WEALTH AND INCOME IN THE EURO AREA

HETEROGENEITY IN HOUSEHOLDS' BEHAVIOURS?

Luc Arrondel, Muriel Roger and Frédérique Savignac

HOUSEHOLD FINANCE AND CONSUMPTION NETWORK

In 2014 all ECB publications feature a motif taken from the €20 banknote.

Luc Arrondel
CNRS-PSE, Banque de France; e-mail: arrondel@pse.ens.fr

Muriel Roger
Banque de France, PSE (INRA); e-mail: muriel.roger@banque-france.fr

Frédérique Savignac
Banque de France; e-mail: frederique.savignac@banque-france.fr

Abstract

This article aims at linking the household wealth and income distributions for 15 European countries using the Household Finance and Consumption Survey. We study the role played by the household's location in the income distributions in determining its location in the wealth distribution. A generalized ordered probit model is estimated to explain the role played by the position in the income distribution and by intergenerational transfers on the probability to be in a given wealth decile in each country. As expected, we obtain that a rise in income or having received gifts and inheritances increases the probability to be in higher wealth deciles. Most importantly, we find evidences of heterogeneity in accumulation behaviours along the wealth distribution in France, Finland, Germany, Greece, Italy, Slovakia and Spain. The relative effect of income or inheritance on wealth accumulation varies, depending on the rank of the households in the wealth distribution. We also highlight some specificity in the top of the wealth distribution.

Non-technical summary

Wealth and income figures do not provide similar pictures of households' financial prosperity, especially when performing cross-country comparisons in the euro area (see Eurosystem Household Finance and Consumption Network, 2013b, for a description of key stylised facts and of the caveats to bear in mind in their interpretation). The Stiglitz-Sen-Fitoussi report (2009) also pointed out that households' financial situation (and material well being) depend both on income and wealth. The discrepancy between the two indicators could reflect cross country differences in saving and accumulation behaviours. It could also be due to the differences in intergenerational transfers (gifts and inheritances). In times of crisis or high unemployment risk, it is therefore of primary interest from a policy perspective to understand to what extend income could affect the personal wealth situation.

This paper contributes to the debate on households' wealth and income by linking the wealth and income distributions at the household level for 15 European countries. We study the role played by the household's location in the income distribution in determining its location in the wealth distribution. Our empirical analysis is based on the Eurosystem Household Finance and Consumption Survey (HFCS). This survey provides detailed household level information on wealth, debts, income and characteristics of about 62,500 households representative of the population in 15 euro area countries.

Preliminary descriptive statistics shows that the correlation between wealth and income varies a lot across country. Moreover, when checking the relative position of households in both distributions by country, we find that some high income households are poor in wealth and conversely, some low income households are wealthy. The proportions of such households vary across country.

Our empirical analysis aims at estimating the link between the rank of the household in the wealth distribution and its rank in the income distribution, controlling for intergenerational transfers, age and other sociodemographic characteristics of households. We account for the potential heterogeneity in the wealth accumulation behaviours both along the wealth and the income distributions. As expected, our results confirm that a rise in income or having received gifts and inheritances increases the probability to be in higher wealth deciles. Most importantly, we show that the impact of income and intergenerational transfers on the probability to be in a certain position in the wealth distributions differs across the wealth distribution in some countries, while in other ones the empirical results are consistent with the assumption of homogeneity in accumulation behaviours across the wealth distribution.

1. Introduction

Who is rich (or poor)? What is financial prosperity for households? Wealth or income? The Stiglitz-Sen-Fitoussi report (2009) claims that income and wealth have to be considered jointly. It also points out that the distributions of these well being indicators are of primary interest because average income and wealth do not reflect the standard of living of the whole population. This article contributes to answer these questions by examining the link between the distributions of wealth and income at the household level in 15 European countries. It is now well documented that income and wealth distributions do not exhibit similar patterns. Wealth is much more unequally distributed than income (see e.g. Davies and Shorrocks, 1999 or Campbell 2006). Moreover, while there is a link between income and wealth reflecting that wealth is, at least partly, built up on income savings, some income-poor people can also be wealthy[2]. Indeed, receiving intergenerational transfers (gifts and inheritances), in addition to saving from income, is obviously a way to wealthiness. Following the debate initiated by Kotlikoff and Summers (1981, 1988) and Modigliani (1988), the recent findings in the literature (Davies and Shorrocks, 1999; Piketty, 2013) show that the share of inherited wealth is a crucial component of household wealth. Piketty (2011, 2013) points out that this share evolves in the long run and differs across country. From a policy point of view, a highly topical issue in many countries is therefore to what extend labour income could affect the personal wealth situation.

This article aims at contributing to this debate by linking the household wealth and income distributions for 15 European countries. More precisely, we study the role played by the household's location in the income distributions in determining its location in the wealth distribution. Our empirical analysis is based on the Household Finance and Consumption Survey (Eurosystem Household Finance and Consumption Network, 2013a). This survey provides detailed household level information on wealth, debts, income and characteristics of about 62 500 households representative of the population in 15 euro area countries.[3]

Our main contribution is twofold. We provide a unified analysis on wealth accumulation behaviours at the household level for several countries.[4] Moreover, we account for the heterogeneity in the wealth accumulation behaviours both along the wealth and the income distributions. Indeed, when checking the relative position of households in both distributions by country, we find that some high income households are poor in wealth and conversely, some low income households are wealthy. The proportions of such households vary across country.

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[2] See Dias-Gimenez et al. (2011) for an empirical analysis based on U.S. data.

[3] Ireland and Estonia are not covered in the first wave of the HFCS.

[4] The literature shows that the heterogeneity in households' characteristics and behaviours is necessary to explain the household wealth distribution observed in a country (e.g. Hugget (1996), Castaneda et al. (2003), Cagetti and De Nardi M. (2008), Hintermaier and Koeninger (2011)). Cross-country differences (in particular among developed countries) are also emphasized (Banks et al. (2003) or Bover (2010) for a comparison between the U.S. and respectively Great Britain and Spain and Eurosystem Household Finance and Consumption Network (2013b) for euro area countries).

We define a generalized ordered probit model to estimate, country by country, the relationship between wealth and income distributions when controlling for intergenerational transfers, age and other sociodemographic characteristics of households. The categories of the dependent variable are defined to reflect that the net wealth of household h lies between the j and $j+1$ percentiles of the net wealth distribution (in the considered country). The (explanatory) income variable is defined in a similar way in order to have a precise view on the link between the rank of the household in the wealth distribution and its rank in the income distribution. Together the generalized probit model and the definition of our income variable in terms of distribution allow a great flexibility in linking wealth and income. We estimate a generalized ordered probit model rather a simple ordered probit model, as it is a more general specification which allows heterogeneous effects of the explanatory variables across alternatives (Greene and Hensher, 2010). We test for the homogeneity of the estimated coefficients (*parallel lines* assumption) across the net wealth distribution for each country. If accepted, this assumption induces an equal effect of the considered explanatory variable (income or inheritances variables) at each level of the wealth distribution. If rejected, it implies heterogeneity of the effects along the distribution.

As expected, we obtain that a rise in income or having received gifts and inheritances increases the probability to be in higher wealth deciles. In other words, changes in income or receiving intergeneration transfers make households crossing wealth thresholds.

The homogeneity in the income effect on the probability to be in a given wealth decile is not rejected in most euro area countries, excepted for France, Finland, Germany, Italy and Spain. In those countries, the impact of income on wealth accumulation varies, depending on the rank of the households in the wealth distribution. This heterogeneity in accumulation behaviors also depends on the households' position in the income distribution. It concerns households above the median income in France and Spain, households in the bottom and the top of the income distribution in Germany and in Finland, and every income levels in Italy.

Concerning gifts and inheritances, we find homogeneous impact on wealth accumulation along the wealth distribution in all countries, except Germany, Greece, Italy, Slovakia and Spain. For instance, in Spain, we find a significant positive effect of inheritances on wealth all along the wealth distribution. This impact differs in the bottom of the wealth distribution and concerns only the gifts or inheritances that include housing assets or businesses.

We also highlight some specificity in the top of the wealth distribution. For half of the countries in our sample, the probability to cross the 9th threshold in the wealth distribution is increased when changing from the 9th to 10th income deciles while for lower level of wealth, the probability to cross a given threshold is not affected when moving from an income decile to the next one.

The paper is organized as follows. Section 2 documents the household income and wealth distributions in 15 European countries based on the Household Finance and Consumption Survey. In

Section 3, we present our empirical model and we discuss our results in Section 4. Section 5 concludes.

2. Household income and wealth distributions in the euro area

2.1. Data and definitions

We use the first wave of the Household Finance and Consumption survey (HFCS) that provides household level information on wealth, income and many demographics characteristics. The full sample includes 62,521 households and covers 15 euro area countries. The methodology ensures country-representativeness and cross-country comparability (see Eurosystem Household Finance and Consumption Network 2013a for all technical features of the HFCS survey). Most of the national surveys were conducted in 2010. They are however some differences in fieldwork periods, and in the reference periods for income and wealth across country (see table A1 in Appendix) that could affect cross-country comparisons, especially in times of crisis. In particular, wealth distribution could be affected by asset prices developments and income distribution by unemployment. Having this in mind, the HFCS provides nevertheless a unique opportunity to analyze and compare households' wealth and income distributions as well as their correlations for European countries. In particular, the HFCS provides detailed information on gross income and income sources in addition to the assets and liabilities of the households.

As we are interested in wealth accumulation behaviours, income and wealth distributions are analyzed with household level information.[5] In order to document wealth distributions in each country, we consider *net wealth*. *Net wealth* is defined as *gross wealth* less liabilities at the household level and *gross wealth* includes all kind of assets of the households: real assets (household main residence, other properties, business assets, other valuables as car, durable or luxury goods) and financial assets.[6] Concerning the household income distribution by country, we mainly focus on *earnings* (defined as employee income, self employment income, unemployment benefits and income from pensions) *and social transfers* as the relevant information to explain wealth accumulation behaviours. We also consider *total gross income* (defined as earnings, social transfers, private transfers, income from housing and financial assets) so as to measure all before-tax income received during the year by the households.

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[5] We choose to work with wealth and income indicators defined at the household level and not per capita figures or figures normalized by any equivalence scale. Theoretical arguments to use equivalence scale in the case of consumption indicators are well documented while wealth is usually considered at the household level. Controls for the size and the structure of the household are included in our empirical model in Section 3.

[6] We considered *pensions* as deferred wages and not as a wealth component. Therefore, pensions are taken into account by our income indicators and not included in the wealth definitions.

2.2. Univariate and joint distributions of income and wealth

When considering how rich people are in a country, and how they could be compared with other people living in another country, wealth and income clearly do not give a similar answer even if the distributions present some similar features. Both variables are unequally distributed in the population, highly skewed to the right and characterized by high values in the top deciles which lead to the high concentration of both distributions. Taken all 15 countries together[7], mean net wealth amounts to 231,000 Euros and is above median net wealth (109,000 Euros). A similar feature holds for total income (mean 38,000 Euros, median 29,000 Euros) and is observed in the 15 countries.

[INSERT FIGURES 1a and 1b ABOUT HERE]

The concentration of both income and wealth distributions, as well as the larger dispersion of wealth compared with income are well documented facts, especially in the U.S. (Diaz-Gimenez et al., 2011). [8] Our data confirm a similar pattern for the 15 European countries. On average the third net wealth quartile is more than 17 times the first net wealth quartile (Q3/Q1=17, Table 1). For income, the inter-quartiles differences are also important but are far from being so high: the third total income quartile is about 2.8 times the first one. In the Euro area, the net wealth (resp. total gross income) of households in the top 10 amounts to about 50% (resp. 30%) of households' total net wealth (resp. total gross income). Concerning net wealth, this share evolves from less than 40% in Greece, Slovakia and Slovevia to more than 60% in Austria and in Germany. Total gross income is more concentrated than earnings due to the wealth concentration. The highest share of earnings (i.e. excluding income from housing and financial assets) is observed in Belgium where the top 10th percentile have more than 35% of total earnings. These cross country variations are confirmed by Gini coefficients.

[INSERT TABLE 1 ABOUT HERE]

Globally, the correlation between net wealth and total income amounts to 0.33 in the Euro area. As expected, this correlation is lower for earnings (0.23) as income from financial and housing assets are not included. As suggested by the wealth and income distributions described above, these correlations vary across country: from less than 0.20 in Belgium and Malta to about 0.48 in Luxembourg, Italy, Portugal and it reaches about 0.60 in Finland.

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[7] See Table A2 in appendix.

[8] The mean features of the income distributions in the Euro area are documented among other in ECB (2008), Eurostat (2010), Dunnzlaff & al. (2011) and Fuest & al. (2011).

Given the household level information we have, we can go further in examining the link between the wealth and the income distributions by looking at the relative position of the same household in both distributions. In order to avoid "mechanic" correlations due to income from housing and financial assets, we use *earnings and transfers* as income indicator. In Figure 2, we report the percentage of households which belong to the *k* net wealth quintile *(k=1,..,5)* and to *j* income quintile (j=1,…,5) of each country. Each picture on the diagonal gives the percentage of households belonging to the same quintile in terms of wealth and income. A perfect correlation between both variables would have been characterized by 100% of households in each of these cells. For the second, third and fourth quintiles of the distributions of wealth and income, the percentages are around 20-25% for all countries. This result reflects the relative homogeneity of the distributions in the middle. Variability appears in the first and last quintiles of the net wealth distribution. Between 25% and 50% of the households in the first quintile of income (earnings and transfers*)* belongs to the same quintile of the distribution of wealth; between 35% and 65% of the households are in the highest income and wealth quintiles. The analyses of the extrema of the distributions show that the ranks in income and wealth distributions may be weaker in some countries than in other ones. We observe, for example, that some high income households are poor in wealth (Netherlands, Finland) while conversely some low income households are wealthy (Malta, Spain, Belgium, France).[9] Such cross country differences could be due to differences in life cycle positions (age structure of the population) or in accumulation behaviours.

All in all, this descriptive analysis of income and wealth distributions shed light on the heterogeneity in income and wealth distributions across country. More importantly, it shows differences in the correlations between household income and wealth both across countries and along the wealth and income distributions.

