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*DOI:*  
[10.57938/fb01fb2e-62f3-4c2d-9a5f-661b53d63a21](https://doi.org/10.57938/fb01fb2e-62f3-4c2d-9a5f-661b53d63a21)

*Published:* 01/09/2016

*Document Version:*  
Publisher's PDF, also known as Version of record

*Document License:*  
Unspecified

[Link to publication](#)

*Citation for published version (APA):*  
Schneebaum, A., Rehm, M., Mader, K., & Hollan, K. (2016). *The Gender Wealth Gap Across European Countries*. WU Vienna University of Economics and Business. Department of Economics Working Paper Series No. 232 <https://doi.org/10.57938/fb01fb2e-62f3-4c2d-9a5f-661b53d63a21>

Department of Economics  
Working Paper No. 232

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September 2016



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August 2016<sup>5</sup>

## Abstract

This paper studies the gap in wealth between male and female single households using 2010 Household Finance and Consumption Survey data for eight European countries. In the raw data, a large gap emerges at the upper end of the unconditional distribution. While OLS estimates show no difference in average net wealth levels, quantile regressions at the 95<sup>th</sup> percentile yield mixed evidence for the gender wealth gap in different specifications. Labour market characteristics and participation in asset and debt categories largely explain the differences between male and female single households. We show that the gender gap in net wealth is driven by gender gaps in gross wealth and its components, but is attenuated in four countries by gender gaps in (collateralized) debt. In the full specification, the unexplained gap in gross wealth amounts to 27% in Slovakia, 33% in France, 44% in Austria, 45% in Germany, and 48% in Greece. A robustness check using person-level pension wealth confirms the presence of a gender gap for the full population.

**JEL Classifications:** D31; J16; E21

**Key Words:** Gender; Wealth; Wealth Gap; Distribution

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<sup>5</sup>The authors thank the Austrian Chamber of Labour in Vienna (AK Wien) for funding this project. Any opinions expressed in this paper are the authors' own. An earlier version of this research was published in the Department of Economics at the Vienna University of Economics and Business, as "The Gender Wealth Gap in Europe", Working Paper 186, 2014.

# 1 Introduction

A recent surge of interest in the distribution of wealth, along with growing availability of high-quality micro-data, has led to more research on the topic. Much of the existing literature on wealth distributions focuses on the United States (e.g. Wolff, 1998), with more limited research on European countries (e.g. Frick et al., 2010; Bover, 2010; Piketty, 2014). Thus far, differences in wealth by gender have not been a prominent topic in this research, some notable exceptions notwithstanding (e.g. Deere and Doss, 2006; Schmidt and Sevak, 2006; Sierminska et al., 2010). Especially in contrast to the gender pay gap, the gender wealth gap has received far less attention. Reasons for this research shortage have been the relative lack of wealth data compared to income data, and the difficulty in untangling ownership information within households. Despite the difficulties in studying wealth gaps by gender, the topic is highly relevant. Wealth is an important indicator of well-being, because it constitutes economic prosperity in its own right, provides the basis for future income generation via investments, brings social and political power, and provides economic security when income flows are interrupted. Understanding the gender gap in wealth is thus critical for understanding contemporary gender relations in the economy.

This paper thus contributes to the literature by presenting the first cross-national study of the gender wealth gap in eight European countries,<sup>1</sup> based on a survey harmonized by the European Central Bank, the Household Finance and Consumption Survey (HFCS). The HFCS data used here contain household-level information on net wealth and its components, real and financial assets, and debt. Detailed socioeconomic data on the household and the people in it allow us to control for numerous household- and individual-level characteristics to test the role of gender in determining a household’s wealth.

The HFCS data enable researchers to take large strides in studying the distribution of wealth by gender by providing harmonized data for many European countries, but the fact that the data are aggregated at the household level presents a challenge. Having data on the wealth of households, not individuals, complicates the analysis of the intra-household distribution of wealth because household members may not have equal access to wealth (Sierminska et al., 2010; Grabka et al., 2013) or decision-making power (Mader and Schneebaum, 2013). This paper circumvents this problem by restricting the analysis to households with only one adult, the female or male reference person (“female single households” and “male single households”, respectively).

The study investigates the difference in wealth between male and female single households by using multivariate econometric methods on several different outcomes of interest. First, for compatibility with the existing literature, OLS regressions predicting the level of household net wealth are performed using a vector of standard and novel explanatory variables. Second, since the gender wealth gap is most prevalent at the top of the net wealth distribution, we use quantile regressions to investigate the household- and person-

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<sup>1</sup>These are Austria, Belgium, Germany, Spain, France, Greece, Portugal, and Slovakia.

level characteristics which drive this gap. Third, we extend the analysis of net wealth to its constituent parts, and show the results of quantile regressions at the 95<sup>th</sup> percentile predicting gross wealth and its components, financial and real wealth, and debt as well as its components, secured and unsecured debt. Finally, we check the robustness of our gender wealth gap at the household level by looking at gender differences in occupational pension wealth, for which data are collected at the person level in the HFCS.

The results are in line with the limited existing literature on gender differences in the wealth distribution in the U.S., U.K., and Germany. A gender wealth gap exists at the upper end of the unconditional distribution of net wealth in the raw data in each of the eight countries. Quantile regressions on net wealth at the top of the distribution, however, show mixed evidence of a gender “glass ceiling” in wealth. On the whole, we find that labour market characteristics and participation in asset and debt categories go a long way towards explaining the differences in wealth between male and female single households. The heterogeneous results in the gender *net* wealth gap across countries lead us to look deeper at the gender gap in gross wealth and debt, the two components of net wealth. This analysis sheds light onto the gendered distribution of wealth categories across countries which was previously veiled by looking at net wealth only. Further, differences in historical trajectories, institutions, and social norms in the eight countries that we analyse here also appear to play an important role. We provide a discussion of how various social and legal institutions across countries may explain some findings regarding the gender wealth gaps we find in the data.

The paper is structured as follows: section 2 gives an overview of the theoretical and empirical background of gender differences in the accumulation and distribution of wealth, section 3 presents the data, section 4 contains the empirical results for net wealth, section 4.2 covers the additional wealth categories, and section 4.3 contains the robustness check of the gender wealth gap. Section 5 concludes.

## 2 Gender Differences in Wealth Accumulation

It is a well-established stylized fact that the distribution of wealth in Europe is highly skewed, much more so than the distribution of income (Piketty, 2014; Rehm and Schnetzer, 2015). An understanding of the distribution of wealth by gender, though, is not so clearly established. As discussed below, most existing studies find a gender wealth gap, that is, male households have more wealth than female households. In order to assess potential determinants of this gender wealth gap, the following model can be posited (adapted from Schmidt and Sevak (2006), see also Sierminska et al. (2010)):

$$A_{t+1} = (1 + r_t)(A_t + Y_t - C_t + T_t). \quad (1)$$

That is, the household stock of assets  $A$  at time  $t + 1$  is a function of the rate of return ( $r_t$ ), the stock of assets ( $A_t$ ), income earned ( $Y_t$ ), consumption ( $C_t$ ), and wealth transfers

( $T_t$ ) such as inheritances, gifts, or asset division upon divorce, all at time  $t$ . Each of these components may vary by gender as well as institutional and cultural context, thus leading to differences in wealth accumulation.<sup>2</sup>

Income ( $Y_t$ ) differs by gender since women receive lower wages than men for the same work (OECD, 2015). Furthermore, women’s income is lower than men’s since women are more likely to face interruptions in their work histories (Gangl and Ziefle, 2009) and to work in part-time jobs (Bardasi and Gornick, 2008; Matteazzi et al., 2014) as a result of care and housework responsibilities. In addition, gendered sectoral and occupational segregation has been demonstrated to have an important impact on earnings differences between men and women. Finally, the wealth accumulation patterns of the self-employed differ from those of employees (Humer et al., 2015), and the gendered selection into these two groups is thus likely to affect differences in wealth (Anna et al., 2000; Burke et al., 2002; Kim et al., 2004). In general, women have less exposure to the structures that enable wealth accumulation via wage income and are more often subject to the economic penalties that result from child rearing (Denton and Boos, 2007; Chang, 2010; Ruel and Hauser, 2013).

Consumption ( $C_t$ ) may vary with age, which is most commonly captured by the life-cycle hypothesis. The consumption smoothing assumed by the life-cycle hypothesis implies the accumulation of wealth during phases of labour market activity and dissaving in times of negative income shocks, but especially after retirement. Even though the high rate of dissaving in retirement suggested by the life-cycle hypothesis is not unambiguously observed in the empirical literature (Piketty et al., 2014), wealth holdings over age nevertheless tends to have a broadly inverted u-shaped form. Since women typically have higher life expectancies than men, the life-cycle hypothesis would predict that women accumulate higher levels of wealth (i.e. save more) during their active years. In this study, we focus on the wealth of working-age (25-60 years) male and female single households; for this group, the life-cycle hypothesis predicts higher saving by women when controlling for age. At the same time, older and especially widowed women would be expected to have higher inheritances than men as a result of the combined asset accumulation within the couple.

Transfers of wealth ( $T_t$ ) comprise inheritances and inter-vivo transfers, as well as asset separation upon divorce. Inheritances are a key factor in explaining wealth inequality (Bowles and Gintis, 2002; Piketty et al., 2014), a fact which is also observed in the European HFCS data used in this analysis (Fessler and Schürz, 2013; Leitner, 2015). The distribution of inheritances has also become more unequal over time (Piketty, 2014). Some literature suggests that the share of women within the wealthiest 0.4% of people in the U.S. may even serve as a proxy for the importance of inherited wealth (Edlund and Kopczuk, 2009). However, Edlund and Kopczuk (2009) note that the hypothesis that “men make, but women inherit great fortunes” does not hold for the lower wealth groups. The case of gifts among the living does not appear to be quite as clear-cut, since these tend to be given

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<sup>2</sup>The initial level of wealth  $A_t$  is of course the sum of previous periods’  $A_{t+1}$ , and its gender difference is therefore dependant on the other components of equation 1.

to liquidity constrained children (Cox, 2003). Finally, upon divorce, only assets acquired during the partnership are considered jointly owned in many European countries and thus divided between partners; assets owned before marriage and inheritances are not split. Consequently, the effect of divorce on the gender wealth gap may be less pronounced than that of widowhood (Yamokoski and Keister, 2006; Sierminska et al., 2010).

Finally, the economic literature on gender routinely discusses a number of factors affecting the rate of return ( $r_t$ ). First, differences in risk preferences and investment strategy across genders have been thoroughly investigated in the literature, with most authors confirming their existence (Croson and Gneezy, 2009). Recent research, however, casts doubt on the widely held tenet that women are more risk averse than men (Nelson, 2015). Neelakantan and Chang (2010) show that the gender gap in wealth at retirement persists in the U.S. even after accounting for risk preferences. Second, the literature typically finds a gender gap in financial literacy (Lusardi and Mitchell, 2008; Barasinska and Schäfer, 2013), which could affect the gender wealth gap. The gender implications of other factors impacting the rate of return, such as the distribution of capital income from wealth including imputed rents (Fessler et al., 2015a), differential returns which increase with the level of wealth (Piketty, 2014), and intergenerational persistence in educational attainment (Schneebaum et al., 2015) are fruitful avenues for future research.

The empirical research typically finds evidence of a gender wealth gap, i.e. women owning less wealth than men (see the overview by Deere and Doss (2006) in the special issue of *Feminist Economics*, and in Chang (2010)). Sierminska et al. (2010) and Ruel and Hauser (2013) show that a gender wealth gap between men and women exists in the German Socio-Economic Panel (SOEP) and in the Wisconsin Longitudinal Study, respectively, which is largely driven by differences in labour market characteristics but cannot be fully explained by covariates. Schmidt and Sevak (2006), in contrast, find no overall gap in the raw data of the U.S. Panel Study of Income Dynamics (PSID); a gender wealth gap only emerges once household characteristics are controlled for. The vast majority of empirical studies of the gender wealth gap focus on net wealth as their outcome variable of interest (Deere and Doss, 2006; Schmidt and Sevak, 2006; Yamokoski and Keister, 2006; Sierminska et al., 2010; Ruel and Hauser, 2013; Sierminska et al., 2015).

A fundamental issue in the empirical literature on the gender wealth gap is that wealth data often come from household surveys, without information on the ownership of assets across individual household members. Most papers discussed here therefore analyse wealth at the household, not person, level. Important exceptions are Sierminska et al. (2010) and Grabka et al. (2013), who use the 2007 German SOEP wealth module to analyse the gender gap in net wealth at the person level, and Sierminska et al. (2015), who use the panel component of the SOEP to study the evolution of the determinants of the gender wealth gap over time. Many studies therefore focus on households with only one adult to compare male and female household wealth (e.g. Yamokoski and Keister, 2006; Schmidt and Sevak, 2006).

The approach of analysing only households with one adult may be plagued by potential

selection issues. Five main issues may affect the selection into single households by men and women differently. First, women live longer than men. The age composition of single households thus differs between men and women, and women are more likely to inherit and thus have higher wealth. Second, women tend to marry at an earlier age than men. As a consequence, for the entire population, the probability of being single at each age group differs between men and women. This situation may have an effect on wealth, because marriage has been found to increase wealth, independent of the other characteristics of the household and its members (Ruel and Hauser, 2013). Third, preferences and/or constraints regarding relationship status might differ between men and women. Whereas women might be more likely to be divorced or widowed, men might tend to be more likely to be “never married” or married (which includes having re-married after divorce). Again, the wealth effect of marriage could play out here. Fourth, career orientation might differ between female and male single households, which may be linked to the choice to have children. Women who are career-oriented might be more likely to choose to remain childless than career-oriented men. The presence of children is also found to have an effect on wealth accumulation (Yamokoski and Keister, 2006). Finally, social norms and customs regarding household formation might differ by gender across countries. For instance, living in a single-person household might be more common for young men than for young women in some countries compared to others, or women might tend to move in with family or friends at different rates than men following divorce or widowhood across countries.

The selection mechanisms into single households for men and women therefore need to be taken into account. The existing literature on the gender wealth gap addresses this issue explicitly or implicitly by truncating the sample according to the age of households (Schmidt and Sevak, 2006; Warren, 2006), cohorts (Ruel and Hauser, 2013), or family status (Sierminska et al., 2010). A second method of tackling selection bias is by using Heckman selection models (Heckman, 1979). Such an approach consists of a two-stage procedure of first estimating the probability of selecting into a group (here, single adult households, as described below) and then using the results of that estimation as a predictor of wealth. A third approach circumvents the selection issue of household-level data by studying wealth components for which person-level data are available, typically pension-related wealth. Warren (2006), for instance, shows that there is a gender gap in pension wealth in the Family Resources Survey (FRS) of the U.K. both before and after controls are included.

The data used in this paper contain information on wealth at the household level. We limit our analysis to households with just one adult (“single households”) and focus on eight European countries, Austria, Germany, Belgium, France, Greece, Spain, Portugal, and Slovakia. We apply all the aforementioned strategies to minimize any selection bias resulting from our household-level data: we restrict our sample to working age (25-60) households, and we apply a Heckman selection model in estimating all our results. Furthermore, we perform a robustness check using a wealth component, pensions, that is available at the person level.



Since we are investigating eight European countries with different historical, legal, and social backgrounds, norms and institutions that cannot be captured with the available data might influence the results (Issac, 2007; European Central Bank, 2013b). In fact, a key finding from the same HFCS data used here is that households' wealth is very heterogeneous across countries (Andreasch et al., 2013). We address this issue by presenting the results for each country separately and by briefly discussing the social norms and institutional background that might explain the gender wealth gap in each country. For instance, as hinted above, social norms might influence the decision to live alone. In countries in which independence is valued, individual traits such as risk preference might play out more strongly to generate different wealth outcomes between men and women than in countries in which family closeness is appreciated and extended families live together. Regarding institutional backgrounds, several potential avenues of influence are touched upon in this paper. First, labour market outcomes might be influenced by the availability and affordability of child care facilities. Second, the legal framework surrounding divorce might lead to different gender wealth gaps across countries. Third, taxation of wealth and inheritance varies across countries. Fourth, since the main residence is often the main asset of private households, housing policy has a large effect on wealth and thus potentially on the gender wealth gap. Fifth, policies regarding pensions might lead to unequal incentives to accumulate across countries. Finally, banking practices and thus the potential for different treatment of men and women seeking credit might vary across countries. We discuss each of these issues below in the context of our empirical results. However, it should be noted that the main focus of this paper is to investigate the gender wealth gap in eight European countries. A detailed analysis of institutional factors influencing this gender wealth gap needs to be relegated to future research.

### 3 Data Description

The 2010 Household Finance and Consumption Survey (HFCS) data used here to test for differences in wealth between male and female single households contain detailed household balance sheets as well as flow variables and a plethora of socioeconomic and demographic variables. The HFCS data provide multiply imputed values for item non-response, which we take into account in this paper by using Rubin's Rule. All estimates reported are calculated using the survey weights provided by the HFCS. For a detailed description of the survey methodology, see the report by the European Central Bank (2013a).

The HFCS is ex-ante harmonized, yet important differences in cross-country comparability remain. Possible issues in national comparisons may arise from variation in the timing of fieldwork, which was conducted in 2009-11 in most countries; the treatment of imputations; and data editing. Most notably for this paper, Cyprus, Finland, Malta, and the Netherlands performed a substantial share of their survey through methodologies other than computer assisted personal interviews (European Central Bank, 2013a).

These differences in interviewing technique may affect observed inequality (Fessler et al., 2015b). In addition, some countries surveyed key variables differently. Italy only collected data on net income, from which gross income was computed. Finland’s data do not contain any inheritances, and the incidence of inheritances is implausibly low in Italy and the Netherlands (6.7% and 2.1% respectively). Finally, Luxembourg and Slovenia have a small sample size, especially for single households. For these reasons, we focus on eight out of 15 surveyed countries in this analysis: Austria, Belgium, Germany, Spain, France, Greece, Portugal, and Slovakia.

Like most wealth surveys, the HFCS collects net wealth data on the household level,<sup>3</sup> and the data do not contain information on the intra-household distribution of wealth ownership. Empirical research has shown, however, that access to resources cannot be assumed to be equally distributed between persons within the household; women own less of the household wealth (see e.g. Sierminska et al., 2010; Grabka et al., 2013). Simply allocating household assets across household members is therefore likely to bias results towards an underestimation of the gender wealth gap.

This paper thus investigates the wealth of what we call single male and single female households, that is, households which have only one adult member.<sup>4</sup> While they have only one adult in the household, the single households in our sample may contain minors, i.e. children under 16 years of age.

For comparison and to check for selection issues, we include all other (non-single) households in our summary tables. In these households, the socioeconomic characteristics of the survey respondent, which is the (self-selected) financially most knowledgeable person in the household, are used where person-level characteristics are required.

Furthermore, this paper focuses on working-age adults, which also reduces selection problems stemming from the differential life expectancies of men and women. We restrict our sample to adults aged 25 to 60. In the case of non-single households, this age restriction refers to the age of the reference person. Our full sample then comprises 36,362 households, of which 5,188 are single households (2,808 female and 2,380 male).

For this paper, at the household level, net wealth and its components as well as gross income and inheritances are of particular interest. In the HFCS, net wealth is generated as the sum of the household’s assets valued at market prices, which comprise real and financial assets, deducting the household’s liabilities, which are split into collateralized (i.e. mortgage) and unsecured debt. Real assets include vehicles, the main residence, further real estate property, valuables, and self-employment businesses; financial assets include deposits, mutual funds, bonds, shares, managed accounts, non-self-employment businesses, money owed to the household, and private pension plans; collateralized debt

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<sup>3</sup>Certain wealth components, most notably occupational pension wealth, are available at the person level in the HFCS. We study gender differences in this particular asset in Section 4.3 below.

<sup>4</sup>This limitation is to eliminate the cases in which a person lives in a household with wealth but is not the owner of the wealth. Consider, for example, an adult living with his or her parents. The parents may own wealth that the adult cannot access; we do not want to attribute that wealth to the individual. We therefore focus our analysis on one adult (“single”) households.

consists of mortgages on the main residence or on other real estate property, and unsecured debt of overdrafts, credit card debt, and other unsecured loans.<sup>5</sup> The distribution of wealth is highly right-skewed and contains zero and (in the case of net wealth) negative values. We therefore smooth all continuous wealth, debt, and income variables using an inverse hyperbolic sine (IHS) transformation.<sup>6</sup>

Regarding the present value of inheritances, we follow Fessler et al. (2012) and Leitner (2015) in conservatively assuming real value retention; our consumer price index (CPI) data come from the AMECO database (European Commission, 2016). We use dummy variables to distinguish between large and small inheritances, using the median level of wealth of the respective country as the cut-off between the two. The reference category is households which received no inheritance. The ownership of business assets (in the form of publicly traded or non-traded business assets, with or without self-employment), owner-occupied housing, collateralized debt (i.e. mortgages), and unsecured liabilities (credit card debt, overdrafts, and other unsecured debt) are included in our analysis as dummy variables.

