Decomposing household wealth portfolios across countries: An age-old question?

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Abstract

Using harmonized wealth data and a novel decomposition approach, we show that cohort effects exist in the income profiles of asset and debt portfolios for a sample of European countries and the U.S. We find that observable characteristics explain a sizable portion of the wealth participation gap for the young in particular. Similar patterns are observed for most countries for the level of wealth held, conditional on participation. The bottom of the wealth distribution in the European countries (particularly Spain and Luxembourg) is, however, characterized by large unexplained differences to the U.S. distribution, possibly pointing to the existence of important safety nets, which shape wealth holdings in these countries. In accordance with past literature, we find that institutions and other unobservables play a larger role for mature households (50 and over). We will also discuss the potential effect of the crisis on these results.

1   Introduction

There has been growing interest in studying household portfolios for several reasons. On the one hand, population aging has raised questions about the long-term sustainability of pension systems and the need to assess the adequacy of saving for retirement through the study of the level and composition of assets with which households retire (e.g. Chiuri and Jappelli (2010), Gornick et al. (2009)). On the other hand, the on-going financial crisis and the resulting meltdown and subsequent appreciation of assets has had different repercussions across various demographic groups. In addition, the growing complexities of wealth portfolios and the growing efforts to create a more unified market for consumers has sparked a literature on comparing the effect of institutions on wealth portfolios.

Researchers have found that despite greater integration of asset and labor market policies in Europe, differences in market conditions among European countries are much more pronounced than with the US and that large differences in investment patterns exist in European countries, even when controlling for other characteristics. This has been found to be the case for mature households Christelis et al. (2012), for debt Crook and Hochguertel (2007) and for stockholding Guiso et al. (2003).

Nevertheless, despite several attempts, the literature on international portfolios is not abundant. Single or two-country studies are more common than cross-country comparisons due to data availability and difficulty in performing cross-national comparisons. The few sources of cross-country wealth data that do exist are, generally, not directly comparable due to differences in data collection techniques, which are shaped by the institutional environment and indirectly by the available wealth instruments. Consequently, a better understanding of what is captured by wealth survey data requires some knowledge of institutions. For example, a high take-up of individual loans in the US is driven by less severe credit restraints.

Comparable cross-country data is not available for the whole population. For example, the Survey of Health, Ageing and Retirement in Europe (SHARE) captures individuals 50 and over. The forthcoming data from the European Central Bank -the Household Finance and Consumption Survey collected mainly for the purposes of central banks of euro-zone countries seems promising, but is not yet available. Another option for researchers is to rely on data in the Luxembourg Wealth Study, which has thoroughly examined comparable and non-comparable components of wealth and/or a detailed study of country wealth

components and institutions. This approach facilitates an insightful analysis of wealth portfolios across countries.

In this paper we follow this approach and use the conceptual framework developed by the Luxembourg Wealth Study, but augment our knowledge with additional country data and an institutional database in order to present country household portfolios for the whole population.

Our paper is novel in several ways. First, we identify differences in asset portfolios across countries for the whole population. Second, we examine the decision to hold a particular asset and then given this choice we look at the level of asset holdings conditional on the decision to participate in the asset market. Third, we extend the approach of Christelis et al. (2012) by disaggregating the effect of covariates in the participation and level decision. Differences in wealth holdings may, not only stem from differences in the household structure, which is shown in Bover (2010), but also from other factors such as labor market attachment and education, among others.[1] Finally, we introduce a novel way of decomposing asset levels across the distribution. In this way, we extend the literature methodologically by the integration of methods typically used in discrimination analysis in labor studies to the study of differences in portfolio choices by adopting a 'distributionally sensitive' approach. As the absolute levels of wealth across countries can be very different, we favour distribution regression over the Machado and Mata (2005) quantile regression methodology in order to highlight the extent of the wealth gap in the tails of each distribution. Distribution regression also provides a more convenient way to correct for selection bias than quantile regression.

Our focus is on the main assets and liabilities held by households; financial assets, main residence, investment real estate and debt, with a focus on mortgages and non-housing debt.[2]

Past research suggests a large role for institutions in explaining cross-national differences in portfolios. We show that the role of characteristics is more important than previously thought for particular assets and the younger population. Christelis et al. (2012) find that characteristics play a small or negligible role in generating observed international differences for the households 50 years and over. Based on surveys for the whole population, we confirm their results for the elderly and find a substantially stronger role of charac-

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[1]Sierminska et al. (2010) for example, show that labor market differences between men and women explain the majority of wealth differences and work in the opposite direction of demographic factors.

[2]Although we do not take into account other factors such a different risks and returns for financial assets it has been shown that the majority of households have only a few types of assets. Less than 35% of households hold risky assets in the form of stocks or mutual funds and this number is much lower for the other countries.

teristics for the participation decision of a younger segment of the population. We find this to be true for all assets (to a smaller extent for investment real estate) and particularly true for non-housing debt and mortgages. When it comes to levels of wealth, we find that characteristics explain more of the cross-country variation in the middle of the wealth distribution, while the unexplained gaps are largest in the tails of the wealth distribution. Additionally, we find that characteristics explain more of the wealth gaps for younger cohorts than older cohorts. These two phenomena suggest that institutional (or other unobserved) differences between countries predominantly affect high wealth and/or older households.

In Section 2 we describe the data. Section 3 overviews the methods for participation and level decision and provides basic descriptive statistics. The results are in Section 4 and Section 5 concludes.

2   Data

We use data for the United States, Germany, Italy, Luxembourg and Spain. The data for the US come from the 2007 Survey of Consumer Finances (SCF), for Italy the 2008 Survey of Household Income and Wealth (SHIW), for Germany the 2007 wealth module of the Socio-Economic Panel (SOEP), for Luxembourg from the 2007 wealth module of the PSELL-3/EU-SILC and for Spain from the 2008 EFF. The data contain information on multiple income sources and detailed information on financial, non-financial assets and debts. On the basis of this detailed information, we use the conceptual framework developed by the Luxembourg Wealth Study (Sierminska et al. (2006)) for creating harmonized variables of net worth (total assets minus liabilities) and income. We bottom and top code each of the wealth variables at their 1% and 99% levels respectively to stop outliers from over-influencing our results.

3   Methodology

3.1   Participation decision

We look firstly at the participation decision, that is, the decision to hold or not to hold a particular asset/liability. Our raw participation results are in Table 1. They indicate that there is quite a bit of cross-country variation in the decision to hold particular assets.

Risky assets (including bonds, stocks and mutual funds) are particularly different. In the US, where the cost of stock market participation is lower, the share of people investing in the stock market is higher. Large differences are also observed for debt. Italy has the lowest share followed by Germany and Luxembourg, Spain and the US.

We partition the sample by age and find that for the younger segment of the population (shown in Table 2) differences are mostly seen for homeownership and housing debt, which are lower and higher respectively for the younger households.[3] This will be discussed in the following section in more detail, but deserves a mention here. As we plot participation rates by income percentiles we find very interesting patterns. Figure 1 indicates that ownership rates generally increase as we move up the distribution, but there are also noticeable cross country differences for most assets. Past research shows a variation in holdings of particular assets across the distribution with the wealthier holding a large share of risky assets (e.g. Carroll (2002)). We also find cross country variation among these trends.

As substantial differences in asset participation by income level exist across countries, as a next step, we investigate the drivers of these ownership differences. To examine whether these differences are driven by different population characteristics or are unexplained we turn to an extension of the Blinder-Oaxaca nonlinear decomposition for binary variables. This approach is described in Fairlie (1999, 2005)

We estimate a logit model for participation in a particular wealth component w such as

$$p_j(w) = F(X\beta) \tag{1}$$

and examine the differences between country j and our reference country $r = us$:

$$\hat{p}^{us}(w) - \hat{p}^j(w) = \left(\hat{p}^{us}(w) - \hat{p}^{us}_j(w)\right) + \left(\hat{p}^{us}_j(w) - \hat{p}^j(w)\right) \tag{2}$$

where $\hat{p}^{us}_j(w)$ is the counterfactual participation of households in country j if faced with U.S. institutional features and other unobservables, given the distribution of characteristics X in country j. The first expression on the right hand side of equation 2 represents differences in participation due to characteristics, i.e., to differences in the distribution of X between the U.S. and country j. The second term represents differences due to differences in the group processes determining the decision to own or not to own a particular asset. This unexplained effect can be down to different risk preferences, cultural differ-

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[3]We also compare our older sample (Table 2 lower panel) to that of Christelis et al. (2012) and find the participation rates to be within 10% for home and mortgage with a slightly larger discrepancy for own business.

ences, institutional differences and other unobservables across countries. For simplicity, we refer to it as the unexplained or institutional effect.

The characteristic gap is the estimate of the total contribution of the whole set of observed characteristics to the country gap in participation. In order to identify the contribution of specific factors, we break X down into sets of characteristics: X_L (labor market characteristics), X_E (education characteristics), X_D (demographic characteristics), X_M (marital status), X_I income) and X_W (the level of other wealth). Taking a simple example, assume that $X = X_L + X_D$. We can express the independent contribution of X_L to the gap as:

$$\frac{1}{N} \sum_{i=1}^{N} \left[F(X_{Li}^j \beta_L^{us} + X_{Di}^{us} \beta_D^{us}) - F(X_{Li}^{us} \beta_L^{us} + X_{Di}^{us} \beta_D^{us}) \right] \qquad (3)$$

For example, imagine that stock ownership is encouraged via company incentive plans. In this case, different employment levels between countries may explain a portion of the country differences in stock market participation. This effect will be captured in the overall characteristic effect but can also be isolated from the effect of other characteristics using equation 3. Now, imagine that company incentive plans differ across countries. This institutional difference will be part of the unexplained difference in cross-country stock market participation levels but it is beyond the scope of this study to isolate its contribution to the unexplained effect. By indicating which factors are quantitatively important in explaining cross-country differences in portfolio allocation, we can provide useful indications of particular hypotheses or explanations to be explored in more detail.

3.2 Level of wealth holdings

Just as the decision to participation in different components of wealth portfolios may differ across countries, so too may the level of holding, given participation, differ across countries. Figures 4 to 6 plot the aggregate level of each wealth component across the income distribution. To make holdings across countries comparable, we scale each component by the median annual income in each country.[4] The top left panel in figure 4 shows the level of total financial assets held by households across the income distribution. The four European countries show similar holdings, which peak at around 4 times the median income at the very top of the income distribution. In the U.S., the total financial asset holdings are similar to European levels up to median earnings, after which they shoot up to a maximum of 30 times median earnings for the top earners. So, not only is participation

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[4]Absolute wealth levels can be found in table A3

in financial assets higher in the U.S., but the level of financial assets given participation is higher, particularly at the top of the income distribution. Risky assets show a similar pattern, although the top level for the U.S. is less than half of that of total financial assets.

In terms of real estate, we find that the Spanish and Luxembourgish holdings of both principal property and investment real estate are consistently higher than those of other countries across the earnings distribution. Italian households hold higher levels of principal residence than Germany or the U.S., while these three countries hold comparable levels of investment real estate across the income distribution, with the U.S. holding the least amount of either real estate asset. Spain and Luxembourg hold the highest levels of business equity across the income distribution, except at the very top where the U.S. holdings of business equity shoot up to be comparable. U.S. holdings of business equity are consistently lower than any other country in the rest of the income distribution, however.

In terms of debt, Luxembourgish and Spanish households hold the highest level of debt at the bottom of the income distribution, while the U.S. holds the most debt at the top of the income distribution. The vast majority of this debt is made up of mortgages in each country.

Figures 5 and 6 plot the aggregate level of each wealth component across the income distribution for the under-50 and over-50 population respectively. The main differences between these sub-populations are as follows. The under-50 population holds higher levels of principal residence and total debt in each country. In a phenomenon particular to Spain, the under-50 population also holds a much larger level of business equity than the over-50 population, particularly around the middle of the income distribution. In the U.S., the highest level of financial assets is confined to the over-50 population at the top of the income distribution. However, the level of financial assets held by the under and over-50 population is similar throughout the rest of the income distribution.

This analysis is based on raw distributions of wealth components. To study marginal distributions, that is, controlling for characteristics across countries, we employ distribution regression (DR), following Chernozhukov et al. (2009). In practical terms, this involves running a series of probit models at each point in the distribution (excluding zeros) of each wealth component, w, in each country. The dependent variable is binary and takes the value of 1 if the household's wealth holding is below w (conditional on holding that wealth component), and 0 otherwise, where w takes the value of each point of the wealth distribution sequentially. Contrary to the Machado-Mata decomposition, which models conditional wealth levels at specific quantiles, DR models the conditional probability that a household has a wealth holding below w in the distribution, hence mapping the whole conditional cumulative distribution function. We use the same variables as in the partici-

pation model (demographics, labor market status, marital status and education) to model the level of wealth held. Using DR, we predict the probability that a household has a wealth holding below w in the distribution, as well as predicting what this probability would be if the household accumulated wealth in the same way as a similar household in the US. We employ a Blinder-Oaxaca style decomposition of the marginal wealth distributions in each country (using the US as the baseline) to identify what portion of the difference between wealth distributions is due to characteristics and what portion is unexplained, or due to institutional or other unobserved differences.

Starting from estimates of the conditional distribution of each wealth component (w) in country j, given household characteristics (X), we recover estimates of the marginal distribution by integration of the conditional distributions over household characteristics:

$$F_j^j(w) = \int_{\Omega_X} F^j(w|X) \, h_j(X) \, dX \tag{4}$$

where $F^j(\cdot|X)$ is the conditional cumulative wealth distribution function for household characteristics X in country j and h_j is the density distribution of household characteristics for this country.

We can seperate the household characteristics from the conditional cumulative wealth distribution to construct counterfactual wealth distributions for country j, if they chose wealth portfolios in the same way as similar U.S. households (i.e. if the institutional setting in country j was that of the U.S.). For example:

$$F_j^{us}(w) = \int_{\Omega_X} F^{us}(w|X) \, h_j(X) \, dX \tag{5}$$

estimates the counterfactual wealth distribution that would prevail in country j if portfolio decisions followed the U.S. model, where $F^{us}(\cdot|X)$ is the conditional cumulative wealth distribution function for household characteristics X in the U.S. and h_j is the density distribution of household characteristics in country j.

Estimates are obtained by replacing $F^{us}(\cdot|X)$ by estimates $\hat{F}^{us}(\cdot|X)$ in equation (5), and by averaging over our sample of N households who hold the wealth component w in country j:

$$\hat{F}_j^{us}(w) = \sum_{t=1}^{N_j} \hat{F}^{us}(w|x_t) \tag{6}$$

Using the predicted and counterfactual wealth distributions, we perform a Blinder-Oaxaca style decomposition to isolate the difference in wealth distributions that is due to house-

hold characteristics and the difference that is unexplained, or can be attributed to institutional differences and unobservables across countries.

$$F_j^j(w) - F_{us}^{us}(w) = [\hat{F}_j^j(w) - \hat{F}_{us}^j(w)] + [\hat{F}_{us}^j(w) - \hat{F}_{us}^{us}(w)] \tag{7}$$

The first expression on the right hand side of equation 7 identifies the unexplained contribution to differences in wealth levels, while the second expression identifies the difference that can be accounted for by different household characteristics across countries. We perform this decomposition for each wealth component in each country.

4 Results

4.1 Country differences in asset participation

In order to identify the determinants of holding a particular asset we estimate several logit specifications for each country. We present the results for the one with the best fit. The coefficient estimates are then used to determine whether there are country differences in the decision to hold particular assets and to calculate the contribution of country differences in household characteristics to the country differences in asset participation.