2.3. Linking the household's locations in the wealth and income distributions

The differences in the relative locations of a given household in the wealth distribution and in the income distribution could be due to various household specific factors. If we refer to the basic model of the Life Cycle Hypothesis, the rational forward looking consumer accumulates wealth for consumption smoothing over his lifetime. This consumption smoothing leads to a hump-shaped age-

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[9] Such discrepancies between income and wealth positions holds when adding incomes of housing and financial assets to *earnings and transfers, i.e.* considering *total gross income*.

wealth profile and wealth distribution is then explained by 3 variables: age, permanent income and preferences. Given the relation of proportionality between wealth and permanent income provided by this framework (and also in Friedman (1953)), the distribution of household wealth should be similar to that of permanent income, at a given age.

However, transitory or permanent income shocks not uniformly distributed in the population are likely to impact the link between the wealth distribution and the income distribution by modifying the accumulation behaviors of part of the population. For example, Lise (2011) show that labour market frictions and unemployment induce substantial inequality in wealth among workers. This heterogeneity is due to differences in the amount of precautionary saving of the households, depending on their wage level, their expectations on wage growth and their unemployment risk.

One can also suspect that the high concentration of wealth reflects specific wealth accumulation behaviours of rich people. In particular, Dynan et al. (2004) find that their propensity to save is higher than for the rest of the population, which could be due to a specific accumulation motive (wealth intrinsically desirable, see Caroll, 2002).

However, the main candidate to explain the discrepancies between the household positions in wealth and income distribution is obviously gifts and inheritances received which contribute to wealth accumulation and are deemed to perpetuate wealth inequality across generations (Piketty, 2013). These intergenerational transfers may partly explain the non proportionality between income and wealth and could lead to some heterogeneity in the link between wealth and income across the population.[10] Gift and inheritances are documented in the HFCS.

We define two qualitative indicators[11] to account for the effect of intergenerational transfers on the household position in the wealth distribution:

- a dummy variable, equal to one if the household declare to have inherited or be given the household main residence or any other real or financial assets;

- a second indicator, aiming at controlling for the potential importance of the intergenerational transfers on the household wealth, defined as a dummy variable equal to one if the household has inherited or been gifted any housing or business assets.

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[10] The diffusion and the role played by intergenerational transfers at the household level depend on various factors (Albertini et al., 2007): structural factors (for example, household composition, occupational status of the family members), institutional factors (marriage, intergenerational cohabitations) as well as transfers motives (involuntary bequest, altruism, exchange, paternalism, etc.). The diffusion of intergenerational transfers is also linked to country specific factors including the demographic and labour force structures, the legal and taxation framework (legal obligation for intergenerational support, gift and inheritance taxation) as well as cultural factors. In particular, the law regulation for intergenerational transfers varies a lot across European countries, both in terms of intergenerational obligations (Saraceno and Keck, 2010) and in terms of tax treatment (Cremer and Pestiau, 2011, Naess-Schmidt et al., 2011). However some common patterns are found in terms of intergenerational transfers' behaviors. Albertini and Kohli (2013) show that cross country differences are related to differences in welfare regimes (Esping-Andersen, 1990), the transfers from parents to children being less frequent but more intense in the Southern European countries than in the Nordic ones, and the Continental European countries being somewhere between the two.

[11] We select some qualitative indicators to assure the comparability between countries for two reasons. The present value of gifts and inheritances collected in cross section survey is subject to measurement errors. In the HFCS, the value of gift and inheritance is collected in national currency at the inheritance date and disagreements exist in the literature on how incorporating capital gains received on past inheritances into the current value of intergenerational transfers,.

These two indicators are used to compute the proportion of households having received such intergenerational transfers globally at the country level, in each wealth quintile and in the top of the wealth distribution (P90), see Table 3.

[INSERT TABLE 3 ABOUT HERE]

According to the HFCS, the proportion of households having received gifts or inheritances amounts to about 30% in the Euro area (around 20% having received housing or business assets). If one observes varying proportions of household having received gifts or inheritances globally across country (from less than 10% in the Netherlands to about 45% in Cyprus and around 40% in Slovenia or in France), these proportions clearly tend to increase along the wealth distribution in most countries. Such a pattern holds also when restricting the intergenerational transfers to housing or business assets received.

The cross country heterogeneity in terms of proportion of households having received intergenerational transfers is more pronounced when examining the pattern along the wealth distributions. In the bottom of the distribution this percentage is below 10% in some countries (Austria, Germany, Greece, Italy[12], Luxembourg, Netherlands, Portugal) while it is about 13% in Spain between 15% and 20% in Belgium, Cyprus, France, Malta, Slovenia and reaches more than 27% in Slovakia. This percentage increases a lot along the wealth distribution. In Austria and in France more than 70% of households in the top of the wealth distribution (10th decile) have received gifts or inheritances. One observes also a high proportion of households in the top of the wealth distribution having received intergenerational transfers in Cyprus (67%), Germany (63%) and to a lesser extend in Malta and in Belgium (above 55%). The increase in the proportion of households having received intergenerational transfers between the bottom and the top of the wealth distribution is then spectacular in some countries: in Italy and to a lesser extend in Greece, Germany and Austria. Those differences across wealth distributions are more pronounced when restricting intergenerational transfers to housing and business assets. In the euro area, about 11 times (resp. 6 times) more households in the 5th net wealth quintile have received housing or business assets (respectively any gifts or inheritances) compared to households in the first net wealth quintile.

To sum up, while there is a clear pattern of increasing correlation between intergenerational transfers received and the position in the wealth distribution, there is also a wide heterogeneity across country. It leads us to suspect that gifts and inheritances may have differentiated impacts on the position of households in the wealth distribution depending on the country.

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[12] In the case of Italy, the figures are not fully comparable with the other countries as the available information about gift and inheritances concerns only the main residence.

3. Empirical model

In order to analyze the relationship between wealth and income, we estimate a qualitative ordered model defining the probability for a household to be in a wealth decile given its position in the income distribution, the intergenerational transfers received, age and other sociodemographic control variables.

We consider a discrete dependent variable W defined to reflect that the net wealth of household n is in the jth decile (D_j, $j = 1$ to 10) of the net wealth distribution (in the considered country). We have thus:

$$\begin{cases} W_n = 1 \text{ if } W_n^* \leq D_1 \\ W_n = j \text{ if } D_{j-1} < W_n^* \leq D_j \quad j = 1,...,9 \\ W_n = 10 \text{ if } W_n^* > D_{10} \end{cases} \quad (1)$$

where $W_n^* = f(X_n\beta, \varepsilon_n)$ is an underlying latent regression model for net wealth, with X_n household characteristics including income, intergenerational transfers, age and the other control variables. This latent regression could be viewed as a reduced form for wealth accumulation behaviours.

This empirical model can be estimated as a standard ordered probit model. Let us define α_j the threshold parameters, X_I the income covariates variables, X_h the intergenerational transfers covariates variables and X_o the other households' characteristics. Under the standard assumptions of ordered probit models, we get:

$$\begin{cases} \Pr(W = 1 | X) = F(-(\beta_I X_I - \beta_h X_h - \beta_o X_o)) \\ \Pr(W = j | X) = F(\alpha_{j-1} - (\beta_I X_I + \beta_h X_h + \beta_o X_o)) - F(\alpha_j - (\beta_I X_I + \beta_h X_h + \beta_o X_o)) \\ \Pr(W = 10 | X) = 1 - F(\alpha_{10} - (\beta_I X_I + \beta_h X_h + \beta_o X_o)) \end{cases} \quad (2)$$

However, this standard probit model embodies the restriction that the regression coefficients β_I, β_h and β_o are the same whatever the modality j of the dependent variable. As an illustration, it leads to consider the impact of income being the same, for instance, on the probability to be in the 5th wealth decile or in the top wealth decile. In this model, the constant is the only way to account for differences in the thresholds parameters α_j across alternatives and thus for differences in behavior across the wealth distribution. That is why this ordered probit model, also known as the parallel-lines model, is likely to be too restrictive to account for non linearities in wealth accumulation behaviours along the wealth distribution. Therefore, we consider the generalized ordered probit (see Williams (2006),

Greene and Hensher (2010)) that allows the estimated coefficients to vary across alternatives[13]. The Generalized Ordered Probit Model is specified as:

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\begin{cases}
\Pr(W = 1|X) = F(-(\beta^1{}_I X_I - \beta^1{}_h X_h - \beta^1{}_o X_o)) \\
\Pr(W = j|X) = F(\alpha_{j-1} - (\beta^{j-1}{}_I X_I + \beta^{j-1}{}_h X_h + \beta^{j-1}{}_o X_o)) - F(\alpha_j - (\beta^j{}_I X_I + \beta^j{}_h X_h + \beta^j{}_o X_o)) \\
\Pr(W = 10|X) = 1 - F(\alpha_{10} - (\beta^{10}{}_I X_I + \beta^{10}{}_h X_h + \beta^{10}{}_o X_o))
\end{cases}
\quad \textbf{(3)}
$$

With this specification, the explanatory variables (in particular income or inheritances) may have *differentiated impacts along the wealth distribution* on the probability to be in a given wealth decile. Such a specification is then useful to test if income has a similar impact on the probability to be in each wealth decile. However, one also may think to account for differentiated impacts of income on the probability to be in a given wealth decile, *depending on the position of the household in the income distribution*. This is why we define X_I the income variable as a discrete variable reflecting that the income of household *n* is in the jth decile of the income distribution.

In the end, this specification (3) provides a flexible way to study the link between wealth and income distributions at the household level : it provides the probability to be in a given wealth decile given the position in the income distribution (and controlling for inheritances, age and other socio-demographic variables), it allows the effect of income to vary depending on the considered wealth decile (generalized ordered probit model) and depending on the position in the income distribution (through our definition of the income variable X_I).

As control variables for heterogeneity in consumption needs, preferences and income risks, we include: the age of the reference person, the number of household members, the number of active household members, the number of children, the education and the status on the labor market of the reference person[14]. The three variables describing the household composition (number of household members, number of active household members, and number of children) allows to control also for intergenerational cohabitation, women participation rate in the labor market and the fertility rates which varies across euro area countries. Our model is estimated country by country[15] with the Stata procedure of Boes (2006), accounting for multiple imputations. Wealth and income deciles are defined by accounting for the sampling design. However, as our specification reflects economic behaviours, we choose to produce unweighted estimates (Faiella, 2010).

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[13] Greene and Hensher (2010) explain that the Generalized Ordered Probit Model does not allow distinguishing two ways to account for individual heterogeneity: i) heterogeneous thresholds (i.e. thresholds depending on observable individual characteristics) and ii) specific parameter vectors for each category j of the outcome variable.

[14] The explanatory variables introduced as control are the same in all countries. However, in some cases, it was necessary to reduce the number of modalities of the categorical variables due to the limited country sample size.

[15] We do not estimate our model for Slovenia due to the too small sample size for this country.

4. Main results

We analyze the results of the generalized ordered probit model focusing on the respective role played by income and inheritances on the probability to be in a wealth decile. It leads us to answer two main questions: 1) which households' characteristics make them cross the wealth thresholds? 2) Are accumulation behaviours homogeneous along the wealth distribution? The effects of income distribution on the estimated probabilities to be wealthy are illustrated by some country cases.

4.1. How crossing wealth deciles thresholds?

The estimated coefficients associated with the income and inheritances variables are reported in tables 4.1 to 4.14.

[INSERT TABLE 4.1 to TABLE 4.14 ABOUT HERE]

Concerning the effect of the income variable, as expected, the estimated coefficients of the income deciles are positive (when significant): a rise in income increases the probability to be in a higher wealth decile (the income reference is the first income decile). For a given threshold, the estimated coefficients are increasing with income: the probability to be in a given wealth decile increases along the income distribution. A notable exception is observed for the first and second income deciles in France where the probability to move from one decile to the next one in the wealth distribution is always lower for the second income decile than for the first one.[16]

Having received gifts or inheritances also increases significantly the probability to be in a higher wealth decile: the estimated coefficients are almost always significant and positive. [17] We also consider the specific effect of the type of goods transmitted (housing or business assets)[18]. Such transfers also increase the probability to be wealthier, but we do not find clear evidences of a specific effect of this kind of transfers.

Age[19] has a positive impact on the probability to be in a higher wealth decile. Coherently with a permanent income effect, a positive impact of education on the position in the wealth distribution is found. Concerning the labour status, one generally obtain that households with a self-employed reference person are more likely to be in a higher wealth decile (compared to households with an employed reference person) because they hold valuable professional assets.

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[16] In France, the heterogeneity in housing and financial income is very high across household belonging to the bottom of the *earnings and transfers* income distribution. Few of them have even very high housing and financial income and may be considered as rentiers.

[17] Information on inheritances is not available for Finland. For Italy detailed information on the type of transfers (housing assets or business) is not available. For Greece, both variables are available but most people, when they declare to have inherited or received a gift, declare that it is housing or business. The model was thus not identifiable with the two inheritances variables.

[18] While gifts and inheritances received are likely to include various kinds and values of transfers, housing and business received as inheritances imply that the transfer is consequent.

[19] Results for the control variables are not reported in the tables but are available from the authors upon request.

When focusing on the highest wealth decile, one can see that in Austria, Luxembourg, Malta and Netherlands, the coefficients of the income deciles (the first decile of income taken as a reference) are not significantly different from zero for the T90-100 threshold. It implies that the probability to move from the first income decile to another income decile (whatever it is) does not increase the probability to be in the top of the wealth distribution. In the other countries, significant differences appear after the 8th income decile. In these countries, for instance moving from the first income decile to the 8th income decile significantly increases the probability to be in the top of the wealth distribution.

Given the overall picture on the correlations between wealth and income along the wealth and income distributions (Figure 2 discussed in Section 2), one can suspect that moving from an income decile to the next one does not necessarily have the same impact along the income distribution on the probability of being in a considered wealth decile. In particular, from the descriptive statistics it seems that in the middle of the income and wealth distributions households are rather similar, and thus the probability to cross the thresholds of wealth deciles in the middle of the wealth distribution may be less affected by changes in the income distribution than in the top and bottom of the distribution. In order to check this assumption, we perform several tests of equality of the estimated coefficients of the income deciles variable. We discuss the results of these tests for the top and bottom of the income and wealth distributions (reported in Table 5.1) and for the middle of both distributions (Table 5.2).

