.916)	(0.760-0.916)	(0.757-0.891)	(0.970-1.028)	(0.974-1.024)	(0.970-1.028)
% change in net wealth 2015-2011			0.999			0.999
			(0.999-1.001)			(0.999-0.999)
N	8121	8121	8121	3847	3847	3847

Spain						
% change in total real assets 2015-2011	1.001			1.000004		
	(0.998-1.004)			(0.999-1.00001)		
% change in total financial assets 2015-2011		0.999			0.999	
		(0.999-1.0003)			(0.999-1.000001)	
% change in total real estate wealth 2015-2011		0.999			1.0001	
		(0.999-1.0002)			(1.00003-1.0002)	
% change in total debt 2015-2011	0.987	0.987		0.999	0.999	
	(0.978-0.996)	(0.978-0.996)		(0.999-1.00001)	(0.999-1.00001)	
% change in income 2015-2011	0.853	0.856	0.846	1.0001	1.0001	1.0001
	(0.801-0.905)	(0.802-0.910)	(0.800-0.892	(0.990-1.0102)	(0.980-1.020)	(0.990-1.0102)
% change in net wealth 2015-2011			1.000			1.000004
			(0.999-1.001)			(0.999-1.00001)
N	15310	15310	15310	7840	7840	7840
Finland						
% change in total real assets 2015-2011	0.999			0.999		
	(0.994-1.004)			(0.999-1.0001)		
% change in total financial assets 2015-2011		1.001			1.000004	
		(0.999-1.002)			(0.999-1.00001)	
% change in total real estate wealth 2015-2011		0.991			0.999	
		(0.869-1.129)			(0.999-1.00004)	
% change in total debt 2015-2011	0.978	0.978		0.999	0.999	
	(0.964-0.993)	(0.964-0.993)		(0.999-1.00001)	(0.999-1.00001)	
% change in income 2015-2011	0.772	0.768	0.751	0.999	0.999	0.999
	(0.685-0.829)	(0.682-0.853)	(0.667-0.835)	(0.999-1.001)	(0.998-1.001)	(0.999-1.001)
% change in net wealth 2015-2011			1.000			0.999
			(0.999-1.0003)			(0.999-1.00001)
N	22828	22828	22828	2340	2340	2340

France						
% change in total real assets 2015-2011	1.001 (0.999-1.003)			1.000001 (0.999-1.00001)		
% change in total financial assets 2015-2011		1.0002 (0.999-1.001)			1.0000004 (0.999-1.000001)	
% change in total real estate wealth 2015-2011		1.0002 (0.999-1.001)			0.999 (0.999-1.0002)	
% change in total debt 2015-2011	0.993 (0.989-0.997)	0.993 (0.989-0.997)		0.999 (0.999-1.000001)	0.999 (0.999-1.000001)	
% change in income 2015-2011	0.926 (0.880-0.972)	0.927 (0.881-0.973)	0.915 (0.873-0.957)	0.999 (0.999-1.0002)	0.999 (0.999-1.0002)	0.999 (0.999-1.0002)
% change in net wealth 2015-2011			0.999 (0.999-1.0002)			0.999 (0.999-1.000003)
N	22966	22966	22966	8368	8368	8368
Italy						
% change in total real assets 2015-2011	1.002 (0.999-1.004)			0.999 (0.999-1.00003)		
% change in total financial assets 2015-2011		1.002 (1.0003-1.003)			1.00001 (0.999-1.00001)	
% change in total real estate wealth 2015-2011		1.0001 (0.972-1.031)			0.999 (0.999-1.00003)	
% change in total debt 2015-2011	0.970 (0.950-0.991)	0.970 (0.950-0.991)		1.00004 (0.999-1.0002)	1.0004 (0.999-1.0002)	
% change in income 2015-2011	0.821 (0.773-0.869)	0.819 (0.762-0.876)	0.820 (0.773-0.867)	1.0001 (0.999-1.001)	1.0002 (0.999-1.001)	1.0001 (0.999-1.001)
% change in net wealth 2015-2011			1.0001 (0.999-1.001)			0.999 (0.999-1.00002)
N	18622	18622	18622	7540	7540	7540

