3 The Household Finance and Consumption Survey

Research on wealth inequality in the Eurozone has gained momentum with the first wave of the Household Finance and Consumption Survey (HFCS) which was conducted in 2010. The rich data set covers 15 countries in the euro area and provides information on the balance sheets of private households. The total sample includes 62,521 representative observations which are (methodically) comparable across countries. Additionally to a broad range of household financial variables, the data set also provides socio-economic information on an individual level such as income, social status, age, and education. Detailed information on the complex survey design and the data collection process can be found in Eurosystem Household Finance and Consumption Network (2013).

While this data source provides a unique opportunity for research on wealth inequality and inheritances in the euro area, two major shortcomings need to be addressed in cross-country comparisons. First, variations in total wealth and its structure may be subject to differing institutional arrangements in each country. Social norms, welfare regimes, and the public provision of goods may influence the necessity for households to accumulate wealth. This issue is especially relevant for the household structure which is known to differ notably between continental and southern European countries (Fessler and Schürz, 2013). Second, different sampling strategies in the participating countries may lead to varying degrees of coverage, especially of high-wealth individuals. While this issue can be addressed through over-sampling of this particular group, such a strategy is not feasible for every country: there is no over-sampling for Austria, Malta, the Netherlands, Slovakia and Slovenia in the HFCS data. Therefore, the gap between the top in the actual wealth distribution and its representation in the survey may vary significantly by country (Tiefensee and Grabka, 2014).

The latter issue has been addressed in Vermeulen (2014) and can in general be mitigated by using imputation methods. For this study such an approach is, however, not feasible. While household wealth can be imputed using Pareto methods (Eckerstorfer et al., 2015; Bach et al., 2015), we would also need to consider a number of other household variables and individual characteristics that cannot be easily assigned. A sensible imputation approach would therefore need to impute all these variables in a multivariate way which is not the focus of this paper.

The HFCS provides total annual gross income for households. We make use of the household earned income which includes remuneration of employees, self-employment incomes, and income from pensions. Inheritances and substantial gifts are already collected on the household level in the HFCS. This variable captures the monetary value of all inheritances and gifts ever received by the household members, including money, dwellings, land, business, life insurances, and other valuables. It is worth noting that we do not account for implicit gifts as mentioned above (Kotlikoff, 1988). Transfer wealth should thus be regarded as seriously downward biased. For the analysis of the wealth distribution, we use total household net wealth (gross wealth less liabilities), including tangibles (main residence, vehicles, company stakes, etc.) and financial assets (savings, bonds, etc.).
Since wealth data is subject to differential non-response (Vermeulen, 2014), the HFCS makes use of multiple imputations. The imputation of missing valid information on household wealth closely follows the guidelines provided by Little and Rubin (2002). To account for the inherent uncertainty of the imputation procedure, five values are chosen to replace the missing information, based on different random draws from the joint distribution of the collected data. Thereby, it is possible to partly reflect the uncertainty of the imputation process. All figures and calculations reported in this paper were derived with the use of 100 complex survey weights, all five multiple imputations, and the application of Rubin’s rule.

For this study, we utilize the whole data set excluding observations for Cyprus, Finland, Italy, Luxembourg, and Malta. These countries were either lacking information on the sex or age of household members apart from the reference person (CY and MT), did not provide data on Intergenerational wealth transfers (FI & IT), or only offer anonymized information for a large number of observations (i.e., missing information on gender of additional household members for LU). Since this information is indispensable for our method to correct for differing household structures, these five countries were not included in our analysis. This leaves us with a reduced sample of 41,501 household observations from Austria, Belgium, Germany, Spain, France, Greece, Netherlands, Portugal, Slovenia and Slovakia, which represent roughly 80% (111,325,857) of European households.

It has been argued that cross-country comparability of wealth data may be limited when survey designs differ between countries (Tiefensee and Grabka, 2014) or when the institutional setting influences population and household structures (Bover, 2010; Fessler and Schürz, 2013). An innovative approach to control for varying household structures has been presented in Fessler et al. (2014). The authors argue that per-country household wealth should be standardized using a counterfactual distribution based on the overall frequency of a single household type in the survey. This correction therefore purges wealth differences that arise from differing household structure. Our analysis adapts the proposed methodology and corrects the HFCS data for common household types with up to four members each. A sensitivity analysis reveals that this is a reasonable value, since it allows a large enough number of different households as controls on the one hand, but does not use very sparse types for the correction on the other hand.

Table 1 provides descriptive statistics for the countries and variables in use. First of all, the differences in the median wealth across the Eurozone countries are remarkable. While median net wealth in Germany amounts to slightly above €50,000, it is roughly €180,000 in Spain. However, the survey period in Spain was around 2008 when the real estate bubble boosted residential wealth, while most other countries started gathering data in 2010. There are also large differences in the average household income from employment and pensions. Slovakia exhibits the smallest value with an annual income of €13,000 while Belgium displays the highest income (€43,100). Concerning the share of households that have already inherited, the participation rates range between 29.5% in Portugal and 40.2% in Slovenia. The Netherlands seems to be an outlier with an
Table 1: Descriptive Statistics

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<th>Net wealth</th>
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<td>P50</td>
<td>P95</td>
<td>Income</td>
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<td>Female</td>
<td>Age</td>
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<td>Retiree</td>
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<td></td>
<td>k€</td>
<td>k€</td>
<td>k€</td>
<td>μ (k€)</td>
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<td>%</td>
<td>μ</td>
<td>%</td>
<td>%</td>
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<td>39.3</td>
<td>35.4</td>
<td>55.8</td>
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<td>35.5</td>
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<td>1077.0</td>
<td>43.1</td>
<td>35.1</td>
<td>46.4</td>
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This table shows descriptive statistics of our dependent variable, i.e., selected percentiles of net household wealth, and of our explanatory variables, i.e., mean of households earned income, proportion of heir households, and several socioeconomic characteristics of the reference person (gender, age, education, labor status). Source: HFCS 2010, own calculations.