At the person level, we make use of age, education, the number of children present, relationship status, employment status, the hours worked per week, and the work/age ratio of the respondent. We group age into three categories, namely 25-34, 35-44, and 45-60 years. The HFCS provides four education categories, primary, lower secondary, upper secondary and tertiary education, and we have dummy variables for each. The number of children is categorized into zero, one, two, and three or more. Relationship status includes never married, married (or living in a civil union), divorced, and widowed. Employment status comprises seven mutually exclusive categories: 1. employees with and 2. employees without a permanent contract; 3. self-employed without employees; 4. employers, i.e. self-employed with employees; 5. unemployed; 6. out of labour force; and 7. retired. In our estimates, we use a person's work/age ratio to capture the share of one's potential working life actually spent working, which can thus be interpreted as historical labour market attachment. It is calculated as the ratio of years during which a person worked (for all or most of the year, as an employee or self-employed) since age 16, over the years in which this person could have potentially worked, i.e. age minus 15. The work/age ratio is thus bounded between 0 and 100%. The number of hours usually worked per week on average over a year indicates current labour market attachment.<sup>7</sup>

Finally, the data on earnings give the sum of annual income in the previous twelve months from gross employee, self-employment, and unemployment benefit income, including gross income from public, occupational, and private pension plans. This variable is also IHS transformed and used as an instrument in the selection model.

Table 1 gives an overview of the distribution of the control variables for male and female single households, and for all other households (whose reference person is also 25 to 60 years

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<sup>5</sup>For a detailed discussion of asset valuation in the HFCS, see the European Central Bank (2013a) report and for an in-depth analysis of issues in cross-country comparability, see Tiefensee and Grabka (2014).

<sup>6</sup>The transformation applied is  $W = a \sinh(w) = \ln(w) + \sqrt{w^2 + 1}$ .

<sup>7</sup>Weekly hours worked are not available for France.

Table 1: Descriptive statistics for independent variables by country and household type

|                            | All Countries |        |        | Austria |        |        | Belgium |        |        |
|----------------------------|---------------|--------|--------|---------|--------|--------|---------|--------|--------|
|                            | Female        | Male   | Others | Female  | Male   | Others | Female  | Male   | Others |
| <b>Age group</b>           |               |        |        |         |        |        |         |        |        |
| Aged 25-34                 | 25.8          | 26.8   | 16.0   | 29.5    | 35.2   | 17.0   | 21.5    | 24.6   | 14.0   |
| Aged 35-44                 | 26.8          | 26.7   | 27.9   | 24.1    | 21.1   | 30.7   | 25.5    | 29.3   | 26.4   |
| Aged 45-60                 | 47.4          | 46.4   | 56.1   | 46.4    | 43.6   | 52.2   | 53.0    | 46.1   | 59.6   |
| <b>Education</b>           |               |        |        |         |        |        |         |        |        |
| Primary or below           | 14.0          | 14.3   | 11.1   | 0.0     | 0.4    | 0.3    | 4.0     | 7.2    | 4.6    |
| Lower secondary            | 8.6           | 8.4    | 14.5   | 15.0    | 10.6   | 12.0   | 8.0     | 11.4   | 11.9   |
| Upper secondary            | 44.2          | 47.6   | 42.5   | 70.6    | 72.2   | 73.1   | 37.0    | 32.9   | 33.2   |
| Tertiary                   | 33.3          | 29.7   | 31.5   | 14.3    | 16.7   | 14.6   | 51.0    | 48.5   | 50.3   |
| <b>Children</b>            |               |        |        |         |        |        |         |        |        |
| No children                | 70.5          | 93.7   | 55.4   | 81.9    | 97.8   | 63.5   | 74.5    | 87.4   | 53.6   |
| One                        | 17.2          | 3.6    | 21.0   | 10.6    | 1.8    | 17.8   | 11.5    | 7.2    | 19.1   |
| Two                        | 8.9           | 2.2    | 17.2   | 6.1     | 0.4    | 13.9   | 9.5     | 4.2    | 18.1   |
| Three or more              | 3.5           | 0.5    | 6.4    | 1.4     | 0.0    | 4.9    | 4.5     | 1.2    | 9.1    |
| <b>Relationship status</b> |               |        |        |         |        |        |         |        |        |
| Never married              | 52.2          | 64.8   | 17.8   | 47.8    | 69.8   | 11.4   | 48.5    | 48.5   | 9.8    |
| Married                    | 5.9           | 6.4    | 71.6   | 3.8     | 5.6    | 81.4   | 12.5    | 12.6   | 80.8   |
| Divorced                   | 31.8          | 25.9   | 8.6    | 41.3    | 24.2   | 6.1    | 31.0    | 34.7   | 7.5    |
| Widowed                    | 10.1          | 2.9    | 2.0    | 7.2     | 0.4    | 1.0    | 8.0     | 4.2    | 1.9    |
| <b>Employment status</b>   |               |        |        |         |        |        |         |        |        |
| Employee (permanent)       | 54.5          | 50.2   | 43.9   | 61.4    | 58.9   | 58.9   | 56.5    | 53.3   | 64.5   |
| Employee (temporary)       | 9.3           | 8.2    | 4.4    | 4.2     | 3.6    | 2.1    | 5.5     | 6.6    | 3.3    |
| Self-employed              | 6.1           | 11.6   | 10.6   | 4.6     | 8.0    | 10.2   | 1.5     | 5.4    | 5.8    |
| Employer                   | 2.3           | 5.2    | 6.7    | 1.8     | 3.1    | 5.5    | 2.5     | 3.6    | 2.5    |
| Unemployed                 | 12.3          | 13.6   | 7.6    | 9.6     | 11.0   | 8.5    | 17.7    | 17.8   | 11.2   |
| Out of labour force        | 8.9           | 6.5    | 9.8    | 3.4     | 4.4    | 8.7    | 9.8     | 8.0    | 9.2    |
| Retired                    | 6.7           | 4.5    | 4.2    | 17.1    | 11.0   | 10.1   | 5.5     | 4.8    | 4.3    |
| <b>Inheritances</b>        |               |        |        |         |        |        |         |        |        |
| High inheritance           | 8.1           | 9.9    | 8.4    | 12.3    | 13.0   | 25.4   | 4.0     | 3.0    | 4.7    |
| Low inheritance            | 18.8          | 20.2   | 14.2   | 13.5    | 12.2   | 14.9   | 19.0    | 16.2   | 26.5   |
| No inheritance             | 72.1          | 68.6   | 73.3   | 73.8    | 74.9   | 59.5   | 76.5    | 79.6   | 66.6   |
| <b>Ownership of</b>        |               |        |        |         |        |        |         |        |        |
| Business assets            | 12.8          | 24.1   | 33.4   | 6.8     | 13.2   | 22.6   | 9.6     | 19.9   | 30.7   |
| Main residence             | 42.8          | 42.8   | 73.8   | 23.9    | 27.3   | 60.5   | 55.0    | 43.1   | 81.0   |
| Liabilities                | 43.2          | 42.8   | 61.7   | 35.2    | 34.0   | 48.2   | 48.7    | 41.8   | 66.3   |
| Collateralized debt        | 19.0          | 19.5   | 38.9   | 7.8     | 9.3    | 30.3   | 30.5    | 28.1   | 51.5   |
| Unsecured debt             | 29.6          | 28.8   | 42.7   | 28.7    | 25.8   | 24.7   | 24.7    | 21.4   | 32.5   |
| <b>Work/age ratio (%)</b>  |               |        |        |         |        |        |         |        |        |
| Mean                       | 66.9          | 74.6   | 55.3   | 71.5    | 76.1   | 76.3   | 60.2    | 60.0   | 64.5   |
| Median                     | 74.1          | 81.2   | 68.4   | 79.2    | 84.4   | 86.5   | 70.6    | 66.7   | 74.3   |
| <b>Week work hours (#)</b> |               |        |        |         |        |        |         |        |        |
| Mean                       | 26.7          | 31.4   | 29.6   | 26.4    | 29.0   | 30.3   | 20.4    | 26.5   | 28.0   |
| Median                     | 35.0          | 40.0   | 38.0   | 35.0    | 39.8   | 38.5   | 24.0    | 38.0   | 36.0   |
| <b>Earnings (€)</b>        |               |        |        |         |        |        |         |        |        |
| Mean                       | 19,048        | 25,615 | 24,545 | 22,934  | 27,832 | 25,642 | 25,233  | 29,283 | 34,261 |
| Median                     | 15,789        | 21,152 | 20,000 | 18,022  | 22,805 | 20,241 | 19,676  | 22,380 | 25,040 |

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|                            | Germany |        |        | Spain  |        |        | France |        |        |
|----------------------------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
|                            | Female  | Male   | Others | Female | Male   | Others | Female | Male   | Others |
| <b>Age group</b>           |         |        |        |        |        |        |        |        |        |
| Aged 25-34                 | 31.8    | 30.0   | 13.5   | 14.6   | 14.1   | 10.1   | 22.9   | 22.0   | 13.7   |
| Aged 35-44                 | 23.7    | 19.0   | 26.7   | 31.2   | 31.3   | 27.4   | 28.3   | 28.0   | 27.6   |
| Aged 45-60                 | 44.5    | 51.0   | 59.8   | 54.3   | 54.5   | 62.4   | 48.8   | 49.9   | 58.7   |
| <b>Education</b>           |         |        |        |        |        |        |        |        |        |
| Primary or below           | 0.8     | 2.0    | 0.7    | 12.6   | 18.2   | 19.1   | 20.4   | 20.2   | 17.1   |
| Lower secondary            | 5.1     | 5.9    | 6.6    | 14.7   | 17.2   | 19.0   | 6.9    | 5.4    | 5.5    |
| Upper secondary            | 60.6    | 53.0   | 52.8   | 26.2   | 22.7   | 22.4   | 37.3   | 46.1   | 43.2   |
| Tertiary                   | 33.5    | 39.1   | 39.9   | 46.5   | 41.9   | 39.5   | 35.4   | 28.2   | 34.2   |
| <b>Children</b>            |         |        |        |        |        |        |        |        |        |
| No children                | 75.8    | 97.2   | 61.3   | 71.7   | 94.4   | 54.5   | 64.3   | 91.5   | 46.9   |
| One                        | 13.1    | 2.4    | 19.0   | 17.0   | 2.0    | 24.9   | 20.1   | 4.7    | 22.4   |
| Two                        | 8.9     | 0.4    | 14.7   | 9.3    | 3.0    | 17.2   | 10.1   | 3.1    | 20.9   |
| Three or more              | 2.1     | 0.0    | 5.0    | 2.0    | 0.5    | 3.4    | 5.5    | 0.8    | 9.7    |
| <b>Relationship status</b> |         |        |        |        |        |        |        |        |        |
| Never married              | 46.4    | 66.4   | 9.9    | 47.0   | 60.1   | 11.4   | 60.5   | 65.8   | 18.6   |
| Married                    | 13.1    | 11.1   | 82.3   | 1.5    | 1.5    | 80.4   | 5.5    | 6.4    | 74.2   |
| Divorced                   | 34.1    | 19.8   | 6.5    | 39.4   | 34.3   | 5.8    | 25.2   | 24.9   | 6.0    |
| Widowed                    | 6.4     | 2.8    | 1.3    | 12.2   | 4.0    | 2.4    | 8.8    | 2.9    | 1.3    |
| <b>Employment status</b>   |         |        |        |        |        |        |        |        |        |
| Employee (permanent)       | 53.8    | 54.4   | 63.9   | 52.2   | 42.9   | 44.5   | 53.2   | 47.5   | 59.7   |
| Employee (temporary)       | 12.7    | 3.7    | 5.0    | 13.0   | 9.6    | 8.8    | 8.6    | 7.8    | 3.7    |
| Self-employed              | 5.9     | 9.1    | 9.1    | 2.1    | 9.2    | 5.0    | 7.6    | 13.9   | 14.3   |
| Employer                   | 1.7     | 3.2    | 5.2    | 6.4    | 8.5    | 13.1   | 1.8    | 6.0    | 9.5    |
| Unemployed                 | 14.4    | 15.4   | 8.1    | 12.6   | 19.2   | 11.0   | 13.3   | 13.8   | 5.2    |
| Out of labour force        | 12.3    | 13.0   | 10.0   | 12.1   | 7.1    | 14.6   | 10.5   | 6.6    | 2.7    |
| Retired                    | 0.8     | 1.2    | 1.6    | 0.8    | 3.0    | 2.7    | 4.9    | 4.2    | 4.2    |
| <b>Inheritances</b>        |         |        |        |        |        |        |        |        |        |
| High inheritance           | 8.2     | 13.2   | 28.0   | 10.4   | 12.1   | 11.1   | 7.1    | 9.0    | 13.3   |
| Low inheritance            | 17.6    | 15.7   | 15.2   | 17.2   | 24.8   | 23.0   | 22.3   | 25.3   | 30.3   |
| No inheritance             | 74.2    | 71.1   | 56.5   | 72.5   | 62.8   | 65.6   | 69.5   | 64.6   | 55.1   |
| <b>Ownership of</b>        |         |        |        |        |        |        |        |        |        |
| Business assets            | 12.4    | 23.9   | 36.2   | 18.1   | 27.8   | 40.3   | 17.3   | 32.1   | 44.2   |
| Main residence             | 17.8    | 20.9   | 63.2   | 66.4   | 66.2   | 85.5   | 40.8   | 45.4   | 71.5   |
| Liabilities                | 48.5    | 49.2   | 67.9   | 50.7   | 44.5   | 61.8   | 47.0   | 46.3   | 67.5   |
| Collateralized debt        | 8.9     | 14.8   | 43.8   | 34.5   | 29.4   | 43.9   | 20.5   | 22.0   | 42.0   |
| Unsecured debt             | 42.5    | 41.1   | 42.9   | 24.7   | 21.7   | 34.7   | 33.6   | 30.6   | 44.3   |
| <b>Work/age ratio (%)</b>  |         |        |        |        |        |        |        |        |        |
| Mean                       | 69.1    | 76.0   | 76.9   | 54.7   | 71.6   | 65.7   | 68.4   | 75.9   | 78.9   |
| Median                     | 76.9    | 83.3   | 84.6   | 55.6   | 73.4   | 72.4   | 76.0   | 81.8   | 85.0   |
| <b>Week work hours (#)</b> |         |        |        |        |        |        |        |        |        |
| Mean                       | 27.4    | 32.0   | 30.9   | 25.1   | 28.6   | 28.4   |        |        |        |
| Median                     | 32.0    | 40.0   | 38.0   | 35.0   | 40.0   | 38.0   |        |        |        |
| <b>Earnings (€)</b>        |         |        |        |        |        |        |        |        |        |
| Mean                       | 19,529  | 29,236 | 29,866 | 16,308 | 20,298 | 17,122 | 18,795 | 20,537 | 27,092 |
| Median                     | 15,780  | 24,340 | 24,000 | 14,160 | 17,265 | 14,400 | 17,283 | 18,668 | 22,209 |

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|                            | Greece |        |        | Portugal |        |        | Slovakia |       |        |
|----------------------------|--------|--------|--------|----------|--------|--------|----------|-------|--------|
|                            | Female | Male   | Others | Female   | Male   | Others | Female   | Male  | Others |
| <b>Age group</b>           |        |        |        |          |        |        |          |       |        |
| Aged 25-34                 | 37.9   | 46.3   | 23.4   | 19.5     | 23.4   | 10.8   | 42.1     | 43.5  | 29.7   |
| Aged 35-44                 | 33.8   | 36.2   | 33.1   | 25.3     | 22.2   | 27.5   | 16.7     | 23.9  | 31.5   |
| Aged 45-60                 | 28.3   | 17.5   | 43.6   | 55.2     | 54.5   | 61.8   | 41.2     | 32.6  | 38.8   |
| <b>Education</b>           |        |        |        |          |        |        |          |       |        |
| Primary or below           | 9.6    | 2.8    | 13.1   | 40.3     | 41.3   | 51.3   | 0.0      | 0.0   | 0.3    |
| Lower secondary            | 5.1    | 13.6   | 15.7   | 14.0     | 15.6   | 18.4   | 4.1      | 0.0   | 1.7    |
| Upper secondary            | 51.0   | 53.1   | 50.1   | 21.7     | 24.6   | 18.1   | 71.9     | 83.3  | 77.2   |
| Tertiary                   | 34.3   | 30.5   | 21.1   | 24.0     | 18.6   | 12.2   | 24.0     | 16.7  | 20.9   |
| <b>Children</b>            |        |        |        |          |        |        |          |       |        |
| No children                | 83.3   | 100.0  | 58.8   | 68.8     | 95.8   | 52.9   | 67.9     | 94.2  | 54.8   |
| One                        | 10.6   | 0.0    | 20.2   | 17.6     | 3.0    | 27.7   | 24.9     | 4.3   | 26.1   |
| Two                        | 6.1    | 0.0    | 17.7   | 10.4     | 1.2    | 15.9   | 6.3      | 1.4   | 16.0   |
| Three or more              | 0.0    | 0.0    | 3.3    | 3.2      | 0.0    | 3.5    | 0.9      | 0.0   | 3.1    |
| <b>Relationship status</b> |        |        |        |          |        |        |          |       |        |
| Never married              | 55.1   | 80.8   | 11.4   | 37.1     | 58.7   | 8.4    | 41.2     | 60.1  | 14.2   |
| Married                    | 1.5    | 3.4    | 81.2   | 5.9      | 6.0    | 80.4   | 6.3      | 2.9   | 74.2   |
| Divorced                   | 32.8   | 15.3   | 5.1    | 39.4     | 32.3   | 8.2    | 36.2     | 31.2  | 9.6    |
| Widowed                    | 10.6   | 0.6    | 2.2    | 17.6     | 3.0    | 3.1    | 16.3     | 5.8   | 2.0    |
| <b>Employment status</b>   |        |        |        |          |        |        |          |       |        |
| Employee (permanent)       | 52.0   | 45.2   | 32.6   | 47.1     | 49.1   | 55.0   | 63.8     | 63.0  | 70.4   |
| Employee (temporary)       | 14.1   | 17.5   | 9.5    | 10.9     | 10.8   | 7.5    | 9.5      | 11.6  | 5.6    |
| Self-employed              | 9.6    | 15.8   | 16.9   | 5.0      | 9.6    | 8.6    | 6.8      | 12.3  | 6.3    |
| Employer                   | 2.0    | 6.2    | 4.6    | 2.7      | 3.6    | 6.4    | 1.4      | 3.6   | 3.2    |
| Unemployed                 | 4.0    | 6.8    | 5.5    | 18.1     | 15.0   | 11.4   | 5.4      | 7.2   | 9.5    |
| Out of labour force        | 5.1    | 2.8    | 22.4   | 6.8      | 4.2    | 4.1    | 5.0      | 1.4   | 4.6    |
| Retired                    | 11.1   | 2.3    | 5.7    | 10.0     | 9.0    | 6.6    | 9.5      | 2.2   | 3.2    |
| <b>Inheritances</b>        |        |        |        |          |        |        |          |       |        |
| High inheritance           | 14.0   | 11.0   | 19.8   | 5.2      | 9.9    | 6.0    | 6.2      | 9.6   | 8.5    |
| Low inheritance            | 10.0   | 11.4   | 10.3   | 8.8      | 11.6   | 15.6   | 27.3     | 23.0  | 23.0   |
| No inheritance             | 76.0   | 77.3   | 69.0   | 83.3     | 74.9   | 76.2   | 62.4     | 60.1  | 63.2   |
| <b>Ownership of</b>        |        |        |        |          |        |        |          |       |        |
| Business assets            | 3.0    | 6.8    | 19.1   | 5.9      | 10.8   | 15.3   | 10.0     | 18.8  | 18.8   |
| Main residence             | 40.4   | 32.8   | 70.4   | 50.7     | 50.3   | 72.2   | 62.9     | 58.0  | 82.0   |
| Liabilities                | 36.5   | 40.7   | 49.4   | 41.6     | 36.5   | 56.2   | 21.7     | 28.0  | 38.3   |
| Collateralized debt        | 9.1    | 6.2    | 23.7   | 29.9     | 26.9   | 42.1   | 6.8      | 9.4   | 16.0   |
| Unsecured debt             | 29.4   | 36.7   | 34.8   | 19.9     | 17.4   | 27.1   | 15.4     | 20.0  | 26.8   |
| <b>Work/age ratio (%)</b>  |        |        |        |          |        |        |          |       |        |
| Mean                       | 54.7   | 63.2   | 55.7   | 70.2     | 76.0   | 82.5   | 67.2     | 67.2  | 70.6   |
| Median                     | 64.1   | 66.7   | 64.9   | 75.9     | 81.1   | 90.6   | 73.5     | 71.4  | 77.4   |
| <b>Week work hours (#)</b> |        |        |        |          |        |        |          |       |        |
| Mean                       | 31.4   | 39.4   | 28.3   | 25.8     | 33.4   | 34.0   | 29.9     | 35.6  | 32.9   |
| Median                     | 40.0   | 40.0   | 40.0   | 35.0     | 40.0   | 40.0   | 40.0     | 40.0  | 40.0   |
| <b>Earnings (€)</b>        |        |        |        |          |        |        |          |       |        |
| Mean                       | 14,051 | 17,052 | 15,113 | 10,421   | 14,863 | 12,837 | 6,997    | 8,161 | 7,196  |
| Median                     | 13,333 | 15,264 | 12,540 | 8,144    | 9,980  | 8,950  | 6,028    | 6,888 | 6,247  |

Notes: This table shows the distribution of each characteristic within each household type, except where noted otherwise. Male and female single households contain just one adult (aged 25-60), non-single households are all other households (reference person aged 25-60). Weekly work hours are not available for France. Source: HFCS 2010, authors' calculations.

old) in the eight European countries studied here. Across all countries, men and women in single households are younger than the reference person in non-single (“other”) households: if all countries are combined, 47% of women and 46% of men in single households are 45 to 60 years of age, which compares to 56% of the other households. However, there are differences in age by gender between countries. Whereas women living in single households are somewhat older than men in most countries, men in single households are older than women in single households in Germany (51% aged 45-60 versus 45%) and the age structure is very similar for women and men in single households in Spain, Portugal, and France. It is conceivable that there is cultural pressure for younger, older, and also perhaps divorced individuals to live with their extended family rather than by themselves in some countries such as Spain and Portugal, and that this social norm contributes to age differences by gender which emerge when comparing countries.