[INSERT TABLE 5.1 AND TABLE 5.2 ABOUT HERE]

As expected, in the middle of both distributions, in most cases, we do not find significant differences in the probability to cross a given wealth threshold for two contiguous income deciles. For example, there is no difference in the probability to cross the fifth wealth threshold for households in the fourth or fifth income deciles (excepted in France and in Spain). Similarly, in the bottom of both distributions, in most cases, we do not find significant differences on the probability to cross a wealth threshold between contiguous income deciles. The only pattern, common to half of the countries of the euro area, is observed at the very top of the two distributions: the probability to cross the highest wealth threshold is significantly increased for households in the highest income decile (compared with people in the 9th income decile). In other words, being in the top income distribution increases the coefficient of the 9th threshold and thus raises the probability to be also in the highest wealth decile.

4.2. Are accumulation behaviours homogeneous along the wealth distribution?

What we have learned so far from the estimation results is the positive effect of income and inheritances on the probability to be in a higher wealth decile as well as some specificities to cross the

9th wealth threshold. Our empirical specification (generalized ordered probit) allows heterogeneous effects of the explanatory variables on the probability to be in each wealth deciles, i.e. for instance, the impact of having received inheritances on the probability to be in the 6th wealth decile may differ from its impact on the probability to be in the 8th wealth decile. If the estimated coefficients do not differ across the wealth categories, they could be jointly estimated (parallel line assumption). We test for this homogeneity of the estimated coefficients for income, inheritances and inheritances as housing assets or business. The coefficients associated with the 10 income deciles are tested jointly[20].

Concerning the effect of income on the wealth distribution, the parallel-line assumption is not rejected in most countries excepted for France, Spain, Italy, Finland and Germany (see Table 6).

[INSERT TABLE 6 ABOUT HERE]

Having in mind that the underlying latent variable is net wealth, this result indicates heterogeneous accumulation behaviors along the wealth distribution in the second group of countries. In these cases, the impact of income on wealth accumulation varies, depending on the rank of the household in the wealth distribution. Moreover, this heterogeneity in wealth accumulation along the wealth distribution also depends on the income distribution. For France and Spain, this heterogeneous behavior appears when household income is above the median. In Finland and in Germany, it concerns households at the top or at the bottom of the income distribution. In Italy, the impact of income on wealth differs all along the wealth and the income distributions.

Concerning the inheritances variables, the parallel-line assumption is not rejected in most countries excepted for Germany, Greece, Italy, Slovakia and Spain (see Table 6).

In Spain, the assumption of homogeneous effects along the wealth distribution is rejected only for the inheritances of housing assets or businesses and the significant differences appear in the bottom of the wealth distribution. In other words, regressions results show a significant impact of any kind of inheritances on wealth all along the wealth distribution (see Table 4.14). This impact differs only for housing assets or businesses with specific effects at the bottom of the wealth distribution. The coefficients of the housing or business dummy are decreasing and thus increasing again before being stables from the 5th threshold to the top of the distribution.

In Germany, the heterogeneity of the effects of the two indicators of inheritance is all along the wealth distribution. For Italy and Greece, we have only the information for the general indicator.[21] As in Germany, the heterogeneity is all the distribution and the differences in the estimated coefficients are highly significant.

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[20] The test is performed jointly on all the income deciles to have a global results on the full income distribution. Results may be slightly different if we had performed the test income decile by income decile.

[21] For Italy detailed information on the type of transfers (housing assets or business) is not available. For Greece, both variables are available but most people, when they declare to have inherited or received a gift, declare that it is housing or business. The model was thus not identifiable with the two inheritances variables.

4.3. Income effects along the wealth distribution and across country

In order to illustrate the heterogeneous effect of income deciles on accumulation along the wealth distribution we compute the estimated probabilities to be in a given wealth decile for all income and wealth levels. Excepted when more precisions are added, the probabilities computed considering an household composed of 3 persons, with two adults (including one active person) and one child, the reference person is employed, has upper secondary diploma and is aged between 35 and 44. We select the countries in which the parallel-line assumption is rejected for the income variable.

The estimated probabilities for Italy clearly illustrate the heterogeneous effect of income on wealth accumulation along the wealth distribution (Figure 3). Income has a negative impact on the probability to be in the first wealth decile. Concerning the probability to be in the middle of the wealth distribution, while income matters (see Table 4.8), there is no clear pattern on the link between wealth and income distributions. When moving to the top of the wealth distribution, the probability to be in a wealth decile is increasing with income. A sharp increase in the probability to be in the 9th and 10th wealth deciles is observed in the top of the income distribution.

[INSERT FIGURE 3]

We also report the results for three positions in the wealth distribution (first, fifth and tenth deciles) for France, Germany, Italy and Spain (Figure 4)[22]. The estimated probability to be in the first wealth decile with a low income (first decile of income) varies from less than 20% in France to more than 45% in Italy. This probability decreases along the wealth distribution in the four countries (excepted for Germany where it increases with the 10th income decile). In the middle of the wealth distribution there is no clear pattern: the estimated probability to be in the 5th wealth decile varies between 5% and 15% in France, Italy and Spain whatever the income. The estimated probabilities to be in the top of the wealth distribution (top wealth decile) is very low for low income in the four countries, it increases slightly after the median income and rise sharply between the 9th and the 10th income deciles.

[INSERT FIGURE 4]

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[22] As we have no information on inheritance for Finland, results have not been drawn in the common graphs.

5. Conclusion

While the role of income on wealth accumulation is largely studied in the literature, little is known on the joint distributions of income and wealth. To fill this gap, we propose an original approach studying how the household's location in the income distribution determines its location in the wealth distribution, accounting for intergenerational transfers, age, and household characteristics. The empirical analysis is conducted for 15 European countries using the Household Finance and Consumption Survey.

Our results are coherent with the assumption of heterogeneous accumulation behaviors along the wealth distribution. For France, Finland, Germany, and Italy, income does not have the same impact on the way to wealthiness, depending on the wealth and income levels. In Germany, Greece, Italy, Slovakia and Spain, intergenerational transfers do impact differently household wealth along the wealth distribution. We highlight also some specificities in the top of the wealth distribution. When moving to the top of the wealth distribution, the probability to be in a wealth decile is increasing with income. A sharp increase in the probability to be in the 9th and 10th wealth deciles is observed in the top of the income distribution. Moreover, we show that, in countries with heterogeneous accumulation behaviours, the impact of income on the way to wealthiness is not so clear in the bottom and in the middle of wealth distribution.These results give some hints in the debate about the role of income and inheritances on upward mobility.

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Table 1. Income and wealth concentrations

	Austria	Belgium	Cyprus	Finland	France	Germany	Greece	Italy	Luxembourg	Malta	Netherlands	Portugal	Slovakia	Slovenia	Spain	Euro area
Q3/Q1																
Net wealth	24.28	10.37	6.77	34.49	28.47	31.79	6.44	9.39	12.46	4.45	18.38	8.72	2.71	5.19	4.25	17.34
Total gross income	2.74	3.27	3.10	2.82	2.39	2.97	2.70	2.69	2.73	2.81	2.20	2.95	2.50	4.72	2.65	2.79
Earnings	2.81	3.41	3.27	3.07	2.62	3.08	2.84	2.73	2.79	3.22	2.47	3.12	2.58	4.91	2.86	2.94
Earnings and transfers	2.75	3.23	3.19	2.84	2.40	2.97	2.80	2.73	2.69	3.17	2.28	2.98	2.55	4.93	2.65	2.80
P90/median																
Net wealth	7.09	3.42	5.51	4.63	4.42	8.61	3.25	3.33	3.46	3.21	4.13	3.95	2.48	3.15	3.33	4.64
Total gross income	2.46	2.66	2.59	2.32	2.20	2.63	2.42	2.47	2.39	2.36	2.01	2.72	2.17	2.78	2.34	2.53
Earnings	2.44	2.72	2.57	2.35	2.28	2.63	2.44	2.41	2.39	2.44	2.08	2.75	2.19	3.13	2.34	2.53
Earnings and transfers	2.43	2.68	2.48	2.29	2.16	2.56	2.43	2.41	2.36	2.38	2.06	2.70	2.18	3.01	2.31	2.48
Share of the top decile																
Net wealth	61.70	44.02	56.76	44.96	49.97	59.17	38.78	44.79	51.29	46.79	40.14	52.68	32.78	35.76	43.41	49.49
Total gross income	31.84	36.04	32.36	27.19	29.52	31.21	28.49	29.13	31.25	25.16	22.72	33.54	26.44	30.26	30.76	30.05
Earnings	30.54	36.31	31.00	27.03	28.39	31.22	28.42	28.68	29.70	25.74	23.62	33.35	26.40	31.27	29.63	29.66
Earnings and transfers	30.35	35.69	30.82	26.00	26.77	30.42	28.39	28.65	29.28	25.34	23.03	32.87	26.31	31.09	28.74	28.88
Gini Coefficients																
Net wealth	0.762	0.608	0.697	0.664	0.679	0.758	0.561	0.609	0.661	0.600	0.653	0.670	0.448	0.534	0.580	0.678
Total gross income	0.420	0.484	0.446	0.381	0.384	0.428	0.400	0.398	0.420	0.367	0.318	0.450	0.356	0.478	0.413	0.421
Earnings	0.418	0.494	0.449	0.399	0.405	0.444	0.406	0.397	0.416	0.390	0.357	0.454	0.361	0.489	0.429	0.433
Earnings and transfers	0.410	0.486	0.441	0.373	0.361	0.425	0.405	0.396	0.402	0.380	0.331	0.447	0.358	0.485	0.398	0.413

Source: HFCS; sample 62,521 households

Table 2. Correlations between wealth and income

	Austria	Belgium	Cyprus	Finland	France	Germany	Greece	Italy	Luxembourg	Malta	Netherlands	Portugal	Slovakia	Slovenia	Spain	Euro area
Gross wealth with :																
Total gross income	0.280	0.194	0.435	0.655	0.460	0.387	0.443	0.495	0.484	0.194	0.329	0.490	0.290	0.395	0.257	0.350
Earnings	0.225	0.129	0.292	0.434	0.280	0.289	0.393	0.437	0.271	0.169	0.291	0.430	0.277	0.366	0.242	0.255
Earnings and Transfers	0.226	0.122	0.288	0.467	0.276	0.286	0.391	0.446	0.275	0.174	0.281	0.432	0.277	0.387	0.245	0.253
Net wealth with:																
Total gross income	0.269	0.178	0.424	0.592	0.442	0.361	0.421	0.480	0.474	0.187	0.254	0.477	0.285	0.378	0.246	0.331
Earnings	0.214	0.112	0.281	0.367	0.254	0.265	0.369	0.420	0.256	0.161	0.203	0.417	0.272	0.349	0.228	0.234
Earnings and Transfers	0.214	0.105	0.278	0.395	0.249	0.261	0.367	0.429	0.259	0.167	0.188	0.420	0.271	0.371	0.233	0.231

Source: HFCS; sample 62,521 households

Table 3. Percentage of households having received gifts or inheritances across country

| | Yes/No | | | | | | | Including housing or business assets | | | | | | |
| | Whole population | Net wealth distribution | | | | | | Whole population | Net wealth distribution | | | | | |
		Q1	Q2	Q3	Q4	Q5	P90		Q1	Q2	Q3	Q4	Q5	P90
Austria	35.4	9.6	16.1	38.6	47.9	64.7	71.5	25.1	2.5	4.9	25.1	36.8	56.4	64.4
Belgium	35.1	15.1	27.5	33.0	42.6	57.5	57.3	13.3	1.6	8.6	14.7	15.5	26.2	27.0
Cyprus	44.3	18.2	28.9	49.0	61.7	64.0	67.3	39.4	15.9	24.8	42.2	57.0	57.1	61.7
Finland	-	-	-	-	-	-	-	-	-	-	-	-	-	-
France	39.8	14.7	27.9	40.9	49.5	65.8	71.2	19.6	3.7	8.7	19.0	25.2	41.6	47.2
Germany	33.9	7.0	21.0	27.7	49.7	64.1	62.7	19.2	1.2	5.7	9.5	34.5	45.1	51.9
Greece	30.5	2.9	31.0	39.9	39.1	40.1	41.7	30.1	2.4	30.8	39.8	38.6	39.4	40.4
Italy*	19.9	0.7	19.0	24.5	26.1	29.4	30.4	19.9	0.7	19.0	24.5	26.1	29.4	30.4
Luxembourg	28.9	6.7	14.3	30.8	35.7	57.2	54.0	14.9	1.0	7.5	17.3	15.4	33.5	31.1
Malta	32.1	17.2	25.7	29.1	34.7	54.0	59.3	16.6	6.3	13.7	15.3	16.6	31.1	35.6
Netherlands	8.4	4.5	5.2	7.5	8.5	16.1	23.4	1.3	1.4	0.2	0.4	1.0	3.6	6.3
Portugal	29.5	9.8	26.4	31.3	35.8	44.0	47.3	24.7	6.4	22.1	26.2	29.4	39.2	42.0
Slovakia	38.3	27.5	44.4	35.3	38.3	46.3	42.7	27.4	15.8	33.2	25.7	27.0	35.4	35.9
Slovenia	40.2	18.1	40.9	46.3	48.6	47.9	47.7	36.7	18.1	40.9	34.4	46.9	43.8	41.8
Spain	30.2	12.9	25.8	27.7	37.1	47.6	54.5	23.9	9.1	21.6	20.8	30.1	37.8	43.2
Euro area	30.2	8.6	22.4	29.4	39.8	50.8	53.2	19.4	3.2	12.0	17.2	27.6	36.9	41.3

Source: HFCS;sample 62,521 households
*For Italy, the available information about gifts and inheritances received concerns only the main residence. The figures for Italy cannot be compared with the other countries.
For Finland, information not available.