Luxembourg						
% change in total real assets 2015-2011	0.997 (0.991-1.002)			1.00001 (0.999-1.00004)		
% change in total financial assets 2015-2011		0.998 (0.996-1.001)			1.000004 (0.999-1.00001)	
% change in total real estate wealth 2015-2011		1.002 (0.998-1.005)			1.00003 (0.999-1.001)	
% change in total debt 2015-2011	1.004 (0.995-1.013)	1.004 (0.995-1.013)		1.0000001 (0.999-1.000001)	1.0000001 (0.999-1.000001)	
% change in income 2015-2011	0.874 (0.709-1.039)	0.875 (0.709-1.041)	0.877 (0.709-1.045)	1.0002 (0.999-1.001)	1.0001 (0.999-1.001)	1.0002 (0.999-1.001)
% change in net wealth 2015-2011			0.999 (0.997-1.001)			1.000002 (0.999-1.00001)
N	1995	1995	1995	1483	1483	1483
Malta						
% change in total real assets 2015-2011	1.006 (0.978-1.033)					
% change in total financial assets 2015-2011		0.977 (0.947-1.009)				
% change in total real estate wealth 2015-2011		0.446 (0.234-0.852)				
% change in total debt 2015-2011	1.004 (0.974-1.036)	1.010 (0.980-1.041)				
% change in income 2015-2011	1.068 (0.793-1.343)	1.119 (0.803-1.435)	1.051 (0.752-1.350)			
% change in net wealth 2015-2011			1.005 (0.973-1.038)			
N	351	351	351			

The Netherlands						
% change in total real assets 2015-2011	0.956 (0.917-0.997)			1.0001 (0.999-1.0002)		
% change in total financial assets 2015-2011		1.001 (0.996-1.005)			0.999 (0.999-1.00002)	
% change in total real estate wealth 2015-2011		0.988 (0.969-1.008)			0.997 (0.994-1.001)	
% change in total debt 2015-2011	1.007 (0.914-1.043)	1.007 (0.972-1.042)		1.0001 (0.999-1.001)	1.0002 (0.999-1.001)	
% change in income 2015-2011	0.716 (0.505-0.927)	0.675 (0.435-0.915)	0.675 (0.434-0.916)	0.999 (0.998-1.002)	1.001 (0.999-1.002)	1.0003 (0.999-1.002)
% change in net wealth 2015-2011			0.998 (0.988-1.008)			0.999 (0.999-1.0001)
N	2833	2833	2833	566	566	566
Portugal						
% change in total real assets 2015-2011	1.001 (0.997-1.004)			1.000007 (0.999-1.0003)		
% change in total financial assets 2015-2011		1.001 (0.999-1.001)			0.999 (0.999-1.00001)	
% change in total real estate wealth 2015-2011		1.000004 (0.999-1.00002)			0.999 (0.999-1.0002)	
% change in total debt 2015-2011	0.983 (0.974-0.993)	0.983 (0.974-0.993)		1.00001 (0.999-1.00002)	1.00001 (0.999-1.00002)	
% change in income 2015-2011	0.887 (0.831-0.943)	0.887 (0.831-0.43)	0.862 (0.807-0.967)	0.999 (0.989-1.009)	0.999 (0.989-1.009)	0.999 (0.979-1.019)
% change in net wealth 2015-2011			1.0001 (0.999-1.001)			0.999 (0.999-1.00001)
N	10503	10503	10503	6192	6192	6192

Slovenia						
% change in total real assets 2015-2011	0.888			0.999		
	(0.607-1.292)			(0.970-1.001)		
% change in total financial assets 2015-2011		1.005			0.999	
		(0.992-1.019)			(0.999-1.001)	
% change in total real estate wealth 2015-2011		1.409			0.995	
		(0.468-4.234)				
% change in total debt 2015-2011	0.767	0.774		1.0001	1.0001	
	(0.507-1.160)	(0.514-1.166)		(0.999-1.001)	(0.999-1.001)	
% change in income 2015-2011	0.303	0.227	0.342	1.004	1.004	1.004
	(0.035-1.580)	(0.027-1.541)	(0.005-1.573)	(0.987-1.021)	(0.991-1.017)	(0.987-1.021)
% change in net wealth 2015-2011			0.926			0.999
			(0.643-1.332)			(0.998-1.001)
N	949	949	949	103	103	103
Slovakia						
% change in total real assets 2015-2011	0.996			0.999		
	(0.982-1.011)			(0.999-1.0002)		
% change in total financial assets 2015-2011		0.995			0.999	
		(0.991-0.999)			(0.999-1.00002)	
% change in total real estate wealth 2015-2011		1.016			1.0003	
		(0.959-1.076)			(0.999-1.001)	
% change in total debt 2015-2011	0.926	0.925		0.999	0.999	
	(0.864-0.992)	(0.863-0.991)		(0.999-1.0004)	(0.999-1.00004)	
% change in income 2015-2011	0.658	0.664	0.651	1.0007	1.001	1.001
	(0.577-0.759)	(0.580-0.748)	(0.563-0.739)	(0.995-1.0064)	(0.995-1.0064)	(0.995-1.0064)
% change in net wealth 2015-2011			1.001			0.999
			(0.996-1.006)			(0.999-1.0001)
N	5118	5118	5118	2591	2591	2591

Notes: 90% significance, 95% significance. Coefficients are reported as odds ratios. Models adjusted by age, gender, education, employment status, marital status, number of family members, number of working members, property status and main explanatory (net wealth and income) in 2011.