exceptionally low rate of heirs (8.4%). It is worth noting that the Netherlands is the only country in the HFCS survey that conducted computer-assisted web interviews (CAWI) instead of personal interviews. This could explain part of the significant differences compared to the other countries, since information on private wealth collected with personal interviews is supposed to be more reliable than web inquiries. For instance, interviewers may persuade respondents to participate in the survey, increase response rates, and reduce the risk of response bias (Eurosystem Household Finance and Consumption Network, 2013). As already mentioned, the remaining socio-economic variables are based on the information of the reference persons.

As we are interested in the processes behind climbing the ladder to the top of the wealth distribution, we examine the households in the top percentiles by country in Figure 1. A priori, one would expect countries to be represented in the top wealth shares according to their population weights. Accordingly, a country with a population share of 20% in the total Eurozone population should also represent 20% in the top wealth shares. This is, however, not the case for the Eurozone, as Figure 1a depicts. Based on the roughly 111 million households in our sample, this figure displays the country-specific composition of the 11.1 million households in the Top 10% of the Eurozone net wealth distribution. The black bars show the hypothetical proportion of countries that is solely based on their population share, while the dark grey bars represent their actual shares in the high-wealth households. This simple illustration shows that conditional on the country of origin, rich countries like Germany seem to be underrepresented in the Top 10% (compared to their actual population share), while others are overrepresented (like Belgium, France, Spain). As mentioned before, this does not account for a number of factors which may influence cross-country comparisons, the most important being household structure. We correct
for household heterogeneity by calibrating the survey weights, so that the households of each
country are reweighted to represent the average household composition in the sample, which leads
to the results displayed by the light grey bars. Compared to the actual scenario, the reweighting
procedure results in substantial changes, especially for countries whose household structure is far
off from the sample average. This is especially evident for Spain, and to a lesser extent also for
Germany and France, whose respective household compositions seem to be very different from the
sample average.

![Figure 1: Country Representation: Population, Actual and Reweighted Share](image)

Figures 1b to 1d provide the same illustration for even higher top wealth shares. Comparing
these figures, the most remarkable trend is probably given by Germany. As mentioned, the largest
Eurozone country is underrepresented by one tenth of its population in the Top 10%, but this is
also true for the Top 5% even when accounting for differences in the household composition. The
picture changes, when looking at the the Top 1% where Germany is overrepresented by a factor of
1\textgreater{}2, and particularly for the Top 0.1% where German households have a 35% higher occurrence compared to what their population share would imply.

A mirrored image of this process can be observed for Spain and France which are overrepre-
sented by a factor of 1\textgreater{}22 and 1\textgreater{}12 in the Top 10% respectively (after reweighting). This gap
diminishes in the Top 1%, where France is represented closely around its population share and
Spain is already down 12% of the equal-occurrence scenario. Many smaller countries — Greece,
Netherlands, Slovenia, Slovakia — disappear altogether starting from Top 1%. The results for
Austria are striking, insofar as the catching-up process along this analysis is the most drastic.
Already overrepresented in the Top 10% by a factor of 1\textsuperscript{1} \texttimes 22, the share increases significantly to reach a factor of 2\textsuperscript{1} \texttimes 4 in the Top 1\% and an even higher value of 3\textsuperscript{1} \texttimes 2 for the Top 0.1\% compared to the Austrian population share in the Eurozone.

4 Results

Our empirical application focuses on the propensity to get rich through the two main drivers of wealth accumulation: self-made income and inheritances. We have particular interest in the country-specific differences of the marginal contributions to household wealth in the Eurozone. Such differences could be motivated by a number of institutional settings, for example differing tax levels on both income sources or labor market characteristics and housing preferences which may facilitate saving and thus wealth accumulation.

As the above-mentioned literature has shown, inheritances can be a significant component of wealth accrual. Our empirical strategy will therefore rest on two pillars. First, we estimate logit regressions using country fixed-effects and dummies which indicate whether a household has received inheritances. This allows us to depict the overall importance of inheritances, for now leaving aside the issue that regressions on the mean may be a bad approximation to the overall distribution of net wealth. Second, we expand our regression design and estimate structural quantile regressions. These are conducted separately for each country with further control variables for other household characteristics. This method especially emphasizes the differing role of income and inheritances at various points of the distribution.

4.1 Disproportionately Rich: Logit Evidence

Using logit regressions we estimate a model of the form

\[ I_{\text{top}X} = \beta_0 + \beta_1 \text{Country} + \beta_2 \text{Bequest} > 0, \]  

where an indicator variable \( I_{\text{top}X} \), which takes on the value of zero and one if a household belongs to the Top \( X \% \) of the Eurozone’s wealth distribution, is related to country dummies and an indicator that captures whether the household has received an inheritance. Based on these outcomes we derive the estimated share of households in the Top \( X \% \) as predictions based on our logit regression and compare it to an equal representation of all countries at the top end of the wealth distribution.

Figure 2 presents the results for this exercise for the Top 10\%, Top 5\% and Top 1\% of the Eurozone net wealth distribution. The black line of unity marks the position where the number of households in the top shares corresponds exactly to a country’s population share in the Eurozone. Values above the black line denote overrepresentation while values below the black line display countries which are underrepresented in the top wealth shares. Stars indicate the actual estimated