The dependent variable is equal to one if the household holds the asset and is equal to zero otherwise. We include a number of variables, which have been shown to affect participation. The set of demographic variables includes age, age squared, gender and the number of children under 18. Education variables include indicator variables for low and high education. The set of marital status variables consists of indicator variables for married, divorced and widowed. Labor market variables include indicator variables for employed, self-employed and retired. We also include income and wealth held, not pertaining to the asset in question, transformed using the inverse hyperbolic sine.[5]

Estimates from the logit regressions allow us to pinpoint important country differences in the decision to own assets. The marginal effects evaluated at the mean for the probability of holding an asset are presented in table A1 and A2. Before we elaborate on the results for our main dependent variables below we discuss the expected direction of our results.

In a recent comprehensive study of household portfolios (Guiso et al. (2002)) the various

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[5]We experiment with various specification of the monetary variables including levels and log transformation, but find the inverse hyperbolic sine transformation yields the best fit.

authors estimate the participation decision for selected assets on a common set of explanatory variables. The results for the US indicate that the ownership of almost all types of assets and liabilities rises with wealth (except credit card balances and non-housing debt). And as wealth rises, the shares in total assets held in homes and other non-financial assets decline, while the share in risky assets and investment real estate rise. Given that risk preference varies with age we typically expect a higher stock ownership among older cohorts. Younger people face more background risk, which affects their preference for risky assets. As their uncertainty about lifetime income declines and they enter their prime-age years they may be willing to take on more risk. Older people on the other hand exhibit less labor supply flexibility compared to younger people, who can work more or retire later if they have low returns to their investments.

Education is generally positively correlated with income and, hence, with asset holdings. There exist some differences across countries depending on the return to education and household formation (Spain) and country specific characteristics (Luxembourg) (Bover (2010) and Mathae et al. (2011), respectively). Research indicates that married couples are generally better off and differences by family type are stronger than by gender (Bover (2010); Sedo and Kossoudji (2004) for housing; Yamokoski and Keister (2006) for wealth levels).

Younger portfolios tend to be dominated by housing wealth. Younger couples would rather pay down their mortgage or make precautionary savings rather than invest in risky assets. Older households have built up their assets and can use the cash flow to invest in risky assets or investment real estate. At the same time, other risk related to older age may temper the willingness of older people to take risks (uncertainty about life expectancy, health uncertainty).

Given the expected direction of most of the included explanatory variables as outlined above we will focus on identifying similarities and differences in our sample countries for each of the wealth components. We start with the main portfolio asset: housing, followed by debt and financial assets.

Real estate   We focus on the determinants of principal residence and investment real estate ownership together as the direction of the effect of explanatory variables is similar. As expected, age has a positive effect at a decreasing rate. The number of children has no effect (except in Germany) although, as suspected, marital status does. Marriage increases the probability of owning property and divorce decreases it (except in the US for investment real estate). Being a widow or widower has a positive effect on owning your own home, but not investment real estate.

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Lower educated individuals are less likely to own real estate compared to those with a medium level of education, except in Luxembourg. Having a higher education degree suggests you are more likely to own investment real estate.

Across countries, we find some differences. In most countries, male run households are more likely to own real estate, except in Luxembourg, which may be a result of leaving the house to the woman in case of divorce and, possibly, the way the head of household is reported. Being employed or self-employed encourages owning your own home except in Italy, where the age structure of homeownership is slightly different. A negative effect of being employed on investment real estate holds for most countries.

Debt   The effect of age in holding debt is understandably correlated with the decision to own real estate. The number of children also has a positive significant effect as having children is correlated with having higher expenses. Only in the US is there a strong negative relationship between being low and high educated and holding debt. Being any other marital status than single is positively related to debt.

Financial assets   The effect of age on holding financial assets is no longer significant. Age squared is positive except for Italy. In all countries the number of children has a negative effect on financial assets. This can be caused by two things. First, children generally lead a household to incur higher expenses. Second, there is a higher probability of owning non-financial assets in households with children. Households reporting lower education are less likely to hold financial assets. Being employed has no effect on ownership in Italy and Spain.

There is cross-country variation in the effect of several variables. We find that married households are more likely to hold financial assets in the US and Germany and less likely in Italy and Luxembourg. Being self-employed or retired has opposite effects on the likelihood of having financial assets in the US and Germany.

Own business   In accordance with the literature on self-employment, age and being married has a positive decreasing effect on owning your own business.

Cross-country differences exist in the direction of the effect on the number of children.

The effect of income and wealth on asset ownership   As we have shown in Figure 1 the effect of income on participation varies across countries. Below we examine

the marginal effect in more detail.

Real estate: We find a positive and significant effect of non -real estate wealth on real estate ownership in all countries, but the effect varies. The effect is also positive and significant for disposable income. Debt: As with real estate the effect of wealth is positive and significant. The effect of income is only significant for Germany and actually negative in Luxembourg. Financial assets: The effect of wealth on holding financial assets is stronger in Germany and Luxembourg than in the US and Spain. The effect of income is the strongest in Italy followed by Luxembourg, Germany and the US and is not significant in Spain. Business: The effect of income is only significant in Italy and Spain in the latter being very small. The effect of wealth is strongest in Luxembourg followed by the US, Spain, Germany and Italy.

4.2 Decomposition of the Participation Decision

In our decomposition we focus on the main portfolio assets: homeownership, investment real estate ownership, business ownership, debt holding and financial asset ownership. We group the possible factors that can affect asset ownership into: demographic (age, age squared, gender and the number of children under 18), education (indicator variable for low and high), marital status (indicator variables for married, divorced and widowed); labor market (indicator variables for employed, self-employed and retired) and income and wealth. The results for the decompositions can be found in Table 3 for principal residence, investment real estate and debt and in Table 4 for financial assets and own business. We use the specification from the estimation shown in Tables A1 to A2.

We find that country differences in variables, such as education and labor market attachment provide significant contributions to the gap. The unexplained part of the gap varies across countries and asset types and is due to the country differences in coefficients noted in the previous section. These may be partly caused by differences in institutions, but also by important unmeasurable factors such as risk preferences, for example.

In each of the panels in tables 3-4, the top section reports estimates of the contribution of country differences in specific variables to explaining the participation gap. Negative estimates indicate that the country differences in the characteristics reduce the country differences in the participation decision and the gap would have been larger if the characteristics had been the same in both countries.[6] In all cases the differences refer to the

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[6]Except in the case of a negative gap, where the opposite is true. A positive estimate indicates that these controls reduce the negative gap.

base country: the United States. In the second panel, the probability of holding the asset in the base country $P(x = 0)$ and the reference country $P(x = 1)$ is reported. Next, *Diff* indicates the difference we wish to explain, *Exp* refers to the explained part (due to characteristics) and *Unexp* the unexplained part (due to coefficients). In the adjacent column for each country we show the percentage each set of characteristics contributes to the explained gap and, below this, we report the overall share of the total gap that is explained by characteristics.

Principal residence   First, we examine real estate. We find differences of less than 2 percentage points between Italy, Luxembourg and the US. The largest difference with the US is for Germany and Spain. In Spain, homeownership is larger than in the United States and we observe factors that both reduce and increase the observed gap. These two countries have a different structure in terms of education, marital status, employment and income. We find differences in the explanatory variables to be working in the opposite direction than differences in coefficients. In addition the unexplained gap is larger than the explained gap. Differences in income and education have the largest diminishing effect on the gap as Spain has lower income and lower education levels. Differences in marital status actually increase the gap as there are more married couples in Spain and so, with the US marital structure and Spanish coefficients, the gap would be even larger. In Germany the difference we wish to explain is 30.7 percentage points. We explain about 3/4 of this. All of the explanatory factors are significant, although differences in education seem to be playing the largest role while income and wealth reduce the gap by 16 and 23%.

Investment real estate   The largest differences in investment real estate are between Spain, Luxembourg and Germany. In all countries differences are, for the most part, explained by differences in education and income although, in Luxembourg and Spain, these factors only explain about half of the gap.

Debt   In terms of debt, large differences can be observed across countries. Apart from Germany, only a small share of the gap is explained by the above factors, suggesting unobservables and institutional differences significantly affect the take-up rate of loans. The largest difference in the take-up rate is in Italy (51.6pp), Luxembourg (42.1pp), Germany (40.8pp) and Spain (31.1pp). In Italy and Spain the difference in the age structure of households compared with the United States explains a large share of the difference as older households are, typically, less likely to take up loans and are more prevalent in the former two countries. Marital status and income only play a large explanatory

role in Spain. Even though a large share of cross-country differences in participation is explained by wealth, most of them remain unexplained. As a result, we focus on an alternative specification for debt, which excludes wealth. This can be found in table 9. By excluding wealth we find that the role of explanatory variables increases in Spain and declines by half in Germany.

Mortgage and Non-housing debt   We disaggregate debt into mortgage and non-housing debt in table 9. We find that the role of explanatory variables is greater in the case of mortgage than other debt, with age and education playing the largest role.

Financial Assets   Large differences to the the US are observed in Germany, Luxembourg and Italy but, as in the case of debt, a very small share is explained for Italy and Luxembourg.In Germany differences are explained, for the most part by education and labor market attachment and one fifth by non-financial wealth.

Own Business   A small share of the population in each of the survey countries owns their own business. Country differences of less than 10 percent can be observed for Germany, Luxembourg and Italy. In Spain and the US, business ownership rates are the same. Differences in labor market composition and non-business wealth are the dominant factors explaining cross-country differences.

Robustness checks   The findings above have been estimated for the whole population. However, it is a well-known fact that portfolio choice is affected by age and cohort effects. As a result, we partition our sample into those below and above 50 years old. The results can be found in tables 5 and 6 for the young and tables 7 and 8 for the older sample. For the younger sample, we find that demographics and marital status variables, in particular, play a larger role in explaining differences in asset participation.In addition, a larger share of the differences is explained in the younger sample compared to the older sample. In fact, one of the limitations of the SHARE data, used in the Christelis et al. (2012) paper, is the lack of insight into age differences in the drivers of wealth portfolio choices. As illustrated above, a focus on the over-50 population may lead to an underestimation of the role of demographic differences in explaining portfolio differences, with a larger share being attributed to institutions. Our results by age cohort indicate that the role of institutions and other unobservables is less important for younger cohorts. We perform the same cohort analysis for the different components of debt (table 10 and 11) and also

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find a larger role of explanatory variable in explaining the existing gaps in the younger sample. (In Appendix table A4 we see the differences in the two samples)

4.3 Country differences in asset levels across the distribution

We use the distribution regression approach elaborated in section 3 and show in tables A5 to A9 the model coefficients at one point in the wealth distribution, the median, for each wealth component in each country. The coefficients are interpreted as in a regular probit model as follows: the negative coefficient of -0.021 on age in the first column of table A5 indicates that, as household heads become older, the household is less likely to hold less than the median value of total assets. In other words, age has a positive effect on the level of total assets held.

Across countries, age has the same expected positive effect on asset and debt holdings, at a decreasing rate. Additionally, a male or more educated household head increases wealth levels compared to a female or low educated household head in all countries. The effect of these variables on levels of wealth is in line with their effect on the participation decision, discussed in section 4.1.

There are differences in the direction of the effect of marital status, labor market status, number of children and income across countries. In our reference country, the U.S., we find that having more children, being married, divorced or widowed (compared to single), being employed or self-employed and having higher income all positively affect wealth holdings. By contrast, in Luxembourg, the number of children has a negative effect on wealth holdings while being employed has no effect for most components of the portfolio. In Italy, being married, divorced, widowed or employed has a negative effect on the level of wealth holdings while being self-employed has no effect. In Germany, divorce has a negative effect on wealth holdings, while income has no effect. Finally, in Spain, being divorced, widowed or employed does not affect wealth holdings.

These differences in coefficients across countries reflect country-specific wealth accumulation behavior that we must assume is due to the different institutional settings or unobservables, such as risk attitudes or culture, in each country. In the next section, we will see how important they are in explaining the cross-country differences in wealth levels.

4.4 Decomposition of wealth levels across the distribution

Using DR, we plot in figures 7 to 12 the predicted and counterfactual distribution of each item in the wealth portfolio by country. We use the U.S. as our baseline country so that all of the counterfactual wealth distributions show the distribution of wealth in country j that could be expected if country j was faced with the same institutional set-up and other unobservable factors as the U.S., holding the distribution of observable covariates in country j constant.

4.4.1 Total Assets

The top left panel in figure 7 shows the predicted distribution of total assets in each country. These predicted distributions follow the actual wealth distributions very closely (result available from authors upon request). Along the horizontal axis, we plot the level of total assets, scaled by the median annual income in each country. The U.S. shows the highest level of total assets, peaking at around 140 times the median annual income. This is followed by Spain, whose highest total asset level if at around 100 times the median annual income. The distribution of total assets in Luxembourg, Italy and Germany are similar, reaching a top level of around 30 times total annual income in each country. Most of the difference in asset levels in each country, however, occurs in the top half of the distribution. In the lower half of the distribution, the highest level of total assets is between 2 (in Germany) and 10 (in the U.S.) times the median annual income in each country. This highlights the importance of looking at the entire distribution, and not just at means.

The next four panels in figure 7 show the predicted distribution of total assets in the U.S. compared to each of the other four countries separately. An additional distribution, the counterfactual distribution for each of the four other countries, shows what the wealth distribution would be in these countries, if they accumulated wealth in the same way as U.S. households. The difference between the US predicted distribution and the counterfactual distribution of each country depicts the well-known characteristic effect, i.e., the difference in distributions that is explained by the different demographics, labor market attributes and educational attributes between countries. The difference between the counterfactual country distribution and the predicted country distribution shows the unexplained effect, which we surmise is due to institutional differences or other unobservables across countries.

In each country, figure 7 shows that the difference in the total asset distribution between the U.S. and that country is mainly due to characteristics. This characteristic effect is

more prominent around the middle of each total asset distribution, indicating that people located in the tails are more similar across countries. The unexplained effect, or the institutional effect, goes in the opposite direction to the characteristic effect, indicating that households in Germany, Italy, Luxembourg and Spain would hold less total assets than in the U.S., if it were not for the institutional or other unobserved features in their country. This is particularly true in Luxembourg and Spain, where the institutional effect is larger than the characteristic effect at the bottom of the total asset distribution. This may be due to the generous welfare regimes in Europe, compared to the U.S., which provide an earnings safety net and can reasonably be expected to decrease the perceived risk of holding elevated asset and debt levels (such as real estate as can be seen in figure 1).

4.4.2 Total Debt

The top left panel in figure 8 shows the predicted distribution of total debt in each country. We immediately notice that there are less discrepancies in this variable across countries than in total assets. One exception is Italy, where the level of total debt is much lower than in any other country, peaking at around 5 times median annual income but showing a total debt level of less than median annual income for the lower two thirds of the total debt distribution. The other four countries have significantly higher debt levels, of 2-3 times median income, up to this point of the distribution, with the U.S. and Spain peaking at 11-13 times median income and Germany and Luxembourg topping out at lower levels of 6-8 times median income. On aggregate, each country holds 4-10 times less total debt than it does total assets. Although the U.S. and Spain hold the largest absolute debt levels, they hold relatively less debt compared to total assets than the other countries.

The next four panels in figure 8 show the predicted distribution of total debt in the U.S. compared to each of the other four countries separately, along with the counterfactual distribution for each of the four other countries. Once again, the characteristic effect is dominant in explaining the difference between distributions and, again, the difference in characteristics explains more of the difference around the middle of the total debt distribution. In each country, expect Italy, the institutional effect goes in the opposite direction to the characteristic effect, particularly in Luxembourg and Spain. In Italy, institutional differences work in conjunction with differences in characteristics to decrease the total debt holdings of households in Italy.