The differences in educational systems are evident in the comparison of households across countries. The share of men and women who completed only primary or lower secondary education is comparatively high in Spain and especially Portugal, and in both countries a larger share of males in single households has only finished those education levels. Austria and Germany, with their well-developed systems of vocational training, as well as Slovakia, have high shares of secondary education. Especially in Germany and Slovakia, there are notable differences between female and male single households (61% and 53% in Germany, and 72% and 83% in Slovakia, respectively, have secondary education). Austria and Germany are also the only countries where a larger share of male rather than female single households holds a tertiary degree. Belgium has by far the highest share of tertiary education for both women and men in single households, which amount to roughly 50%. It is possible that the international community in Brussels plays some role here.

Women living in single households are more likely than men in single households to have children present. If all countries are combined, 30% of female versus only 6% of male single households have children. These stark differences hold for every country; only in Belgium they are somewhat attenuated (around 25% of female versus 13% of male single households have children). Other (non-single) household types are more likely to have children than single female and male households; 45% of these other household types have a minor in their home.

Combining all countries, men in single households are more likely to have never been married (65% compared to women’s 52%), whereas 32% of women but only 26% of men are divorced, and 10% of women are widowed compared to 3% of men. 72% of other, non-single households have a married reference person. Although magnitudes vary, this pattern holds across all countries except for Belgium, where men and women in single households are equally likely to have never been married (49%) and more men than women are divorced. Furthermore, about 13% of both men and women in single households are married in Belgium, which suggests again that either cultural factors or the multinational community in Brussels might influence the sample.

Regarding labour market status in all countries, women are more likely than men

in single households to be employees with a permanent contract (55% versus 50% for all countries combined). Only in Germany and Portugal is this pattern reversed. In the combined sample of all countries, men in single households are more likely to be self-employed (12%, compared to 6% of women), to employ others (5% of men versus 2% of women), and to be unemployed (by a small margin, 13% of men versus 12% of women). Women in single households, on the other hand, are slightly more likely to have a temporary contract (9% versus 8% of men) or to be out of the labour force (16% versus 11% of men). This general picture is the same in all countries except for Germany, where more men than women in single households are employed temporarily or are out of the labour force, and in Portugal, where more women than men in single households are unemployed. Combining all countries, non-single households also have high rates of dependent employment (61%), but they have lower rates of unemployment (7%) than single households. The exceptions here are Greece (44%) for dependent employment and France, Greece, and Portugal for unemployment.

More male single households have received an inheritance (31% versus women's 28%) in all countries combined.<sup>8</sup> However, this pattern is reversed in Austria, Belgium, and Greece. Men are also a bit more likely to have received a large inheritance in all countries except for Belgium and Greece. On the other hand, a slightly larger share of women received a low inheritance in five countries; the exceptions are Spain, Greece, and Portugal.

In terms of asset holdings, we see that male heads of single households are more likely to own a business (24% versus female's 13%) in all countries combined. This relation – and even its rough magnitude – holds true for all countries. Non-single households have higher ownership rates for businesses and main residences, as well as higher debt rates than single households in all countries.

For owner-occupied housing, in contrast, very heterogeneous national ownership rates are obscured by the equal prevalence (43%) for male and female households in the sample of all countries. In the two countries with low ownership rates, Austria and Germany, more males than females in single households own their main residence (27% and 21%, respectively). In the other countries, ownership rates are higher among women (Greece 40%, Belgium 55%, France and Slovakia 63%) or roughly equal between genders (Portugal about 50%, Spain 66%). Since Austria and Germany have large rental sectors and comparatively strong social housing policies, this finding provides some indication that such institutions might have gendered effects.

The incidence of debt, again, varies a lot between countries despite similar aggregate numbers for male and female single households (43%). In Austria, Germany, and France, the incidence of total debt is similar between men and women; however, men have higher rates of mortgages (at a low level in Austria and Germany), and women of unsecured debt such as credit card debt and overdrafts. In Belgium, Spain, and Portugal, women

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<sup>8</sup>Note that inheritances do not always sum to one because a small share of households had inheritances whose value we could not measure, because either the date or value of the inheritance was missing, or there are no inflation data for the year in which the inheritance was received.



have a higher incidence of debt than men in single households; in Slovakia and in Greece (except for mortgages), the situation is reversed. In all countries except for Greece and Slovakia, more women than men in single households have unsecured debt such as credit card debt and overdrafts. In Germany, with its large low-wage sector, and in Greece, which experienced a stark economic crisis, these rates of unsecured debt are comparatively high (43% for German women and 37% for Greek men in single households).

Men have stronger historical labour market attachment than women as measured by the mean and median work/age ratio if all countries are combined. At the mean, men in single households spent 75% of their potential working lives actually working, whereas this value is 67% for women. However, this finding does not extend to Belgium, France, and Slovakia, where male and female heads of single households have virtually equal labour market attachment at the mean (60% in Belgium, 67% in France and Slovakia). One possible explanation is that national (historical) differences in norms and institutions around childcare play a role in this finding. In Belgium and France the level of child care provision is relatively high, with policy focusing on full coverage. Furthermore, in those two countries childcare services, including for very young children, are widely accepted. Slovakia, on the other hand, had high child care coverage historically, but following the transition to a market economy, Slovakia's child care facilities experienced a clear downward tendency the 1990s (Plantenga and Remery, 2009; Janta, 2014).

Current labour market attachment is also stronger for men than for women, as captured by weekly working hours (31 for men versus 27 for women in single households at the mean). This relation holds true for all countries, although both levels and the gap in hours differ: on average, heads of female single households work between 20 hours in Belgium and 31 in Greece. The difference in working hours at the mean between male and female single households is 3 hours in Austria, and 8 in Greece and Portugal. Hours worked are higher in non-single households at the mean and at the median compared to single households.

Men living in single households have higher average earnings of about €26,000 per year, compared to women's €19,000 if all countries are combined. The HFCS data thus show a raw gender gap in earnings of roughly 26% for our sample of male and female single households. This gap varies from 8% in France to 33% in Germany. In addition, the level of annual earnings differs vastly across the European countries studied here. On average, female single households earn between roughly €7,000 in Slovakia and €25,000 in Belgium. Average earnings levels of non-single households are lower than male but higher than female single households' earnings levels in all countries except for Germany and Belgium, where the reference person in non-single households earns more.

All in all, we thus observe some systematic differences in our male and female samples and in comparison to the non-single households, even after restricting the age of our sample to the working age population. In particular, age, the presence of children, marital status, home ownership, and earnings are of some concern to varying degrees in different countries. It is therefore possible that there are differences in selection into single households between

women and men. As discussed in Section 4 below, we take this concern into account by applying a Heckman selection model in our multivariate analyses.

Table 2: Net wealth by country and household type

|                      | N      | Share | Mean    | p1      | p5     | p10    | Median  | p90     | p95       | p99       |
|----------------------|--------|-------|---------|---------|--------|--------|---------|---------|-----------|-----------|
| <b>All Countries</b> |        |       |         |         |        |        |         |         |           |           |
| Female Households    | 2,808  | 10.65 | 88,516  | -23,342 | -2,428 | -200   | 19,241  | 253,829 | 373,830   | 708,234   |
| Male Households      | 2,380  | 11.25 | 129,523 | -20,140 | -4,359 | -153   | 23,701  | 301,100 | 511,726   | 1,322,829 |
| Other households     | 31,174 | 78.10 | 248,694 | -35,963 | -58    | 2,314  | 130,474 | 526,805 | 792,844   | 1,963,811 |
| <b>Austria</b>       |        |       |         |         |        |        |         |         |           |           |
| Female households    | 293    | 19.67 | 93,125  | -13,919 | -1,296 | 508    | 19,098  | 228,898 | 353,709   | 874,555   |
| Male households      | 227    | 16.51 | 179,896 | -57,347 | -8,491 | -145   | 17,051  | 365,247 | 632,446   | 2,372,511 |
| Other households     | 980    | 63.82 | 379,703 | -67,786 | -1,990 | 3,027  | 161,866 | 792,452 | 1,415,455 | 4,295,981 |
| <b>Belgium</b>       |        |       |         |         |        |        |         |         |           |           |
| Female households    | 200    | 15.75 | 159,559 | -3,800  | 88     | 930    | 63,105  | 401,197 | 542,977   | 1,073,444 |
| Male households      | 167    | 15.21 | 150,031 | -1,077  | 0      | 509    | 26,172  | 369,000 | 587,877   | 1,509,400 |
| Other households     | 1,020  | 69.04 | 356,912 | -4,206  | 1,033  | 6,700  | 237,013 | 694,917 | 1,009,481 | 2,795,145 |
| <b>Germany</b>       |        |       |         |         |        |        |         |         |           |           |
| Female households    | 236    | 17.04 | 57,951  | -33,000 | -4,130 | -1,460 | 10,880  | 156,379 | 329,490   | 522,460   |
| Male households      | 253    | 21.17 | 112,620 | -20,500 | -8,290 | -1,980 | 17,990  | 240,300 | 497,780   | 1,522,500 |
| Other households     | 1,555  | 61.80 | 260,987 | -33,250 | -1,058 | 1,422  | 87,918  | 515,882 | 807,520   | 3,031,487 |
| <b>Spain</b>         |        |       |         |         |        |        |         |         |           |           |
| Female households    | 247    | 7.19  | 166,837 | -11,723 | -271   | 202    | 125,529 | 359,832 | 414,483   | 797,266   |
| Male households      | 198    | 5.97  | 225,833 | -7,452  | 0      | 546    | 105,146 | 500,140 | 646,584   | 1,323,541 |
| Other households     | 2,657  | 86.85 | 287,321 | -35,928 | 323    | 6,720  | 184,721 | 587,396 | 874,630   | 1,879,599 |
| <b>France</b>        |        |       |         |         |        |        |         |         |           |           |
| Female households    | 1,192  | 16.00 | 103,182 | -12,477 | -863   | 510    | 22,332  | 276,408 | 419,787   | 792,993   |
| Male households      | 1,053  | 14.99 | 135,576 | -8,130  | -442   | 616    | 22,448  | 330,495 | 543,423   | 1,225,777 |
| Other households     | 6,403  | 69.00 | 256,670 | -19,199 | 51     | 2,067  | 147,869 | 565,925 | 816,416   | 1,873,162 |
| <b>Greece</b>        |        |       |         |         |        |        |         |         |           |           |
| Female households    | 198    | 8.18  | 68,224  | -11,100 | -1,100 | 0      | 40,800  | 184,145 | 234,442   | 420,000   |
| Male households      | 177    | 6.31  | 81,683  | -23,200 | -3,034 | 0      | 14,640  | 203,448 | 246,491   | 871,208   |
| Other households     | 1,691  | 85.50 | 174,534 | -9,399  | 108    | 5,000  | 125,401 | 388,800 | 541,354   | 961,735   |
| <b>Portugal</b>      |        |       |         |         |        |        |         |         |           |           |
| Female households    | 221    | 6.28  | 74,970  | -26,405 | -3,531 | 0      | 24,866  | 159,282 | 232,160   | 858,000   |
| Male households      | 167    | 5.89  | 87,436  | -3,918  | 0      | 43     | 41,132  | 204,140 | 312,736   | 1,172,700 |
| Other households     | 2,021  | 87.83 | 143,926 | -12,768 | 184    | 1,944  | 78,407  | 292,312 | 464,455   | 1,168,653 |
| <b>Slovakia</b>      |        |       |         |         |        |        |         |         |           |           |
| Female households    | 221    | 9.41  | 48,049  | -414    | 151    | 824    | 42,368  | 105,320 | 123,473   | 172,000   |
| Male households      | 138    | 7.27  | 52,420  | -1,475  | -260   | 639    | 38,748  | 118,315 | 158,533   | 376,716   |
| Other households     | 1,266  | 83.32 | 89,116  | -333    | 5,432  | 20,538 | 65,808  | 170,389 | 236,077   | 482,135   |

Notes: This table shows the unweighted sample size, as well as the weighted share in the population and wealth levels of male and female single households (only one adult aged 25-60 present), and all other, non-single households (reference person aged 25-60). Source: HFCs 2010, authors' calculations.

Table 2 gives an overview of the distribution of net wealth across household types and countries. The share of male and female single households in the total population varies substantially. In Spain, Greece, Portugal, and Slovakia, the shares of both male and female single households are between 6% and 9% of the countries' sample; in Austria, Belgium, Germany, and France, their shares lie between 15% and 21%.

On average, female single households have lower net wealth than male single households (€89,000 for females versus €130,000 males) if all countries are combined. That is, the raw data show a gender wealth gap of roughly 32% at the mean. On the country level, a positive raw gender wealth gap exists at the mean in each country except for Belgium, where female-headed single households have 6% more wealth than male-headed ones. The magnitude of this gap is far from uniform; it amounts to 8% in Slovakia, 14% in Portugal and 16% in Greece, 24% in France and 26% in Spain, and 48% in Austria and 49% in Germany. Non-single households have higher net wealth than single households in all countries and in the aggregate.

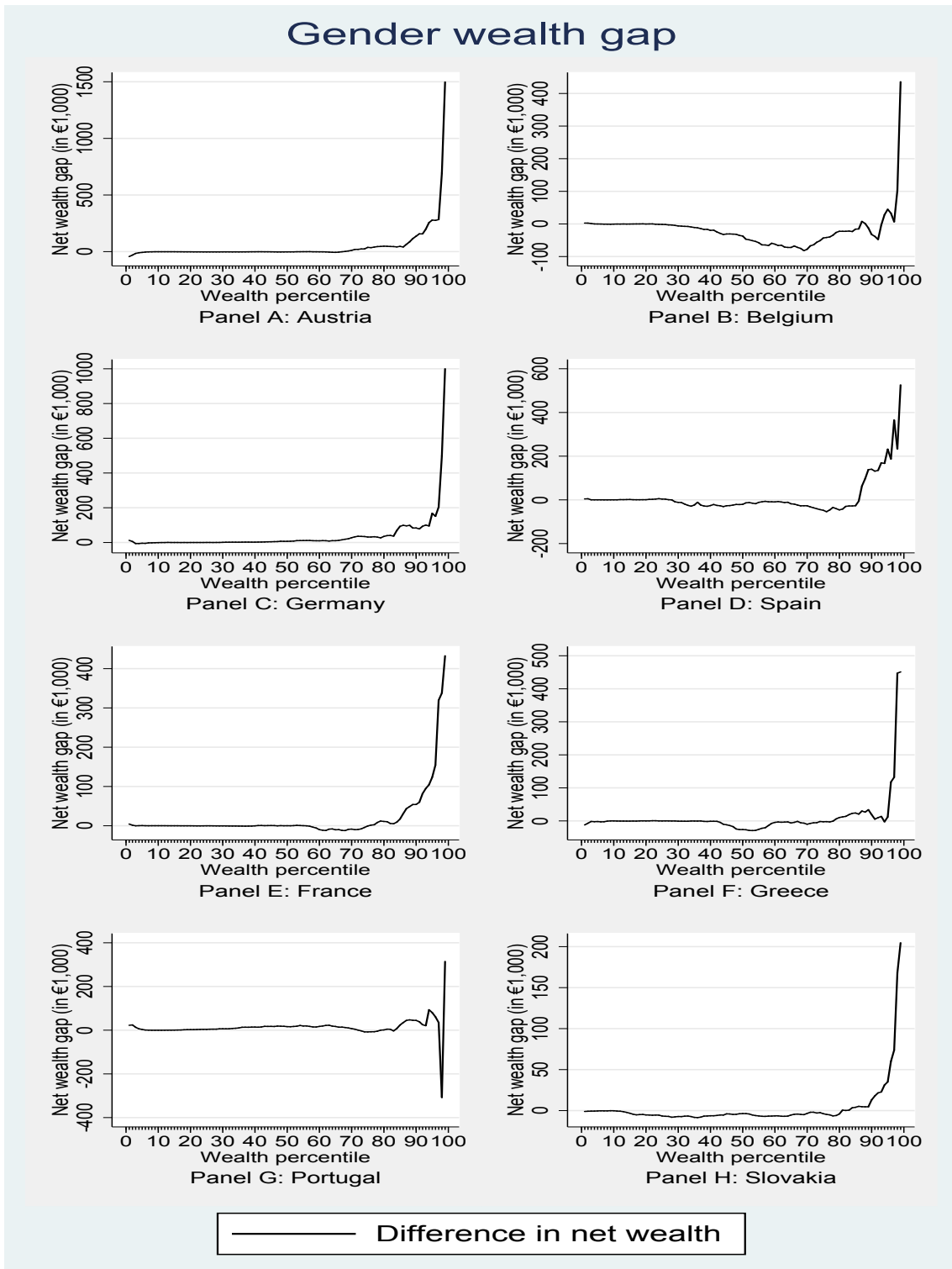
At the median, there is a positive raw gender wealth gap (i.e., wealth of male single households exceeding female's) of 19% if all countries are combined, but at the country level the situation is much more mixed. Austria, Belgium, Spain, Greece, and Slovakia report higher net wealth of female compared to male single households at the median. Net wealth is virtually equal at the median in France between male and female single households. The size of the gap varies substantially due to the lower absolute values of net wealth; this negative gap (higher wealth of female single households) is 9% in Slovakia, 12% in Austria, and 19% in Spain, but 141% in Belgium and 179% in Greece. The positive gender gap (more wealth for males) is 40% in Germany and Portugal.

Female single households have higher net wealth than male single households in several instances at the bottom half of the distribution. In particular, at the first percentile, women are more indebted than men in Belgium, Germany, Spain, France, and Portugal. However, the differences in net wealth are small in absolute terms. Only in Belgium, women have noticeably higher net wealth than men up to the 90<sup>th</sup> percentile.

The gender wealth gap becomes positive and large at the top of the distribution. At the 95<sup>th</sup> percentile, the raw gender net wealth gap is consistently positive, and its magnitude ranges from 5% in Greece to 44% in Austria. At the very top of the distribution, the 99<sup>th</sup> percentile, the gap widens even further, from 27% in Portugal to 66% in Germany. It thus appears that the higher net wealth of male single households at the top of the distribution is driving the gender wealth gap at the mean in the raw data.

Figure 1 investigates this point further by showing the gender wealth gap between male and female single households across the net wealth distribution for all eight countries. In most countries, there is very little difference in net wealth between male and female single households across much of the distribution; the gap increases steeply only at the top end of the distribution. Austria, Germany, Spain, France, Greece, and Slovakia conform to this pattern, with very minor (often negative) wealth gaps across the distribution. Belgium is the only country with a marked negative wealth gap in the upper half of the distribution.

Figure 1: Gender wealth gap (male minus female net wealth) across European countries



Notes: This graph shows the gender gap across the unconditional distribution of net wealth of single female households. Source: HFCS 2010, authors' calculations.

Portugal has a few observations of female single households with very high wealth, which impact the wealth gap at the top end. In part, this negative gap is driven by differences in the value of the main residence of male and female single households in Portugal (see Figure 3 on page 28, which we discuss below).

The gender wealth gap is thus clearly right-skewed in our raw data; male single households have higher net wealth than female single households at the upper end of the wealth distribution. The magnitude of the absolute gap at the 95<sup>th</sup> percentile varies substantially; it ranges from roughly €12,000 in Portugal to around €280,000 in Austria. The gap rises steeply until the 99<sup>th</sup> percentile in all countries (except for the few households in Portugal), where it lies between roughly €200,000 in Slovakia and €1,500,000 in Austria. The gender wealth gap is thus clearly right-skewed in our raw data; male single households have higher net wealth than female single households at the upper end of the wealth distribution.