Table 4.1 Regression results Austria

| | INCOME | | | | | | | | | | | | | | | | | | INHERITANCE | | | |
| | P20 | | P30 | | P40 | | P50 | | P60 | | P70 | | P80 | | P90 | | P100 | | Yes / No | | Housing or Business | |
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	**0.466**	0.163	**0.577**	0.191	**0.474**	0.184	**0.737**	0.307	**1.011**	0.265	**0.660**	0.243	**0.711**	0.264	-0.582	91.170	*0.993*	0.483	0.195	0.170	*0.688*	0.350
T20-30	0.111	0.140	*0.297*	0.167	**0.664**	0.163	**0.691**	0.210	**0.756**	0.181	**1.041**	0.247	**1.216**	0.245	2.088	35.142	**1.140**	0.333	**0.410**	0.130	**0.888**	0.206
T30-40	0.089	0.159	0.215	0.168	**0.667**	0.168	**0.558**	0.188	**0.689**	0.201	**1.056**	0.231	**1.321**	0.226	**1.398**	0.317	**1.621**	0.322	**0.476**	0.115	**1.066**	0.171
T40-50	0.105	0.182	0.265	0.175	**0.598**	0.175	**0.606**	0.200	**0.735**	0.220	**0.961**	0.210	**1.165**	0.231	**1.368**	0.285	**1.582**	0.339	**0.467**	0.108	**1.094**	0.149
T50-60	0.079	0.160	0.258	0.189	**0.471**	0.161	**0.505**	0.202	**0.668**	0.208	**0.811**	0.194	**0.811**	0.257	**1.215**	0.230	**1.368**	0.355	**0.353**	0.112	**1.011**	0.128
T60-70	0.176	0.175	**0.464**	0.193	**0.517**	0.200	**0.664**	0.201	**0.775**	0.210	**0.909**	0.234	**0.992**	0.250	**1.209**	0.208	**1.419**	0.314	**0.362**	0.110	**0.739**	0.126
T70-80	0.173	0.222	0.310	0.274	*0.526*	0.259	**0.541**	0.246	**0.649**	0.256	**0.857**	0.294	**0.814**	0.320	**1.112**	0.289	**1.366**	0.356	*0.187*	0.108	**0.749**	0.114
T80-90	-0.116	0.271	0.076	0.278	0.323	0.276	0.430	0.269	**0.630**	0.262	**0.668**	0.279	**0.734**	0.300	**1.014**	0.290	**1.250**	0.311	**0.353**	0.124	**0.549**	0.132
T90-100	-0.350	0.459	-0.230	0.375	-0.050	0.344	-0.041	0.395	0.165	0.386	0.204	0.421	0.201	0.381	0.502	0.420	*0.650*	0.371	*0.371*	0.198	**0.511**	0.199

Source: HFCS.

Sample: 4,436 households

Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.

Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 4.2 Regression results Belgium

| | INCOME | | | | | | | | | | | | | | | | | | INHERITANCE | | | |
| | P20 | | P30 | | P40 | | P50 | | P60 | | P70 | | P80 | | P90 | | P100 | | Yes / No | | Housing or Business | |
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	0.106	0.211	**0.642**	0.220	**0.546**	0.214	**0.578**	0.225	**1.112**	0.294	**0.858**	0.248	**1.296**	0.352	3.028	127.602	**1.270**	0.368	**0.618**	0.157	0.068	0.311
T20-30	0.048	0.203	*0.347*	0.204	0.150	0.201	**0.544**	0.188	**0.979**	0.200	**0.879**	0.193	**1.402**	0.269	**1.562**	0.287	**1.038**	0.268	**0.436**	0.116	**0.538**	0.207
T30-40	-0.229	0.184	0.037	0.170	-0.179	0.170	*0.323*	0.177	**0.445**	0.184	**0.569**	0.169	**0.814**	0.203	**1.179**	0.275	**0.959**	0.207	**0.291**	0.099	**0.680**	0.161
T40-50	-0.230	0.189	0.060	0.176	-0.083	0.172	0.158	0.170	0.272	0.166	**0.343**	0.164	**0.582**	0.180	**0.844**	0.200	**0.916**	0.194	**0.293**	0.084	**0.462**	0.127
T50-60	-0.179	0.206	-0.053	0.189	-0.124	0.181	0.118	0.181	0.149	0.174	0.216	0.171	**0.529**	0.182	**0.612**	0.188	**0.788**	0.230	**0.360**	0.078	**0.233**	0.111
T60-70	*-0.394*	0.198	-0.248	0.184	**-0.398**	0.172	-0.118	0.189	-0.013	0.178	-0.020	0.174	*0.305*	0.179	**0.355**	0.177	**0.569**	0.179	**0.381**	0.078	**0.236**	0.105
T70-80	**-0.376**	0.189	*-0.353*	0.191	**-0.503**	0.196	-0.219	0.213	-0.101	0.196	-0.204	0.189	0.086	0.188	0.113	0.187	**0.434**	0.190	**0.375**	0.073	**0.306**	0.100
T80-90	-0.282	0.184	-0.316	0.196	**-0.423**	0.199	*-0.362*	0.202	-0.110	0.202	-0.317	0.205	-0.132	0.195	0.013	0.192	*0.317*	0.185	**0.295**	0.077	**0.400**	0.099
T90-100	*-0.389*	0.217	-0.267	0.215	-0.326	0.224	-0.236	0.234	-0.177	0.224	*-0.379*	0.228	-0.271	0.230	-0.007	0.225	0.229	0.216	*0.181*	0.093	**0.368**	0.108

Source: HFCS

Sample: 2,364 households

Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.

Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 4.3 Regression results Cyprus

	INCOME																	INHERITANCE			
	P20		P30		P40		P50		P60		P70		P80		P90		P100		Yes / No		Housing or Business	
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	-0.256	0.244	-0.060	0.251	0.435	0.295	-0.005	0.303	0.119	0.295	**1.097**	0.421	**0.803**	0.381	**1.066**	0.443	-1.465	156.417	**0.823**	0.362	0.239	0.386
T20-30	-0.215	0.234	0.078	0.229	0.150	0.262	0.107	0.266	0.223	0.266	**0.739**	0.262	**0.963**	0.291	**1.019**	0.358	-0.898	150.883	**0.978**	0.351	-0.056	0.382
T30-40	-0.046	0.227	0.140	0.215	*0.398*	0.226	0.241	0.250	0.312	0.325	**0.669**	0.257	**0.990**	0.292	**1.144**	0.319	3.208	94.973	**0.932**	0.285	-0.036	0.288
T40-50	0.088	0.223	0.205	0.238	0.286	0.253	*0.533*	0.270	0.399	0.289	**0.699**	0.252	**1.122**	0.261	**1.443**	0.277	**2.131**	0.660	**0.952**	0.276	-0.084	0.272
T50-60	0.134	0.243	0.033	0.214	0.090	0.241	**0.485**	0.217	**0.512**	0.233	*0.419*	0.213	**1.046**	0.232	**1.203**	0.271	**1.515**	0.276	**0.890**	0.258	-0.141	0.234
T60-70	0.010	0.241	-0.109	0.252	-0.153	0.253	0.113	0.254	0.257	0.272	0.193	0.224	**0.680**	0.265	**0.946**	0.266	**1.081**	0.278	**0.682**	0.193	0.025	0.199
T70-80	-0.113	0.249	-0.303	0.235	-0.263	0.239	0.021	0.254	0.268	0.256	0.187	0.232	*0.504*	0.249	**0.707**	0.236	**0.997**	0.266	**0.603**	0.196	0.005	0.192
T80-90	-0.397	0.271	-0.382	0.271	-0.286	0.284	-0.120	0.292	0.130	0.270	0.071	0.260	0.331	0.250	*0.513*	0.293	**0.790**	0.273	**0.621**	0.197	-0.084	0.200
T90-100	-0.266	0.384	-0.329	0.344	-0.449	0.420	-0.268	0.329	0.085	0.302	0.214	0.294	0.169	0.272	*0.539*	0.284	**0.706**	0.290	0.393	0.251	0.113	0.256

Source: HFCS.

Sample :1,237 households

Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.

Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 4.4 Regression results Finland

	INCOME																		INHERITANCE			
	P20		P30		P40		P50		P60		P70		P80		P90		P100		Yes / No		Housing or Business	
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	-0.147	0.102	-0.051	0.099	**-0.238**	0.097	-0.076	0.105	-0.120	0.104	0.008	0.109	-0.019	0.111	-0.036	0.115	*0.196*	0.118				
T20-30	-0.025	0.076	**0.247**	0.076	**0.390**	0.079	**0.563**	0.084	**0.592**	0.086	**0.790**	0.092	**0.818**	0.094	**0.828**	0.097	**1.116**	0.103				
T30-40	-0.077	0.074	*0.123*	0.073	**0.310**	0.075	**0.509**	0.079	**0.653**	0.082	**0.817**	0.085	**0.893**	0.088	**0.990**	0.092	**1.262**	0.098				
T40-50	-0.096	0.075	**0.149**	0.073	**0.321**	0.074	**0.399**	0.077	**0.603**	0.079	**0.668**	0.082	**0.775**	0.084	**0.895**	0.087	**1.227**	0.092				
T50-60	-0.016	0.078	**0.199**	0.075	**0.363**	0.075	**0.429**	0.078	**0.580**	0.079	**0.734**	0.081	**0.774**	0.083	**0.925**	0.086	**1.256**	0.089				
T60-70	-0.087	0.086	**0.178**	0.079	**0.416**	0.078	**0.488**	0.080	**0.647**	0.081	**0.761**	0.082	**0.823**	0.084	**0.975**	0.086	**1.350**	0.089				
T70-80	-0.108	0.096	**0.179**	0.086	**0.394**	0.084	**0.428**	0.086	**0.568**	0.085	**0.666**	0.086	**0.726**	0.087	**0.917**	0.089	**1.326**	0.091				
T80-90	*-0.186*	0.113	0.055	0.099	**0.304**	0.095	**0.339**	0.096	**0.498**	0.094	**0.551**	0.095	**0.682**	0.095	**0.864**	0.096	**1.283**	0.098				
T90-100	**-0.331**	0.141	-0.110	0.121	0.064	0.114	0.104	0.114	*0.210*	0.110	**0.307**	0.110	**0.402**	0.110	**0.516**	0.111	**1.020**	0.111				

Source: HFCS

Sample: 10,989 households

Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.

Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 4.5 Regression results France

| | INCOME | | | | | | | | | | | | | | | | | INHERITANCE | | | |
| | P20 | | P30 | | P40 | | P50 | | P60 | | P70 | | P80 | | P90 | | P100 | | Yes / No | | Housing or Business | |
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	-0.086	0.068	0.088	0.083	**0.219**	0.084	**0.306**	0.082	**0.338**	0.092	**0.392**	0.100	**0.583**	0.117	**0.630**	0.112	**0.752**	0.128	**0.435**	0.057	**0.446**	0.091
T20-30	**-0.159**	0.058	0.066	0.061	**0.203**	0.069	**0.321**	0.069	**0.457**	0.073	**0.537**	0.081	**0.790**	0.086	**0.941**	0.093	**1.179**	0.113	**0.535**	0.046	**0.483**	0.063
T30-40	**-0.216**	0.055	-0.052	0.056	*0.112*	0.061	**0.244**	0.064	**0.359**	0.069	**0.479**	0.073	**0.685**	0.078	**0.857**	0.078	**1.246**	0.098	**0.521**	0.042	**0.472**	0.056
T40-50	**-0.184**	0.054	-0.051	0.056	0.068	0.058	**0.221**	0.060	**0.260**	0.063	**0.479**	0.065	**0.633**	0.070	**0.787**	0.071	**1.219**	0.080	**0.448**	0.036	**0.502**	0.046
T50-60	**-0.129**	0.059	0.007	0.056	*0.105*	0.056	**0.251**	0.062	**0.333**	0.060	**0.511**	0.062	**0.698**	0.068	**0.858**	0.068	**1.273**	0.076	**0.429**	0.035	**0.469**	0.041
T60-70	**-0.181**	0.060	-0.048	0.057	0.018	0.058	**0.154**	0.066	**0.239**	0.065	**0.410**	0.062	**0.549**	0.066	**0.764**	0.067	**1.184**	0.068	**0.425**	0.033	**0.433**	0.038
T70-80	**-0.222**	0.062	**-0.184**	0.059	-0.064	0.061	0.048	0.062	*0.098*	0.060	**0.291**	0.061	**0.424**	0.062	**0.602**	0.065	**1.099**	0.067	**0.413**	0.033	**0.464**	0.036
T80-90	**-0.228**	0.065	**-0.215**	0.065	*-0.104*	0.063	-0.046	0.064	0.020	0.063	**0.160**	0.064	**0.317**	0.064	**0.482**	0.066	**1.037**	0.065	**0.402**	0.034	**0.483**	0.035
T90-100	**-0.178**	0.074	**-0.319**	0.077	**-0.208**	0.075	**-0.183**	0.078	**-0.169**	0.071	-0.007	0.069	0.106	0.068	**0.275**	0.067	**0.810**	0.065	**0.407**	0.040	**0.448**	0.039

Source: HFCS.
Sample: 15,006 households
Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.
Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 4.6 Regression results Germany

| | INCOME | | | | | | | | | | | | | | | | | | INHERITANCE | | | |
| | P20 | | P30 | | P40 | | P50 | | P60 | | P70 | | P80 | | P90 | | P100 | | Yes / No | | Housing or Business | |
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	0.032	0.161	-0.017	0.153	0.384	0.224	*0.414*	0.205	*0.343*	0.190	**0.815**	0.214	**0.943**	0.184	**0.902**	0.263	-3.415	183.742	**0.596**	0.159	-0.136	0.265
T20-30	0.029	0.138	0.159	0.144	**0.541**	0.155	**0.962**	0.142	**1.033**	0.159	**1,340**	0.165	**1.546**	0.161	**1.819**	0.202	4.421	100.957	**0.721**	0.109	**0.481**	0.217
T30-40	-0.041	0.137	-0.079	0.139	**0.323**	0.134	**0.695**	0.133	**0.965**	0,150	**1.106**	0.146	**1.334**	0.144	**1.578**	0,170	**2.452**	0.315	**0.724**	0,090	**0.777**	0.173
T40-50	-0,110	0.143	-0.046	0.158	**0.395**	0.148	**0.577**	0.149	**0.867**	0.148	**1.117**	0.161	**1.349**	0.149	**1.633**	0.184	**2.197**	0.176	**0.589**	0.077	**0.805**	0.117
T50-60	-0.155	0.159	-0.033	0.162	*0.273*	0.155	0.518	0.168	**0.656**	0.152	**0.871**	0.154	**1.175**	0.173	**1.527**	0.173	**2.053**	0.153	**0.569**	0.075	**0.694**	0.102
T60-70	-0.149	0.185	-0.133	0.174	0,200	0,160	**0.365**	0.163	**0.589**	0.151	**0.693**	0.167	**0.997**	0.163	**1.272**	0.168	**1.801**	0.149	**0.472**	0.072	**0.786**	0,100
T70-80	-0.284	0.184	-0.232	0.184	0.121	0.175	0.224	0.173	**0.399**	0.155	**0.551**	0.178	**0,880**	0.173	**1.102**	0.179	**1.708**	0.157	**0.488**	0.071	**0.621**	0.084
T80-90	-0.288	0.226	-0.283	0.248	-0.143	0.218	0.074	0.213	0.218	0.186	0.367	0.214	**0.649**	0.175	**0.931**	0.186	**1.501**	0.175	**0.413**	0.067	**0.503**	0.082
T90-100	-0.136	0.224	-0.297	0.297	-0.207	0.287	0.075	0,220	0.257	0.221	0.270	0.249	**0.520**	0.200	**0.602**	0.227	**1.269**	0.222	**0.189**	0.076	**0.653**	0.086

Source: HFCS data

Sample: 3,565 households

Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.

Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 4.7 Regression results Greece

| | INCOME | | | | | | | | | | | | | | | | | | INHERITANCE | | | |
| | P20 | | P30 | | P40 | | P50 | | P60 | | P70 | | P80 | | P90 | | P100 | | Yes / No | | Housing or Business | |
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	**0.348**	0.160	**0.312**	0.154	**0.472**	0.170	**0.460**	0.157	**0.875**	0.194	**0.726**	0.185	**1.186**	0.221	**1.116**	0.205	**1.427**	0.257	**1.548**	0.169		
T20-30	0.211	0.131	**0.389**	0.130	**0.436**	0.137	**0.348**	0.139	**0.843**	0.139	**0.579**	0.144	**0.929**	0.154	**1.173**	0.169	**1.322**	0.183	**1.547**	0.119		
T30-40	0.191	0.134	**0.325**	0.125	**0.508**	0.134	**0.470**	0.135	**0.769**	0.138	**0.633**	0.139	**0.848**	0.145	**1.071**	0.151	**1.347**	0.167	**1.052**	0.072		
T40-50	0.040	0.142	*0.248*	0.136	**0.422**	0.146	**0.390**	0.148	**0.693**	0.149	**0.497**	0.163	**0.834**	0.164	**0.997**	0.146	**1.308**	0.187	**0.827**	0.062		
T50-60	0.007	0.142	0.171	0.131	**0.335**	0.139	**0.412**	0.145	**0.534**	0.134	**0.454**	0.143	**0.764**	0.155	**0.939**	0.151	**1.217**	0.158	**0.638**	0.059		
T60-70	0.074	0.146	0.203	0.135	*0.260*	0.147	**0.529**	0.143	**0.463**	0.139	**0.474**	0.152	**0.760**	0.155	**0.943**	0.155	**1.306**	0.171	**0.512**	0.057		
T70-80	0.101	0.163	0.235	0.159	*0.332*	0.172	**0.530**	0.160	**0.578**	0.169	**0.466**	0.168	**0.687**	0.168	**0.978**	0.179	**1.371**	0.193	**0.491**	0.059		
T80-90	0.025	0.218	0.136	0.195	*0.361*	0.203	**0.388**	0.194	**0.597**	0.202	**0.492**	0.206	**0.588**	0.202	**0.938**	0.205	**1.293**	0.211	**0.366**	0.064		
T90-100	0.045	0.302	0.043	0.279	0.339	0.284	0.310	0.280	*0.479*	0.264	0.466	0.286	**0.632**	0.290	**0.944**	0.280	**1.336**	0.265	**0.361**	0.078		

Source: HFCS

Sample: 2,971 households

Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.

Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 4.8 Regression results Italy

	INCOME																		INHERITANCE		
	P20		P30		P40		P50		P60		P70		P80		P90		P100		Yes / No		Housing or Business
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	**0.285**	0.078	**0.684**	0.086	**0.938**	0.093	**1.172**	0.105	**1.311**	0.109	**1.723**	0.129	**1.837**	0.141	**1.968**	0.158	6.203	428.907	**2.351**	0.268	
T20-30	*0.133*	0.071	**0.423**	0.075	**0.657**	0.078	**0.935**	0.084	**1.092**	0.086	**1.383**	0.092	**1.852**	0.108	**1.895**	0.113	**2.431**	0.192	**2.185**	0.138	
T30-40	0.111	0.070	**0.399**	0.072	**0.507**	0.074	**0.700**	0.077	**0.865**	0.079	**1.065**	0.083	**1.358**	0.088	**1.536**	0.093	**2.041**	0.120	**1.387**	0.062	
T40-50	**0.145**	0.070	**0.431**	0.071	**0.584**	0.073	**0.751**	0.076	**0.902**	0.077	**1.125**	0.080	**1.364**	0.084	**1.515**	0.088	**1.925**	0.103	**0.870**	0.044	
T50-60	0.001	0.075	**0.317**	0.074	**0.507**	0.076	**0.599**	0.078	**0.857**	0.078	**0.974**	0.080	**1.229**	0.083	**1.408**	0.087	**1.898**	0.098	**0.656**	0.039	
T60-70	-0.049	0.081	**0.218**	0.079	**0.370**	0.080	**0.445**	0.082	**0.659**	0.081	**0.804**	0.083	**1.027**	0.085	**1.338**	0.088	**1.836**	0.097	**0.582**	0.038	
T70-80	-0.098	0.091	0.134	0.087	**0.225**	0.089	**0.403**	0.089	**0.536**	0.087	**0.654**	0.088	**0.930**	0.090	**1.191**	0.092	**1.725**	0.098	**0.521**	0.039	
T80-90	**-0.238**	0.109	-0.027	0.103	0.073	0.103	*0.175*	0.103	**0.276**	0.101	**0.497**	0.100	**0.645**	0.101	**0.980**	0.102	**1.529**	0.106	**0.482**	0.041	
T90-100	*-0.263*	0.148	-0.199	0.145	0.054	0.137	0.129	0.135	0.173	0.131	**0.317**	0.129	**0.497**	0.129	**0.679**	0.128	**1.278**	0.129	**0.428**	0.050	

Source: HFCS

Sample: 7,951 households

Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.

Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 4.9 Regression results Luxembourg

	INCOME																		INHERITANCE			
	P20		P30		P40		P50		P60		P70		P80		P90		P100		Yes / No		Housing or Business	
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	0.511	0.335	**0.882**	0.380	*0.791*	0.450	**1.830**	0.454	**2.066**	0.621	**2.324**	0.563	4.092	244.300	**1.686**	0.709	5.006	416.784	0.618	0.446	-10.823	1062.999
T20-30	0.153	0.353	*0.552*	0.327	0.603	0.386	**1.151**	0.415	**1.482**	0.451	**1.665**	0.414	**1.733**	0.416	**1.581**	0.482	**2.425**	0.723	0.562	0.438	4.111	165.872
T30-40	-0.184	0.335	0.331	0.360	0.281	0.293	0.535	0.417	**1.176**	0.352	**1.197**	0.368	**1.318**	0.316	**1.655**	0.442	**2.198**	0.459	0.179	0.212	**0.742**	0.323
T40-50	0.068	0.474	**0.732**	0.351	*0.897*	0.490	**0.967**	0.404	**1.151**	0.384	**1.143**	0.427	**1.893**	0.385	**2.148**	0.522	**2.333**	0.381	**0.404**	0.204	*0.531*	0.310
T50-60	-0.511	0.378	0.267	0.382	0.172	0.433	0.276	0.310	0.552	0.351	*0.607*	0.353	**1.193**	0.332	**1.540**	0.378	**1.690**	0.373	0.253	0.208	*0.450*	0.258
T60-70	-1.137	0.801	-0.407	0.394	-0.301	0.379	-0.128	0.360	-0.111	0.372	0.447	0.352	0.698	0.411	**0.969**	0.420	*0.948*	0.449	**0.472**	0.189	0.079	0.215
T70-80	-3.177	188.090	-0.010	0.425	0.346	0.318	0.241	0.374	0.339	0.317	*0.543*	0.318	*0.819*	0.411	**1.306**	0.368	**1.467**	0.414	**0.611**	0.156	0.240	0.220
T80-90	3.820	415.795	0.496	0.413	-0.136	0.424	0.378	0.489	0.160	0.405	0.280	0.328	0.479	0.378	**0.849**	0.354	**1.208**	0.376	**0.359**	0.167	**0.507**	0.186
T90-100	0.398	1.716	-0.175	0.499	-0.341	0.456	-0.021	0.562	-0.587	0.448	-0.117	0.475	-0.207	0.501	0.227	0.470	0.601	0.493	0.106	0.171	*0.336*	0.188

Source: HFCS data,.

Sample: 950 households

Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.

Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 4.10 Regression results Malta

| | INCOME | | | | | | | | | | | | | | | | | | INHERITANCE | | | |
| | P20 | | P30 | | P40 | | P50 | | P60 | | P70 | | P80 | | P90 | | P100 | | Yes / No | | Housing or Business | |
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	0.024	0.311	*0.648*	0.351	**0,970**	0.337	*0.792*	0.403	**1.264**	0.407	**1.743**	0.516	**1.731**	0.579	**1.478**	0.545	**1.997**	0.725	0.310	0.230	4.695	104.395
T20-30	0.212	0.219	*0.416*	0.248	*0.537*	0.283	**0.756**	0.270	**0.827**	0.306	**1.164**	0.351	**1.346**	0.423	**1.673**	0.534	**1.301**	0.660	**0.435**	0.184	**0.654**	0.266
T30-40	*0.495*	0.248	**0.652**	0.227	**0.697**	0.286	**0.937**	0.334	**1.069**	0.305	**1.246**	0.298	**1.322**	0.356	**1.713**	0.413	**2.013**	0.469	*0.334*	0.183	**0.499**	0.206
T40-50	**0.549**	0.245	**0.788**	0.255	**0.736**	0.289	**1.065**	0.280	**0.960**	0.296	**1.195**	0.342	**1.506**	0.389	**1.870**	0.472	**2.164**	0.392	**0.468**	0.149	0.186	0.189
T50-60	0.446	0.322	*0.497*	0.282	**0.815**	0.339	**0.903**	0.343	**0.686**	0.326	0.809	0.511	**1.194**	0.406	**1.600**	0.497	**1.682**	0.507	**0.357**	0.151	0.173	0.180
T60-70	0.118	0.319	0.072	0.307	0.413	0.319	*0.795*	0.394	0.278	0.355	0.514	0.526	**1.026**	0.455	**1.254**	0.521	**1.608**	0.491	**0.412**	0.159	*0.359*	0.190
T70-80	0.160	0.293	-0.004	0.279	0.281	0.281	*0.835*	0.394	0.263	0.351	0.617	0.378	*0.705*	0.388	**1.149**	0.367	**1.367**	0.341	**0.356**	1.151	**0.480**	0.187
T80-90	0.513	0.352	0.239	0.328	0.494	0.369	*0.916*	0.457	0.604	0.387	**1.059**	0.456	**1.415**	0.386	**1.256**	0.431	**1.650**	0.399	**0.418**	0.164	**0.458**	0.182
T90-100	-0.199	0.645	-0.041	0.718	-0.338	0.604	-0.513	0.572	-0.116	0.790	0.359	0.628	0.104	0.674	0.371	0.646	0.646	0.638	0.226	0.263	**0.533**	0.255

Source: HFCS data.
Sample: 843 households
Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.
Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 4.11 Regression results Netherlands

	INCOME																		INHERITANCE			
	P20		P30		P40		P50		P60		P70		P80		P90		P100		Yes / No		Housing or Business	
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	0.410	0.822	-0.045	0.437	-0.177	0.414	0.244	0.774	0.268	0.439	-0.108	0.559	-0.052	0.751	0.141	0.471	0.048	0.659	*-0.855*	0.466		
T20-30	-0.032	0.252	-0.199	0.286	0.002	0.274	*0.467*	0.281	0.070	0.305	0.106	0.292	-0.044	0.478	0.161	0.354	0.034	0.477	0.582	0.413		
T30-40	-0.282	0.231	-0.215	0.242	0.007	0.267	0.252	0.313	0.097	0.266	0.135	0.278	0.068	0.281	0.140	0.240	0.003	0.341	**0.655**	0.295		
T40-50	-0.315	0.247	-0.259	0.209	-0.237	0.204	-0.083	0.262	-0.003	0.231	0.045	0.283	0.017	0.235	0.026	0.225	0.081	0.315	**0.604**	0.272		
T50-60	-0.359	0.270	-0.291	0.204	-0.322	0.227	-0.010	0.259	0.046	0.236	0.053	0.297	0.065	0.224	0.176	0.236	0.065	0.260	**0.653**	0.186		
T60-70	-0.382	0.260	-0.218	0.214	-0.202	0.248	0.095	0.206	0.156	0.231	0.084	0.291	0.134	0.225	0.164	0.227	0.181	0.251	**0.591**	0.178		
T70-80	**-0.500**	0.241	-0.380	0.233	-0.311	0.227	-0.176	0.240	-0.009	0.189	-0.144	0.243	0.065	0.216	0.134	0.197	0.194	0.231	**0.517**	0.155		
T80-90	-0.272	0.344	-0.161	0.293	-0.228	0.253	-0.251	0.241	0.016	0.197	-0.158	0.228	0.152	0.225	0.246	0.199	0.318	0.200	**0.533**	0.144		
T90-100	-0.035	0.300	-0.236	0.259	-0.189	0.293	-0.234	0.294	-0.145	0.259	-0.112	0.250	0.312	0.260	0.299	0.216	0.354	0.273	**0.777**	0.143		

Source: HFCS.

Sample:1,301 households

Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.

Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 4.12 Regression results Portugal

| | INCOME | | | | | | | | | | | | | | | | | | INHERITANCE | | | |
| | P20 | | P30 | | P40 | | P50 | | P60 | | P70 | | P80 | | P90 | | P100 | | Yes / No | | Housing or Business | |
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	0.108	0.101	0.138	0.108	*0.214*	0.114	**0.354**	0.117	**0.681**	0.144	**0.605**	0.142	**0.581**	0.151	**0.818**	0.213	**0.899**	0.286	**0.620**	0.155	**0.535**	0.191
T20-30	0.033	0.094	-0.022	0.096	0.073	0.099	**0.224**	0.102	**0.398**	0.114	**0.465**	0.111	**0.542**	0.127	**0.760**	0.143	**0.974**	0.162	**0.521**	0.117	**0.490**	0.138
T30-40	-0.041	0.099	-0.014	0.093	0.030	0.094	**0.266**	0.101	**0.405**	0.111	**0.453**	0.104	**0.593**	0.112	**0.715**	0.138	**1.078**	0.138	**0.403**	0.103	**0.407**	0.116
T40-50	-0.132	0.094	-0.075	0.096	0.094	0.092	0.161	0.098	**0.381**	0.101	**0.400**	0.097	**0.542**	0.109	**0.663**	0.111	**1.075**	0.128	**0.394**	0.102	*0.210*	0.109
T50-60	-0.108	0.090	-0.069	0.092	0.120	0.093	**0.197**	0.098	**0.346**	0.097	**0.427**	0.098	**0.567**	0.107	**0.676**	0.105	**1.145**	0.127	**0.364**	0.096	*0.197*	0.104
T60-70	-0.135	0.104	-0.093	0.099	0.078	0.100	**0.210**	0.104	**0.274**	0.098	**0.407**	0.097	**0.516**	0.104	**0.701**	0.103	**1.138**	0.121	**0.405**	0.096	*0.169*	0.103
T70-80	-0.168	0.110	-0.067	0.113	0.108	0.101	**0.233**	0.105	*0.177*	0.107	**0.464**	0.104	**0.560**	0.111	**0.690**	0.105	**1.216**	0.118	**0.272**	0.098	**0.270**	0.103
T80-90	*-0.234*	0.137	*-0.267*	0.141	0.150	0.112	*0.197*	0.119	*0.226*	0.118	**0.306**	0.130	**0.483**	0.115	**0.654**	0.117	**1.168**	0.133	*0.204*	0.116	**0.407**	0.128
T90-100	*-0.310*	0.178	**-0.540**	0.208	-0.002	0.142	0.045	0.159	-0.023	0.167	0.103	0.184	**0.315**	0.137	**0.354**	0.136	**0.906**	0.144	**0.279**	0.128	**0.321**	0.134

Source: HFCS

Sample: 4,404 households

Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.

Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 4.13 Regression results Slovakia

| | INCOME | | | | | | | | | | | | | | | | | | INHERITANCE | | | |
| | P20 | | P30 | | P40 | | P50 | | P60 | | P70 | | P80 | | P90 | | P100 | | Yes / No | | Housing or Business | |
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	0.197	0.158	**0.368**	0.157	**0.737**	0.166	**0.676**	0.164	**0.844**	0.165	**0.963**	0.187	**1.148**	0.207	**1.321**	0.237	**1.316**	0.230	*0.206*	0.110	**1.138**	0.170
T20-30	*0.259*	0.143	**0.398**	0.153	**0.758**	0.145	**0.812**	0.148	**0.863**	0.161	**1.001**	0.162	**1.187**	0.167	**1.209**	0.183	**1.401**	0.206	*0.181*	0.101	**0.649**	0.122
T30-40	0.239	0.146	*0.284*	0.161	**0.743**	0.145	**0.813**	0.144	**0.769**	0.160	**0.952**	0.163	**1.057**	0.168	**1.172**	0.186	**1.297**	0.191	0.107	0.096	**0.522**	0.112
T40-50	0.214	0.146	**0.334**	0.143	**0.592**	0.151	**0.845**	0.146	**0.714**	0.160	**0.848**	0.164	**1.012**	0.165	**1.147**	0.182	**1.344**	0.199	0.133	0.096	**0.340**	0.106
T50-60	0.097	0.162	*0.310*	0.159	**0.584**	0.155	**0.793**	0.146	**0.763**	0.168	**0.853**	0.169	**1.037**	0.180	**1.067**	0.186	**1.212**	0.184	0.070	0.097	**0.373**	0.112
T60-70	-0.047	0.197	0.212	0.166	**0.432**	0.161	**0.713**	0.154	**0.638**	0.189	**0.706**	0.172	**0.847**	0.192	**0.981**	0.173	**1.107**	0.205	0.163	0.109	**0.288**	0.127
T70-80	-0.094	0.210	0.275	0.176	**0.563**	0.163	**0.611**	0.164	**0.718**	0.171	**0.752**	0.181	**0.876**	0.179	**1.043**	0.190	**1.234**	0.201	0.171	0.107	**0.381**	0.116
T80-90	-0.382	0.238	0.034	0.207	**0.403**	0.192	**0.488**	0.204	**0.628**	0.201	**0.562**	0.217	**0.691**	0.230	**0.919**	0.214	**1.178**	0.219	0.181	0.128	**0.379**	0.130
T90-100	-0.359	0.359	0.147	0.307	0.389	0.284	0.483	0.309	*0.600*	0.302	*0.629*	0.313	*0.617*	0.353	**0.908**	0.303	**1.171**	0.290	-0.106	0.154	**0.544**	0.161

Source: HFCS

Sample: 2,057 households

Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.

Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 4.14 Regression results Spain

| | INCOME | | | | | | | | | | | | | | | | | | INHERITANCE | | | |
| | P20 | | P30 | | P40 | | P50 | | P60 | | P70 | | P80 | | P90 | | P100 | | Yes / No | | Housing or Business | |
	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.	coeff	Std. err.
T10-20	0.117	0.109	**0.294**	0.137	**0.422**	0.125	**0.736**	0.155	**0.878**	0.140	**0.953**	0.167	**0.905**	0.161	**1.221**	0.181	**1.716**	0.224	**0.400**	0.140	**0.693**	0.177
T20-30	**0.244**	0.094	**0.408**	0.109	**0.603**	0.106	**0.752**	0.123	**0.859**	0.117	**1.012**	0.138	**1.018**	0.131	**1.429**	0.139	**1.655**	0.163	**0.296**	0.109	**0.365**	0.125
T30-40	**0.186**	0.080	**0.436**	0.094	**0.617**	0.097	**0.751**	0.106	**0.838**	0.104	**0.967**	0.116	**1.139**	0.119	**1.523**	0.129	**1.811**	0.141	**0.425**	0.099	0.099	0.107
T40-50	0.097	0.082	**0.454**	0.089	**0.617**	0.091	**0.754**	0.097	**0.856**	0.096	**0.913**	0.107	**1.199**	0.107	**1.517**	0.115	**1.841**	0.126	**0.417**	0.088	0.079	0.094
T50-60	0.071	0.079	**0.370**	0.091	**0.568**	0.090	**0.758**	0.096	**0.783**	0.095	**0.885**	0.105	**1.146**	0.100	**1.511**	0.111	**1.874**	0.117	**0.315**	0.083	*0.163*	0.089
T60-70	-0.011	0.081	**0.189**	0.090	**0.468**	0.092	**0.628**	0.096	**0.679**	0.093	**0.823**	0.099	**1.083**	0.100	**1.473**	0.109	**1.821**	0.113	**0.252**	0.075	**0.277**	0.081
T70-80	-0.081	0.082	0.122	0.096	**0.351**	0.094	**0.480**	0.095	**0.634**	0.099	**0.713**	0.098	**0.951**	0.100	**1.350**	0.104	**1.775**	0.110	**0.299**	0.076	**0.281**	0.080
T80-90	-0.128	0.095	-0.031	0.107	**0.236**	0.103	**0.290**	0.106	**0.435**	0.101	**0.602**	0.113	**0.772**	0.110	**1.076**	0.110	**1.672**	0.107	**0.332**	0.073	**0.237**	0.078
T90-100	*-0.186*	0.103	-0.123	0.114	0.035	0.109	0.125	0.117	**0.244**	0.103	**0.367**	0.114	**0.404**	0.120	**0.710**	0.118	**1.306**	0.117	**0.288**	0.076	**0.267**	0.078

Source: HFCS
Sample: 6,197 households
Control variables: age of the reference person, number of household members, number of active household members, number of children, education and status on the labour market of the reference person.
Significant coefficients at the 5% level in bold and at the 10% in italics.

Table 5.1 Tests on income coefficients (top and bottom of the distributions)

	Threshold1		Threshold9	
	Income D1-D2	Income D2-D3	Income D8-D9	Income D9-D10
Austria	**0.466**	-0.111	-0.301	-0.149
	(0.163)	(0.196)	(0.198)	(0.195)
Belgium	0.107	**-0.537**	-0.264	*-0.237*
	(0.244)	(0.233)	(0.197)	(0.188)
Cyprus	-0.256	-0.196	-0.369	-0.168
	(0.243)	(0.233)	(0.197)	(0.187)
Finland	-0.147	-0.096	*-0.115*	**-0.504**
	(0.102)	(0.102)	(0.061)	(0.051)
France	-0.086	**-0.174**	**-0.169**	**-0.534**
	(0.068)	(0.076)	(0.056)	(0.047)
Germany	-0.018	0.136	-0.070	**-0.616**
	(0.179)	(0.194)	(0.115)	(0.089)
Greece	**0.348**	0.036	*-0.312*	**-0.392**
	(0.160)	(0.150)	(0.158)	(0.144)
Italy	**0.285**	**-0.399**	**-0.183**	**-0.598**
	(0.078)	(0.081)	(0.084)	(0.073)
Luxembourg	0.511	-0.371	*-0.434*	*-0.374*
	(0.335)	(0.380)	(0.248)	(0.219)
Malta	0.241	-0.406	-0.267	-0.274
	(0.311)	(0.263)	(0.312)	(0.303)
Netherlands	0.409	0.454	0.013	-0.055
	(0.822)	(0.850)	(0.200)	(0.217)
Portugal	0.108	-0.030	-0.038	**-0.552**
	(0.100)	(0.108)	(0.119)	(0.109)
Slovakia	0.197	-0.171	-0.290	-0.263
	(0.158)	(0.175)	(0.246)	(0.179)
Spain	0.116	-0.177	**-0.306**	**-0.596**
	(0.109)	(0.134)	(0.099)	(0.084)

Source: HFCS.
Sample: 62,521 households. Country by country estimates.
Significant coefficient differences at the 5% level in bold and at the 10% in italics.

Table 5.2 Tests on income coefficients (middle of the distributions)

	Threshold4			Threshold5			Threshold6		
	Income D3-D4	Income D4-D5	Income D5-D6	Income D3-D4	Income D4-D5	Income D5-D6	Income D3-D4	Income D4-D5	Income D5-D6
Austria	**-0.333**	-0.008	-0.128	-0.213	-0.033	-0.163	-0.053	-0.147	-0.111
	(0.137)	(0.149)	(0.136)	(0.155)	(0.151)	(0.138)	(0.168)	(0.154)	(0.136)
Belgium	0.143	*-0.241*	-0.114	0.071	-0.242	-0.030	0.150	*-0.279*	-0.106
	(0.142)	(0.143)	(0.165)	(0.143)	(0.147)	(0.142)	(0.147)	(0.155)	(0.166)
Cyprus	-0.081	-0.248	0.134	-0.057	-0.395	-0.027	0.045	-0.266	-0.144
	(0.235)	(0.239)	(0.261)	(0.216)	(0.197)	(0.209)	(0.244)	(0.185)	(0.225)
Finland	**-0.171**	-0.078	-0.205	**-0.165**	-0.066	**-0.151**	**-0.238**	-0.071	**-0.159**
	(0.066)	(0.065)	(0.065)	(0.065)	(0.034)	(0.062)	(0.066)	(0.063)	(0.061)
France	**-0.119**	**-0.152**	-0.039	*-0.097*	**-0.146**	-0.082	-0.066	**-0.135**	-0.085
	(0.057)	(0.057)	(0.055)	(0.055)	(0.058)	(0.059)	(0.055)	(0.058)	(0.130)
Germany	**-0.375**	-0.149	*0.249*	*-0.255*	-0.205	-0.111	*-0.258*	-0.128	-0.207
	(0.134)	(0.126)	(0.134)	(0.136)	(0.127)	(0.141)	(0.141)	(0.141)	(0.128)
Greece	-0.174	0.032	**-0.302**	-0.164	-0.077	-0.122	-0.057	**-0.269**	0.066
	(0.117)	(0.113)	(0.110)	(0.111)	(0.116)	(0.119)	(0.119)	(0.118)	(0.114)
Italy*	**-0.154**	**-0.167**	**-0.151**	**-0.190**	-0.092	**-0.258**	**-0.152**	-0.075	**-0.214**
	(0.066)	(0.068)	(0.068)	(0.067)	(0.067)	(0.067)	(0.071)	(0.070)	(0.068)
Luxembourg	-0.164	-0.069	-0.184	0.096	-0.104	-0.276	-0.105	-0.173	-0.017
	(0.387)	(0.357)	(0.272)	(0.354)	(0.352)	(0.280)	(0.311)	(0.299)	(0.359)
Malta	0.524	-0.329	0.105	-0.318	-0.087	0.217	-0.342	-0.381	0.517
	(0.279)	(0.314)	(0.247)	(0.269)	(0.344)	(0.310)	(0.222)	(0.291)	(0.305)
Netherlands	-0.022	-0.154	-0.079	0.032	-0.312	-0.056	-0.016	-0.296	-0.061
	(0.209)	(0.281)	(0.219)	(0.207)	(0.220)	(0.261)	(0.203)	(0.255)	(0.228)
Portugal	*-0.169*	-0.067	**-0.220**	**-0.189**	-0.077	-0.149	*-0.171*	-0.132	-0.064
	(0.093)	(0.094)	(0.095)	(0.093)	(0.091)	(0.098)	(0.099)	(0.097)	(0.102)
Slovakia	-0.258	-0.252	0.131	-0.274	-0.208	0.030	-0.220	-0.281	0.076
	(0.135)	(0.129)	(0.138)	(0.145)	(0.142)	(0.141)	(0.148)	(0.131)	(0.154)
Spain	*-0.163*	-0.138	-0.101	**-0.198**	**-0.189**	-0.024	**-0.279**	*-0.160*	-0.051
	(0.088)	(0.090)	(0.091)	(0.093)	(0.090)	(0.091)	(0.092)	(0.091)	(0.089)

Source: HFCS data.

Sample: 62 521 households. Country by country estimates

Significant coefficient differences at the 5% level in bold and at the 10% in italics.