4.4.3 Selected components of total assets

For the purpose of distribution analysis, we select components of total assets with significantly different cross-country levels and where there is also a reasonably high level of holding in each country, for analysis. From figure 4, we select total financial assets, principal residence, investment real estate and business equity as seeming the most interesting to study.

Business Equity   Looking first at business equity in figure 9, it is clear that there are large cross-country differences in the level of business equity held. The top left panel of figure 9 shows that the Spanish and Luxembourg hold the joint highest median levels of business equity, at around 8 times median annual income. However, the distribution in Spain is quite different to that in Luxembourg after the median. The Spanish distribution peaks at around 30 times median income while the Luxembourg distribution tops out at around 9 time median income. Luxembourg, Italy and the U.S. hold median business equity amounts of just once median income, and these three distributions follow each other closely at all points.

The next four panels in figure 9 show the the predicted distribution of business equity in the U.S., compared to each of the other four countries separately, along with the counterfactual distribution for each of the four other countries. The characteristic gap between the US and each European country is large and indicates that the U.S. households have characteristics that tend to increase their level of business equity compared to the European countries. However, the European countries have higher levels of business equity than the U.S. anyway so the unexplained gap (institutions, unobservables, etc) works in the opposite direction to the characteristics gap. The unexplained gap in business equity levels is particularly large in Luxembourg and Spain.

Investment Real Estate   Looking at the predicted distributions of investment real estate in the top left panel of figure 10, we see that Spanish households hold the highest level of investment real estate, peaking at around 45 times median income. Next, Luxembourg, Italy and Germany hold a peak of between 15 and 20 times median income, with the Luxembourg distribution being consistently higher that the other two, especially in the lower half of the distribution. For example, the median investment real estate holding in Luxembourg is around 9 times median income compared to the median holding in Italy and Germany of around 4 times median income. The U.S. shows the lowest level of investment in real estate. The median level is around the same value as median income

while the peak value is around 8 times median income.

The next four panels show how much in the difference across distributions is due to characteristics and how much is due to the institutional setting. In contrast to our findings for total assets and total debt, it is institutional features or unobservables that predominantly drive the difference in real estate holdings between the U.S. and the other four European countries. The characteristic effect opposes the institutional effect, indicating that the difference in real estate distributions between the U.S. and Europe would be even larger if U.S. household did not have characteristics that made them more likely to invest in real estate than their European counterparts. The institutional effect, in this case, is so large that we still see much larger investment level in Europe, despite this characteristic effect.

Principal Residence   Looking at the predicted distributions of principal residence in the top left panel of figure 11, once again, Spanish households hold the highest level of principal residences, peaking at around 40 times median income. The ordering is the same as with investment real estate, with Luxembourg, Italy, Germany and the U.S. following, although the discrepancies are not as large for this particular asset as they are for investment real estate.

The next four panels show how much in the difference across distributions is due to characteristics and how much is due to the institutional setting. As with investment real estate, we find that the institutional effect dominates and is more predominant in the lower half of the distribution. The characteristic effect works in the opposite direction and is largest around the middle of the distribution. Once again, we find that holdings of this asset, principal residence, would be higher in the U.S. than in the selected European countries, if not for institutional differences.

Total Financial Assets   We turn next to the predicted distributions of total financial assets in the top left panel of figure 12. As noted in figure 4, the holdings of U.S. households dwarf those of the other countries, although these differences are concentrated mainly in the top quartile of the total financial assets distribution. The distribution of total financial assets among the European countries studied are largely similar.

Looking at the next four panels of figure 12, we see that characteristics are largely responsible for the difference in total financial asset levels between the U.S. and the European countries. Institutional features work in the same direction as characteristics, reducing the level of total financial assets in the European countries compared to the U.S., with the largest institutional effects visible in Germany and Luxembourg.

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4.4.4 Cohort differences

We perform the same decomposition for each component of the wealth portfolio for the under-50 and the over-50 population separately (results available from authors upon request). The main differences between these two subgroups is the magnitude of the unexplained gap in portfolio distributions between the U.S. and the other countries. The younger cohort show more homogeneous wealth distributions across countries, with characteristics explaining a large proportion of the gap and a smaller unexplained gap. The older cohort shows larger between-country differences in wealth distributions, and characteristics explain a smaller proportion of these gaps than in the younger cohort. The unexplained gap is larger for the older cohort than the younger cohort. This indicates that institutional effects and other unobservables play a larger role for the older cohort, perhaps due to greater financial literacy of this group, but also to direct effects of tax and pension institutions in shaping the wealth portfolio.

5 Conclusions

In this paper, we decompose the participation and level decision in household wealth portfolios across countries. We find that household characteristics explain a sizable portion of the wealth participation gap, but that this varies across countries and asset components. For real estate, the largest share of the participation gap is explained in Germany and Spain (and Luxembourg for investment real estate), with education and income playing the largest explanatory roles. For debt, large cross-country differences exist but, apart from age, other household characteristics do not explain a large share of the gap. Partitioning the sample by age, we find that, for the younger cohort, demographics and marital status variables in particular, play a larger role in explaining differences in asset participation and debt compared to the mature sample. In addition, a larger share of the gap can be explained in the younger sample, compared to the older sample.

Looking beyond the participation decision at the level of assets and liabilities held, we find the largest differences at the top of the wealth distribution. Household characteristics explain a large part of the difference in total asset and total debt distributions, particularly in the middle of the each distribution. Institutional and other unobserved factors also contribute to the differences in these distributions, particularly at the bottom of the distribution in Spain and Luxembourg, suggesting the existence of important safety nets in these two countries.

Looking at the distributions of particular components of the wealth distribution, we find that the unexplained gap dominates for real estate and the characteristic gap dominates for financial assets and businesses. When we partition by age, our conclusions relating to participation are reinforced. For the young, differences in demographics across countries play a large role in explaining the differences in relative wealth levels. The older cohort displays larger unexplained cross-country gaps, indicating that the institutional setting is more influential for this group.

Future research in this direction could use the forthcoming data from the European Central Bank - the Household Finance and Consumption Survey which will provide harmonized cross-country wealth data. The next step of our research will decompose the difference in wealth component levels, correcting for selection into wealth, which shows important cross-country and within-portfolio differences. In a further analysis, we would like to control for observable institutional factors to examine how these affect the unexplained gap in portfolio participation and levels.

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6 Tables and Figures

Table 1: Asset portfolios.

	US	Germany	Italy	Luxembourg	Spain
Total Fin.Assets	94.29	57.65	77.08	67.97	92.95
Deposit Accounts	92.70	na	76.48	na	92.95
Risky Assets	34.22	na	21.15	na	3.37
Main Residence	71.86	41.15	70.25	70.94	83.10
Other Property	19.99	13.21	22.02	27.95	36.43
Business Equity	12.57	6.14	16.78	5.63	12.25
Total Assets	97.84	70.84	90.88	88.55	98.17
Total Debt	77.34	36.55	25.79	35.21	46.28
Housing Debt	52.33	na	12.71	na	32.28
Mortgage	48.30	18.45	na	35.21	26.05
Other Home Debt	5.80	5.88	na	na	8.02
Non-housing debt	66.47	21.08	15.59	na	23.20

Table 2: Asset portfolios for younger and mature households.

24 to 49 year olds	US	Germany	Italy	Luxembourg	Spain
Total Fin.Assets	91.97	52.32	79.73	64.39	92.05
Deposit Accounts	90.25	na	79.23	na	92.05
Risky Assets	32.55	na	16.50	na	2.48
Main Residence	62.61	32.02	57.66	64.07	77.00
Other Property	15.46	10.31	15.95	21.47	29.19
Business Equity	12.87	7.36	21.41	5.60	14.94
Total Assets	97.17	63.77	88.23	86.56	97.74
Total Debt	86.56	50.36	40.64	53.89	66.61
Housing Debt	57.30	na	22.76	na	52.29
Mortgage	55.46	24.93	na	53.89	45.41
Other Home Debt	6.21	5.62	na	na	10.05
Non-housing debt	77.31	31.22	22.59	na	30.23

50 and over	US	Germany	Italy	Luxembourg	Spain
Total Fin.Assets	96.56	61.51	75.37	71.85	93.76
Deposit Accounts	95.09	na	74.71	na	93.76
Risky Assets	35.86	na	24.15	na	4.17
Main Residence	80.93	47.78	78.38	78.40	88.53
Other Property	24.43	15.31	25.94	34.97	42.89
Business Equity	12.27	5.25	13.80	5.67	9.85
Total Assets	98.50	75.97	92.59	90.70	98.56
Total Debt	68.31	26.53	16.21	14.95	28.14
Housing Debt	47.45	na	6.22	na	14.43
Mortgage	41.29	13.74	na	14.95	8.78
Other Home Debt	5.40	6.07	na	na	6.20
Non-housing debt	55.84	13.72	11.08	na	16.92

Table 3: Decomposition of portfolio participation decision (Home, Investment Real Estate and Debt).

	(1) Germany	%	(2) Italy	%	(3) Luxembourg	%	(4) Spain	%
PR								
demog	-0.004**	-2	-0.021***	-107	0.011***	70	-0.003	-2
educ	0.059***	29	0.061***	326	0.027***	171	0.055***	34
marstat	0.008***	4	-0.031***	-166	-0.016***	-101	-0.037***	-23
LM	0.062***	31	0.007***	37	0.011***	70	0.021***	13
asini	0.032***	16	0.012***	64	-0.017***	-108	0.106***	65
asinwp	0.046***	23	-0.010***	-53	0	0	0.020***	12
		100		102		101		100
P(x=0)	0.719		0.719		0.719		0.719	
P(x=1)	0.412		0.703		0.709		0.831	
Diff	0.307		0.016		0.009		-0.112	
Exp	0.203	66	0.019	116	0.016	171.74	0.162	-145
Unexp	0.104		-0.003		-0.007		-0.274	
IR								
demog	-0.001	-1	-0.007***	-13	0.007***	21	0.006***	7
educ	0.037***	35	0.045***	82	0.015***	45	0.033***	36
marstat	0.005***	5	0	0	0.003***	9	0.000	0
LM	0.026**	25	-0.010***	-18	0.010***	30	0.006**	7
asini	0.027***	25	0.024***	44	-0.000	0	0.043***	47
asinwi	0.012***	11	0.002***	4	-0.002***	0	0.003***	3
		100		99		105		99
P(x=0)	0.200		0.200		0.200		0.200	
P(x=1)	0.132		0.220		0.279		0.364	
Diff	0.068		0		-0.080		-0.164	
Exp	0.106	156	0	-269	0.033	-42	0.092	-56
Unexp	-0.038		-0.075		-0.113		-0.256	
DEBT								
demog	0.040***	15	0.052***	42	0.004**	10	0.021***	89
educ	0.027***	10	0.025***	20	0.013***	32	0.023***	97
marstat	0.002**	1	-0.007***	-6	-0.003***	-7	-0.007***	-30
LM	0.025	9	0.014***	11	0.006**	15	0.009**	38
asini	-0.003*	-1	-0.001	-1	0.001	2	-0.011	-47
asinwd	0.184***	67	0.040***	32	0.019***	47	-0.011***	-47
		100		99		98		102
P(x=0)	0.773		0.773		0.773		0.773	
P(x=1)	0.366		0.258		0.352		0.463	
Diff	0.408		0.516		0.421		0.311	
Exp	0.275	67	0.124	24	0.041	10	0.024	8
Unexp	0.133		0.392		0.380		0.287	

Table 4: Decomposition of portfolio participation decison (Financial Assets and Businesses).

	(1) Germany %		(2) Italy %		(3) Luxembourg %		(4) Spain %	
TFA								
demog	0.001	1	-0.001	0	0.000	0	-0.006***	0
educ	0.061***	40	0.062***	166	0.038***	677	0.056***	43
marstat	-0.003***	-2	-0.021***	-56	-0.016***	-285	-0.020***	-16
LM	0.041***	27	-0.001	-3	0.006***	107	0.012***	9
asini	0.021***	14	0.002***	5	-0.009***	-160	0.102***	79
asinwf	0.031***	20	-0.004***	-11	-0.013***	-232	-0.014***	-11
		99		102		107		105
P(x=0)	0.943		0.943		0.943		0.943	
P(x=1)	0.576		0.771		0.680		0.930	
Diff	0.366		0.172		0.263		0.0134	
Exp	0.153	42	0	22	0.006	2	0.129	963
Unexp	0.213		0.135		0.257		-0.116	
BUSINESS								
demog	0.006***	9	0.001	10	0.001	3	-0.002	-7
educ	0.008***	12	0.012***	115	0.002***	5	0.009***	32
marstat	0.003***	4	0.001	10	0.001	3	-0.000	0
LM	0.013	19	-0.022***	-212	0.038***	99	0.010***	36
asini	0.001*	1	0.001*	10	0.000	0	0.004*	14
asinwb	0.037***	55	0.019***	183	-0.004***	-10	0.007***	25
		100		115		99		101
P(x=0)	0.126		0.126		0.126		0.126	
P(x=1)	0.061		0.168		0.0563		0.123	
Diff	0.064		0		0.0694		0.003	
Exp	0.068	105	0	-25	0.0382	55	0.028	877
Unexp	-0.003		-0.053		0.0312		-0.025	

Table 5: Decomposition of portfolio participation decision for the 25 to 49 year olds (Home, Investment Real Estate and Debt).

	(1) Germany	%	(2) Italy	%	(3) Luxembourg	%	(4) Spain	%
PR								
demog	0.002	1	-0.019***	-28	0.003	-15	-0.000	0
educ	0.065***	32	0.052***	77	0.025***	-124	0.042***	32
marstat	0.022***	11	-0.023***	-34	-0.010***	50	-0.032***	-25
LM	0.009***	4	-0.002	-3	0.005**	-25	0.013***	10
asini	0.083***	40	0.054***	80	-0.041***	204	0.098***	75
asinwp	0.024***	12	0.006***	9	-0.003***	15	0.009***	7
		100		101		104		100
P(x=0)	0.626		0.626		0.626		0.626	
P(x=1)	0.320		0.577		0.641		0.770	
Diff	0.306	67	0.050	136	-0.015	138	-0.144	-90
Exp	0.206		0.067		-0.020		0.130	
Unexp	0.100		-0.018		0.006		-0.274	
IR								
demog	0.014***	17	0.002	4	0.021***	44	0.020***	25
educ	0.020***	24	0.020***	39	0.006***	13	0.013***	16
marstat	0.008***	10	0.003**	6	0.006***	13	0.002**	2
LM	0.009***	11	-0.009***	-17	0.011***	23	0.007***	9
asini	0.030***	37	0.037***	72	0.004***	8	0.038***	47
asinwi	0.000	0	0.000	0	-0.000	0	0.000	0
		99		103		100		100
P(x=0)	0.155		0.155		0.155		0.155	
P(x=1)	0.103		0.160		0.215		0.292	
Diff	0.052		-0.005		-0.060		-0.137	
Exp	0.082	159	0.052	-1049	0.048	-80	0.080	-59
Unexp	-0.031		-0.057		-0.108		-0.217	
DEBT								
demog	0.007***	2	0.009***	8	0.005**	8	0.009***	23
educ	0.038***	12	0.033***	29	0.015***	23	0.026***	67
marstat	0.004***	1	-0.003	0	-0.000	0	-0.004	0
LM	0.007**	2	0.002	2	0.003	5	0.009**	23
asini	0.010***	3	0.002***	2	-0.003***	0	0.022***	57
asinwd	0.261***	80	0.072***	63	0.045***	69	-0.024***	-52
		98		95		97		96
P(x=0)	0.866		0.866		0.866		0.866	
P(x=1)	0.504		0.406		0.539		0.666	
Diff	0.362		0.459		0.327		0.200	
Exp	0.327	90	0.115	25	0.065	20	0.039	19
Unexp	0.035		0.344		0.262		0.161	

Table 6: Decomposition of portfolio participation decison for the 25 to 49 year olds (Financial Assets and Businesses).