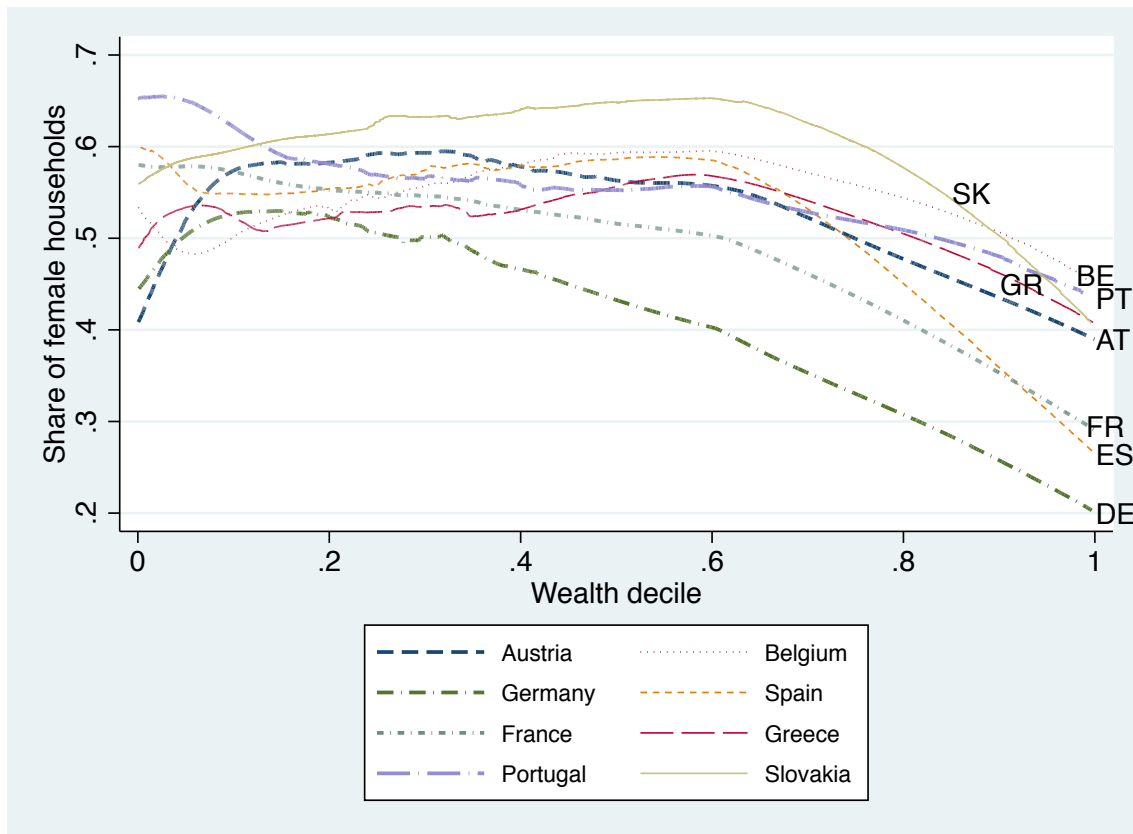
This gap at the top of the unconditional distribution of net wealth is compounded by the household composition of the wealth distribution in the European countries studied here, as the lowess graph in Figure 2 shows. The share of female single households across the net wealth distribution shows an inverted u-shape, and in some cases a down-right downwards-sloping pattern. The share of female households compared to male single households peaks at the 1<sup>st</sup> decile in Germany and at the 3<sup>rd</sup> in Austria, the two distributions with the most pronounced inverted u-shape. Belgium, Greece, Spain, and Slovakia peak around the 6<sup>th</sup> decile. Portugal and especially France show a downward sloping distribution of female households across the entire net wealth distribution. That is, in France, the relative incidence of female households strictly declines as net wealth rises. In all eight countries, the share of female single households falls below 50% in the top decile.

## 4 Multivariate Analysis: The Gender Wealth Gap

This section presents the multivariate empirical findings on the gender wealth gap in the eight European countries. Since the descriptive analysis showed that there is a fairly large gap at the upper end of the net wealth distribution of single female and male households despite very limited differences along most of the distribution, we attempt to explain this gap with various personal- and household-level characteristics. To do so, we first show the gender wealth gap in net wealth for the average single household by using an OLS regression, sequentially adding covariates to the model. Second, we employ a quantile regression at the 95<sup>th</sup> percentile of the net wealth distribution to examine the gender gap for wealthier households. Third, we extend this analysis by looking into disaggregated wealth categories as dependent variables; that is, we investigate the gender wealth gap in gross wealth and its components (financial and real wealth), in debt and its constituent parts (collateralized and unsecured debt), and then in even more detail in main residences. Finally, we exploit the only data available on the individual level, namely pension wealth, to show gender differences in this wealth category as a robustness check in Section 4.3.

As discussed in Section 3, the selection into single households is likely to be driven by

Figure 2: Share of female versus male households, across the net wealth distribution



Notes: This graph shows the lowess-smoothed share of female in all single households across the unconditional distribution of net wealth of female single households. Source: HFCS 2010, authors' calculations.

different aspects for men and women. In particular, we observed differences in age between men and women in single adult households, their relationship status, career orientation as indicated by the presence of children, home ownership, and earnings. The degree of these differences varies by country, but at least one of these characteristics differs greatly by gender in each country (and in comparison to households with more than one adult, or “other” households in Table 1). We thus attempt to control for the selection into a single household as a potential determinant of wealth by using these characteristics in the first step of a two-stage Heckman selection correction procedure, as shown in Equation 2. Here we estimate the probability  $Prob$  of being single for each household  $i$  in country  $j$ , controlling for a household gender dummy variable, a vector  $X$  of age, relationship status, the presence of children<sup>9</sup>, ownership of the main residence, and earnings – all of which are also interacted with the gender dummy –, and include an error term  $\epsilon_{ij}$ :

$$Prob_{ij} = \phi_{ij}Female_{ij} + \chi_{ij}X_{ij} + \psi_{ij}X_{ij} * Female_{ij} + \epsilon_{ij}. \quad (2)$$

<sup>9</sup>We combine the variables “two” and “three or more children present” for this estimation due to a low number of observations in the latter, especially when split by gender.

Having obtained the probability of being a single household  $Prob_i$  for households in each country  $j$ , we calculate the Inverse Mills Ratio (IMR). This is the ratio of the probability density function to the cumulative distribution function of the distribution of the predicted values in the probability model:

$$IMR_{ij} = \frac{f(Prob_{ij})}{F(Prob_{ij})}. \quad (3)$$

Included in the selection model (Equation 2), but not in the models predicting wealth below, is our instrument of earnings. Earnings can affect the probability of being a single household, because living alone requires a certain regular income stream – in a sense, one needs to be able to “afford” living in a single household. Furthermore, a well-established literature shows that having her own income often enables a woman to leave a bad relationship and live alone (e.g. Andress and Hummelsheim, 2009; Fernandez and Wong, 2014). Finally, given the literature indicating that other economic characteristics, such as inheritances, are more important in determining wealth than income (Fessler and Schürz, 2013; Leitner, 2015), we are comfortable leaving earnings out of the wealth equation.

The results of the selection model are reproduced in Table 12 in Appendix A.1. Two important findings should be mentioned here, one regarding variables and one concerning countries. With respect to variables, the selection model shows that being married, having one child in the household (except in Austria), and owning a home decreases the probability of living in a single household in all eight countries for men and women. These lower probabilities of living in a single household are attenuated for women in many cases. Regarding countries, we find almost all selection variables to be statistically significant in France and to a lesser extent in Belgium and Slovakia. The selection process into single households thus appears to be captured particularly well in these countries by the quantifiable characteristics covered here. It is possible that individual attitudes such as independence and risk-taking might be more similar for men and women in these countries. In other countries, however, we conjecture that social norms and conventions might play more of a role, such as social pressure to live in larger households for elderly or young persons (Fokkema and Liefbroer, 2008). Overall, these results suggest that there are indeed differences in selection into single households. We therefore report the selection parameter IMR for the Inverse Mills Ratio in the OLS results and in the quantile regressions below.

#### 4.1 The Gender Gap in Net Wealth

In this section, we show the results of the OLS and quantile regression models for each of the eight countries. We regress the IHS-transformed level of net wealth  $NW$  for each household  $i$  in country  $j$  on a constant, a household gender dummy variable, a vector of  $k$  controls in  $X$ , the Heckman correction term  $IMR$ , and an error term  $\varepsilon$ :

$$NW_{ij} = \alpha_j + \beta_{1j}Female_{ij} + \beta_{jk}X_{jik} + \gamma_j IMR_{ij} + \varepsilon_{ij}. \quad (4)$$



Control variables are subsumed in four groups<sup>10</sup>: personal characteristics (age and education); family structure (number of children present and relationship status); inheritances; and labour market attributes and asset ownership (employment characteristics, business and housing assets, and debt). The control group comprises male single households aged 35 to 44 with lower secondary education, who are married (or living in a civil union) with no children living in the household, who did not receive an inheritance, work as an employee with a permanent contract, and own neither their main residence, business assets, nor debt.<sup>11</sup>

Table 3 shows the results for the OLS model when the control variables are added sequentially. For readability, it includes only the coefficient for living in a female single household and the selection parameter.<sup>12</sup> Since the gender gap in net wealth at the mean is not very pronounced, as Table 2 and Figure 1 showed, we do not expect a strong gap to emerge from the OLS. Table 3 shows that in most countries, there is indeed no statistically significant gender wealth gap in any specification, from the base model (1), which includes no controls beyond the Heckman correction term to the full model (5). However, there are some exceptions. In Slovakia, there is a statistically significant gender wealth gap if family controls are included (model (3)), and in Spain, there is a statistically significant gap if we control for family structure and inheritances (models (3) and (4)). Only Portugal shows a statistically significant gender wealth gap starting in the base model (1) and throughout all specifications, including inheritances (model (4)). When the set of independent variables for labour market and assets is added for the full model, we do not find a gender gap in net wealth in any of the eight countries analysed here. The explanatory power of the full model (5) is comparatively high; it is between 33% in France and 58% in Slovakia.<sup>13</sup>

In all countries, the selection term IMR is statistically significant in at least one specification, confirming that selection into single households does differ for males and females, and that the characteristics relevant to this selection are also related to wealth. In Austria, Spain, Greece, and Slovakia, it has an effect in specifications (1) through (4), i.e. the base model; when age and education are included; when family structures are added; and when the model controls for inheritances. In the other countries, the selection parameter is not statistically significant when control set (2), age and education, is included, and significance is irregular otherwise. When the economic characteristics of labour market and assets are added for the full model (5), the selection parameter is not statistically significant in any country except Germany. We conjecture that controlling for home ownership explicitly in the full model might be driving this result. This would suggest that the decision to live alone is strongly influenced by housing, and in particular by owning one's main residence.

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<sup>10</sup>See Section 3 for a detailed description of the variables.

<sup>11</sup>Choosing these variables as the attributes of the control group permits us to show the effects of their complements in the results.

<sup>12</sup>For detailed results, refer to Tables 13 to 20 in Appendix A.2.

<sup>13</sup>The  $R^2$  in the multiply imputed data is calculated as the average of the  $R^2$  over the five imputates in the data set.

Table 3: Net wealth gap of single households at the mean (OLS)

|          |                      | (1)                 | (2)                 | (3)                  | (4)                 | (5)                 |
|----------|----------------------|---------------------|---------------------|----------------------|---------------------|---------------------|
|          | Independent Variable | Base                | Age & Educ.         | Family               | Inheritances        | Labor & Assets      |
| Austria  | Female               | 0.672<br>(0.586)    | 0.899<br>(0.572)    | -0.200<br>(0.706)    | -0.047<br>(0.690)   | 0.630<br>(0.722)    |
|          | IMR                  | 1.806***<br>(0.488) | 1.850***<br>(0.548) | 9.856***<br>(2.775)  | 7.912***<br>(3.010) | 3.677<br>(3.066)    |
|          | $R^2$                | .022                | .094                | .145                 | .173                | .387                |
| Belgium  | Female               | 0.099<br>(0.490)    | 0.097<br>(0.419)    | -0.122<br>(0.433)    | -0.146<br>(0.436)   | 0.023<br>(0.422)    |
|          | IMR                  | 1.516**<br>(0.677)  | 1.051<br>(0.667)    | 5.952***<br>(1.026)  | 5.766***<br>(1.012) | -0.328<br>(1.170)   |
|          | $R^2$                | .029                | .184                | .251                 | .256                | .428                |
| Germany  | Female               | -0.884<br>(0.904)   | -0.602<br>(0.872)   | -1.059<br>(0.825)    | -0.909<br>(0.886)   | -0.239<br>(0.913)   |
|          | IMR                  | 0.831<br>(1.082)    | 0.783<br>(1.004)    | 11.253***<br>(1.869) | 9.296***<br>(1.838) | 5.983***<br>(2.186) |
|          | $R^2$                | .005                | .093                | .251                 | .256                | .468                |
| Spain    | Female               | -0.395<br>(0.642)   | -0.651<br>(0.615)   | -1.520**<br>(0.679)  | -1.213*<br>(0.652)  | -0.272<br>(0.591)   |
|          | IMR                  | 1.991*<br>(1.032)   | 2.101*<br>(1.144)   | 6.150***<br>(1.795)  | 5.147***<br>(1.649) | -2.592<br>(1.916)   |
|          | $R^2$                | .014                | .111                | .186                 | .214                | .473                |
| France   | Female               | -0.128<br>(0.359)   | -0.343<br>(0.362)   | 0.212<br>(0.361)     | 0.199<br>(0.352)    | -0.063<br>(0.318)   |
|          | IMR                  | 0.883<br>(0.570)    | 0.763<br>(0.533)    | 4.406***<br>(1.066)  | 4.021***<br>(1.034) | -0.721<br>(1.221)   |
|          | $R^2$                | .005                | .074                | .110                 | .136                | .329                |
| Greece   | Female               | 0.026<br>(0.579)    | 0.073<br>(0.597)    | -0.573<br>(0.745)    | -0.437<br>(0.706)   | 0.296<br>(0.580)    |
|          | IMR                  | 4.845***<br>(0.942) | 4.876***<br>(1.047) | 8.167***<br>(1.007)  | 6.428***<br>(1.086) | -0.068<br>(2.149)   |
|          | $R^2$                | .112                | .132                | .210                 | .224                | .370                |
| Portugal | Female               | -1.485**<br>(0.703) | -1.600**<br>(0.631) | -1.858***<br>(0.647) | -1.498**<br>(0.604) | -1.050<br>(0.639)   |
|          | IMR                  | 1.474*<br>(0.851)   | 0.922<br>(0.754)    | 3.216**<br>(1.591)   | 2.061<br>(1.683)    | -1.865<br>(1.739)   |
|          | $R^2$                | .027                | .180                | .209                 | .242                | .506                |
| Slovakia | Female               | 0.309<br>(0.412)    | 0.012<br>(0.396)    | -0.641*<br>(0.389)   | -0.490<br>(0.426)   | 0.383<br>(0.349)    |
|          | IMR                  | 1.889***<br>(0.374) | 2.045***<br>(0.402) | 5.985***<br>(1.011)  | 5.464***<br>(1.011) | -0.368<br>(0.737)   |
|          | $R^2$                | .064                | .112                | .196                 | .229                | .578                |

Notes: This table shows OLS estimates for IHS-transformed net wealth of single male versus female households (only one adult aged 25-60 present). Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Source: HFCS 2010, authors' calculations.

We thus do not find much evidence of a gap in average net wealth between male and female single households in the full OLS specification. This is not very surprising, since the raw data of Table 2 and Figure 1 did not give a strong indication of a gender gap in average net wealth. It is therefore likely that these differences at the mean level of wealth miss important details about the gender wealth gap, given the fact that the distribution of net wealth is highly right-skewed in each of the eight countries, as is the raw gender gap in net wealth.

We therefore conduct a quantile regression at the 95<sup>th</sup> percentile of the net wealth distribution, in order to assess the gender gap at the top of the distribution.<sup>14</sup> Table 4 presents the coefficients on being a female single household and on the selection parameter.

The coefficient for being female is consistently negative at the top of the net wealth distribution; however, the statistical significance of the gender gap in net wealth varies substantially across countries and across our first four models. The gender wealth gap at the top of the distribution is statistically significant in the raw data of the base model (1) in three countries (Austria, Spain, and France). When personal characteristics of age and education are taken into account in model (2), only France retains a significant gender wealth gap. Three countries show a gender wealth gap with family controls in model (3) (Germany, Portugal, and Slovakia). Including inheritances in the controls yields five countries with a statistically significant gender wealth gap (Austria, Germany, Greece, Portugal, and Slovakia), suggesting that female single households receive larger inheritances: once comparing male and female single households with the same distribution of inheritances, female single households have lower wealth than male single households, i.e. the net wealth gap becomes larger (except in Portugal) and statistically significant. This finding is in line with the literature on gender differences in inheritances among the rich (Edlund and Kopczuk, 2009).

The size of the gender wealth gap is economically significant; its smallest value is 25% in the raw data in France which rises to 33% in model (2).<sup>15</sup> Austria and Germany have somewhat larger gender wealth gaps at the top of the distribution, which amount to almost 90% in Germany and over 100% in Austria in model (4). Slovakia's gender wealth gap in model (4), controlling for inheritances, is about 70%; Greece's about 63%. In general, the gender wealth gap increases as more control variables are included. Only Portugal's decreases from over 50% to less than 45% from model (3) to model (4).

The sporadic significance of the gender gap in net wealth with few immediately obvious commonalities in the first four models suggests that institutional differences and social norms might play a role in shaping these results. For instance, the three countries in which the gender wealth gap is significant when family controls are included in model (3), Germany, Portugal, and Slovakia, have rather weak child care institutions.

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<sup>14</sup>A limited number of observations and consequent sensitivity to variations prevent us from investigating the very top of the distribution, even though the raw data suggests that the gap widens towards the 99<sup>th</sup> percentile.

<sup>15</sup>Note that since the IHS transformation approximates the logarithmic function for all but very small values, coefficients can be interpreted analogously to logarithmic models (Pence, 2006).

Table 4: Net wealth gap of single households at the top of the distribution (quantile regression)

|                      |        | (1)                 | (2)                 | (3)                 | (4)                 | (5)                |
|----------------------|--------|---------------------|---------------------|---------------------|---------------------|--------------------|
| Independent Variable |        | Base                | Age & Educ.         | Family              | Inheritances        | Labor & Assets     |
| Austria              | Female | -0.972**<br>(0.384) | -0.107<br>(0.451)   | -0.734<br>(0.560)   | -1.067**<br>(0.491) | -0.206<br>(0.354)  |
|                      | IMR    | 1.637**<br>(0.689)  | 1.701*<br>(0.887)   | 5.192**<br>(2.276)  | 4.222**<br>(1.642)  | -1.012<br>(1.459)  |
| Belgium              | Female | -0.188<br>(0.296)   | -0.255<br>(0.252)   | -0.094<br>(0.333)   | -0.011<br>(0.377)   | -0.043<br>(0.498)  |
|                      | IMR    | 0.970***<br>(0.265) | 1.020***<br>(0.254) | 4.041***<br>(0.948) | 3.948***<br>(0.908) | 2.982**<br>(1.231) |
| Germany              | Female | -0.553<br>(0.549)   | -0.342<br>(0.373)   | -0.732*<br>(0.414)  | -0.895**<br>(0.426) | -0.163<br>(0.365)  |
|                      | IMR    | 1.246<br>(0.966)    | 1.291*<br>(0.668)   | 3.460***<br>(0.834) | 3.339***<br>(0.903) | -0.159<br>(1.434)  |
| Spain                | Female | -0.515**<br>(0.236) | -0.075<br>(0.130)   | -0.008<br>(0.179)   | -0.089<br>(0.197)   | -0.343<br>(0.242)  |
|                      | IMR    | 0.555<br>(0.489)    | 0.354<br>(0.603)    | 0.290<br>(0.700)    | 0.363<br>(0.636)    | -0.524<br>(0.767)  |
| France               | Female | -0.241*<br>(0.136)  | -0.332*<br>(0.183)  | -0.164<br>(0.224)   | -0.199<br>(0.215)   | -0.220<br>(0.157)  |
|                      | IMR    | 0.418<br>(0.319)    | 0.467<br>(0.306)    | 2.911***<br>(0.690) | 2.674***<br>(0.642) | 0.218<br>(0.346)   |
| Greece               | Female | -0.435<br>(0.346)   | -0.175<br>(0.247)   | -0.348<br>(0.368)   | -0.626*<br>(0.343)  | -0.447<br>(0.413)  |
|                      | IMR    | 1.617***<br>(0.460) | 1.906***<br>(0.451) | 2.078***<br>(0.590) | 1.343*<br>(0.717)   | 0.421<br>(1.205)   |
| Portugal             | Female | -0.285<br>(0.433)   | -0.326<br>(0.258)   | -0.508*<br>(0.262)  | -0.446*<br>(0.269)  | -0.161<br>(0.345)  |
|                      | IMR    | -0.291<br>(0.266)   | -0.169<br>(0.391)   | -0.202<br>(1.102)   | -0.431<br>(1.175)   | -0.550<br>(0.832)  |
| Slovakia             | Female | -0.302<br>(0.275)   | -0.262<br>(0.218)   | -0.555*<br>(0.310)  | -0.702**<br>(0.338) | -0.006<br>(0.225)  |
|                      | IMR    | 0.202<br>(0.191)    | 0.250<br>(0.234)    | 0.780<br>(0.563)    | 0.888<br>(0.611)    | -0.438<br>(0.509)  |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Full-time childcare services are scarce in Germany and Portugal, and high costs hamper uptake in Slovakia (Janta, 2014). Furthermore, of the five countries in which controlling for inheritance (model (4)) yields a statistically significant gender wealth gap (Austria, Germany, Greece, Portugal, and Slovakia), three (Austria, Portugal and Slovakia) have no inheritance taxation, and the other two countries (Greece and Germany) have very low inheritance taxation (Ey, 2014). Whereas a causal interpretation is not possible with

these data, it is not implausible that norms and institutions affect the differences between female and male single households at the top of the distribution.