Table 6 Tests of the parallel-line assumption

	Income		Yes / No		Housing / Business	
	F test	Proba	F test	Proba	F test	Proba
Austria	0.84	0.82	1.16	0.33	1.62	0.12
Belgium	1.16	0.17	1.17	0.31	1.68	0.10
Cyprus	0.76	0.94	0.37	0.93	0.26	0.98
Finland	**4.46**	0.00	-	-	-	-
France	**2.25**	0.00	1.34	0.22	0.58	0.79
Germany	**1.43**	0.01	**2.78**	0.01	**4.10**	0.00
Greece	0.72	0.96	**12.90**	0.00	-	-
Italy	**3.31**	0.00	**31.16**	0.00	-	-
Luxembourg	0.95	0.59	0.89	0.53	0.80	0.60
Malta	0.56	0.99	0.36	0.94	0.74	0.66
Netherlands	0.33	1.00	1.21	0.30	-	-
Portugal	0.85	0.82	0.93	0.49	1.32	0.23
Slovakia	0.54	0.99	1.02	0.42	**2.91**	0.00
Spain	**1.47**	0.01	1.00	0.43	**2.35**	0.02

Source: HFCS data.
Sample: 62,521 households. Country by country estimates.

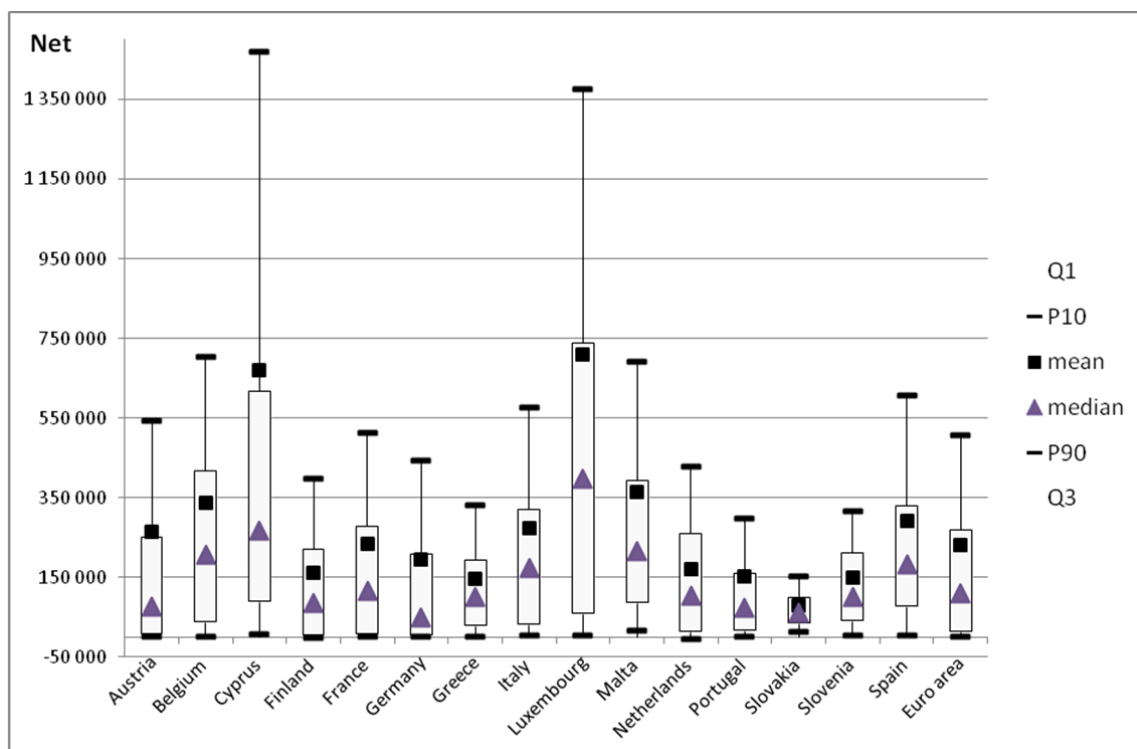**Figure 1.a. Net wealth distribution across country (p10, Q1, Q3, p90, mean, median)**

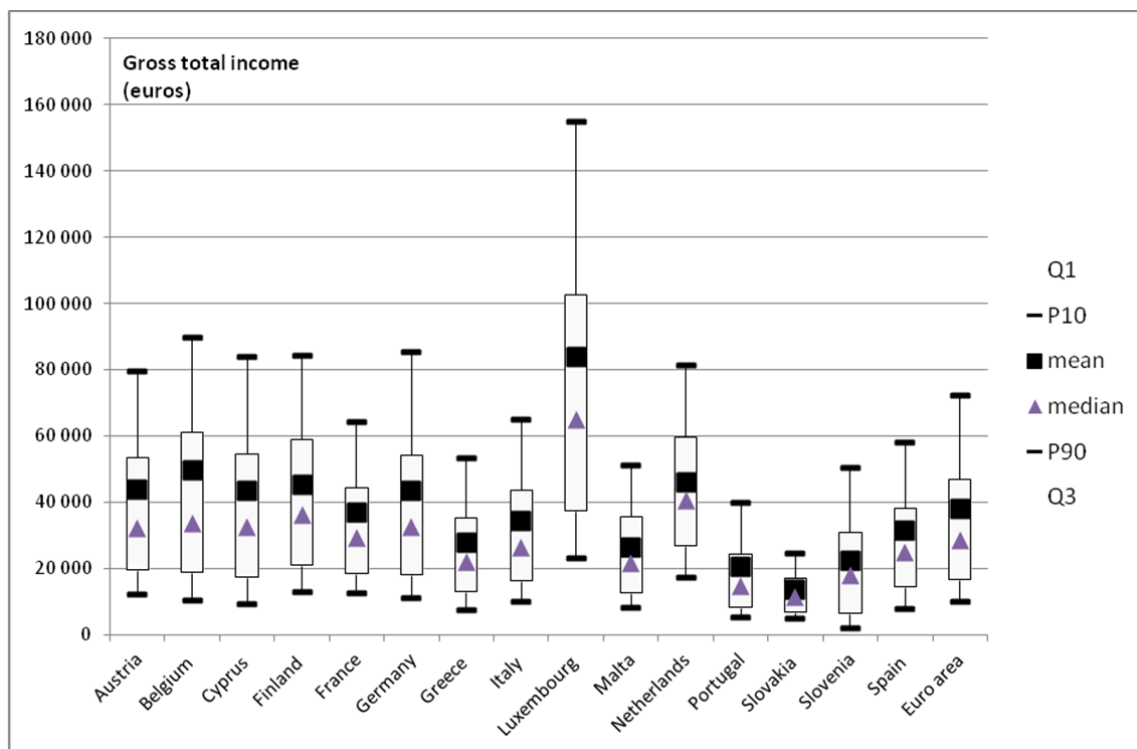**Figure 1.b. Total income across country (p10, Q1, Q3, p90, mean, median)**

Figure 2: Relative position in income (earnings and transfers) and net wealth distributions –

Percentage of households (X axis)-Country (Y axis)

Austria:AT, Belgium:BE, Cyprus: CY, Germany:DE , Finland:FI, France:FR, Greece:GR, Italie:IT, Luxembourg:LU; Malta:MT, Netherlands:NL, Portugal:PT, Slovakia:SK, Slovenia:SI, Spain:ES.

Figure 3: Estimated probability to be in a given wealth decile as a function of income deciles in Italy
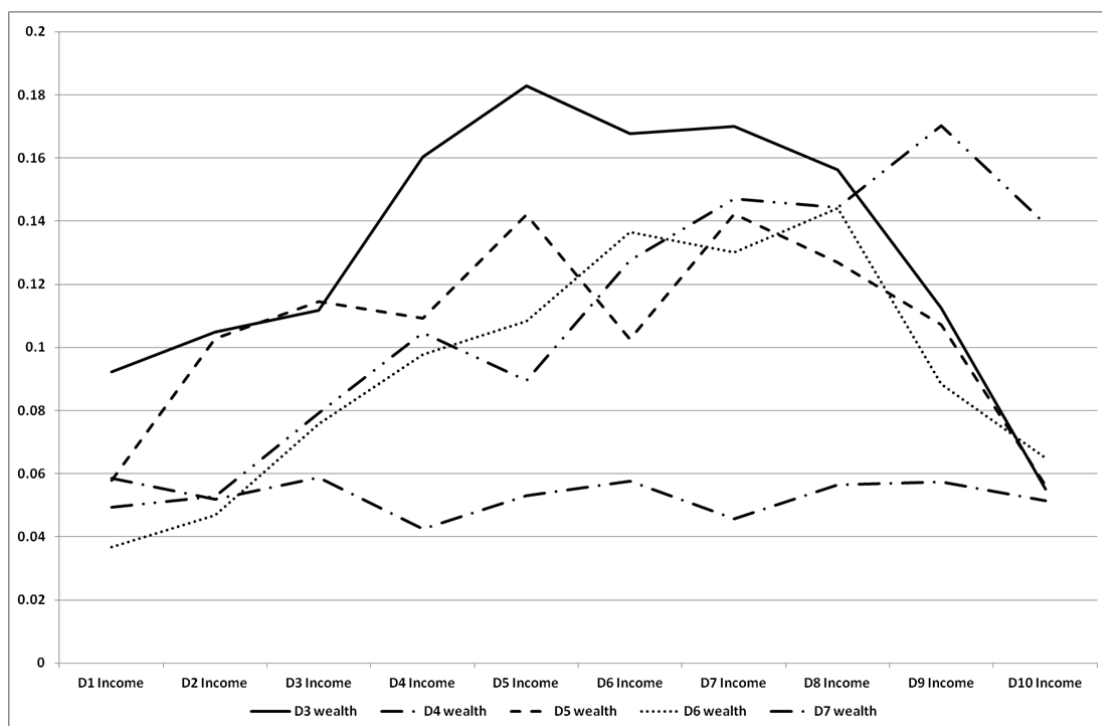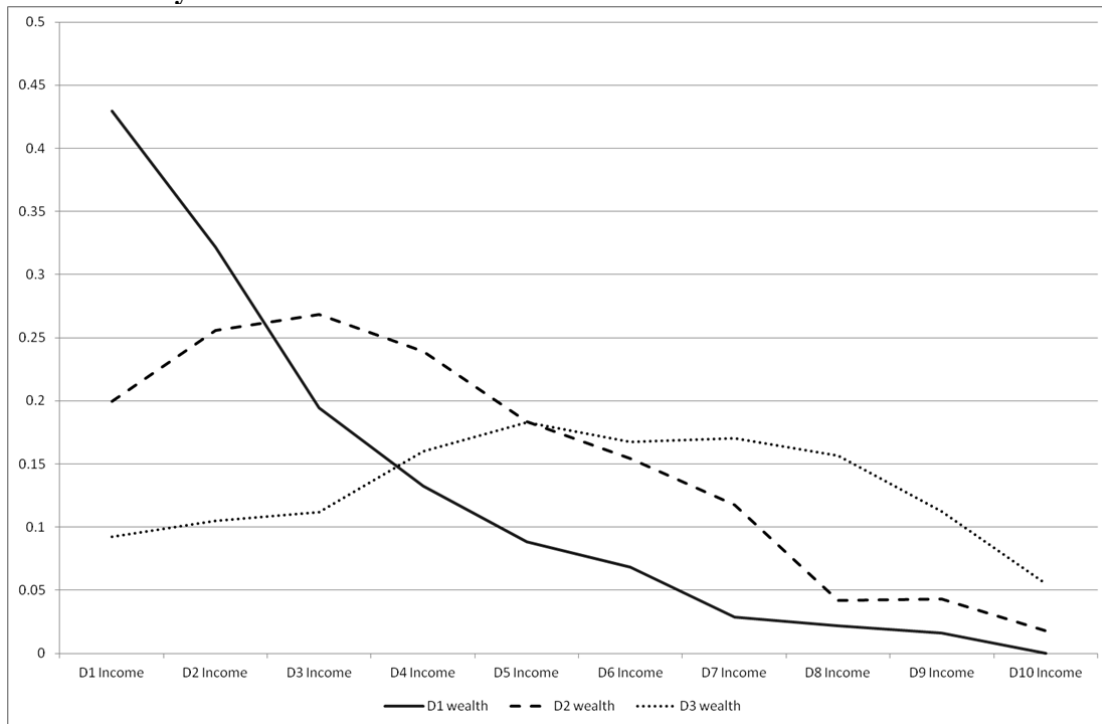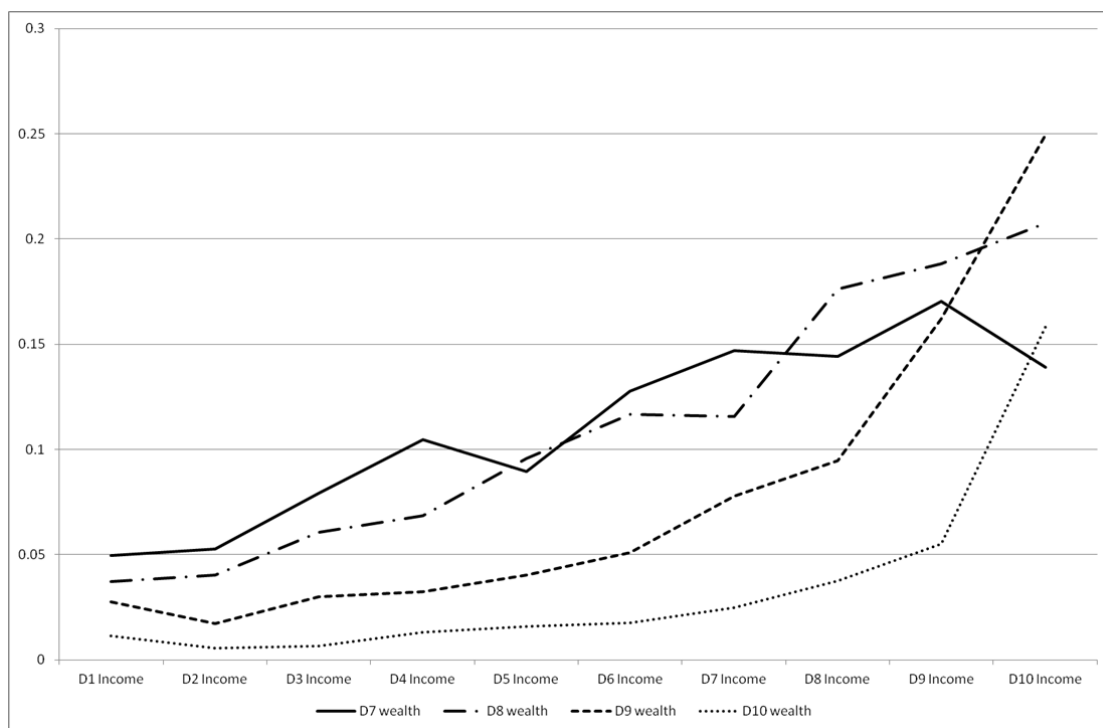
Figure 4a: Estimated probability to be in the D1 wealth deciles as a function of income deciles
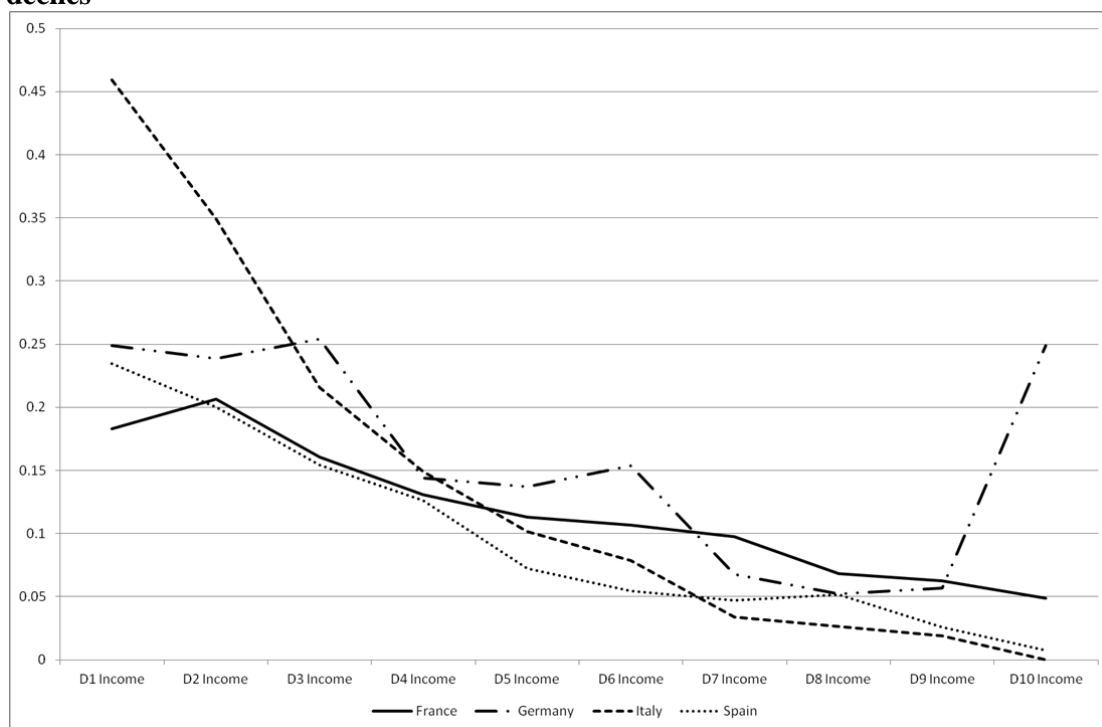