	(1) Germany	%	(2) Italy	%	(3) Luxembourg	%	(4) Spain	%
TFA								
demog	-0.004**	-2	-0.004***	-8	-0.002	88	-0.005***	-4
educ	0.085***	51	0.082***	173	0.046***	-2018	0.061***	53
marstat	0.002*	1	-0.032***	-63	-0.022***	965	-0.031***	-27
LM	0.015***	9	-0.007***	0	0.003*	-132	0.010***	9
asini	0.044***	26	0.007***	15	-0.017***	746	0.089***	77
asinwf	0.025***	15	0.000	0	-0.010***	439	-0.008***	-7
		100		116		88		100
P(x=0)	0.920		0.920		0.920		0.920	
P(x=1)	0.523		0.797		0.644		0.920	
Diff	0.397		0.122		0.276		-0.001	
Exp	0.167	42	0.048	39	-0.002	-1	0.116	-16407
Unexp	0.230		0.075		0.278		-0.117	
BUSINESS								
demog	0.007***	9	0.004**	-17	0.007**	17	0.006**	17
educ	0.013***	16	0.010***	-42	0.001**	2	0.012***	33
marstat	0.002	2	0.002**	-8	0.002*	5	0.002***	6
LM	0.024***	29	-0.061***	254	0.033***	82	0.001	3
asini	0.004***	5	0.004***	-17	0.000**	0	0.014***	39
asinwb	0.032***	39	0.017***	-71	-0.004*	-10	0.001**	3
		91		100		97		99
P(x=0)	0.129		0.129		0.129		0.129	
P(x=1)	0.074		0.214		0.056		0.149	
Diff	0.055		-0.085		0.073		-0.021	
Exp	0.082	149	-0.024	28	0.040	55	0.036	-175
Unexp	-0.027		-0.061		0.033		-0.057	

Table 7: Decomposition of portfolio participation decision for households with head 50 and over (Home, Investment Real Estate and Debt).

	(1) Germany	%	(2) Italy	%	(3) Luxembourg	%	(4) Spain	%
PR								
demog	0.003	2	-0.001	-2	-0.003	-10	-0.003	-2
educ	0.043***	30	0.049***	76	0.026***	85	0.047***	33
marstat	0.007***	5	-0.020***	-31	-0.010***	-33	-0.019***	-13
LM	0.014**	10	0.005*	8	0.019*	62	0.024*	17
asini	0.009***	6	0.001***	2	-0.007***	-23	0.066***	47
asinwp	0.068***	47	0.030***	47	0.007***	23	0.026***	18
		99		100		104		100
P(x=0)	0.809		0.809		0.809		0.809	
P(x=1)	0.478		0.784		0.784		0.885	
Diff	0.331	44	0.026	252	0.025	121	-0.076	-186
Exp	0.145		0.064		0.031		0.141	
Unexp	0.186		-0.039		-0.005		-0.217	
IR								
demog	0.001	1	-0.002	-3	-0.000	0	-0.002	-2
educ	0.047***	39	0.058***	73	0.024***	273	0.052***	52
marstat	0.003***	2	0.000	0	0.000	0	0.000	0
LM	0.002	2	-0.005*	-6	0.003	34	0.001	1
asini	0.014**	11	0.008**	10	-0.002**	-23	0.033***	33
asinwi	0.055***	45	0.020***	25	-0.016***	-182	0.017***	17
		100		100		102		101
P(x=0)	0.244		0.244		0.244		0.244	
P(x=1)	0.153		0.259		0.350		0.429	
Diff	0.091		-0.015		-0.105		-0.185	
Exp	0.122	134	0.079	-524	0.009	-8	0.100	-54
Unexp	-0.031		-0.094		-0.114		-0.285	
DEBT								
demog	0.041***	28	0.039***	43	-0.000	0	0.017***	-100
educ	0.016**	11	0.011	12	0.008*	-66	0.014*	-82
marstat	0.006***	4	0.001	1	-0.001	8	0.001	-6
LM	-0.011*	-7	0.012***	13	-0.028***	230	-0.038***	224
asini	-0.002	-1	-0.001	0	0.001	-8	-0.009	53
asinwd	0.099***	66	0.028***	31	0.008***	-66	-0.001	6
		100		101		98		94
P(x=0)	0.683		0.683		0.683		0.683	
P(x=1)	0.265		0.162		0.149		0.281	
Diff	0.418		0.521		0.534		0.402	
Exp	0.149	36	0.0903	17	-0.0122	-2	-0.017	-4
Unexp	0.269		0.431		0.546		0.419	

Table 8: Decomposition of portfolio participation decision for households with head over 50 (Financial Assets and Businesses).

	(1) Germany	%	(2) Italy	%	(3) Luxembourg	%	(4) Spain	%
TFA								
demog	0.007***	10	0.005***	15	0.005***	-2451	0.001	2
educ	0.040***	56	0.045***	135	0.028***	-13725	0.042***	77
marstat	-0.004***	-6	-0.013***	-39	-0.010***	4902	-0.008***	-15
LM	-0.007*	-10	0.002	6	-0.005*	2451	-0.010*	-18
asini	0.007***	10	-0.001***	-3	-0.005***	2451	0.054***	99
asinwf	0.028***	39	-0.004***	-12	-0.013***	6373	-0.025***	-46
		99		102		0		99
P(x=0)	0.966		0.966		0.966		0.966	
P(x=1)	0.615		0.754		0.719		0.938	
Diff	0.350		0.212		0.247		0.028	
Exp	0.072	20	0.0334	16	0.000	0	0.055	195
Unexp	0.278		0.179		0.247		-0.027	
BUSINESS								
demog	0.000	0	-0.006***	-23	-0.004	-16	-0.008***	-106
educ	-0.001	-1	0.002	8	0.001	4	-0.000	0
marstat	-0.001	-1	-0.002**	-8	-0.004***	-16	-0.003***	-40
LM	0.030***	43	0.004***	15	0.038***	150	0.012*	159
asini	-0.003*	-4	-0.001**	-4	-0.000*	0	-0.011*	-146
asinwb	0.045***	65	0.030***	114	-0.005***	-20	0.018***	239
		101		103		102		106
P(x=0)	0.123		0.123		0.123		0.123	
P(x=1)	0.053		0.138		0.057		0.099	
Diff	0.070		-0.015		0.066		0.024	
Exp	0.069	98	0.026	112	0.025	38	0.008	31
Unexp	0.001		-0.042		0.041		0.017	

Table 9: Decomposition of portfolio participation decision (Total Debt, Mortgage and Non-housing Debt).

|	(1) Germany	%	(3) Italy	%	(5) Luxembourg	%	(7) Spain	%
TOTAL DEBT								
demog	0.041***	27	0.047***	31	0.004***	11	0.019***	13
educ	0.065***	43	0.068***	56	0.030***	84	0.060***	45
marstat	0.003***	2	-0.019***	-8	-0.006***	-17	-0.018***	-14
LM	0.026***	17	0.021***	17	0.012***	34	0.025***	19
asini	0.017***	11	0.004***	3	-0.005***	-14	0.047***	36
		100		100		97		99
P(x=0)	0.773		0.773		0.773		0.773	
P(x=1)	0.366		0.258		0.352		0.463	
Diff	0.408		0.516		0.421		0.311	
Exp	0.152	37	0.121	23	0.0357	8	0.132	67
Unexp	0.256		0.395		0.385		0.179	
MORTGAGE								
demog	0.025***	14	0.019***	14	-0.005	-16	0.008***	5
educ	0.077***	42	0.078***	59	0.035***	110	0.066***	43
marstat	0.018***	10	-0.012***	-8	-0.002	-6	-0.015***	-10
LM	0.021***	12	0.021***	16	0.015***	47	0.021***	14
asini	0.041***	23	0.025***	19	-0.012***	-38	0.071***	47
		100		101		97		99
P(x=0)	0.483		0.483		0.483		0.483	
P(x=1)	0.184		0.127		0.352		0.260	
Diff	0.299		0.356		0.131		0.223	
Exp	0.182	61	0.132	37	0.032	24	0.152	68
Unexp	0.117		0.224		0.099		0.071	
NON-HOUSING DEBT								
demog	0.038***	28	0.045***	38	na		0.014***	15
educ	0.066***	49	0.059***	50	na		0.055***	59
marstat	0.009***	7	-0.007***	-6	na		-0.008***	-9
LM	0.018***	13	0.020***	17	na		0.022***	24
asini	0.004	3	0.001*	1	na		0.011*	12
		100		101				101
P(x=0)	0.665		0.665		na		0.665	
P(x=1)	0.211		0.156		na		0.232	
Diff	0.454		0.509		na		0.433	
Exp	0.135	30	0.117	23	na		0.0932	22
Unexp	0.319		0.392		na		0.340	

Table 10: Decomposition of portfolio participation decision for the 25 to 49 year olds(Total Debt, Mortgage and Non-housing Debt).

	(1) Germany	%	(3) Italy	%	(5) Luxembourg	%	(7) Spain	%
DEBT								
demog	0.012***	7	0.011***	6	0.015***	52	0.013***	9
educ	0.091***	53	0.078***	107	0.038***	132	0.063***	41
marstat	0.007***	4	-0.020***	-27	-0.012***	-42	-0.026***	-17
LM	0.019***	11	-0.006**	0	0.002	7	0.021***	14
asini	0.042***	24	0.011***	15	-0.014***	-49	0.080***	53
P(x=0)	0.866		0.866		0.866		0.866	
P(x=1)	0.504		0.406		0.539		0.666	
Diff	0.362		0.459		0.327		0.200	
Exp	0.172	48	0.073	16	0.029	9	0.152	76
Unexp	0.190		0.386		0.298		0.048	
MORTGAGE								
demog	-0.011**	-5	-0.020***	-19	-0.012**	44	-0.014***	-11
educ	0.086***	42	0.069***	67	0.030***	-111	0.054***	41
marstat	0.025***	12	-0.021***	-19	-0.005***	19	-0.029***	-22
LM	0.010***	5	0.000	0	0.006**	-22	0.015***	11
asini	0.095***	46	0.074***	72	-0.045***	167	0.106***	80
		100		100		96		100
P(x=0)	0.555		0.555		0.555		0.555	
P(x=1)	0.249		0.228		0.539		0.454	
Diff	0.305		0.327		0.0157		0.101	
Exp	0.205	67	0.103	31	-0.0270	-172	0.132	131
Unexp	0.100		0.224		0.043		-0.031	
NON-HOUSING DEBT								
demog	0.016***	10	0.018***	21	na		0.017***	14
educ	0.080***	52	0.060***	69	na		0.049***	40
marstat	0.014***	9	-0.010***	-11	na		-0.013***	-11
LM	0.016***	10	0.009***	10	na		0.025***	20
asini	0.026***	17	0.009***	10	na		0.043***	35
		99		99				99
P(x=0)	0.773		0.773		na		0.773	
P(x=1)	0.312		0.226		na		0.302	
Diff	0.461		0.547		na		0.471	
Exp	0.153	33	0.087	16	na		0.122	26
Unexp	0.308		0.460		na		0.349	

Table 11: Decomposition of portfolio participation decision for household heads 50 and over (Total Debt, Mortgage and Non-housing Debt).

	(1) Germany	%	(3) Italy	%	(5) Luxembourg	%	(7) Spain	%
DEBT								
demog	0.043***	51	0.039***	41	0.002	-30	0.017***	33
educ	0.039***	46	0.040***	42	0.021***	-313	0.040***	78
marstat	0.007***	8	-0.002	-2	-0.002	30	-0.002	-4
LM	-0.009	-11	0.016***	17	-0.024**	358	-0.035**	-68
asini	0.005***	6	0.002***	2	-0.003***	45	0.030***	58
		100		101		90		97
P(x=0)	0.683		0.683		0.683		0.683	
P(x=1)	0.265		0.162		0.149		0.281	
Diff	0.418		0.521		0.534		0.402	
Exp	0.085	20	0.094	18	-0.007	-1	0.051	13
Unexp	0.333		0.427		0.541		0.351	
MORTGAGE								
demog	0.044***	35	0.039***	33	0.009**	21	0.028***	22
educ	0.046***	37	0.053***	45	0.026***	60	0.050***	40
marstat	0.008***	6	-0.007***	-6	-0.003**	-7	-0.006***	-5
LM	0.013**	10	0.027***	23	0.013	30	0.011	9
asini	0.013***	10	0.005***	4	-0.003***	-7	0.041***	33
		100		99		96		98
P(x=0)	0.413		0.413		0.413		0.413	
P(x=1)	0.137		0.0622		0.149		0.0878	
Diff	0.275		0.351		0.263		0.325	
Exp	0.124	45	0.118	34	0.0436	17	0.126	39
Unexp	0.151		0.233		0.219		0.199	
NON-HOUSING DEBT								
demog	0.032***	44	0.030***	34	na		0.007**	54
educ	0.049***	67	0.041***	47	na		0.046***	357
marstat	0.009***	12	0.004*	5	na		0.005*	39
LM	-0.015*	-21	0.012***	14	na		-0.034**	-264
asini	-0.002	-3	-0.001	-1	na		-0.012	-93
		100		98	na			93
P(x=0)	0.558		0.558		na		0.558	
P(x=1)	0.137		0.111		na		0.169	
Diff	0.421		0.448		na		0.389	
Exp	0.073	17	0.087	20	na		0.013	3
Unexp	0.348		0.361		na		0.376	

Figure 1 Participation across the income distribution for the whole population.
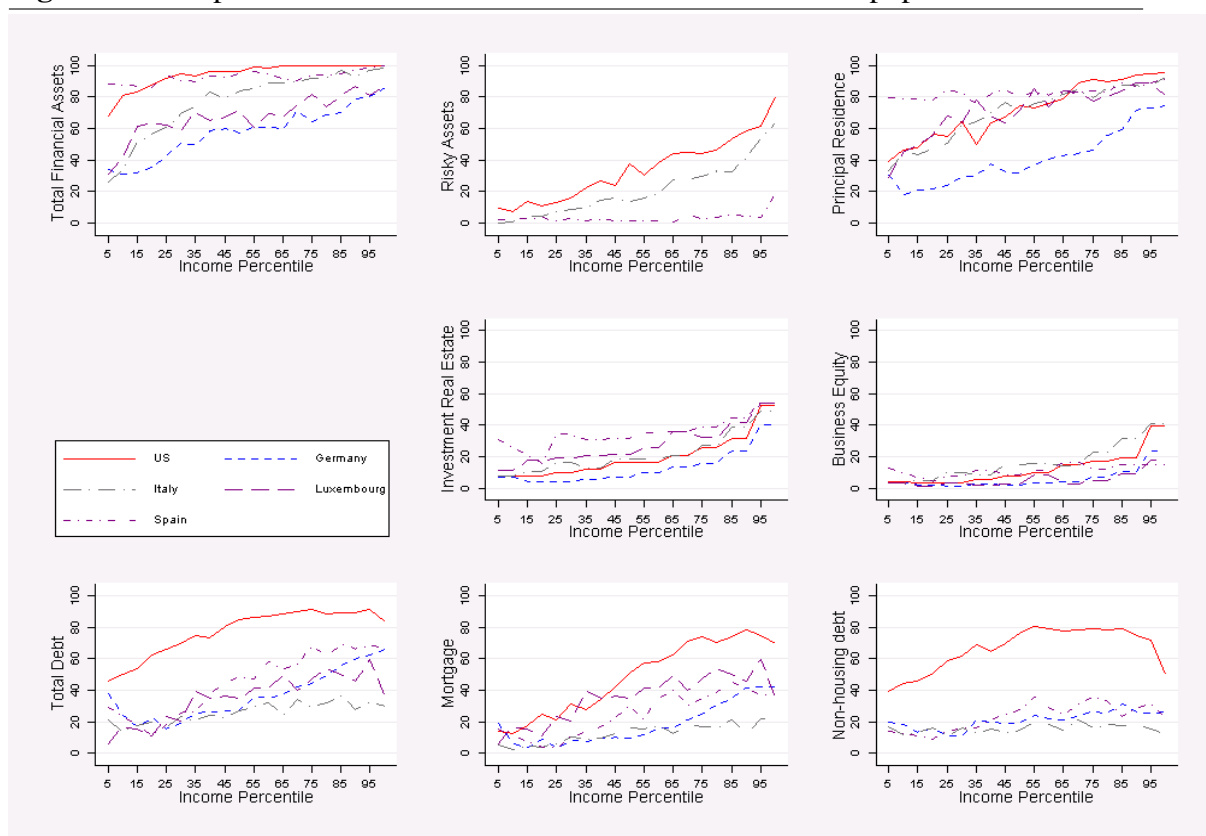
Source: 2007 SCF, 2007 SOEP, 2008 SHIW, 2007 PSELL3 and 2008 EFF
Note: Weighted statistics

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Figure 2 Participation across the income distribution for the 25 to 49 population.