Finally, in the full model (5), female single households do not have statistically significant lower wealth than male single households in any of the eight Euro area countries. That is, even though we do find some evidence of a gender gap in net wealth in the raw data or with limited sets of controls at the top of the distribution in most countries, these differences are explained by labour market characteristics and participation in certain asset and debt categories.

The significance of the IMR shows that we are effectively capturing the difference in selection into single households in five countries: Austria, Belgium, Germany, France, and Greece. It thus does indeed appear to be the case that the factors included in the selection model are related to wealth as well as the choice to live alone in at least some countries. In particular, we conjecture that individual attitudes and social norms such as independence and risk-taking might affect both the decision to live alone and the wealth level of single households in those countries. This view might be supported by the fact that we detect no selection bias in model (5) when labour market effects and assets are controlled for in seven countries.<sup>16</sup>

Portugal, Spain, and Slovakia seem unaffected by selection issues. These three countries have the lowest share of single male and female households (together with Greece, see Table 1). It is conceivable that there are social norms in these countries which induce the formation of larger households such as early marriage, living with parents longer at a young age, or living with adult children in older age. This possibility is in line with the literature which finds that living alone is much more common in Northern and Western Europe than in either Southern or Eastern Europe at all ages. Especially during young and middle adulthood, the percentage of men and women living alone is particularly low in Southern European countries (Fokkema and Liefbroer, 2008).

Regarding the effects of covariates, the control variables largely show the expected effects found in the literature (Schmidt and Sevak, 2006; Yamokoski and Keister, 2006; Sierminska et al., 2010), conditional on statistical significance.<sup>17</sup> Youth, seniority, and education have the expected effects. So does marital status – never having been married, or being divorced or widowed go hand in hand with higher wealth in single households (with the exception of Slovakia in model (5)). Single households at the top of the distribution in which there are children present have lower wealth. Large inheritances play an important role; they retain their statistical significance even in the full model in five countries. Temporary contracts, unemployment, work history (work/age ratio) and employing others have the expected effects. Home and business ownership are positively correlated with wealth, but not surprisingly, at the top of the distribution debt (both collateralized and unsecured) has little correlation with wealth.

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<sup>16</sup>The exception is Belgium.

<sup>17</sup>Due to space limitations, the detailed results along with a more in-depth discussion are reproduced in Tables 21 to 28 in Appendix A.3.

To sum up, as expected, we do not find a gender wealth gap at the mean for the eight European countries investigated here. Possibly more surprisingly, there is only a somewhat scattered incidence of a statistically significant gender gap in net wealth at the 95<sup>th</sup> percentile, and it is explained by gender differences in labour market characteristics and participation in asset and debt categories in all eight countries. Where it can be confirmed, the gap in net wealth is economically significant; it ranges from 25% in France to over 100% in Austria in different specifications of the controls. We effectively control for selection, especially in countries where it can be conjectured that individual attitudes and social norms such as independence and risk-taking play a role in the decision to live in a single-adult household. Furthermore, we are able to corroborate the existing literature regarding the influence of other covariates on net wealth. In particular, age, education, the presence of children, marital status, inheritances, home and business ownership, temporary contracts, unemployment, and employing others have the expected signs. The next section analyses components of net wealth to investigate the possible reasons for the far less than uniform statistical significance of the gender gap in net wealth at the top of the distribution.

## 4.2 The Gender Gap in the Components of Net Wealth

The previous section (4.1) has established that even at the top of the distribution, the evidence for a gender gap in net wealth across countries and model specifications is mixed, even though the raw data shows a clear gap. This section thus presents an extension which investigates the gender gap in various components of net wealth. In particular, it starts with an analysis of gross wealth and its two components (real and financial wealth), continues with debt, where we delve deeper into collateralized and unsecured debt, and concludes with a brief look at main residences.

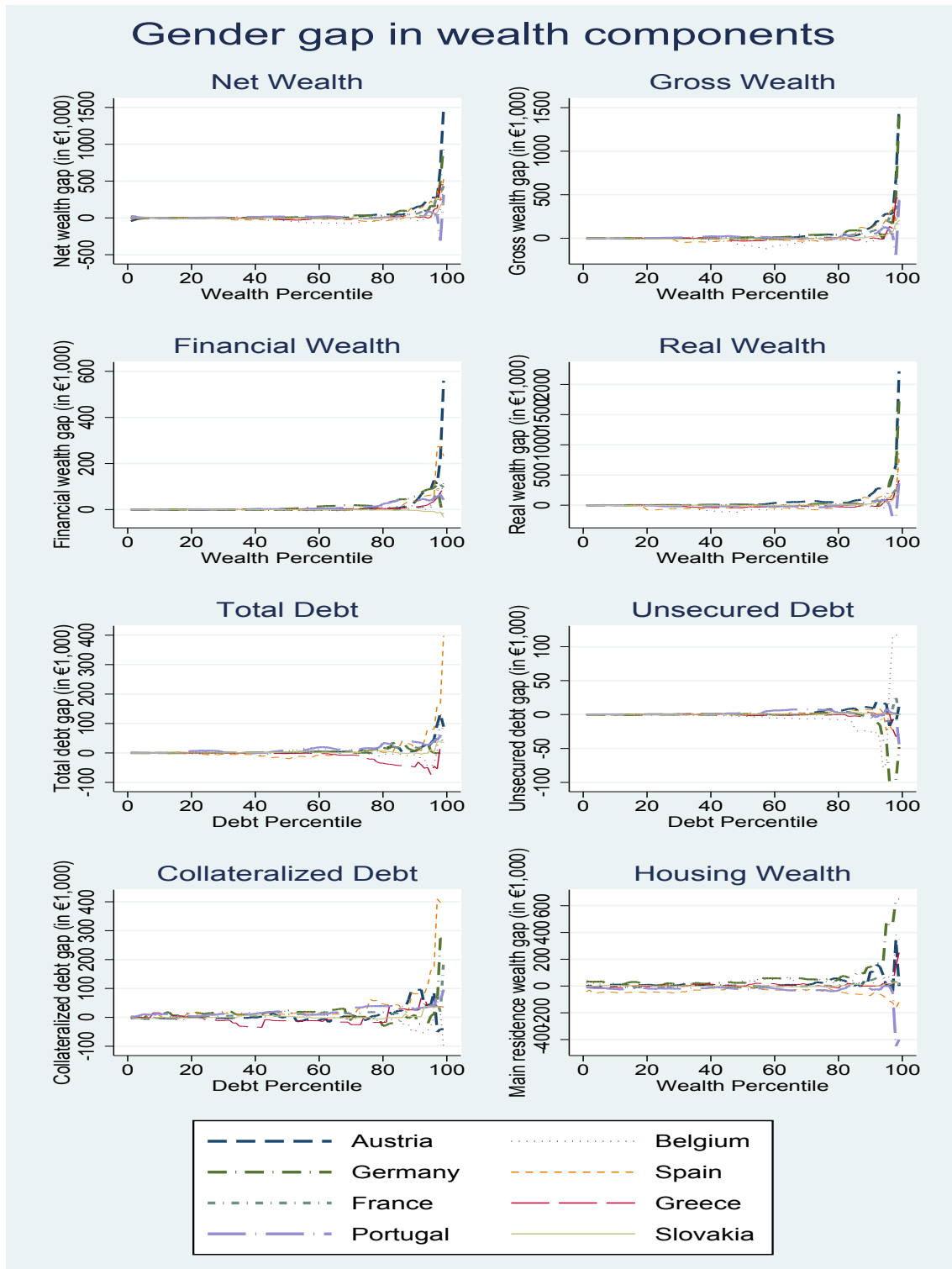
Figure 3 gives a brief overview of these asset and debt categories. Important variations by country and category notwithstanding, which are discussed in detail below, it shows that the gap between male and female single households is situated at the top of the distribution in all cases. We therefore continue to focus on the top of the distribution in the multivariate analysis of this section.

Table 5 shows the results of a quantile regression predicting the value of gross wealth owned by female versus male single households at the 95<sup>th</sup> percentile of the gross wealth distribution.<sup>18</sup> The coefficient on female single households is negative across the board; compared to the quantile regression of net wealth, however, the gender gap in gross wealth is statistically significant in many more specifications. In particular, we find a statistically significant gender gap in gross wealth that we did not detect for net wealth in the first four models in Spain (models (2) and (4)), France (models (3) and (4)), Greece (models (1), (2), and (3)), and Slovakia (models (1) and (2)). In the full model (5), five countries (Austria, Germany, France, Greece, and Slovakia) now show a statistically significant gender gap for gross wealth, where no country had done so for net wealth. Only in Germany does

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<sup>18</sup>Recall that all continuous wealth and debt variables are smoothed using the IHS transformation.

Figure 3: Gender gap in components of net wealth (male minus female wealth/debt) across European countries (in €1,000)



Notes: This graph shows the gender gap in wealth and debt categories across the unconditional distribution of wealth and debt categories of single female households. Source: HFCS 2010, authors' calculations.

the gender gap lose statistical significance in two instances (model (3) and (4)) predicting gross wealth compared to net wealth, and in Belgium the gender wealth gap remains statistically insignificant in all specifications.

The size of the gender gap in gross wealth varies significantly across countries, from less than 30% in Slovakia in model (5) to almost 80% in Austria in model (4). Although the non-universal statistical significance makes it difficult to discern patterns, in some cases the gender wealth gap follows an inverted u-shaped pattern across the five specifications. That is, the size of the unexplained gap increases as personal and family characteristics are controlled for, and then decreases when inheritances and especially labour market characteristics and asset/debt holdings are included. This is the case in Austria, France, and Portugal.

For all countries, the gender wealth gap shrinks when controls for labour market characteristics and asset/debt holdings are added. This finding confirms the importance of labour market outcomes and asset/debt holdings in explaining a part of the gender wealth gap. At the same time, the range of the gap size across countries is notably compressed. In the full model, the gap in gross wealth now takes values from the above-mentioned 27% in Slovakia to around 33% in France, 44% in Austria and 45% in Germany, to 48% in Greece. Finally, selection issues continue to be present while studying gross wealth. The country-specific patterns for the IMR found in Table 4 are broadly confirmed in Table 5.

Next we look at the two components of gross wealth, real and financial wealth. Both show a gender gap that is strongly statistically significant. In particular, real wealth is very similar to gross wealth, both regarding statistical significance and the size of the gap between female and male single households. The only difference to gross wealth is in a single instance of statistical significance in Belgium (model (4)) with a gap of about 24%, and that the gender gap in real wealth is not statistically significant in any model in Germany. Since real wealth, and especially housing, is the most important asset category for most households, this close link to gross wealth is to some extent to be expected.

Financial wealth, on the other hand, shows some peculiarities. There is a gender gap in financial wealth at the top of the distribution of single households that is statistically significant in most model specifications in Germany and Austria, as well as in France, Greece and Portugal, and to a lesser degree in Spain, whereas Belgium and Slovakia do not show evidence of a gender gap in financial wealth.

A possible explanation of the differences in the findings regarding the gender gap in net wealth versus gross wealth and its components is based on the fact that net wealth is gross wealth minus debt. As noted above, Spain, France, Greece, and Slovakia, as well as Germany, have notable differences in the statistical significance in the gender gaps of gross and net wealth. These are countries with a high incidence of debt in the full population (see Table 1). In particular, single households in Spain, France, and Portugal have comparatively high levels of collateralized debt, while Greece and Germany have higher levels of unsecured debt.<sup>19</sup> It is therefore possible that the observed gender gap in

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<sup>19</sup>Belgium also has relatively high levels of debt incidence, in particular unsecured debt (see Figure 3),



Table 5: Gross wealth of single households at the top of the distribution

|          |                      | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  |
|----------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|          | Independent Variable | Base                 | Age & Educ.          | Family               | Inheritances         | Labor & Assets       |
| Austria  | Female               | -0.707***<br>(0.211) | -0.339<br>(0.250)    | -0.393<br>(0.298)    | -0.785**<br>(0.337)  | -0.438*<br>(0.261)   |
|          | IMR                  | 0.372**<br>(0.133)   | 0.475**<br>(0.201)   | 1.894**<br>(0.776)   | 1.616<br>(0.887)     | -0.426<br>(0.314)    |
| Belgium  | Female               | -0.316<br>(0.226)    | -0.247<br>(0.168)    | -0.296<br>(0.189)    | -0.158<br>(0.187)    | -0.154<br>(0.241)    |
|          | IMR                  | 0.310**<br>(0.124)   | 0.421***<br>(0.105)  | 0.475*<br>(0.256)    | 0.634***<br>(0.223)  | -0.137<br>(0.193)    |
| Germany  | Female               | -0.455<br>(0.385)    | -0.126<br>(0.304)    | -0.340<br>(0.249)    | -0.327<br>(0.259)    | -0.445*<br>(0.258)   |
|          | IMR                  | 0.439***<br>(0.133)  | 0.442***<br>(0.094)  | 1.153***<br>(0.424)  | 0.783**<br>(0.384)   | -0.445**<br>(0.226)  |
| Spain    | Female               | -0.529***<br>(0.177) | -0.500*<br>(0.235)   | -0.347<br>(0.214)    | -0.335*<br>(0.182)   | -0.239<br>(0.161)    |
|          | IMR                  | 0.066<br>(0.045)     | 0.056<br>(0.075)     | 0.042<br>(0.096)     | 0.072<br>(0.090)     | 0.061<br>(0.098)     |
| France   | Female               | -0.378***<br>(0.122) | -0.401***<br>(0.110) | -0.443***<br>(0.097) | -0.462***<br>(0.118) | -0.326***<br>(0.108) |
|          | IMR                  | 0.187***<br>(0.041)  | 0.162***<br>(0.045)  | 0.359***<br>(0.073)  | 0.354***<br>(0.069)  | -0.016<br>(0.078)    |
| Greece   | Female               | -0.588***<br>(0.142) | -0.605***<br>(0.121) | -0.523***<br>(0.145) | -0.613***<br>(0.161) | -0.478**<br>(0.194)  |
|          | IMR                  | 0.122**<br>(0.054)   | 0.020<br>(0.043)     | 0.362**<br>(0.198)   | 0.332**<br>(0.154)   | -0.021<br>(0.193)    |
| Portugal | Female               | -0.449<br>(0.358)    | -0.637***<br>(0.171) | -0.738***<br>(0.187) | -0.716***<br>(0.195) | -0.204<br>(0.224)    |
|          | IMR                  | 0.133***<br>(0.039)  | 0.096**<br>(0.044)   | 0.167<br>(0.112)     | 0.201*<br>(0.117)    | -0.092<br>(0.083)    |
| Slovakia | Female               | -0.640***<br>(0.141) | -0.519***<br>(0.174) | -0.596***<br>(0.151) | -0.504***<br>(0.124) | -0.265*<br>(0.144)   |
|          | IMR                  | 0.020<br>(0.070)     | 0.073<br>(0.091)     | -0.062<br>(0.204)    | -0.016<br>(0.213)    | -0.144<br>(0.113)    |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of gross wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

gross wealth is diminished sufficiently to render it statistically insignificant for net wealth, because debt is taken into consideration implicitly. We therefore explicitly consider the gender gap in debt next.

Table 8 shows that the coefficients on female households are indeed virtually uniformly but does not have a statistically significant gender wealth gap in either net or gross wealth. Apart from potential data problems related to low numbers of observations at the top of the distribution, we conjecture that the population composition of Brussels might have an impact here.

Table 6: Real wealth of single households at the top of the distribution

|          |                      | (1)                  | (2)                  | (3)                  | (4)                  | (5)                 |
|----------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------------|
|          | Independent Variable | Base                 | Age & Educ.          | Family               | Inheritances         | Labor & Assets      |
| Austria  | Female               | -0.703***<br>(0.239) | -0.449<br>(0.285)    | -0.460<br>(0.281)    | -0.932***<br>(0.354) | -0.641*<br>(0.316)  |
|          | IMR                  | 0.372**<br>(0.140)   | 0.406*<br>(0.198)    | 1.914**<br>(0.731)   | 1.673<br>(1.077)     | -0.134<br>(0.365)   |
| Belgium  | Female               | -0.120<br>(0.288)    | -0.037<br>(0.165)    | -0.190<br>(0.149)    | -0.239*<br>(0.141)   | -0.198<br>(0.188)   |
|          | IMR                  | 0.311***<br>(0.102)  | 0.371***<br>(0.071)  | 0.345*<br>(0.201)    | 0.319*<br>(0.166)    | -0.288*<br>(0.152)  |
| Germany  | Female               | -0.296<br>(0.273)    | -0.209<br>(0.265)    | -0.334<br>(0.229)    | -0.348<br>(0.229)    | -0.199<br>(0.354)   |
|          | IMR                  | 0.328***<br>(0.109)  | 0.286***<br>(0.107)  | 0.530*<br>(0.294)    | 0.489*<br>(0.285)    | -0.426*<br>(0.242)  |
| Spain    | Female               | -0.546***<br>(0.178) | -0.429*<br>(0.207)   | -0.364*<br>(0.201)   | -0.372**<br>(0.176)  | -0.243<br>(0.168)   |
|          | IMR                  | 0.049<br>(0.051)     | 0.039<br>(0.066)     | 0.046<br>(0.096)     | 0.065<br>(0.089)     | 0.062<br>(0.110)    |
| France   | Female               | -0.407***<br>(0.136) | -0.335***<br>(0.109) | -0.382***<br>(0.105) | -0.463***<br>(0.133) | -0.289**<br>(0.115) |
|          | IMR                  | 0.183***<br>(0.039)  | 0.178***<br>(0.041)  | 0.351***<br>(0.069)  | 0.347***<br>(0.072)  | -0.058<br>(0.090)   |
| Greece   | Female               | -0.577***<br>(0.158) | -0.599***<br>(0.107) | -0.511***<br>(0.147) | -0.558***<br>(0.160) | -0.411**<br>(0.198) |
|          | IMR                  | 0.098*<br>(0.054)    | 0.010<br>(0.038)     | 0.271*<br>(0.146)    | 0.206<br>(0.136)     | 0.029<br>(0.200)    |
| Portugal | Female               | -0.266<br>(0.486)    | -0.625***<br>(0.187) | -0.609***<br>(0.227) | -0.616***<br>(0.225) | -0.020<br>(0.336)   |
|          | IMR                  | 0.109**<br>(0.051)   | 0.078*<br>(0.047)    | 0.104<br>(0.125)     | 0.150<br>(0.128)     | -0.005<br>(0.092)   |
| Slovakia | Female               | -0.677***<br>(0.169) | -0.593***<br>(0.157) | -0.637***<br>(0.172) | -0.550***<br>(0.137) | -0.324*<br>(0.180)  |
|          | IMR                  | 0.018<br>(0.074)     | 0.063<br>(0.086)     | -0.110<br>(0.189)    | -0.049<br>(0.206)    | -0.130<br>(0.135)   |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of real wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

negative in a quantile regression for debt at the 95<sup>th</sup> percentile, meaning that there is a gender gap in debt (in which men hold more debt) which might dampen the gap in net wealth. However, whether the gender gap in debt is statistically significant in multivariate analysis is highly country-specific; this is the case in Spain, France, and Portugal in all five specifications. These three are countries with a high share of home ownership (Pittini et al., 2015), and especially in Spain there was a house price bubble (Lourenco and Rodrigues, 2014) which might have impacted the level at which mortgages were taken out at the top

Table 7: Financial wealth of single households at the top of the distribution

|                      |        | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  |
|----------------------|--------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Independent Variable |        | Base                 | Age & Educ.          | Family               | Inheritances         | Labor & Assets       |
| Austria              | Female | -0.789***<br>(0.288) | -0.429**<br>(0.217)  | -0.508**<br>(0.242)  | -0.607**<br>(0.241)  | -0.498**<br>(0.239)  |
|                      | IMR    | 0.154<br>(0.143)     | 0.243**<br>(0.114)   | 0.368<br>(0.337)     | 0.247<br>(0.330)     | -0.515<br>(0.539)    |
| Belgium              | Female | -0.344<br>(0.389)    | -0.456<br>(0.309)    | -0.335<br>(0.309)    | -0.421<br>(0.269)    | -0.438<br>(0.273)    |
|                      | IMR    | 0.379**<br>(0.157)   | 0.519***<br>(0.151)  | 0.806**<br>(0.332)   | 0.921***<br>(0.339)  | 0.248<br>(0.379)     |
| Germany              | Female | -0.802***<br>(0.198) | -0.483**<br>(0.180)  | -0.693***<br>(0.208) | -0.734***<br>(0.197) | -0.470**<br>(0.237)  |
|                      | IMR    | 0.177*<br>(0.092)    | 0.136*<br>(0.079)    | 0.589***<br>(0.167)  | 0.354***<br>(0.136)  | -0.335*<br>(0.183)   |
| Spain                | Female | -0.581<br>(0.404)    | -0.941***<br>(0.276) | -0.575*<br>(0.312)   | -0.443<br>(0.332)    | -0.400<br>(0.422)    |
|                      | IMR    | 0.007<br>(0.078)     | 0.042<br>(0.082)     | -0.388*<br>(0.219)   | -0.266<br>(0.246)    | -0.535**<br>(0.244)  |
| France               | Female | -0.189*<br>(0.114)   | -0.508***<br>(0.120) | -0.433***<br>(0.149) | -0.427***<br>(0.160) | -0.315**<br>(0.148)  |
|                      | IMR    | 0.198***<br>(0.036)  | 0.086*<br>(0.049)    | 0.289**<br>(0.133)   | 0.269**<br>(0.120)   | 0.055<br>(0.116)     |
| Greece               | Female | -1.332***<br>(0.342) | -1.427***<br>(0.333) | -1.431***<br>(0.362) | -1.363***<br>(0.363) | -1.016***<br>(0.358) |
|                      | IMR    | 0.091<br>(0.113)     | 0.002<br>(0.079)     | -0.106<br>(0.234)    | -0.181<br>(0.278)    | -0.305<br>(0.366)    |
| Portugal             | Female | -0.516*<br>(0.275)   | -0.760**<br>(0.305)  | -0.714**<br>(0.331)  | -0.728**<br>(0.332)  | -0.391<br>(0.310)    |
|                      | IMR    | 0.092<br>(0.187)     | 0.036<br>(0.062)     | 0.067<br>(0.215)     | 0.078<br>(0.207)     | -0.020<br>(0.193)    |
| Slovakia             | Female | -0.120<br>(0.329)    | -0.147<br>(0.382)    | -0.092<br>(0.456)    | -0.079<br>(0.472)    | -0.178<br>(0.419)    |
|                      | IMR    | 0.031<br>(0.101)     | 0.066<br>(0.112)     | 0.035<br>(0.193)     | 0.061<br>(0.209)     | -0.323<br>(0.269)    |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of financial wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

of the distribution. In fact, it is conceivable that in the run-up to the crisis, gendered lending practices (Hertz, 2011) interacted with gender stereotypes about risk aversion (Nelson, 2015) to magnify gender differences in indebtedness. In the other five countries, we do not detect statistically significant differences in indebtedness by gender at the top of the distribution.