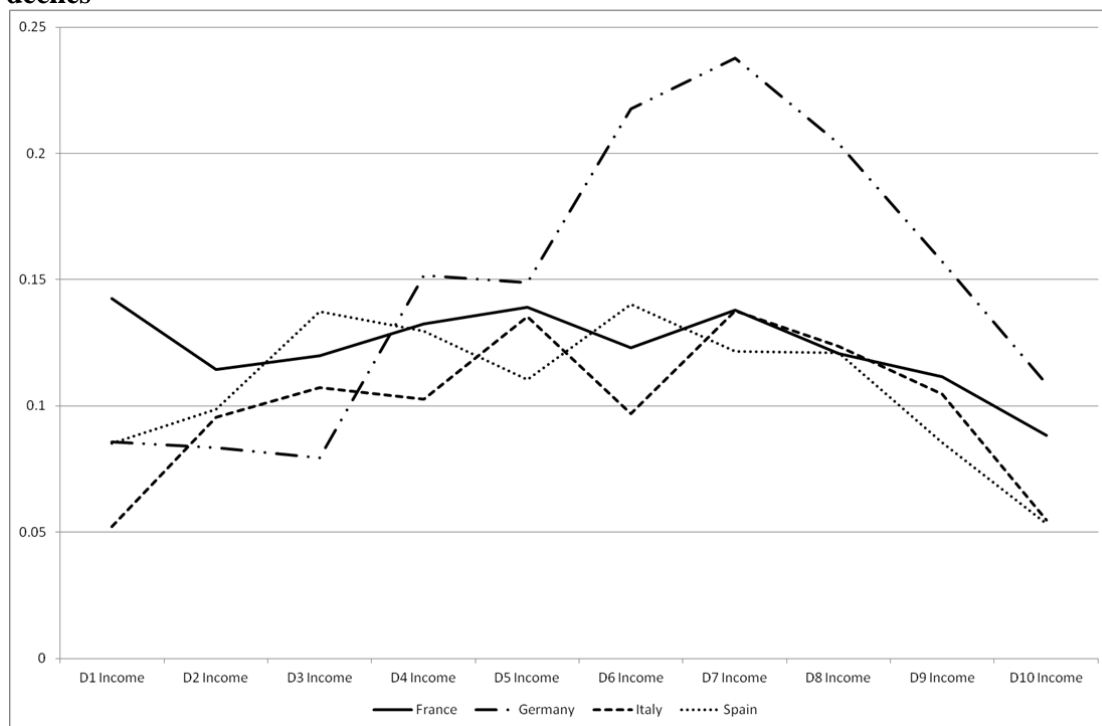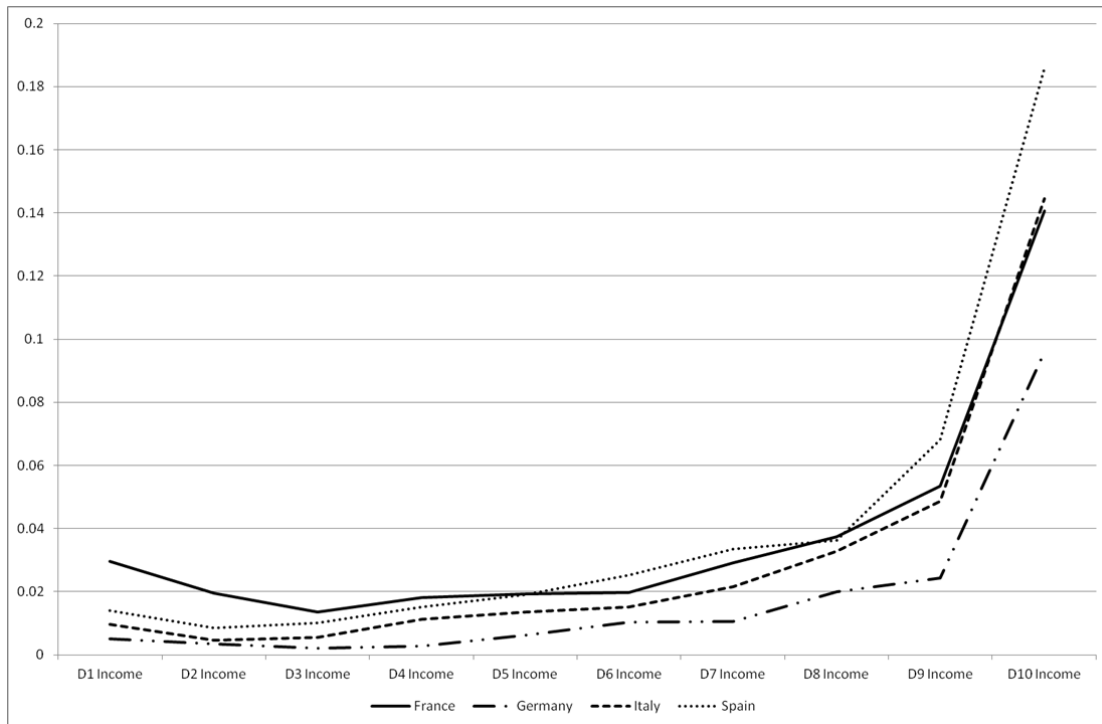**Figure 4b: Estimated probability to be in the D5 wealth decile as a function of income deciles**

Figure 4c: Estimated probability to be in the D10 wealth deciles as a function of income deciles

Appendix

Table A1. Reference periods for wealth and income in the HFCS

Country	Fieldwork	Assets & Liabilities	Income
Belgium	04/10 – 10/10	Time of interview	2009
Germany	09/10 – 07/11	Time of interview	2009
Greece	6/09 – 9/09	Time of interview	Last 12 months
Spain	11/08 – 07/09	Time of interview	2007
France	10/09 – 02/10	Time of interview	2009
Italy	01/11 – 08/11	31/12/2010	2010
Cyprus	04/10 – 01/11	Time of interview	2009
Luxembourg	09/10 – 04/11	Time of interview	2009
Malta	10/10 – 02/11	Time of interview	Last 12 months
Netherlands	04/10 – 12/10	31/12/2009	2009
Austria	09/10 – 05/11	Time of interview	2009
Portugal	04/10 – 07/10	Time of interview	2009
Slovenia	10/10 – 12/10	Time of interview	2009
Slovakia	09/10 – 10/10	Time of interview	Last 12 months
Finland	01/10 – 05/10	31/12/2009	2009

Source: **Eurosystem Household Finance and Consumption Network** (2013a), p.73

Table A2. Distributions of income and wealth (mean, median, p10, p90, Q1, Q3)

		Austria (A)	Belgium (BE)	Cyprus (CY)	Deutschland (DE)	Spain (ES)	Finland (FI)	France (FR)	Greece (GR)	Italy (IT)	Luxembourg (LU)	Malta (MT)	Netherlands (NL)	Portugal (PT)	Slovenia (SI)	Slovakia (SK)	Euro area
Gross wealth	mean	281778	368873	742015	222204	323973	197885	258297	159704	286989	791876	378191	252083	170330	154033	82988	257381
	P10	2452	3717	15099	1106	13362	2009	2732	3778	5500	10136	18475	5525	2032	5246	15072	3000
	Q1	12271	58325	137078	9940	110167	17568	12454	36300	40000	121330	93759	37596	27546	46257	39800	20068
	median	92792	249897	331918	67900	210188	132668	150365	110200	188000	494407	227426	217335	93161	105204	64414	142025
	Q3	275039	448699	711269	255460	367700	263934	308868	207735	333640	835804	418107	360221	183921	212726	100159	305696
	P90	572581	767008	1619166	494803	651333	444988	557114	354825	604227	1465929	720700	530374	333116	325179	156860	548949
Net wealth	mean	265033	338647	670910	195170	291352	161534	233399	147757	275205	710092	365988	170244	152920	148736	79656	230809
	P10	977	2782	7327	64	5658	-574	1583	2000	5000	5038	16113	-3800	1037	4222	12922	1196
	Q1	10315	40236	91347	6600	77867	6385	9805	30000	34242	59242	88537	14098	18365	40837	36454	15502
	median	76445	206249	266888	51358	182725	85750	115804	101934	173500	397841	215932	103562	75209	100659	61182	109153
	Q3	250470	417358	618074	209820	330984	220218	279099	193270	321429	738134	394091	259099	160132	212086	98661	268881
	P90	542163	705145	1469895	442320	607679	397318	511578	331775	577133	1375373	693081	427636	297229	317181	151865	506141

Table A2 (continued)-. Distributions of income and wealth (mean, median, p10, p90, Q1, Q3)

		Austria (A)	Belgium (BE)	Cyprus (CY)	Deutschland (DE)	Spain (ES)	Finland (FI)	France (FR)	Greece (GR)	Italy (IT)	Luxembourg (LU)	Malta (MT)	Netherlands (NL)	Portugal (PT)	Slovenia (SI)	Slovakia (SK)	Euro area
Earnings	mean	39961	44631	37453	38107	27859	40444	30402	26551	33073	74368	23237	41043	19013	21217	13223	33599
	P10	10940	8587	6652	7400	5374	9649	7148	7000	9538	20000	6048	11356	4488	1318	4523	7129
	Q1	17880	16340	15058	16000	12589	17915	15064	12230	15663	34220	10151	22516	7494	6150	6488	14660
	median	30082	30074	28580	28800	23000	33169	24918	21315	25761	58900	18501	36898	13770	15782	11010	26000
	Q3	50204	55760	49300	49340	36000	54933	39503	34713	42778	95640	32732	55577	23375	30209	16761	43110
	P90	73486	81890	73360	75860	53930	78046	56790	51967	62111	140600	45148	76778	37800	49346	24059	65837
Earnings and transfers	mean	41511	47361	38941	40364	29407	43101	32720	27548	33666	78031	23854	43453	19624	22811	13318	35382
	P10	11957	11252	8133	10200	7700	12687	11369	8000	10270	22540	6879	14902	5024	3945	4635	9648
	Q1	18961	18524	16345	17980	14000	20292	17183	13297	16220	36640	10765	25359	8088	8000	6605	16121
	median	31372	32515	30160	31000	24000	35245	26905	22063	26061	61740	19141	38435	14334	18117	11091	27394
	Q3	51590	58644	50100	51140	36640	57416	41146	35000	43129	98560	33435	57256	23833	31090	16800	44710
	P90	75292	84246	74260	78320	54920	80582	58061	52489	62701	145440	45356	78986	38242	50243	24072	67343
Gross total income	mean	43929	49536	43255	43531	31329	45141	36918	27661	34344	83657	26443	45792	20310	22334	13467	37841
	P10	12275	10240	9053	11080	7714	13002	12322	7296	10021	22920	8026	17120	5000	1930	4722	9954
	Q1	19493	18688	17546	18262	14316	20893	18562	13027	16189	37568	12683	27009	8242	6549	6761	16827
	median	32296	33654	32350	32543	24800	36257	29214	22044	26260	64840	21615	40562	14628	18046	11185	28610
	Q3	53500	61132	54351	54204	38000	58881	44440	35188	43572	102606	35665	59480	24274	30924	16870	46921
	P90	79480	89642	83767	85444	58048	84117	64304	53358	64937	154778	50980	81423	39840	50175	24326	72303