Source: 2007 SCF, 2007 SOEP, 2008 SHIW, 2007 PSELL3 and 2008 EFF
Note: Weighted statistics

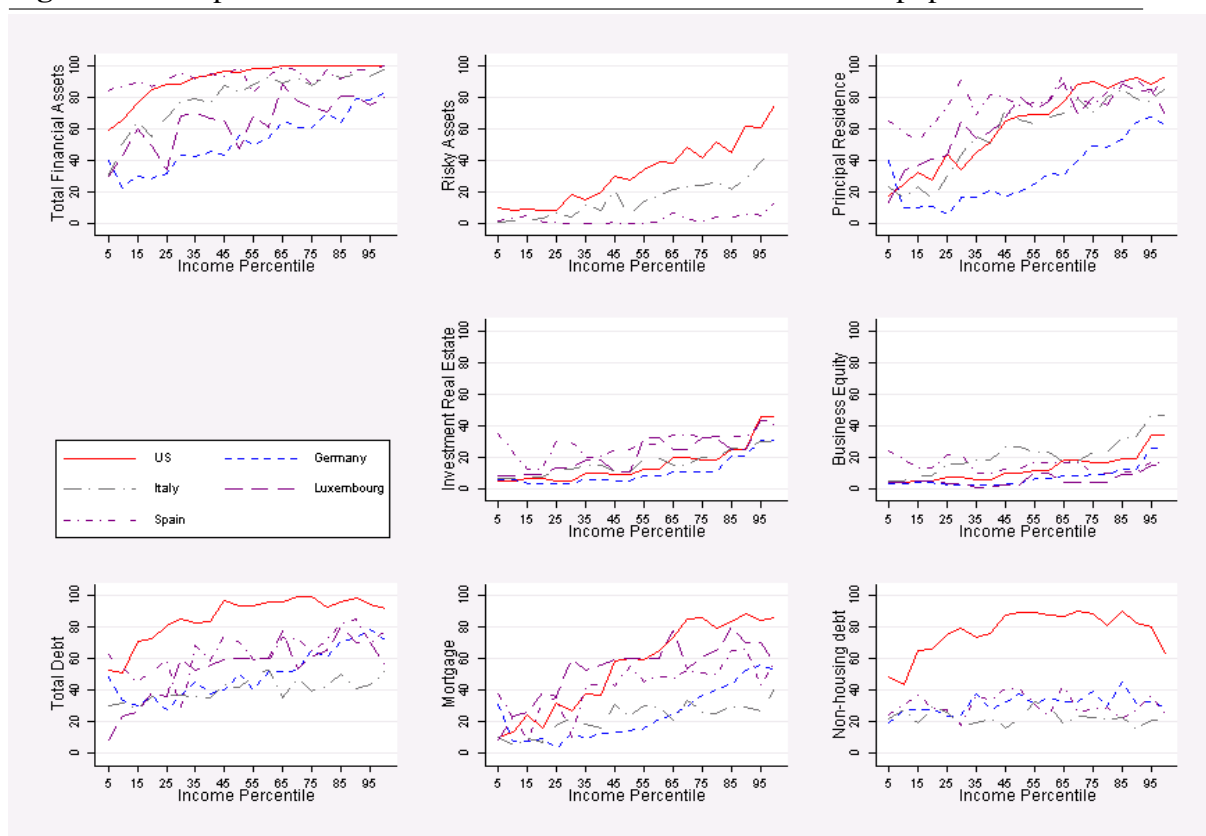**Figure 3** Participation across the wealth distribution for the 50 and over population.

Source: 2007 SCF, 2007 SOEP, 2008 SHIW, 2007 PSELL3 and 2008 EFF
Note: Weighted statistics

Figure 4 Level of holding of each wealth component for the whole population
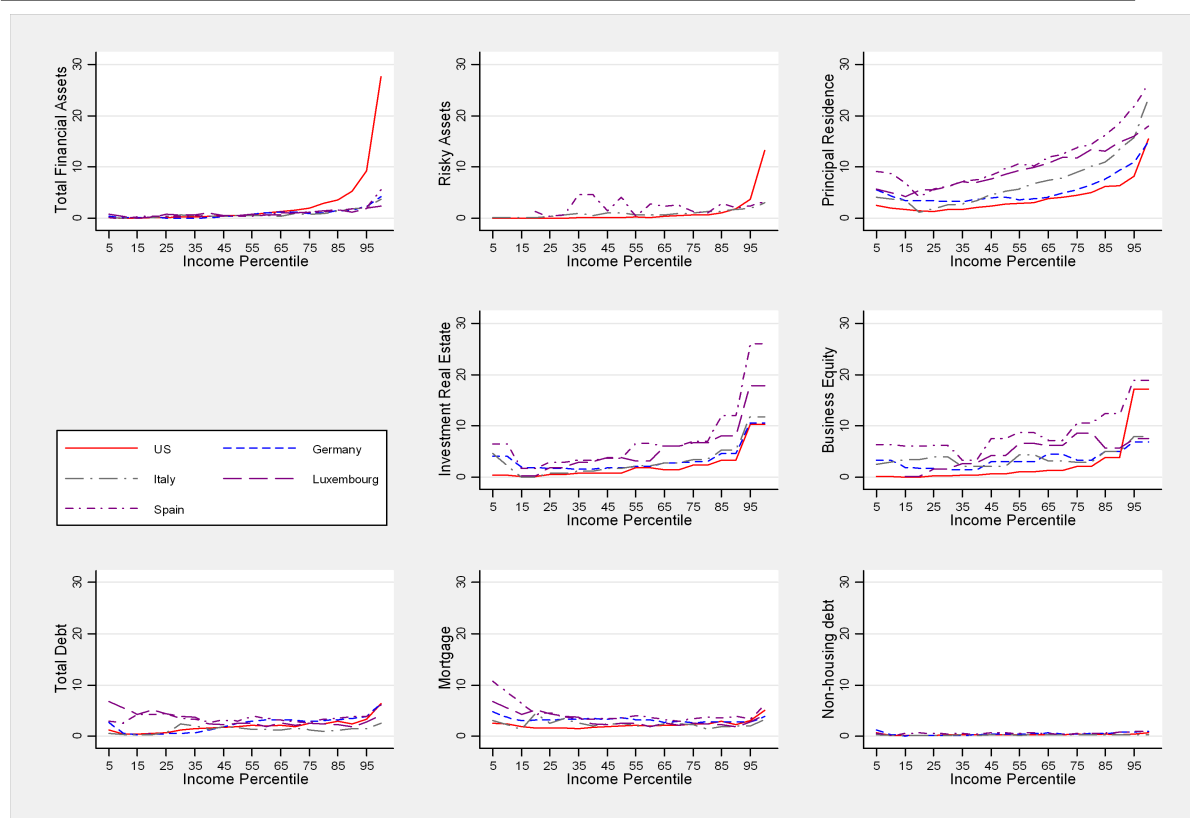
Source: 2007 SCF, 2007 SOEP, 2008 SHIW, 2007 PSELL3 and 2008 EFF
Note: Each wealth component is scaled by the median income in the country

Figure 5 Level of holding of each wealth component for the under-50 population
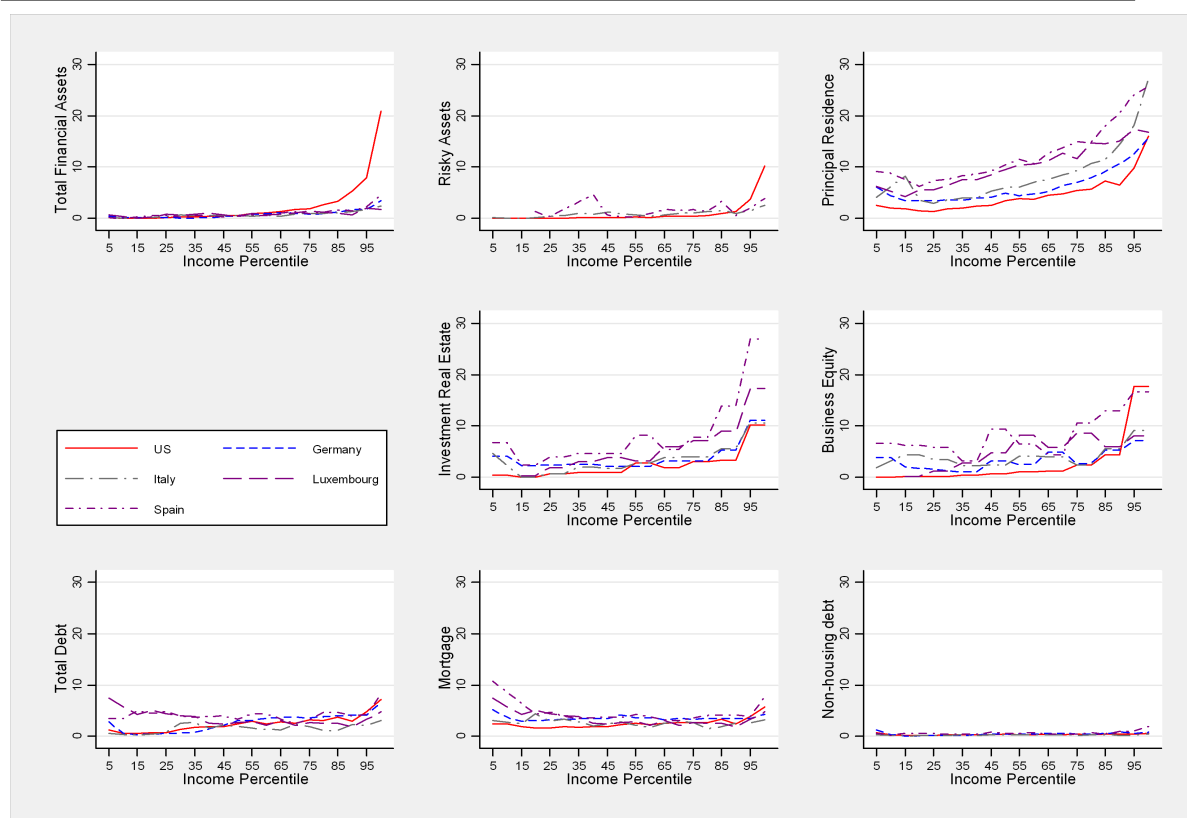
Source: 2007 SCF, 2007 SOEP, 2008 SHIW, 2007 PSELL3 and 2008 EFF
Note: Each wealth component is scaled by the median income in the country

Figure 6 Level of holding of each wealth component for the over-50 population
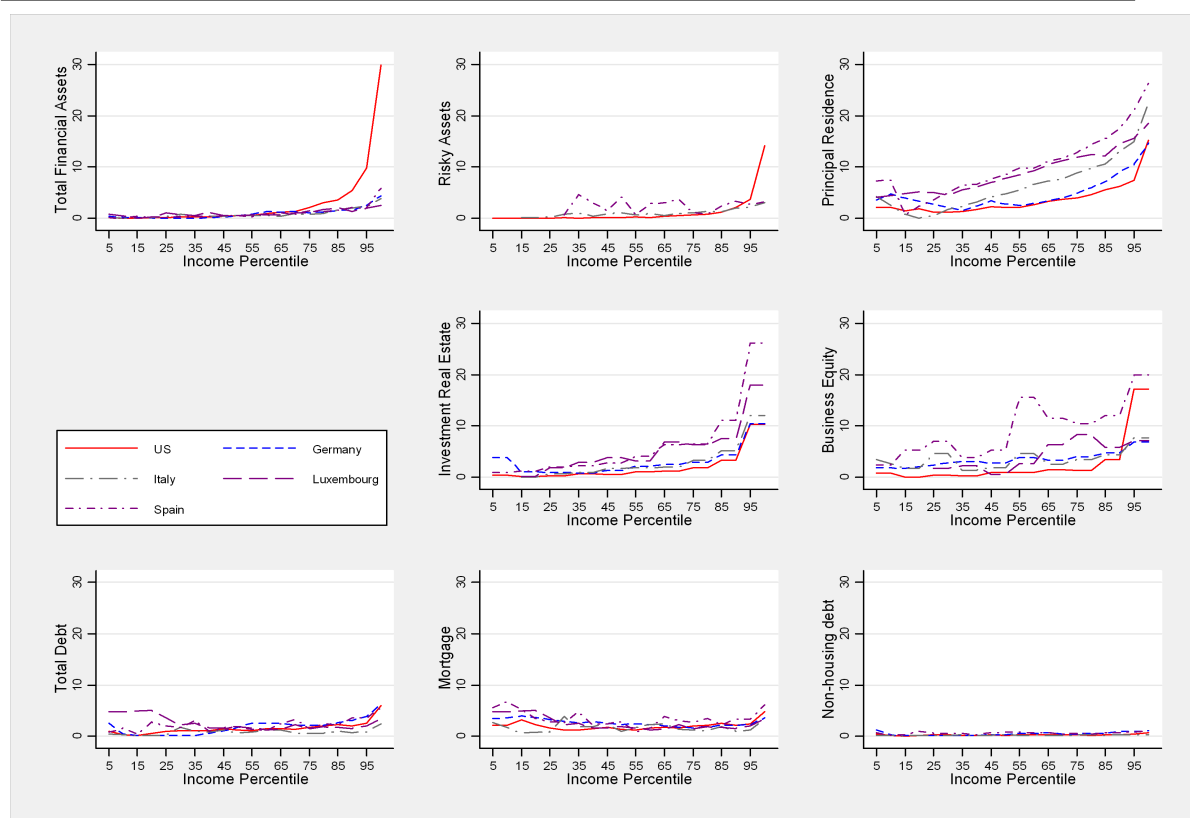
Source: 2007 SCF, 2007 SOEP, 2008 SHIW, 2007 PSELL3 and 2008 EFF
Note: Each wealth component is scaled by the median income in the country