To examine the gender gap in debt more closely, we look into gender differences in the ownership of different kinds of debt next. Gender differences in collateralized debt is

Table 8: Debt of single households at the top of the distribution

|                      |        | (1)                  | (2)                  | (3)                  | (4)                  | (5)                 |
|----------------------|--------|----------------------|----------------------|----------------------|----------------------|---------------------|
| Independent Variable |        | Base                 | Age & Educ.          | Family               | Inheritances         | Labor & Assets      |
| Austria              | Female | -0.120<br>(0.233)    | -0.306<br>(0.341)    | -0.279<br>(0.365)    | -0.309<br>(0.409)    | -0.494<br>(0.329)   |
|                      | IMR    | 0.479***<br>(0.147)  | 0.441**<br>(0.158)   | 1.008**<br>(0.434)   | 1.045**<br>(0.490)   | 0.062<br>(0.438)    |
| Belgium              | Female | 0.088<br>(0.355)     | -0.004<br>(0.386)    | -0.092<br>(0.298)    | -0.088<br>(0.292)    | -0.084<br>(0.335)   |
|                      | IMR    | 0.152**<br>(0.077)   | 0.137<br>(0.086)     | 0.539**<br>(0.267)   | 0.557**<br>(0.263)   | 0.144<br>(0.202)    |
| Germany              | Female | -0.148<br>(0.269)    | 0.143<br>(0.359)     | -0.360<br>(0.368)    | -0.458<br>(0.346)    | -0.180<br>(0.325)   |
|                      | IMR    | 0.249***<br>(0.086)  | 0.361***<br>(0.135)  | 0.687*<br>(0.368)    | 0.539<br>(0.345)     | -0.290<br>(0.260)   |
| Spain                | Female | -0.382**<br>(0.153)  | -0.435***<br>(0.162) | -0.511***<br>(0.183) | -0.513***<br>(0.185) | -0.417**<br>(0.195) |
|                      | IMR    | 0.004<br>(0.054)     | 0.010<br>(0.045)     | 0.126<br>(0.130)     | 0.109<br>(0.126)     | 0.013<br>(0.134)    |
| France               | Female | -0.281***<br>(0.098) | -0.414***<br>(0.112) | -0.479***<br>(0.153) | -0.489***<br>(0.153) | -0.310**<br>(0.150) |
|                      | IMR    | 0.161***<br>(0.035)  | 0.117***<br>(0.035)  | 0.236***<br>(0.080)  | 0.227***<br>(0.081)  | 0.071<br>(0.088)    |
| Greece               | Female | 0.475<br>(0.506)     | 0.458<br>(0.452)     | 0.181<br>(0.435)     | 0.204<br>(0.463)     | -0.003<br>(0.379)   |
|                      | IMR    | 0.189*<br>(0.096)    | 0.223***<br>(0.087)  | 0.236<br>(0.196)     | 0.245<br>(0.211)     | 0.060<br>(0.400)    |
| Portugal             | Female | -0.431***<br>(0.140) | -0.494***<br>(0.145) | -0.423**<br>(0.191)  | -0.418*<br>(0.184)   | -0.424**<br>(0.206) |
|                      | IMR    | -0.017<br>(0.045)    | -0.051<br>(0.045)    | -0.197*<br>(0.115)   | -0.193*<br>(0.113)   | -0.155*<br>(0.089)  |
| Slovakia             | Female | -0.322<br>(0.260)    | -0.144<br>(0.295)    | -0.154<br>(0.390)    | -0.284<br>(0.362)    | -0.161<br>(0.319)   |
|                      | IMR    | 0.073<br>(0.086)     | 0.085<br>(0.103)     | -0.109<br>(0.248)    | -0.137<br>(0.272)    | 0.042<br>(0.300)    |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of total debt for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

shown in Table 9, which reveals that male and female single households do in fact differ in this sub-category. As with total debt, near-universal negative coefficients on female single households are accompanied by statistical significance that is clustered in four of the eight countries – Spain, France, Portugal, and Slovakia. In three of these countries, we found significant differences in the gender gap in gross and net wealth. In the other two countries that showed differences in the gender gap between net and gross wealth, Greece and Germany, unsecured debt might play a role. It is indeed more prevalent in the

entire population of single households in these two countries (see Table 1) and at the top of the distribution in Germany (see Figure 3). This might be linked to Greece's severe economic crisis (e.g. Lane, 2012) and to Germany's large low-income sector (e.g. OECD, 2014). However, in multivariate analysis of the top of the distribution, gender differences in unsecured debt do not appear to play an important role; it is statistically significant only in Austria and in Slovakia in some specifications, as Table 29 in Appendix A.4 shows. Since unsecured debt comprises overdrafts, credit card debt, and similar unsecured debt forms, it might not be too surprising that the multivariate analysis shows little evidence of gender differences at the upper end of the distribution. Taken together, these findings appear to indicate that in four countries (Spain, France, Portugal, Slovakia), it is the difference in the likelihood of owning collateralized debt between male and female single households which drives our finding that female single households have less gross wealth, but not net wealth, than male single households when covariates are controlled for.

Since owner-occupied housing is typically the most important asset category for private households, and since we established gender differences in collateralized debt (i.e., mortgages) which are directly linked to the ownership of real estate, we also investigate whether there are gender differences in the value of male and female single household's main residences. Table 10 does indeed provide evidence for a gender gap in main residences. In particular, female single households hold between 17% (model (4) in Belgium) and 77% (model (3) in Germany) less wealth in the value of their main residences than male single households. Three countries show broad statistical significance of the gender gap in main residences: Belgium, Germany, and Slovakia. In Belgium, the value of the main residence is the only wealth category in which we observe a gender wealth gap – here the value of men's single household's homes is between 16% and 26% higher than women's at the top of the distribution. In Germany, there is a gender gap of 54% to 77% in the value of single household's main residences, and in Slovakia, it ranges from 40% to 51%. Both Germany and Slovakia were affected by historical policies following the transition to market economies regarding home ownership: in East Germany, most residents in formerly state-owned housing were moved to rental contracts, whereas in Slovakia, they were given the opportunity to purchase their homes on favourable terms (Andreasch et al., 2013). Whereas home ownership rates differ substantially between those two countries as a consequence (see Table 1), it is not unthinkable that both policies had unintended effects on relative home ownership between women and men.

Taken together, the results in Tables 4 through 10 suggest that the gender gap in net wealth at the top of the distribution of single households, which we identified in the raw data, is often driven by differences in gross wealth. In Spain, Portugal, France, and Slovakia, a gender gap in (collateralized) debt dampens the gender gap in net wealth sufficiently for it to become only sporadically statistically significant in multivariate analysis. As discussed, this may be related to gender effects of housing policies in three of these countries.

Greece has a high incidence of both home ownership and unsecured debt over the

Table 9: Collateralized debt of single households at the top of the distribution

|                      |        | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  |
|----------------------|--------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Independent Variable |        | Base                 | Age & Educ.          | Family               | Inheritances         | Labor & Assets       |
| Austria              | Female | -0.128<br>(0.622)    | -0.047<br>(0.674)    | 0.317<br>(0.772)     | 0.470<br>(0.865)     | -0.319<br>(0.501)    |
|                      | IMR    | 0.147<br>(0.219)     | 0.130<br>(0.219)     | 0.286<br>(0.437)     | 0.307<br>(0.461)     | 0.091<br>(0.568)     |
| Belgium              | Female | 0.101<br>(0.288)     | 0.156<br>(0.324)     | -0.163<br>(0.283)    | -0.236<br>(0.301)    | -0.278<br>(0.263)    |
|                      | IMR    | 0.109<br>(0.103)     | 0.105<br>(0.078)     | 0.110<br>(0.253)     | 0.041<br>(0.230)     | 0.104<br>(0.214)     |
| Germany              | Female | -0.305<br>(0.268)    | -0.104<br>(0.258)    | -0.272<br>(0.362)    | -0.231<br>(0.368)    | 0.004<br>(0.370)     |
|                      | IMR    | 0.029<br>(0.097)     | 0.039<br>(0.090)     | -0.153<br>(0.188)    | -0.138<br>(0.187)    | -0.075<br>(0.196)    |
| Spain                | Female | -0.555***<br>(0.167) | -0.545**<br>(0.221)  | -0.559***<br>(0.193) | -0.562***<br>(0.184) | -0.583***<br>(0.221) |
|                      | IMR    | -0.027<br>(0.051)    | -0.033<br>(0.066)    | -0.053<br>(0.137)    | -0.056<br>(0.139)    | -0.072<br>(0.034)    |
| France               | Female | -0.262<br>(0.175)    | -0.416**<br>(0.211)  | -0.414***<br>(0.156) | -0.471***<br>(0.143) | -0.305**<br>(0.121)  |
|                      | IMR    | 0.082*<br>(0.047)    | 0.055<br>(0.034)     | 0.078<br>(0.057)     | 0.083<br>(0.058)     | 0.067<br>(0.061)     |
| Greece               | Female | 0.136<br>(0.459)     | 0.032<br>(0.503)     | -0.003<br>(0.364)    | -0.010<br>(0.340)    | -0.044<br>(0.491)    |
|                      | IMR    | 0.074<br>(0.122)     | 0.082<br>(0.127)     | -0.101<br>(0.233)    | -0.085<br>(0.225)    | -0.422<br>(0.336)    |
| Portugal             | Female | -0.553***<br>(0.191) | -0.621***<br>(0.143) | -0.585***<br>(0.212) | -0.571**<br>(0.245)  | -0.691***<br>(0.166) |
|                      | IMR    | -0.010<br>(0.065)    | -0.099**<br>(0.047)  | -0.245**<br>(0.108)  | -0.248***<br>(0.095) | -0.162*<br>(0.085)   |
| Slovakia             | Female | -0.339*<br>(0.180)   | -0.379*<br>(0.208)   | -0.459<br>(0.285)    | -0.518**<br>(0.263)  | -0.451<br>(0.306)    |
|                      | IMR    | 0.011<br>(0.059)     | 0.006<br>(0.071)     | -0.021<br>(0.172)    | 0.036<br>(0.153)     | -0.024<br>(0.149)    |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of collateralized debt for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

entire population of single households, as well as a notable difference in the gender gap of gross and net wealth. The severe economic crisis might provide an explanation of why unsecured debt is prevalent in the general population while at the same time, female single households are more indebted than male single households at the top of the distribution.

In Austria and Germany, there is a gender wealth gap of 73% (Germany in model (3)) to 107% (Austria in model (4)) in net wealth in models which do not control for differences in labour and asset holdings, and a gross wealth gap of about 44% in both countries in

Table 10: Value of main residence of single households at the top of the distribution

|                      |        | (1)                  | (2)                  | (3)                  | (4)                 | (5)                 |
|----------------------|--------|----------------------|----------------------|----------------------|---------------------|---------------------|
| Independent Variable |        | Base                 | Age & Educ.          | Family               | Inheritances        | Labor & Assets      |
| Austria              | Female | -0.122<br>(0.321)    | -0.407<br>(0.324)    | -0.243<br>(0.260)    | -0.575**<br>(0.239) | -0.332*<br>(0.197)  |
|                      | IMR    | 0.064<br>(0.123)     | 0.028<br>(0.116)     | -0.280<br>(0.312)    | -0.224<br>(0.310)   | -0.313<br>(0.274)   |
| Belgium              | Female | -0.090<br>(0.092)    | -0.221**<br>(0.098)  | -0.264***<br>(0.085) | -0.166*<br>(0.096)  | -0.170*<br>(0.088)  |
|                      | IMR    | 0.082<br>(0.053)     | 0.123***<br>(0.043)  | -0.024<br>(0.131)    | -0.006<br>(0.106)   | 0.132<br>(0.082)    |
| Germany              | Female | -0.567**<br>(0.224)  | -0.543**<br>(0.251)  | -0.768**<br>(0.314)  | -0.553**<br>(0.246) | -0.288<br>(0.221)   |
|                      | IMR    | 0.080<br>(0.062)     | 0.053<br>(0.067)     | -0.059<br>(0.106)    | 0.002<br>(0.082)    | -0.203**<br>(0.088) |
| Spain                | Female | -0.159<br>(0.229)    | -0.055<br>(0.171)    | -0.021<br>(0.140)    | 0.016<br>(0.145)    | 0.051<br>(0.159)    |
|                      | IMR    | 0.000<br>(0.063)     | 0.019<br>(0.040)     | 0.020<br>(0.086)     | 0.005<br>(0.090)    | 0.127<br>(0.087)    |
| France               | Female | -0.146<br>(0.149)    | -0.175<br>(0.109)    | -0.195**<br>(0.095)  | -0.232**<br>(0.098) | -0.184<br>(0.114)   |
|                      | IMR    | 0.075***<br>(0.021)  | 0.077***<br>(0.028)  | 0.057<br>(0.074)     | 0.047<br>(0.078)    | 0.035<br>(0.079)    |
| Greece               | Female | -0.335***<br>(0.121) | -0.283*<br>(0.157)   | -0.239<br>(0.145)    | -0.181<br>(0.167)   | -0.141<br>(0.154)   |
|                      | IMR    | 0.025<br>(0.143)     | 0.015<br>(0.046)     | -0.004<br>(0.108)    | -0.010<br>(0.098)   | -0.040<br>(0.134)   |
| Portugal             | Female | 0.072<br>(0.438)     | -0.104<br>(0.323)    | -0.063<br>(0.325)    | -0.080<br>(0.315)   | 0.117<br>(0.348)    |
|                      | IMR    | 0.080**<br>(0.038)   | 0.087***<br>(0.027)  | 0.047<br>(0.086)     | 0.010<br>(0.081)    | -0.021<br>(0.082)   |
| Slovakia             | Female | -0.509***<br>(0.153) | -0.431***<br>(0.164) | -0.420**<br>(0.171)  | -0.401**<br>(0.192) | -0.274<br>(0.172)   |
|                      | IMR    | -0.001<br>(0.066)    | 0.062<br>(0.075)     | -0.019<br>(0.151)    | -0.028<br>(0.182)   | -0.065<br>(0.161)   |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of main residences for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

the full model. In these countries, financial wealth and differences in the value of the household's main residence (as well as unsecured debt in Austria) appear to be behind the net and gross wealth gaps in single households at the top of the distribution. It is possible that exit rates (i.e., the probability of leaving owner-occupied housing following a divorce) in the context of a well-developed rental and social housing sector are a factor contributing to these results. Among single female households, Austria has the highest share of divorcees (see Table 1), and it also has the highest exit rate in comparison to 11

other European countries comprising all of our countries except Slovakia (Dewilde, 2009).

Belgium is the only country which did not show any gender gap in net or gross wealth at the 95<sup>th</sup> percentile. A closer analysis of particular types of wealth shows, however, that there is a gender wealth gap in the value of the household's main residence in Belgium. It is conceivable that the presence of a large international community in Brussels affects this result.

### 4.3 Individual-Level Pension Wealth

This section checks the robustness of the results obtained in Section 4. Like many other wealth surveys, the HFCS contains one wealth component at the individual level, occupational pension wealth.<sup>20</sup> This variable is available in six countries (Austria, Belgium, Germany, Spain, France, and Slovakia) for all men and women in the sample, regardless of their household living arrangements. It thus allows us to present the gender wealth gap in occupational pension wealth for the entire population (similar to e.g. Warren (2006) and Neelakantan and Chang (2010)).

Pension wealth is almost per definition strongly correlated with age. Table 11 thus shows the average level of occupational pension wealth of all women and men for three age groups for the sample as a whole, for all deciles, and the tails.

Private pension wealth is, of course, a very narrow aspect of wealth, which is likely to vary substantially across countries according to the organization of their pension system. Nonetheless, there is a gender gap in occupational pension wealth in the vast majority of cases. In general, the older and the higher up in the distribution, the more pervasive and the larger becomes the gender gap in occupational pension wealth in most countries. In Germany, and in some instances across the net wealth distribution in Spain and in France, women have higher occupational pension wealth than men in the youngest age group (25-34 years). However, as the level of pension wealth and age increases, the familiar structure of a gender gap in occupational pensions re-establishes itself.

There are some exceptions. In Germany and in Spain, women have higher occupational pension wealth than men in the top percentile of the net wealth distribution. In Spain, the sporadic reverse gap in the youngest age group extends to the middle age group (35-44 years) in the upper half of the distribution, a pattern which is mirrored by Austria.

The size of the wealth gap in pensions varies considerably across countries and may reflect idiosyncrasies in pension systems. For instance, in Slovakia, the short time period for accumulation in a market economy is reflected in generally low levels of private pensions, an inverse u-shaped pattern of private pension levels across age groups, and comparatively smaller gender gaps. This might also be related to a mandatory second pillar introduced in 2005 (Wilmington, 2014). Belgian men, at the other end of the spectrum, own the highest private pensions across much of the net wealth distribution. Women in Belgium, however, are faced with a relative gender gap between around 20% and 80%, and thus

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<sup>20</sup>Data on private pensions were collected only in Slovakia in the first wave of the HFCS.