Figure 7 Predicted and counterfactual distributions of Total Assets
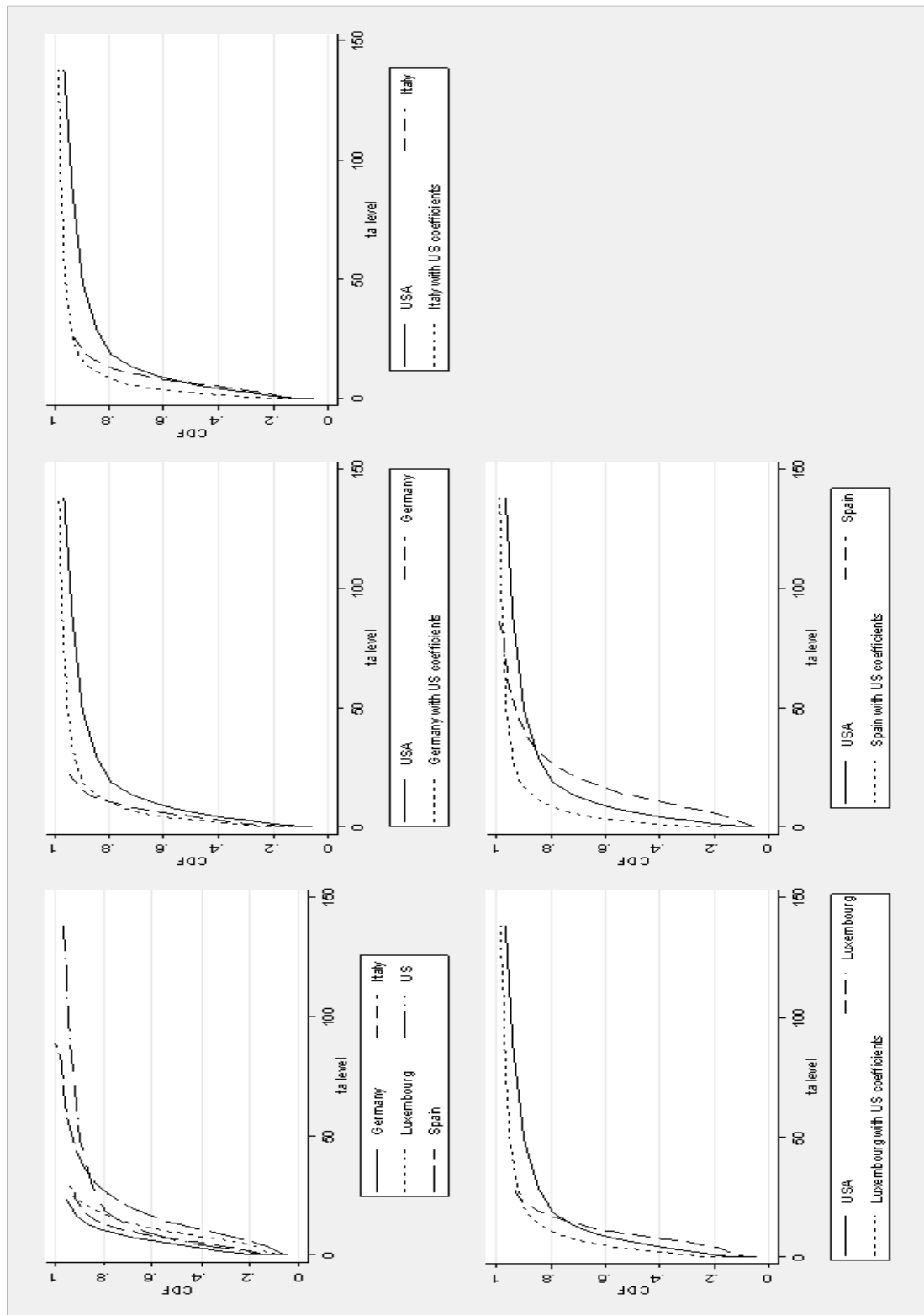
Source: 2007 SCF, 2007 SOEP, 2008 SHIW, 2007 PSELL3 and 2008 EFF
Note: The difference between the US distribution and the distribution of country j with US coefficients shows the wealth gap due to characteristics. The difference between the distribution of country j with US coefficients and the distribution of country j shows the unexplained gap.

Figure 8 Predicted and counterfactual distributions of Total Debt

Source: 2007 SCF, 2007 SOEP, 2008 SHIW, 2007 PSELL3 and 2008 EFF
Note: The difference between the US distribution and the distribution of country j with US coefficients shows the wealth gap due to characteristics. The difference between the distribution of country j with US coefficients and the distribution of country j shows the unexplained gap.

Figure 9 Predicted and counterfactual distributions of Business Equity
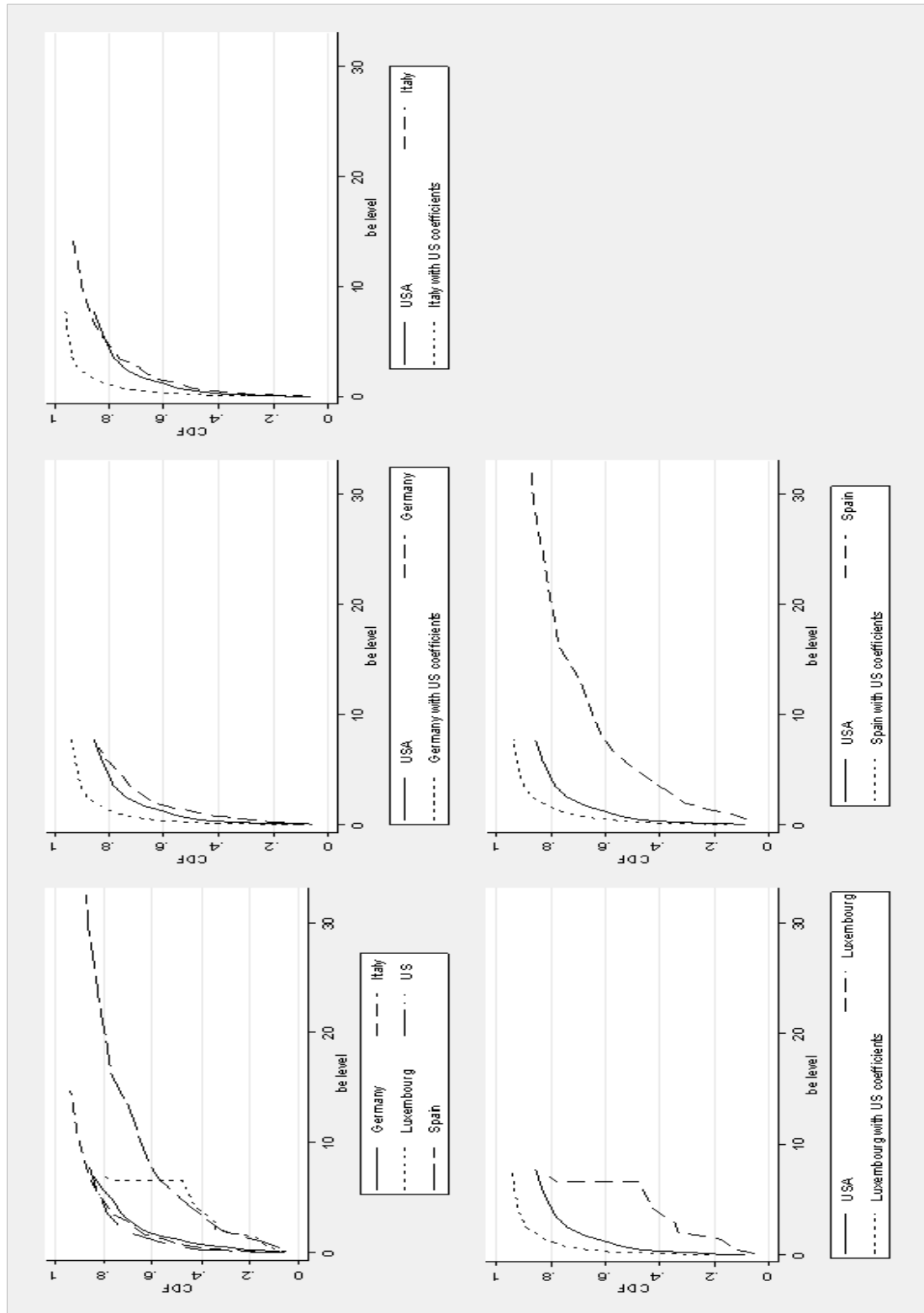
Source: 2007 SCF, 2007 SOEP, 2008 SHIW, 2007 PSELL3 and 2008 EFF
Note: The difference between the US distribution and the distribution of country j with US coefficients shows the wealth gap due to characteristics. The difference between the distribution of country j with US coefficients and the distribution of country j shows the unexplained gap.

Figure 10 Predicted and counterfactual distributions of Investment Real Estate
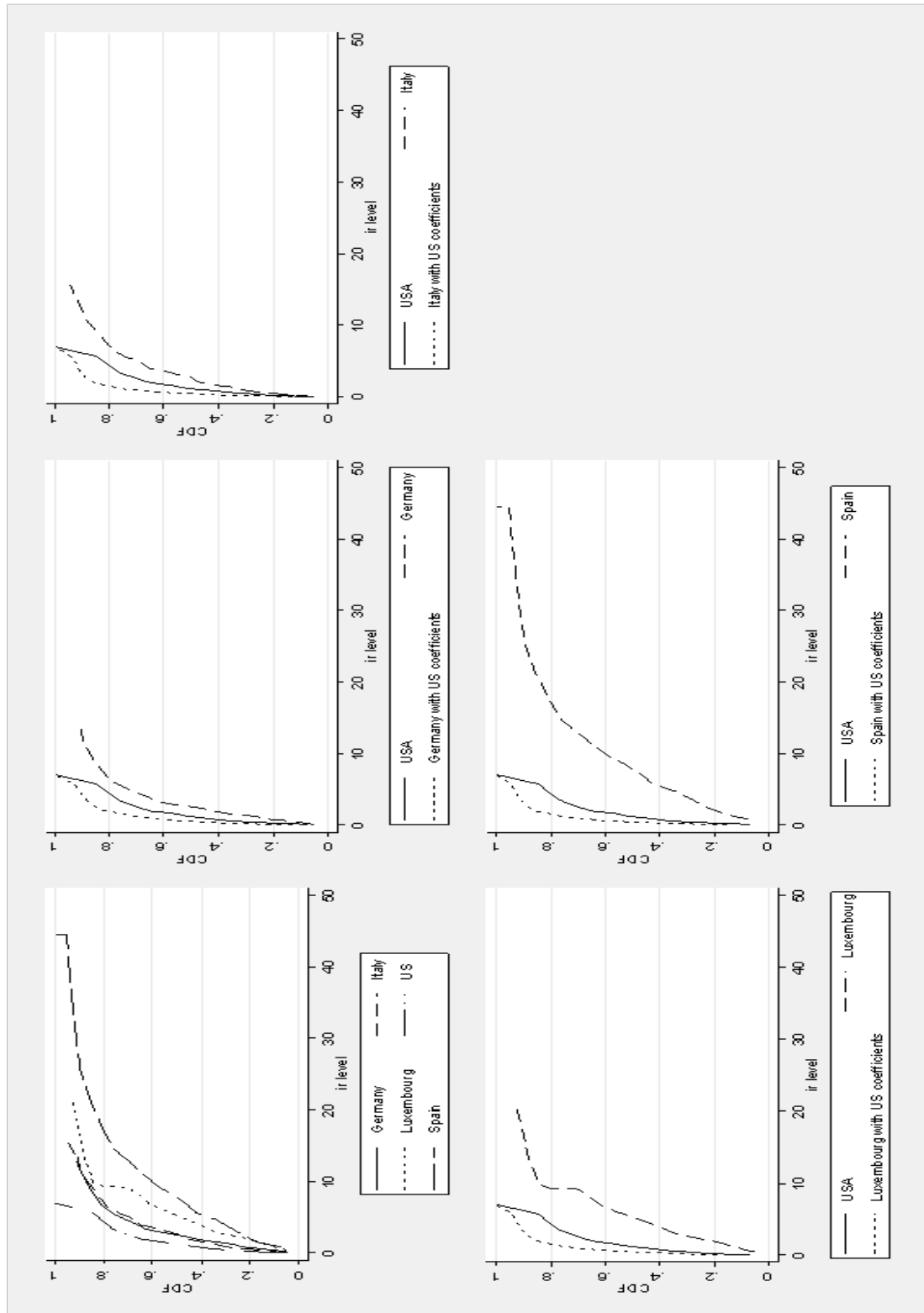
Source: 2007 SCF, 2007 SOEP, 2008 SHIW, 2007 PSELL3 and 2008 EFF
Note: The difference between the US distribution and the distribution of country j with US coefficients shows the wealth gap due to characteristics. The difference between the distribution of country j with US coefficients and the distribution of country j shows the unexplained gap.
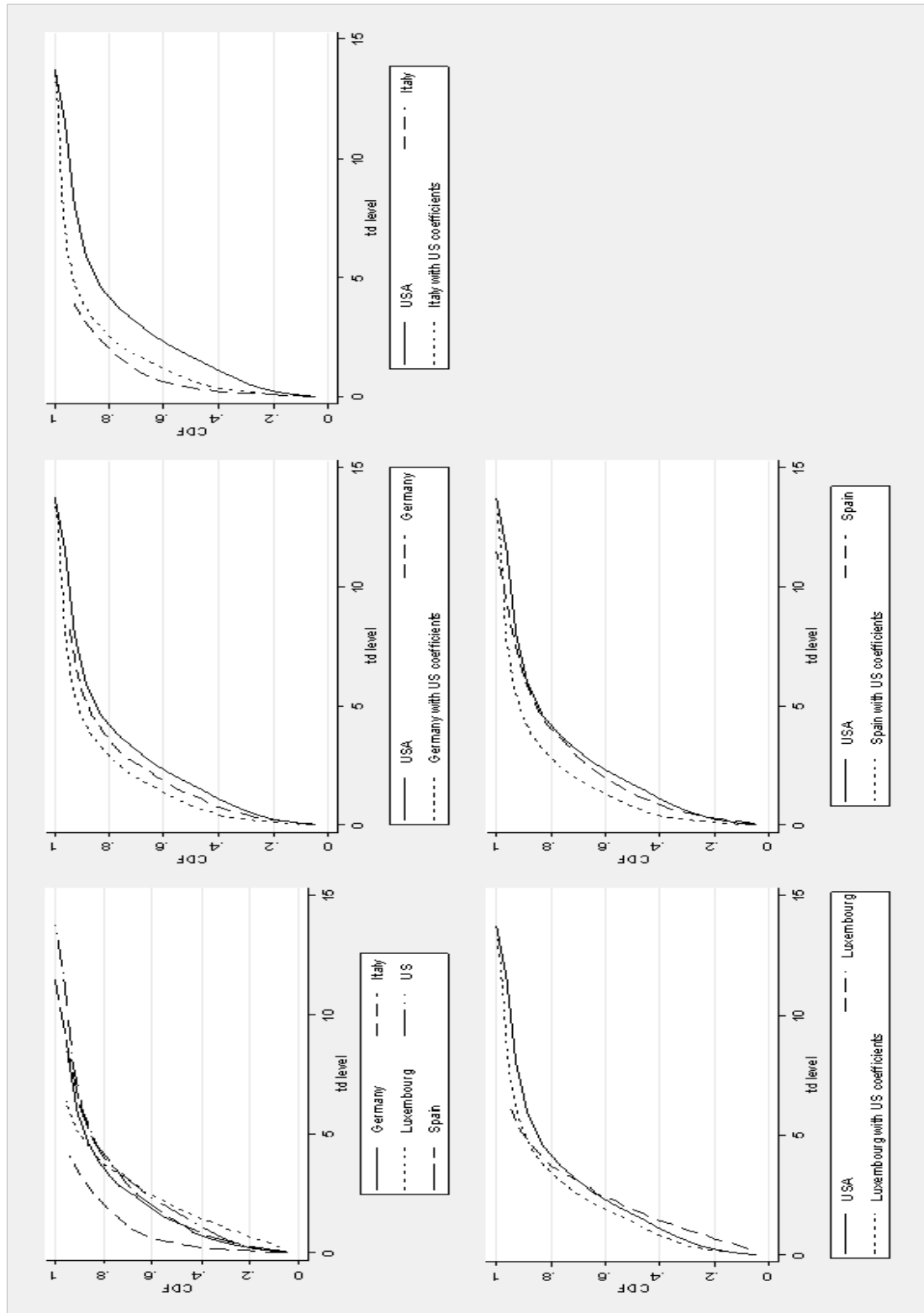
Figure 11 Predicted and counterfactual distributions of Principal Residence
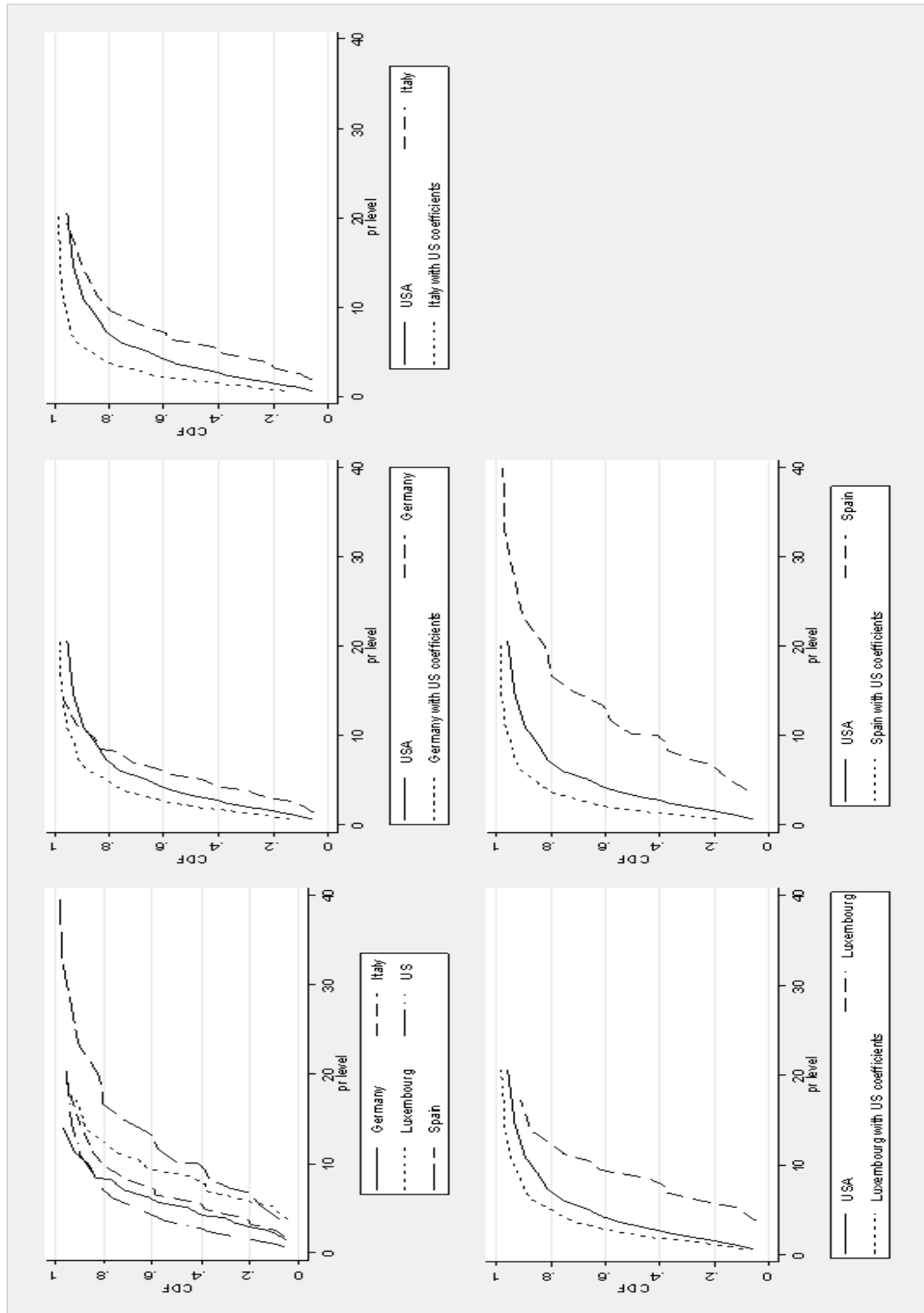
Source: 2007 SCF, 2007 SOEP, 2008 SHIW, 2007 PSELL3 and 2008 EFF
Note: The difference between the US distribution and the distribution of country j with US coefficients shows the wealth gap due to characteristics. The difference between the distribution of country j with US coefficients and the distribution of country j shows the unexplained gap.

Figure 12 Predicted and counterfactual distributions of Total Financial Assets

Source: 2007 SCF, 2007 SOEP, 2008 SHIW, 2007 PSELL3 and 2008 EFF
Note: The difference between the US distribution and the distribution of country j with US coefficients shows the wealth gap due to characteristics. The difference between the distribution of country j with US coefficients and the distribution of country j shows the unexplained gap.
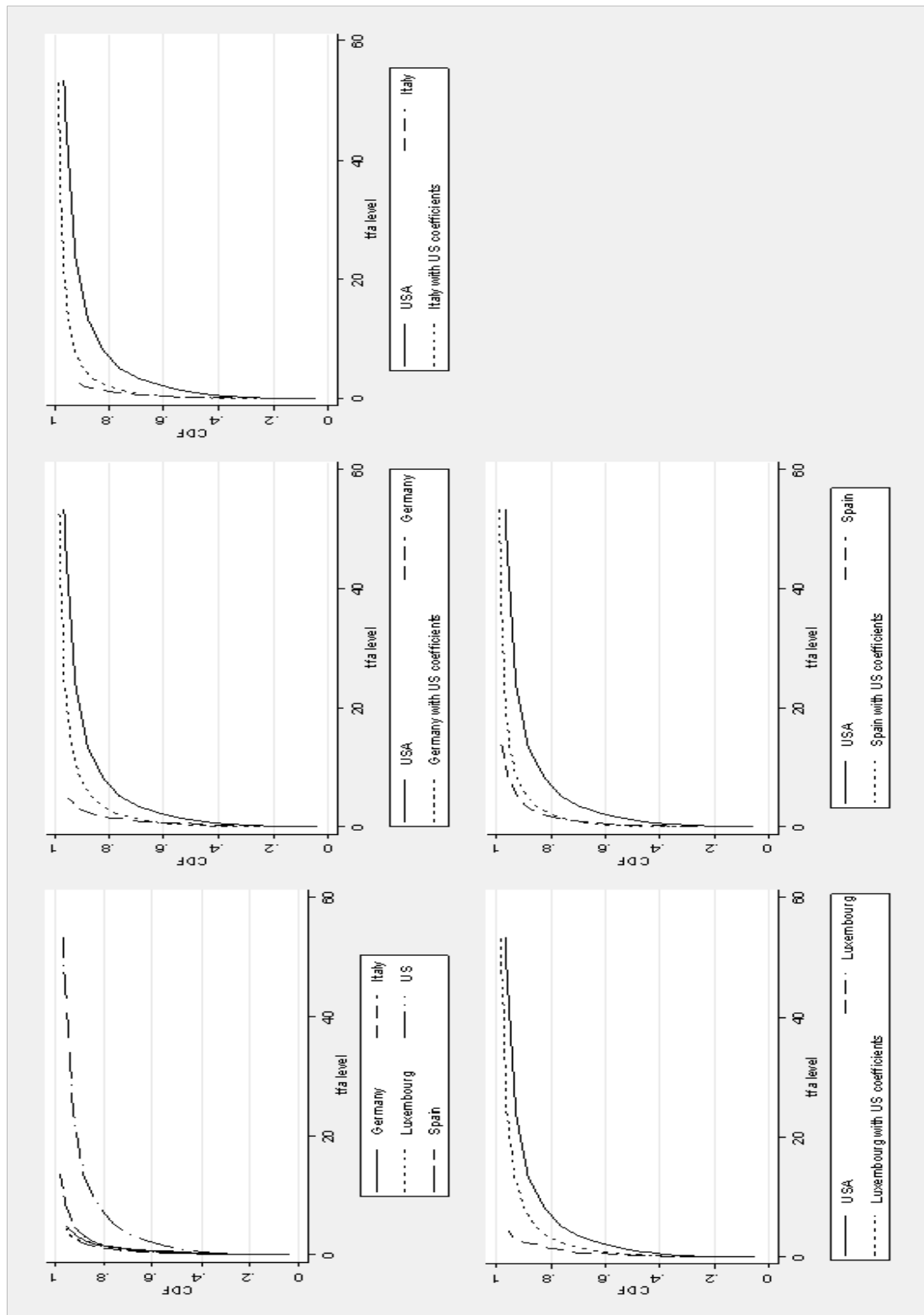
Table A1: Marginal effects for asset participation (principal residence, investment real estate and debt).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
PR	US	se	Germany	se	Italy	se	Luxembourg	se	Spain	se
age	0.024***	(0.002)	0.038***	(0.002)	0.021***	(0.004)	0.018***	(0.003)	0.018***	(0.003)
age2	-0.016***	(0.001)	-0.027***	(0.001)	-0.014***	(0.003)	-0.012***	(0.003)	-0.014***	(0.003)
male	0.023**	(0.011)	-0.002	(0.007)	0.030	(0.019)	-0.060***	(0.012)	0.018	(0.018)
noch18	0.000	(0.004)	0.049***	(0.005)	0.019	(0.013)	0.001	(0.007)	0.021	(0.013)
low education	-0.134***	(0.011)	-0.057***	(0.009)	-0.067***	(0.022)	-0.128***	(0.014)	0.005	(0.021)
high education	0.018*	(0.011)	0.006	(0.011)	-0.053	(0.034)	-0.140***	(0.016)	0.025	(0.026)
married	0.226***	(0.013)	0.306***	(0.011)	-0.038	(0.029)	0.121***	(0.020)	0.074***	(0.021)
divorced	0.018	(0.012)	-0.042***	(0.012)	-0.105***	(0.035)	-0.088***	(0.018)	-0.035	(0.027)
widowed	0.124***	(0.017)	0.143***	(0.014)	-0.008	(0.032)	0.097***	(0.026)	0.054*	(0.030)
employed	0.090***	(0.019)	0.141***	(0.009)	-0.124***	(0.031)	0.010	(0.018)	-0.006	(0.025)
self-employed	0.137***	(0.023)	0.257***	(0.015)	-0.090**	(0.040)	0.068***	(0.025)	0.025	(0.035)
retired	0.033	(0.022)	0.012	(0.012)	0.012	(0.034)	0.008	(0.023)	-0.007	(0.030)
income	0.059***	(0.013)	-0.004***	(0.001)	0.248***	(0.035)	0.115***	(0.029)	0.004*	(0.002)
wealth (non-PR)	0.008***	(0.001)	0.011***	(0.000)	0.004***	(0.001)	0.011***	(0.001)	0.006***	(0.001)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
IR	US	se	Germany	se	Italy	se	Luxembourg	se	Spain	se
age	0.010***	(0.001)	0.010***	(0.001)	0.018***	(0.003)	-0.001**	(0.001)	0.042***	(0.006)
age2	-0.008***	(0.001)	-0.008***	(0.001)	-0.014***	(0.003)	0.001	(0.000)	-0.034***	(0.005)
male	0.049***	(0.011)	-0.001	(0.004)	0.031*	(0.016)	0.011***	(0.003)	0.013	(0.024)
noch18	-0.001	(0.003)	-0.001	(0.002)	-0.000	(0.010)	-0.003	(0.002)	0.012	(0.019)
low education	-0.081***	(0.012)	-0.034***	(0.004)	-0.033**	(0.016)	0.016***	(0.003)	-0.086***	(0.029)
high education	0.039***	(0.008)	0.035***	(0.005)	0.018	(0.021)	0.014***	(0.003)	0.080**	(0.034)
married	0.095***	(0.013)	0.030***	(0.005)	-0.014	(0.024)	-0.007*	(0.004)	0.045	(0.035)
divorced	0.092***	(0.013)	-0.022***	(0.006)	-0.050	(0.036)	-0.001	(0.005)	-0.102**	(0.050)
widowed	0.085***	(0.018)	-0.002	(0.007)	-0.048*	(0.029)	-0.010*	(0.005)	-0.087*	(0.045)
employed	0.017	(0.020)	0.005	(0.004)	-0.076***	(0.027)	-0.002	(0.004)	-0.065*	(0.035)
self-employed	0.105***	(0.021)	0.080***	(0.006)	-0.019	(0.032)	0.011*	(0.006)	0.205***	(0.048)
retired	0.062***	(0.022)	-0.026***	(0.006)	-0.045	(0.028)	0.001	(0.004)	0.015	(0.037)
income	0.060***	(0.009)	0.002**	(0.001)	0.114***	(0.014)	0.003	(0.002)	0.006*	(0.004)
wealth (non-IR)	0.005***	(0.001)	0.008***	(0.000)	0.009***	(0.002)	0.046***	(0.004)	0.015***	(0.004)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
DEBT	US	se	Germany	se	Italy	se	Luxembourg	se	Spain	se
age	0.007***	(0.001)	0.023***	(0.002)	0.012***	(0.004)	-0.000	(0.002)	-0.005	(0.007)
age2	-0.014***	(0.001)	-0.031***	(0.002)	-0.020***	(0.003)	-0.007***	(0.002)	-0.008	(0.007)
male	-0.004	(0.009)	0.013**	(0.007)	-0.022	(0.016)	0.008	(0.005)	0.004	(0.027)
noch18	0.014***	(0.004)	0.034***	(0.004)	0.014	(0.010)	0.022***	(0.004)	0.086***	(0.019)
low education	-0.065***	(0.010)	-0.009	(0.009)	0.012	(0.016)	0.009	(0.006)	-0.046	(0.032)
high education	-0.041***	(0.008)	-0.006	(0.010)	-0.013	(0.024)	-0.037***	(0.006)	0.038	(0.039)
married	0.102***	(0.012)	0.204***	(0.010)	0.104***	(0.026)	-0.008	(0.007)	0.200***	(0.041)
divorced	0.083***	(0.011)	0.140***	(0.011)	0.084**	(0.033)	0.040***	(0.009)	0.231***	(0.052)
widowed	0.085***	(0.016)	0.097***	(0.016)	0.069**	(0.034)	-0.086***	(0.015)	0.099	(0.064)
employed	0.044***	(0.016)	0.029***	(0.008)	0.041*	(0.023)	0.046***	(0.007)	-0.056	(0.037)
self-employed	0.030	(0.019)	0.125***	(0.014)	0.022	(0.028)	0.003	(0.010)	-0.038	(0.051)
retired	-0.009	(0.018)	-0.053***	(0.013)	0.025	(0.028)	-0.011	(0.013)	-0.117**	(0.047)
income	-0.005	(0.003)	0.001	(0.001)	0.002	(0.009)	-0.004**	(0.002)	0.017***	(0.004)
wealth (assets)	0.038***	(0.002)	0.016***	(0.001)	0.011***	(0.002)	0.065***	(0.004)	0.031***	(0.008)
Observations	4,256		11,096		7,916		3,660		6,145	

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A2: Marginal effects for asset participation (financial assets and own business).