Table 11: Occupational pension wealth by gender and age group (in €)

|                 |        | Decile |     |       |       |        |        |        |        |        |         |         |           |
|-----------------|--------|--------|-----|-------|-------|--------|--------|--------|--------|--------|---------|---------|-----------|
|                 |        | Mean   | .01 | .10   | .20   | .30    | .40    | .50    | .60    | .70    | .80     | .90     | .99       |
| <b>Austria</b>  |        |        |     |       |       |        |        |        |        |        |         |         |           |
|                 | Female | 2,551  | 43  | 132   | 232   | 679    | 747    | 945    | 1,201  | 1,631  | 2,705   | 8,878   | 18,349    |
| Age 25-34       | Male   | 5,003  | 68  | 411   | 799   | 1,089  | 1,443  | 1,995  | 2,930  | 4,644  | 5,963   | 19,517  | 25,836    |
|                 | Female | 6,753  | 20  | 260   | 517   | 1,015  | 1,328  | 2,709  | 3,644  | 5,934  | 7,822   | 17,664  | 55,950    |
| Age 35-44       | Male   | 7,483  | 86  | 348   | 739   | 1,226  | 1,870  | 2,328  | 3,447  | 4,587  | 6,900   | 20,965  | 67,023    |
|                 | Female | 7,741  | 30  | 362   | 712   | 1,191  | 1,802  | 2,413  | 3,900  | 6,409  | 12,822  | 19,786  | 70,331    |
| Age 45-60       | Male   | 26,700 | 0   | 299   | 794   | 1,533  | 2,455  | 3,961  | 6,400  | 11,412 | 31,814  | 77,718  | 378,055   |
| <b>Belgium</b>  |        |        |     |       |       |        |        |        |        |        |         |         |           |
|                 | Female | 7,082  | 50  | 50    | 300   | 750    | 3,000  | 5,000  | 7,000  | 7,660  | 15,320  | 17,500  | 27,000    |
| Age 25-34       | Male   | 13,039 | 100 | 700   | 2,000 | 5,400  | 8,750  | 10,000 | 12,000 | 13,000 | 19,380  | 27,000  | 62,500    |
|                 | Female | 22,921 | 1   | 1,200 | 1,750 | 3,750  | 5,500  | 7,000  | 10,000 | 17,500 | 46,000  | 62,500  | 157,000   |
| Age 35-44       | Male   | 33,489 | 50  | 700   | 2,880 | 4,000  | 7,800  | 10,480 | 17,500 | 32,000 | 37,500  | 89,000  | 200,000   |
|                 | Female | 32,048 | 160 | 1,000 | 1,750 | 4,000  | 6,634  | 14,980 | 20,000 | 30,000 | 50,200  | 89,000  | 285,000   |
| Age 45-60       | Male   | 92,974 | 106 | 4,000 | 8,000 | 12,500 | 25,000 | 35,000 | 53,000 | 75,000 | 101,200 | 200,000 | 1,500,000 |
| <b>Germany</b>  |        |        |     |       |       |        |        |        |        |        |         |         |           |
|                 | Female | 13,991 | 182 | 652   | 1,120 | 2,110  | 3,476  | 5,220  | 6,540  | 8,580  | 12,040  | 22,360  | 180,000   |
| Age 25-34       | Male   | 6,731  | 47  | 246   | 668   | 1,020  | 1,360  | 1,800  | 2,740  | 5,140  | 8,352   | 17,100  | 100,000   |
|                 | Female | 16,048 | 0   | 114   | 730   | 1,320  | 2,560  | 4,100  | 7,440  | 12,910 | 20,160  | 37,620  | 222,400   |
| Age 35-44       | Male   | 21,241 | 262 | 980   | 1,960 | 3,180  | 4,500  | 6,020  | 9,200  | 14,400 | 31,120  | 62,040  | 189,226   |
|                 | Female | 21,146 | 0   | 462   | 1,260 | 2,240  | 3,080  | 5,000  | 8,000  | 13,060 | 23,800  | 49,500  | 220,000   |
| Age 45-60       | Male   | 27,202 | 32  | 580   | 2,020 | 4,440  | 6,780  | 10,780 | 15,800 | 24,000 | 41,216  | 77,000  | 183,780   |
| <b>Spain</b>    |        |        |     |       |       |        |        |        |        |        |         |         |           |
|                 | Female | 4,347  | 600 | 1,562 | 1,562 | 1,800  | 2,417  | 2,517  | 3,858  | 5,098  | 5,498   | 11,000  | 11,000    |
| Age 25-34       | Male   | 3,729  | 400 | 1,200 | 2,200 | 3,000  | 3,627  | 3,982  | 3,982  | 3,982  | 5,500   | 5,500   | 5,800     |
|                 | Female | 16,536 | 120 | 1,260 | 1,260 | 2,362  | 3,224  | 5,617  | 18,000 | 18,000 | 36,895  | 64,000  | 64,000    |
| Age 35-44       | Male   | 8,416  | 60  | 1,350 | 1,676 | 2,376  | 3,181  | 4,080  | 5,388  | 9,764  | 15,400  | 30,000  | 30,800    |
|                 | Female | 24,549 | 70  | 480   | 500   | 1,266  | 2,320  | 3,062  | 6,000  | 7,477  | 10,000  | 27,000  | 355,000   |
| Age 45-60       | Male   | 36,760 | 100 | 500   | 1,644 | 4,000  | 9,633  | 16,400 | 24,858 | 33,500 | 60,000  | 82,322  | 300,000   |
| <b>France</b>   |        |        |     |       |       |        |        |        |        |        |         |         |           |
|                 | Female | 5,860  | 45  | 179   | 482   | 605    | 897    | 1,661  | 4,059  | 4,705  | 6,242   | 12,986  | 80,401    |
| Age 25-34       | Male   | 4,354  | 1   | 673   | 1,012 | 1,596  | 2,061  | 2,896  | 3,650  | 4,207  | 5,559   | 9,235   | 23,726    |
|                 | Female | 4,818  | 160 | 449   | 870   | 1,325  | 2,254  | 3,788  | 5,429  | 6,000  | 7,122   | 9,993   | 23,284    |
| Age 35-44       | Male   | 11,240 | 80  | 541   | 1,280 | 2,472  | 3,500  | 4,450  | 5,977  | 7,339  | 14,439  | 27,929  | 185,721   |
|                 | Female | 12,378 | 289 | 888   | 1,098 | 1,928  | 3,158  | 5,370  | 8,879  | 11,783 | 15,514  | 26,200  | 90,000    |
| Age 45-60       | Male   | 20,486 | 195 | 835   | 1,771 | 3,393  | 5,200  | 8,842  | 12,748 | 17,823 | 25,537  | 47,877  | 179,602   |
| <b>Slovakia</b> |        |        |     |       |       |        |        |        |        |        |         |         |           |
|                 | Female | 1,722  | 113 | 271   | 415   | 540    | 684    | 957    | 1,148  | 1,611  | 2,080   | 3,770   | 10,397    |
| Age 25-34       | Male   | 2,203  | 209 | 396   | 505   | 632    | 912    | 1,332  | 1,712  | 2,320  | 2,906   | 4,746   | 14,019    |
|                 | Female | 2,409  | 124 | 371   | 561   | 676    | 1,060  | 1,483  | 1,869  | 2,389  | 3,189   | 5,045   | 20,000    |
| Age 35-44       | Male   | 3,923  | 126 | 406   | 746   | 1,138  | 1,594  | 2,065  | 2,777  | 3,787  | 6,738   | 10,159  | 20,644    |
|                 | Female | 2,464  | 46  | 336   | 551   | 751    | 931    | 1,224  | 1,602  | 2,095  | 3,431   | 8,366   | 12,047    |
| Age 45-60       | Male   | 2,550  | 104 | 495   | 783   | 1,098  | 1,453  | 1,807  | 2,238  | 2,749  | 3,396   | 5,624   | 14,612    |

Notes: This table shows the average level of occupational pension wealth owned by women and men in three age groups across the unconditional distribution of occupational pension wealth. Source: HFCS 2010, authors' calculations.

in many deciles on average own less private pension wealth than, for instance, German women. Among the countries studied here, Belgium seems to be the only country with three effectively equal pillars of a pension system since a scheme of sectoral complementary pensions was introduced in 2003 to further extend the occupational pillar (OECD, 2013). Furthermore, the workforce covered by private pension is relatively high in Belgium, with 75% of workers covered, compared to Austria, for example, with just 30% (PensionsEurope, 2012).

These data thus permit a – highly tentative – conclusion that the gender wealth gap for single households appears to broadly persist at the individual level for the entire population in the Euro area, at least for occupational pension wealth. However, a more detailed analysis of the pension systems in the countries studied here would be required for more substantiated insights into the gender gap for this wealth component. In particular, the other two pillars of the pension system, public and voluntary pension plans, and their interplay with the occupational pension plans presented here would need to be taken into account if data were available. All in all, the evidence presented here provides some indication that our findings regarding a gender wealth gap for single households extend to the larger population, at least regarding singular wealth components.

## 5 Discussion and Conclusion

It is well-documented that wealth is unevenly distributed, but gender differences in wealth remain under-studied, especially in cross-country comparisons. This is the first paper to examine the gender wealth gap in a large sample of multiple European countries (Austria, Belgium, Germany, Spain, France, Greece, Portugal, Slovakia). It uses the Household Finance and Consumption Survey of the European Central Bank to test for gender differences in wealth in working-age (25-60 years) “single” households with one adult, male or female.

The raw data show little difference in the net wealth owned by single households across much of the distribution. Only at the top of the unconditional distribution of net wealth does a substantial difference between genders appear. Consequently, an OLS analysis does not show an unexplained gap in average net wealth between male and female single households in the full specification. Somewhat more surprisingly, quantile regressions at the upper end of the distribution (95<sup>th</sup> percentile) yield mixed evidence for a gender gap in net wealth.

Where it can be confirmed statistically, the gender gap in net wealth is economically significant; it ranges from 25% in France to 100% in Austria in different specifications of the control variables. Furthermore, covariates show the expected signs. Youth, seniority, education, and marital status have the expected effects. Children are correlated negatively and inheritances positively with wealth of single households. Wealth rises with the ownership of certain asset classes, but the holding of debt is statistically insignificant.

In order to investigate the gender wealth gap in more detail, this paper looked beyond

differences in net wealth to the individual components of wealth. Differences in gross wealth appear to drive the gender gap in net wealth at the top of the distribution. The size of the gender gap in gross wealth is compressed across countries, and at the full specification it amounts to 27% in Slovakia, 33% in France, 44% in Austria, 45% in Germany, and 48% in Greece. However, in four countries – Spain, France, Portugal, and Slovakia – a gender gap in (collateralized) debt dampens this gender gap in net wealth sufficiently to render its statistical significance patchy in multivariate analysis. Unsecured debt might play a role in Greece (negatively) and Germany (positively), although quantile regressions detect little statistical significance for this debt component.

Since data are available only at the household level, selection into single households may be a concern. The descriptive analysis suggests that there are systematic differences in the characteristics of female and male single households, and that the mechanisms affecting selection into being a single household (and thus in our sample) may be related to age, the presence of children, relationship status, home ownership, and earnings. We follow the literature in truncating our sample by age, and we apply a Heckman selection model in all our results. In addition, we perform a robustness check using occupational pension wealth, for which person-level data are available.

The country level differences in the gender gap in net wealth are likely to be affected by historical trajectories, institutions, and social norms. For instance, selection into single households, as well as wealth, might be driven less strongly by individual traits such as risk preference in countries where large family systems are the norm. This paper provided a brief discussion of country differences in availability and affordability of child care facilities, the legal framework surrounding divorce, taxation of wealth and inheritances, housing policies, pension systems, and banking practices where they might explain differences in the gender wealth gap across countries.

The work presented here has answered some important questions regarding the gender wealth gap in eight European countries, but opened the door to several others. First, it is clear that the availability of data measuring wealth at the individual level, such as in the German Socio-Economic Panel (Wagner et al., 2007), would be useful in measuring a gender wealth gap for the entire population. Second, a more in-depth analysis of the effect of institutional differences on the gender wealth gap would be a fruitful avenue for future research. Third, research on the mechanisms which determine wealth accumulation and how they differ for women and men would be useful, either by analysing panel data (as in the preliminary work of Sierminska et al. (2015)) or in a cross-cohort analysis. Just as studying pay gaps by gender tells us a great deal about the structure of our society and economy, a greater understanding of wealth gaps by gender will illuminate the ways in which wealth is intertwined with economic and social outcomes.

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# A Appendix

## A.1 Selection Model

Table 12: Results of selection model predicting the probability of living in a single household

|                   | Austria              | Belgium              | Germany              | Spain                | France               | Greece               | Portugal             | Slovakia             |
|-------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Female            | -0.320<br>(0.864)    | -0.632<br>(0.424)    | -0.187<br>(0.407)    | -0.438<br>(0.494)    | -0.689***<br>(0.256) | -0.351<br>(0.381)    | -0.389<br>(0.481)    | -1.041<br>(0.857)    |
| Age 25-34         | 0.203<br>(0.229)     | -0.487*<br>(0.258)   | 0.015<br>(0.176)     | -0.575**<br>(0.279)  | -0.477***<br>(0.135) | -0.225<br>(0.249)    | -0.239<br>(0.361)    | -0.648**<br>(0.315)  |
| Age 25-34 x Fem   | -0.022<br>(0.316)    | 0.582<br>(0.383)     | -0.308<br>(0.244)    | 0.378<br>(0.390)     | 0.382**<br>(0.171)   | 0.298<br>(0.360)     | 0.276<br>(0.378)     | 1.059***<br>(0.340)  |
| Age 45-60         | 0.652**<br>(0.307)   | -0.783***<br>(0.218) | 0.310<br>(0.236)     | -0.099<br>(0.215)    | -0.386***<br>(0.146) | -0.050<br>(0.260)    | -0.328<br>(0.204)    | -0.289<br>(0.275)    |
| Age 45-60 x Fem   | -0.625*<br>(0.369)   | 0.883***<br>(0.275)  | -0.577*<br>(0.338)   | -0.135<br>(0.289)    | 0.380**<br>(0.185)   | -0.513<br>(0.340)    | 0.229<br>(0.262)     | 0.731***<br>(0.274)  |
| Married           | -2.546***<br>(0.291) | -1.643***<br>(0.176) | -2.110***<br>(0.185) | -2.701***<br>(0.279) | -1.898***<br>(0.152) | -2.267***<br>(0.313) | -2.216***<br>(0.374) | -2.336***<br>(0.237) |
| Married x Fem     | 0.293<br>(0.335)     | -0.196<br>(0.287)    | 0.274<br>(0.332)     | -0.608<br>(0.520)    | 0.157<br>(0.186)     | -0.382<br>(0.461)    | 0.616<br>(0.437)     | 0.805**<br>(0.321)   |
| Widowed           | -0.968<br>(1.525)    | 0.609<br>(0.681)     | 0.465<br>(0.644)     | 0.091<br>(0.571)     | 0.345<br>(0.372)     | 1.411***<br>(0.276)  | -0.474<br>(0.479)    | 0.229<br>(0.383)     |
| Widowed x Fem     | 1.135<br>(1.563)     | -1.108<br>(0.769)    | -0.544<br>(0.702)    | -0.480<br>(0.602)    | -0.355<br>(0.401)    | -1.107***<br>(0.276) | 0.403<br>(0.524)     | 0.358<br>(0.485)     |
| Divorced          | -0.066<br>(0.251)    | 0.643**<br>(0.251)   | -0.178<br>(0.251)    | 0.441*<br>(0.241)    | 0.487***<br>(0.159)  | 0.249<br>(0.381)     | 0.118<br>(0.241)     | 0.477*<br>(0.280)    |
| Divorced x Fem    | 0.089<br>(0.335)     | -0.765**<br>(0.321)  | -0.062<br>(0.336)    | -0.394<br>(0.329)    | -0.580***<br>(0.208) | 0.132<br>(0.383)     | -0.284<br>(0.296)    | -0.406<br>(0.327)    |
| One Child         | -0.722<br>(0.597)    | -1.377***<br>(0.273) | -1.138***<br>(0.409) | -1.904***<br>(0.649) | -1.643***<br>(0.150) | -0.467**<br>(0.215)  | -1.460***<br>(0.233) | -1.629***<br>(0.391) |
| One Child x Fem   | 0.372<br>(0.686)     | 0.589<br>(0.385)     | 0.777*<br>(0.439)    | 1.919***<br>(0.693)  | 1.437***<br>(0.214)  |                      | 1.047***<br>(0.245)  | 1.289***<br>(0.457)  |
| 2+ Children       | -0.912<br>(1.211)    | -1.533***<br>(0.238) | -1.674***<br>(0.364) | 0.006<br>(0.493)     | -1.815***<br>(0.138) | 0.299<br>(0.247)     | -2.049***<br>(0.290) | -1.242**<br>(0.554)  |
| 2+ Children x Fem | 0.572<br>(1.250)     | 0.961***<br>(0.348)  | 1.711***<br>(0.409)  | 0.605<br>(0.567)     | 1.465***<br>(0.214)  |                      | 2.289***<br>(0.312)  | 0.914<br>(0.616)     |
| Owens Home        | -0.641***<br>(0.213) | -0.913***<br>(0.233) | -0.737***<br>(0.191) | -0.606***<br>(0.215) | -0.419***<br>(0.098) | -1.145***<br>(0.148) | -0.570**<br>(0.266)  | -0.337**<br>(0.145)  |
| Owens Home x Fem  | 0.302<br>(0.301)     | 0.662**<br>(0.304)   | 0.204<br>(0.248)     | 0.522**<br>(0.260)   | 0.146<br>(0.127)     | 0.574***<br>(0.119)  | 0.397<br>(0.297)     | -0.456**<br>(0.232)  |
| Earnings          | 0.067<br>(0.062)     | 0.000<br>(0.028)     | -0.016<br>(0.026)    | 0.011<br>(0.041)     | -0.055***<br>(0.013) | 0.053**<br>(0.027)   | 0.057<br>(0.041)     | 0.002<br>(0.078)     |
| Earnings x Fem    | 0.013<br>(0.081)     | -0.009<br>(0.041)    | 0.013<br>(0.037)     | 0.000<br>(0.045)     | 0.037**<br>(0.019)   | -0.008<br>(0.039)    | -0.027<br>(0.044)    | 0.033<br>(0.087)     |
| Constant          | 0.127<br>(0.665)     | 1.428***<br>(0.320)  | 1.175***<br>(0.339)  | 0.362<br>(0.420)     | 1.476***<br>(0.211)  | 0.217<br>(0.322)     | 0.180<br>(0.404)     | 0.740<br>(0.809)     |
| Observations      | 1,500                | 1,387                | 2,044                | 3,102                | 8,648                | 1,807                | 2,409                | 1,625                |

Notes: This table shows the results of the model predicting selection into a single household (only one adult present) for the population aged 25-60. The variables “two” and “three or more children present” are combined for this estimation due to a low number of observations in the latter. Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Source: HFCS 2010, authors’ calculations.



## A.2 OLS Model

Table 13: Net wealth of single households at the mean - **Austria**

|                      | Base                | Age & Education     | Family               | Inheritance          | Labor & Assets       |
|----------------------|---------------------|---------------------|----------------------|----------------------|----------------------|
| Female               | 0.672<br>(0.586)    | 0.899<br>(0.572)    | -0.200<br>(0.706)    | -0.047<br>(0.690)    | 0.630<br>(0.722)     |
| IMR                  | 1.806***<br>(0.488) | 1.850***<br>(0.548) | 9.856***<br>(2.775)  | 7.912***<br>(3.010)  | 3.677<br>(3.066)     |
| Aged 25-34           |                     | -0.008<br>(0.810)   | 0.501<br>(0.858)     | 0.569<br>(0.835)     | 0.479<br>(0.723)     |
| Aged 45-60           |                     | 1.152<br>(0.736)    | 1.750**<br>(0.771)   | 1.364*<br>(0.723)    | 0.278<br>(0.581)     |
| Primary or below     |                     | 5.164***<br>(1.579) | 6.658***<br>(1.808)  | 7.286***<br>(1.842)  | 4.924*<br>(2.654)    |
| Upper secondary      |                     | 4.225***<br>(0.904) | 4.283***<br>(0.956)  | 4.082***<br>(0.972)  | 3.362***<br>(0.924)  |
| Tertiary             |                     | 5.886***<br>(1.167) | 6.049***<br>(1.215)  | 5.547***<br>(1.267)  | 4.430***<br>(1.121)  |
| One child            |                     |                     | -1.430<br>(1.036)    | -0.927<br>(1.100)    | -0.492<br>(0.930)    |
| Two children         |                     |                     | -2.419<br>(2.715)    | -1.959<br>(2.590)    | -1.500<br>(2.168)    |
| Three+ children      |                     |                     | -4.960<br>(7.143)    | -4.424<br>(7.115)    | 0.430<br>(7.542)     |
| Never married        |                     |                     | 15.726***<br>(5.125) | 12.683**<br>(5.413)  | 5.001<br>(5.525)     |
| Divorced             |                     |                     | 15.172***<br>(5.135) | 12.381**<br>(5.470)  | 5.274<br>(5.432)     |
| Widowed              |                     |                     | 18.207***<br>(5.402) | 15.021***<br>(5.716) | 8.138<br>(5.857)     |
| Large inheritance    |                     |                     |                      | 3.066***<br>(0.578)  | 2.156***<br>(0.752)  |
| Small inheritance    |                     |                     |                      | 0.629<br>(0.933)     | 0.133<br>(0.879)     |
| Employee (temporary) |                     |                     |                      |                      | -0.775<br>(1.343)    |
| Employer             |                     |                     |                      |                      | 0.253<br>(1.343)     |
| Self-employed        |                     |                     |                      |                      | -1.660<br>(1.077)    |
| Unemployed           |                     |                     |                      |                      | -2.178<br>(1.366)    |
| Out of labor force   |                     |                     |                      |                      | -1.431<br>(1.660)    |
| Retired              |                     |                     |                      |                      | -0.453<br>(1.074)    |
| Work/Age Ratio       |                     |                     |                      |                      | 1.943<br>(1.222)     |
| Weekly working hours |                     |                     |                      |                      | 0.001<br>(0.025)     |
| Business assets      |                     |                     |                      |                      | 1.610**<br>(0.659)   |
| Home ownership       |                     |                     |                      |                      | 1.712**<br>(0.794)   |
| Collateralized debt  |                     |                     |                      |                      | 0.106<br>(1.228)     |
| Unsecured debt       |                     |                     |                      |                      | -5.250***<br>(0.818) |
| Constant             | 7.646***<br>(0.611) | 2.981***<br>(1.132) | -15.476**<br>(6.102) | -11.987*<br>(6.425)  | -1.958<br>(6.754)    |
| $R^2$                | .022                | .094                | .145                 | .173                 | .387                 |