FA	(1) US	(2) se	(3) Germany	(4) se	(5) Italy	(6) se	(7) Luxembourg	(8) se	(9) Spain	(10) se
age	-0.000	(0.000)	-0.000	(0.001)	0.003	(0.003)	-0.003	(0.003)	-0.001	(0.002)
age2	0.001*	(0.000)	0.002	(0.001)	-0.005*	(0.002)	0.005*	(0.003)	0.002	(0.002)
male	-0.004**	(0.002)	-0.033***	(0.007)	-0.007	(0.015)	-0.009	(0.012)	0.001	(0.010)
noch18	-0.003***	(0.001)	-0.036***	(0.004)	-0.037***	(0.009)	-0.015**	(0.007)	-0.016***	(0.006)
low education	-0.027***	(0.002)	-0.143***	(0.009)	-0.090***	(0.019)	-0.113***	(0.014)	-0.055***	(0.013)
high education	0.035***	(0.003)	0.101***	(0.011)	-0.003	(0.043)	0.053***	(0.018)	0.033	(0.024)
married	0.020***	(0.003)	0.044***	(0.010)	-0.041*	(0.023)	-0.086***	(0.022)	0.004	(0.013)
divorced	0.003	(0.002)	-0.120***	(0.011)	0.007	(0.030)	-0.135***	(0.021)	0.011	(0.016)
widowed	0.007**	(0.003)	0.015	(0.014)	-0.023	(0.023)	0.059**	(0.028)	0.002	(0.019)
employed	0.010***	(0.002)	0.129***	(0.009)	-0.013	(0.022)	0.085***	(0.019)	0.013	(0.013)
self-employed	0.027***	(0.004)	0.059***	(0.015)	0.038	(0.032)	0.031	(0.030)	-0.003	(0.021)
retired	0.006**	(0.003)	0.082***	(0.013)	-0.005	(0.024)	0.112***	(0.022)	-0.001	(0.016)
income	0.005***	(0.000)	0.011***	(0.001)	0.258***	(0.029)	0.090***	(0.029)	0.002	(0.001)
wealth (non-fin)	0.001***	(0.000)	0.014***	(0.000)	-0.000	(0.001)	0.015***	(0.001)	0.003***	(0.001)

BUSINESS	(1) US	(2) se	(3) Germany	(4) se	(5) Italy	(6) se	(7) Luxembourg	(8) se	(9) Spain	(10) se
age	-0.000	(0.001)	0.001**	(0.000)	0.007***	(0.003)	-0.000**	(0.000)	0.004	(0.003)
age2	-0.001	(0.001)	-0.001**	(0.000)	-0.007***	(0.002)	0.000*	(0.000)	-0.006**	(0.003)
male	0.020***	(0.005)	-0.004**	(0.002)	0.001	(0.013)	0.000*	(0.000)	-0.032***	(0.011)
noch18	-0.002**	(0.001)	0.004***	(0.001)	0.001	(0.007)	0.000	(0.000)	-0.004	(0.009)
low education	-0.013***	(0.005)	-0.012***	(0.002)	0.013	(0.011)	-0.000*	(0.000)	-0.024**	(0.012)
high education	0.008**	(0.004)	-0.009***	(0.002)	-0.045**	(0.017)	0.000*	(0.000)	-0.016	(0.016)
married	0.019***	(0.005)	0.019***	(0.002)	-0.007	(0.019)	0.000*	(0.000)	0.037**	(0.017)
divorced	0.011**	(0.005)	-0.001	(0.003)	0.011	(0.021)	0.001**	(0.000)	-0.062**	(0.024)
widowed	0.015*	(0.008)	0.006	(0.004)	0.006	(0.026)	0.000	(0.000)	-0.012	(0.024)
employed	-0.014**	(0.007)	-0.011***	(0.002)	-0.117***	(0.018)	-0.000*	(0.000)	-0.025*	(0.015)
self-employed	0.106***	(0.016)	0.090***	(0.004)	0.205***	(0.023)	0.002***	(0.001)	0.244***	(0.023)
retired	-0.012	(0.008)	-0.038***	(0.004)	-0.074***	(0.019)	-0.000	(0.000)	0.036*	(0.019)
income	0.001	(0.001)	-0.000	(0.000)	0.093***	(0.012)	0.000	(0.000)	0.003*	(0.001)
wealth (non-BUS)	0.013***	(0.001)	0.001***	(0.000)	0.001	(0.001)	0.001***	(0.000)	0.006***	(0.002)
Observations	4,256		11,096		7,916		3,660		6,145	

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A3: Means by country.

Variables	US	Germany	Italy	Luxembourg	Spain
age	51.60	55.26	56.33	51.20	52.90
age2	29.32	33.40	34.36	28.64	30.51
male	0.73	0.56	0.64	0.48	0.51
noch18	0.84	0.38	0.44	0.61	0.46
low education	0.16	0.65	0.65	0.37	0.57
high education	0.31	0.21	0.10	0.28	0.18
married	0.53	0.45	0.61	0.58	0.64
divorced	0.21	0.19	0.08	0.12	0.08
widowed	0.10	0.15	0.17	0.11	0.15
employed	0.59	0.44	0.36	0.53	0.40
self-employed	0.11	0.06	0.14	0.04	0.09
retired	0.26	0.29	0.41	0.21	0.21
income	11.26	10.44	10.97	11.48	8.91
wealth (non-PR)	9.08	4.25	7.32	8.64	7.60

Wealth levels (in €)

Total Financial Assets	176,020	22,243	22,064	33,440	22,234
Principal Residence	287,565	245,779	268,168	537,316	272,413
Investment Real Estate	280,567	206,835	175,178	454,223	259,849
Business Equity	458,035	145,883	133,890	318,206	247,145
Total Assets	567,906	154,848	253,911	570,153	348,132
Total Debt	125,269	84,850	40,249	137,595	79,316
Observations	4,256	11,096	7916	3,660	6145

Table A4: Means by age groups by country.

25 to 49 years old	US	Germany	Italy	Luxembourg	Spain
age	38.04	38.70	39.63	38.73	38.74
age2	14.98	15.44	16.08	15.46	15.42
male	0.78	0.52	0.66	0.46	0.50
noch18	1.34	0.79	0.94	1.00	0.93
low education	0.14	0.60	0.50	0.30	0.42
high education	0.32	0.22	0.13	0.34	0.22
married	0.53	0.42	0.66	0.58	0.71
divorced	0.22	0.19	0.11	0.12	0.09
widowed	0.01	0.01	0.01	0.02	0.01
employed	0.78	0.71	0.67	0.80	0.63
self-employed	0.11	0.07	0.21	0.05	0.11
retired	0.05	0.00	0.01	0.00	0.01
income	11.32	10.25	10.91	11.52	9.63
wealth (non-PR)	7.69	2.32	6.42	7.91	6.30

50 and over	US	Germany	Italy	Luxembourg	Spain
age	64.89	67.28	67.12	64.69	65.54
age2	43.37	46.44	46.16	42.89	43.96
male	0.67	0.58	0.62	0.51	0.52
noch18	0.36	0.08	0.12	0.19	0.05
low education	0.17	0.69	0.74	0.46	0.72
high education	0.30	0.20	0.08	0.22	0.14
married	0.52	0.48	0.58	0.58	0.58
divorced	0.21	0.19	0.06	0.13	0.07
widowed	0.20	0.24	0.27	0.22	0.27
employed	0.40	0.24	0.16	0.24	0.19
self-employed	0.11	0.05	0.10	0.03	0.07
retired	0.47	0.50	0.68	0.43	0.39
income	11.21	10.58	11.01	11.44	8.26
wealth (non-PR)	10.43	5.66	7.90	9.42	8.76

Table A5: Coefficients from Distribution Regression at the median wealth variable level for the U.S.

VARIABLES	(1) Total Assets	(2) Total Debt	(3) Total Fin. Assets	(4) Principal Residence	(5) Inv. Real Estate	(6) Bus. Equity
age	-0.021***	-0.010***	-0.028***	-0.011***	-0.012***	0.003
age2	0.015***	0.012***	0.019***	0.007***	0.009***	-0.007**
male	-0.043***	-0.025**	-0.056***	-0.003	-0.103***	-0.060***
no. children	-0.010***	-0.015***	0.015***	-0.019***	-0.015***	-0.020***
low education	0.075***	0.105***	0.129***	0.024**	-0.027	0.126***
high education	-0.243***	-0.180***	-0.230***	-0.204***	-0.126***	-0.072***
married	-0.108***	-0.185***	-0.025**	-0.079***	0.022	0.031**
divorced	-0.016*	-0.037***	0.052***	-0.031**	-0.002	0.025
widowed	-0.050***	-0.114***	-0.021	-0.058***	-0.085***	0.159***
employed	-0.002	-0.092***	-0.044***	0.074***	0.029	-0.045**
self-employed	-0.212***	-0.166***	-0.095***	-0.066**	-0.142***	-0.145***
retired	-0.010	0.027	-0.012	0.075***	0.015	-0.047*
income	-0.081***	-0.072***	-0.089***	-0.078***	-0.039***	-0.015***
Constant	2.493***	1.876***	2.725***	2.078***	1.840***	1.276***
R-squared	0.281	0.221	0.274	0.173	0.130	0.085

Robust standard errors in parentheses

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

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Table A6: Coefficients from Distribution Regression at the median wealth variable level for Spain

VARIABLES	(1) Total Assets	(2) Total Debt	(3) Total Fin. Assets	(4) Principal Residence	(5) Inv. Real Estate	(6) Bus. Equity
age	-0.034***	0.022**	-0.020***	-0.024***	-0.025***	-0.015
age2	0.026***	-0.013	0.013***	0.018***	0.020***	0.007
male	-0.041*	-0.034	-0.096***	0.001	0.042	-0.032
no. children	0.014	-0.028	0.015	-0.002	0.010	-0.059*
low education	0.228***	0.072*	0.155***	0.219***	0.156***	0.123**
high education	-0.133***	-0.091**	-0.141***	-0.109***	-0.129***	-0.107
married	-0.097***	-0.067	-0.008	-0.108***	-0.089**	-0.047
divorced	0.026	-0.007	0.162***	-0.005	-0.135	0.006
widowed	-0.048	-0.129	-0.002	-0.062	-0.097	-0.176
employed	0.010	-0.073*	-0.022	-0.025	0.011	0.129
self-employed	-0.189***	-0.277***	-0.109**	-0.127***	-0.132**	-0.058
retired	0.011	-0.022	-0.019	0.014	-0.071	0.092
income	-0.007**	-0.002	-0.005*	-0.007**	0.000	0.002
constant	1.760***	-0.022	1.318***	1.466***	1.471***	1.312***
Observations	6,079	2,204	5,853	5,363	3,081	1,051
R-squared	0.162	0.119	0.106	0.110	0.089	0.112

Robust standard errors in parentheses

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

Table A7: Coefficients from Distribution Regression at the median wealth variable level for Luxembourg

VARIABLES	(1) Total Assets	(2) Total Debt	(3) Total Fin. Assets	(4) Principal Residence	(5) Inv. Real Estate	(6) Bus. Equity
age	-0.038***	0.055***	-0.014***	-0.037***	-0.025***	-0.035***
age2	0.029***	-0.043***	0.008***	0.030***	0.017***	0.038***
male	-0.005	-0.054***	-0.106***	-0.008	0.074***	0.016
no. children	0.013*	0.032***	0.020**	0.017**	0.022	0.041*
low education	0.137***	-0.020	0.095***	0.154***	0.114***	-0.180***
high education	-0.009	-0.158***	-0.108***	-0.057***	-0.085***	0.153***
married	-0.212***	-0.092***	0.006	-0.200***	-0.059*	-0.212***
divorced	-0.009	-0.170***	0.046	-0.062**	0.134***	-0.002
widowed	-0.110***	-0.080	-0.017	-0.165***	-0.102**	0.078
employed	0.036*	0.019	-0.031	0.027	-0.005	-0.059
self-employed	-0.202***	-0.007	0.012	-0.081***	-0.197***	0.003
retired	0.039*	-0.139**	0.067***	0.056**	-0.054	-0.174
income	-0.072***	-0.008	-0.049***	-0.085***	-0.013*	-0.003
constant	2.507***	-0.717***	1.608***	2.571***	1.410***	1.439***
R-squared	0.162	0.109	0.065	0.133	0.089	0.123

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A8: Coefficients from Distribution Regression at the median wealth variable level for Germany

VARIABLES	(1) Total Assets	(2) Total Debt	(3) Total Fin. Assets	(4) Principal Residence	(5) Inv. Real Estate	(6) Bus. Equity
age	-0.027***	-0.013***	-0.019***	-0.006***	-0.006	-0.013**
age2	0.019***	0.012***	0.010***	0.001	0.002	0.005
male	-0.038***	0.022**	-0.014*	-0.044***	-0.012	0.031
no. children	-0.079***	-0.056***	0.012**	-0.091***	0.037***	-0.054***
low education	0.033***	0.063***	0.107***	0.076***	0.062***	0.122***
high education	-0.097***	-0.100***	-0.142***	-0.088***	-0.036	0.004
married	-0.220***	-0.158***	-0.044***	-0.150***	-0.057**	-0.083**
divorced	0.062***	0.081***	0.066***	0.033**	0.035	-0.065
widowed	-0.095***	-0.068***	0.018	-0.108***	0.127***	-0.130*
employed	-0.057***	-0.116***	0.007	-0.031***	0.022	-0.172***
self-employed	-0.189***	-0.270***	-0.065***	-0.201***	-0.155***	-0.191***
retired	0.021	-0.004	0.020	0.021	0.016	-0.076
income	0.004***	0.006***	-0.005***	-0.004***	-0.004	-0.007**
constant	1.588***	1.007***	1.249***	1.125***	0.831***	1.301***
R-squared	0.139	0.115	0.106	0.090	0.050	0.076

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A9: Coefficients from Distribution Regression at the median wealth variable level for Italy

VARIABLES	(1) Total Assets	(2) Total Debt	(3) Total Fin. Assets	(4) Principal Residence	(5) Inv. Real Estate	(6) Bus. Equity
age	-0.025***	0.017**	-0.014***	-0.009*	0.001	0.004
age2	0.020***	-0.012	0.009**	0.008*	-0.002	-0.005
male	-0.032	-0.043	-0.054**	-0.033	-0.024	0.094
no. children	-0.003	-0.052***	0.022*	0.008	0.015	-0.026
low education	0.133***	0.092**	0.139***	0.167***	0.123***	0.080
high education	-0.045	-0.081	-0.018	-0.101***	-0.037	0.155**
married	0.005	-0.070	0.112***	-0.011	0.086	-0.035
divorced	0.015	-0.005	0.136***	-0.027	-0.098	-0.095
widowed	0.031	0.042	0.147***	-0.012	0.053	0.098
employed	0.105***	0.041	0.095***	0.066*	0.233***	0.119
self-employed	0.061	-0.064	-0.001	0.003	0.165**	-0.041
retired	-0.034	0.074	0.014	-0.015	0.102	0.080
incomei	-0.274***	-0.051	-0.229***	-0.214***	-0.319***	-0.185***
Constant	4.132***	0.549	3.332***	3.138***	3.877***	2.506***
Observations	7,189	1,922	6,067	5,647	1,683	952
R-squared	0.235	0.103	0.179	0.185	0.233	0.072

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A10: Glossary of sets of characteristics and variables

Set	Variables included
demog	age, age squared, male (0/1), number of children under 18
educ	indicator variable for low and high education
marstat	married (0/1), divorced (0/1), widowed (0/1)
LM	employed (0/1), self-employed (0/1), retired (0/1)
asini	household disposable income

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