Notes: This table shows OLS estimates of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Table 14: Net wealth of single households at the mean - **Belgium**

|                                     | (1)                 | (2)                  | (3)                  | (4)                  | (5)                  |
|-------------------------------------|---------------------|----------------------|----------------------|----------------------|----------------------|
|                                     | Base                | Age &<br>Education   | Family               | Inheritance          | Labor &<br>Assets    |
| Female                              | 0.099<br>(0.490)    | 0.097<br>(0.419)     | -0.122<br>(0.433)    | -0.146<br>(0.436)    | 0.023<br>(0.422)     |
| IMR                                 | 1.516**<br>(0.677)  | 1.051<br>(0.667)     | 5.952***<br>(1.026)  | 5.766***<br>(1.012)  | -0.328<br>(1.170)    |
| Aged 25-34                          |                     | -2.396***<br>(0.663) | -2.818***<br>(0.615) | -2.808***<br>(0.628) | -1.240*<br>(0.688)   |
| Aged 45-60                          |                     | 0.976***<br>(0.337)  | -0.114<br>(0.446)    | -0.207<br>(0.475)    | 0.877<br>(0.619)     |
| Primary or below                    |                     | -1.925<br>(1.290)    | -2.124<br>(1.421)    | -2.157<br>(1.464)    | -1.416<br>(1.428)    |
| Upper secondary                     |                     | 0.541<br>(0.870)     | 0.375<br>(0.929)     | 0.350<br>(0.955)     | -1.239<br>(1.086)    |
| Tertiary                            |                     | 2.068**<br>(0.825)   | 1.582*<br>(0.845)    | 1.510*<br>(0.883)    | -0.010<br>(0.941)    |
| One child                           |                     |                      | -3.424***<br>(1.074) | -3.322***<br>(1.056) | -0.075<br>(1.134)    |
| Two children                        |                     |                      | -2.532***<br>(0.705) | -2.380***<br>(0.723) | 1.551<br>(0.967)     |
| Three+ children                     |                     |                      | -3.682<br>(2.929)    | -3.463<br>(2.948)    | -0.359<br>(2.145)    |
| Never married                       |                     |                      | 7.270***<br>(1.422)  | 7.115***<br>(1.455)  | 0.277<br>(1.635)     |
| Divorced                            |                     |                      | 7.408***<br>(1.539)  | 7.262***<br>(1.567)  | -0.702<br>(1.810)    |
| Widowed                             |                     |                      | 7.069***<br>(1.344)  | 6.974***<br>(1.368)  | -0.500<br>(1.764)    |
| Large inheritance                   |                     |                      |                      | 1.500**<br>(0.679)   | 0.032<br>(0.840)     |
| Small inheritance                   |                     |                      |                      | 0.510<br>(0.502)     | 0.025<br>(0.482)     |
| Employee with<br>temporary contract |                     |                      |                      |                      | -0.032<br>(0.613)    |
| Employer                            |                     |                      |                      |                      | 1.863**<br>(0.786)   |
| Self-employed                       |                     |                      |                      |                      | -0.210<br>(1.673)    |
| Unemployed                          |                     |                      |                      |                      | -1.287<br>(0.809)    |
| Out of labor force                  |                     |                      |                      |                      | -0.406<br>(0.952)    |
| retired                             |                     |                      |                      |                      | 1.116<br>(0.892)     |
| Work/Age Ratio                      |                     |                      |                      |                      | 2.817***<br>(0.995)  |
| Weekly working hours                |                     |                      |                      |                      | 0.008<br>(0.017)     |
| Business assets                     |                     |                      |                      |                      | 0.441<br>(0.411)     |
| Home ownership                      |                     |                      |                      |                      | 2.806***<br>(0.672)  |
| Collateralized debt                 |                     |                      |                      |                      | -0.266<br>(0.461)    |
| Unsecured debt                      |                     |                      |                      |                      | -2.614***<br>(0.743) |
| Constant                            | 9.359***<br>(0.438) | 8.821***<br>(0.932)  | 0.754<br>(1.928)     | 0.947<br>(1.925)     | 8.844***<br>(2.154)  |
| $R^2$                               | .029                | .184                 | .251                 | .256                 | .428                 |

Notes: This table shows OLS estimates of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Table 15: Net wealth of single households at the mean - **Germany**

|                                     | (1)                 | (2)                 | (3)                   | (4)                   | (5)                  |
|-------------------------------------|---------------------|---------------------|-----------------------|-----------------------|----------------------|
|                                     | Base                | Age &<br>Education  | Family                | Inheritance           | Labor &<br>Assets    |
| Female                              | -0.884<br>(0.904)   | -0.602<br>(0.872)   | -1.059<br>(0.825)     | -0.909<br>(0.886)     | -0.239<br>(0.913)    |
| IMR                                 | 0.831<br>(1.082)    | 0.783<br>(1.004)    | 11.253***<br>(1.869)  | 9.296***<br>(1.838)   | 5.983***<br>(2.186)  |
| Aged 25-34                          |                     | -0.474<br>(1.192)   | -1.807<br>(1.145)     | -1.598<br>(1.187)     | -0.752<br>(1.175)    |
| Aged 45-60                          |                     | 0.873<br>(1.074)    | 1.016<br>(1.064)      | 0.507<br>(1.075)      | -0.128<br>(1.080)    |
| Primary or below                    |                     | -0.602<br>(4.777)   | -0.626<br>(4.794)     | -0.979<br>(4.838)     | -1.195<br>(4.162)    |
| Upper secondary                     |                     | 4.036<br>(2.585)    | 2.733<br>(2.361)      | 2.294<br>(2.401)      | 1.601<br>(1.723)     |
| Tertiary                            |                     | 7.355***<br>(2.594) | 5.549**<br>(2.357)    | 4.719**<br>(2.327)    | 3.060*<br>(1.628)    |
| One child                           |                     |                     | -3.020**<br>(1.475)   | -2.195<br>(1.534)     | -0.066<br>(1.806)    |
| Two children                        |                     |                     | -4.138<br>(2.716)     | -4.590*<br>(2.548)    | -3.010<br>(2.443)    |
| Three+ children                     |                     |                     | 4.721***<br>(1.495)   | 3.585**<br>(1.697)    | 3.988**<br>(1.585)   |
| Never married                       |                     |                     | 17.068***<br>(3.082)  | 14.597***<br>(2.986)  | 11.465***<br>(3.406) |
| Divorced                            |                     |                     | 12.677***<br>(2.866)  | 10.910***<br>(2.696)  | 8.399***<br>(3.069)  |
| Widowed                             |                     |                     | 14.631***<br>(2.793)  | 12.458***<br>(2.741)  | 7.876**<br>(3.615)   |
| Large inheritance                   |                     |                     |                       | 4.193***<br>(0.778)   | 1.858**<br>(0.928)   |
| Small inheritance                   |                     |                     |                       | 2.312**<br>(1.030)    | 1.599*<br>(0.842)    |
| Employee with<br>temporary contract |                     |                     |                       |                       | -2.747*<br>(1.593)   |
| Employer                            |                     |                     |                       |                       | 2.896<br>(2.145)     |
| Self-employed                       |                     |                     |                       |                       | -1.088<br>(1.274)    |
| Unemployed                          |                     |                     |                       |                       | -3.717*<br>(2.181)   |
| Out of labor force                  |                     |                     |                       |                       | -2.018<br>(2.588)    |
| retired                             |                     |                     |                       |                       | 4.519<br>(3.845)     |
| Work/Age Ratio                      |                     |                     |                       |                       | 2.187<br>(1.465)     |
| Weekly working hours                |                     |                     |                       |                       | 0.010<br>(0.051)     |
| Business assets                     |                     |                     |                       |                       | 1.601**<br>(0.789)   |
| Home ownership                      |                     |                     |                       |                       | 1.384<br>(1.270)     |
| Collateralized debt                 |                     |                     |                       |                       | -0.839<br>(1.398)    |
| Unsecured debt                      |                     |                     |                       |                       | -5.744***<br>(0.741) |
| Constant                            | 7.128***<br>(0.733) | 2.021<br>(2.631)    | -15.372***<br>(3.892) | -12.456***<br>(3.839) | -6.168<br>(4.662)    |
| $R^2$                               | .005                | .093                | .251                  | .256                  | .428                 |

Notes: This table shows OLS estimates of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Table 16: Net wealth of single households at the mean - Spain

|                                  | (1)                 | (2)                 | (3)                  | (4)                  | (5)                  |
|----------------------------------|---------------------|---------------------|----------------------|----------------------|----------------------|
|                                  | Base                | Age & Education     | Family               | Inheritance          | Labor & Assets       |
| Female                           | -0.395<br>(0.642)   | -0.651<br>(0.615)   | -1.520**<br>(0.679)  | -1.213*<br>(0.652)   | -0.272<br>(0.591)    |
| IMR                              | 1.991*<br>(1.032)   | 2.101*<br>(1.144)   | 6.150***<br>(1.795)  | 5.147***<br>(1.649)  | -2.592<br>(1.916)    |
| Aged 25-34                       |                     | -2.347**<br>(1.135) | -3.332***<br>(1.106) | -3.136***<br>(1.101) | 0.468<br>(1.035)     |
| Aged 45-60                       |                     | 0.726<br>(0.657)    | 0.472<br>(0.857)     | 0.238<br>(0.874)     | 0.288<br>(0.731)     |
| Primary or below                 |                     | -0.468<br>(1.133)   | -0.507<br>(1.045)    | -0.627<br>(1.022)    | -0.768<br>(0.862)    |
| Upper secondary                  |                     | 0.503<br>(1.387)    | 0.518<br>(1.149)     | 0.464<br>(1.096)     | 0.418<br>(0.915)     |
| Tertiary                         |                     | 2.636**<br>(1.070)  | 3.142***<br>(0.991)  | 2.912***<br>(1.020)  | 2.406**<br>(1.033)   |
| One child                        |                     |                     | 0.358<br>(1.401)     | 0.367<br>(1.357)     | 1.753*<br>(0.976)    |
| Two children                     |                     |                     | 4.468***<br>(1.499)  | 4.319***<br>(1.411)  | 1.342<br>(1.097)     |
| Three+ children                  |                     |                     | -1.217<br>(5.374)    | -1.575<br>(5.543)    | -0.760<br>(4.273)    |
| Never married                    |                     |                     | 15.408***<br>(4.231) | 13.157***<br>(3.747) | -5.324<br>(4.366)    |
| Divorced                         |                     |                     | 15.363***<br>(4.623) | 13.078***<br>(4.137) | -6.326<br>(4.756)    |
| Widowed                          |                     |                     | 15.839***<br>(3.960) | 13.761***<br>(3.529) | -4.403<br>(4.178)    |
| Large inheritance                |                     |                     |                      | 2.651***<br>(0.623)  | 0.789<br>(0.869)     |
| Small inheritance                |                     |                     |                      | 1.761***<br>(0.628)  | 0.257<br>(0.703)     |
| Employee with temporary contract |                     |                     |                      |                      | 0.342<br>(0.774)     |
| Employer                         |                     |                     |                      |                      | 1.207<br>(1.576)     |
| Self-employed                    |                     |                     |                      |                      | 2.309<br>(1.425)     |
| Unemployed                       |                     |                     |                      |                      | -0.587<br>(1.639)    |
| Out of labor force               |                     |                     |                      |                      | 1.552<br>(1.543)     |
| retired                          |                     |                     |                      |                      | -0.861<br>(2.004)    |
| Work/Age Ratio                   |                     |                     |                      |                      | 2.325<br>(1.603)     |
| Weekly working hours             |                     |                     |                      |                      | -0.001<br>(0.042)    |
| Business assets                  |                     |                     |                      |                      | 0.108<br>(0.917)     |
| Home ownership                   |                     |                     |                      |                      | 6.437***<br>(0.858)  |
| Collateralized debt              |                     |                     |                      |                      | -1.070<br>(0.717)    |
| Unsecured debt                   |                     |                     |                      |                      | -2.820***<br>(0.600) |
| Constant                         | 9.056***<br>(1.003) | 8.119***<br>(1.445) | -10.471*<br>(5.698)  | -7.890<br>(5.136)    | 12.035**<br>(5.786)  |
| $R^2$                            | .014                | .111                | .186                 | .214                 | .473                 |

Notes: This table shows OLS estimates of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Table 17: Net wealth of single households at the mean - **France**

|                                     | (1)                 | (2)                 | (3)                  | (4)                  | (5)                  |
|-------------------------------------|---------------------|---------------------|----------------------|----------------------|----------------------|
|                                     | Base                | Age &<br>Education  | Family               | Inheritance          | Labor &<br>Assets    |
| Female                              | -0.128<br>(0.359)   | -0.343<br>(0.362)   | 0.212<br>(0.361)     | 0.199<br>(0.352)     | -0.063<br>(0.318)    |
| IMR                                 | 0.883<br>(0.570)    | 0.763<br>(0.533)    | 4.406***<br>(1.066)  | 4.021***<br>(1.034)  | -0.721<br>(1.221)    |
| Aged 25-34                          |                     | -0.810*<br>(0.449)  | -1.348***<br>(0.469) | -1.124**<br>(0.459)  | -0.089<br>(0.476)    |
| Aged 45-60                          |                     | 1.702***<br>(0.414) | 0.616<br>(0.450)     | 0.456<br>(0.457)     | 0.521<br>(0.432)     |
| Primary or below                    |                     | -1.385*<br>(0.770)  | -1.191<br>(0.830)    | -0.986<br>(0.800)    | -0.798<br>(0.700)    |
| Upper secondary                     |                     | 0.070<br>(0.652)    | -0.007<br>(0.692)    | 0.058<br>(0.677)     | -0.020<br>(0.536)    |
| Tertiary                            |                     | 1.676**<br>(0.776)  | 1.341<br>(0.846)     | 1.305<br>(0.816)     | 0.725<br>(0.625)     |
| One child                           |                     |                     | -1.963***<br>(0.680) | -1.640**<br>(0.667)  | 0.249<br>(0.665)     |
| Two children                        |                     |                     | -3.443***<br>(0.874) | -3.021***<br>(0.878) | -0.665<br>(0.881)    |
| Three+ children                     |                     |                     | -4.232***<br>(1.342) | -3.945***<br>(1.337) | -1.258<br>(1.228)    |
| Never married                       |                     |                     | 5.294***<br>(1.617)  | 4.927***<br>(1.581)  | -1.611<br>(1.714)    |
| Divorced                            |                     |                     | 5.896***<br>(1.661)  | 5.516***<br>(1.644)  | -1.225<br>(1.670)    |
| Widowed                             |                     |                     | 6.034***<br>(1.761)  | 5.694***<br>(1.768)  | -1.795<br>(1.856)    |
| Large inheritance                   |                     |                     |                      | 3.177***<br>(0.306)  | 1.258***<br>(0.238)  |
| Small inheritance                   |                     |                     |                      | 1.170***<br>(0.378)  | 0.463<br>(0.296)     |
| Employee with<br>temporary contract |                     |                     |                      |                      | -0.681<br>(0.610)    |
| Employer                            |                     |                     |                      |                      | 1.150**<br>(0.498)   |
| Self-employed                       |                     |                     |                      |                      | 0.416<br>(0.295)     |
| Unemployed                          |                     |                     |                      |                      | -0.965*<br>(0.544)   |
| Out of labor force                  |                     |                     |                      |                      | -0.379<br>(0.600)    |
| retired                             |                     |                     |                      |                      | -0.465<br>(0.673)    |
| Work/Age Ratio                      |                     |                     |                      |                      | -0.090<br>(0.612)    |
| Weekly working hours                |                     |                     |                      |                      | 0.000<br>(.)         |
| Business assets                     |                     |                     |                      |                      | 1.264***<br>(0.277)  |
| Home ownership                      |                     |                     |                      |                      | 4.014***<br>(0.400)  |
| Collateralized debt                 |                     |                     |                      |                      | -0.543*<br>(0.293)   |
| Unsecured debt                      |                     |                     |                      |                      | -3.250***<br>(0.416) |
| Constant                            | 9.163***<br>(0.338) | 8.590***<br>(0.812) | 2.077<br>(2.045)     | 2.073<br>(1.996)     | 10.979***<br>(2.332) |
| $R^2$                               | .005                | .074                | .110                 | .136                 | .329                 |

Notes: This table shows OLS estimates of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Table 18: Net wealth of single households at the mean - Greece

|                                     | (1)                 | (2)                 | (3)                   | (4)                  | (5)                  |
|-------------------------------------|---------------------|---------------------|-----------------------|----------------------|----------------------|
|                                     | Base                | Age &<br>Education  | Family                | Inheritance          | Labor &<br>Assets    |
| Female                              | 0.026<br>(0.579)    | 0.073<br>(0.597)    | -0.573<br>(0.745)     | -0.437<br>(0.706)    | 0.296<br>(0.580)     |
| IMR                                 | 4.845***<br>(0.942) | 4.876***<br>(1.047) | 8.167***<br>(1.007)   | 6.428***<br>(1.086)  | -0.068<br>(2.149)    |
| Aged 25-34                          |                     | 0.260<br>(0.554)    | 0.155<br>(0.555)      | 0.386<br>(0.559)     | 0.887<br>(0.630)     |
| Aged 45-60                          |                     | 1.000<br>(1.063)    | -0.417<br>(1.141)     | 0.165<br>(1.221)     | 0.729<br>(1.206)     |
| Primary or below                    |                     | -1.837<br>(1.943)   | -1.659<br>(1.906)     | -1.905<br>(1.857)    | -0.650<br>(1.564)    |
| Upper secondary                     |                     | 0.049<br>(1.143)    | 0.391<br>(1.033)      | 0.192<br>(1.055)     | 1.366<br>(1.046)     |
| Tertiary                            |                     | 1.142<br>(1.087)    | 1.532<br>(1.144)      | 1.365<br>(1.176)     | 2.566*<br>(1.310)    |
| One child                           |                     |                     | -2.356<br>(1.919)     | -1.646<br>(1.988)    | -0.619<br>(2.138)    |
| Two children                        |                     |                     | 2.694<br>(2.257)      | 2.632<br>(2.261)     | -0.507<br>(2.361)    |
| Three+ children                     |                     |                     | 0.000<br>(.)          | 0.000<br>(.)         | 0.000<br>(.)         |
| Never married                       |                     |                     | 13.116***<br>(1.895)  | 10.014***<br>(2.119) | -0.969<br>(3.939)    |
| Divorced                            |                     |                     | 13.054***<br>(2.506)  | 9.701***<br>(2.807)  | -1.757<br>(4.633)    |
| Widowed                             |                     |                     | 15.162***<br>(2.588)  | 11.978***<br>(2.818) | 0.396<br>(4.647)     |
| Large inheritance                   |                     |                     |                       | 1.801***<br>(0.545)  | -0.078<br>(0.576)    |
| Small inheritance                   |                     |                     |                       | 2.143***<br>(0.704)  | 0.638<br>(0.835)     |
| Employee with<br>temporary contract |                     |                     |                       |                      | -1.433*<br>(0.844)   |
| Employer                            |                     |                     |                       |                      | 2.546*<br>(1.494)    |
| Self-employed                       |                     |                     |                       |                      | 0.858<br>(0.840)     |
| Unemployed                          |                     |                     |                       |                      | -1.193<br>(1.999)    |
| Out of labor force                  |                     |                     |                       |                      | -1.348<br>(1.610)    |
| retired                             |                     |                     |                       |                      | -1.046<br>(1.782)    |
| Work/Age Ratio                      |                     |                     |                       |                      | 1.244<br>(1.006)     |
| Weekly working hours                |                     |                     |                       |                      | 0.001<br>(0.030)     |
| Business assets                     |                     |                     |                       |                      | 0.197<br>(1.908)     |
| Home ownership                      |                     |                     |                       |                      | 6.004***<br>(1.436)  |
| Collateralized debt                 |                     |                     |                       |                      | -1.444<br>(1.053)    |
| Unsecured debt                      |                     |                     |                       |                      | -3.594***<br>(0.996) |
| Constant                            | 5.218***<br>(0.882) | 4.566***<br>(1.402) | -10.526***<br>(2.813) | -6.725**<br>(2.952)  | 6.182<br>(5.225)     |
| $R^2$                               | .112                | .132                | .210                  | .224                 | .370                 |

Notes: This table shows OLS estimates of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Table 19: Net wealth of single households at the mean - **Portugal**

|                                     | (1)                 | (2)                 | (3)                  | (4)                 | (5)                  |
|-------------------------------------|---------------------|---------------------|----------------------|---------------------|----------------------|
|                                     | Base                | Age &<br>Education  | Family               | Inheritance         | Labor &<br>Assets    |
| Female                              | -1.485**<br>(0.703) | -1.600**<br>(0.631) | -1.858***<br>(0.647) | -1.498**<br>(0.604) | -1.050<br>(0.639)    |
| IMR                                 | 1.474*<br>(0.851)   | 0.922<br>(0.754)    | 3.216**<br>(1.591)   | 2.061<br>(1.683)    | -1.865<br>(1.739)    |
| Aged 25-34                          |                     | -1.926<br>(1.270)   | -2.323*<br>(1.255)   | -2.198*<br>(1.218)  | 0.026<br>(0.984)     |
| Aged 45-60                          |                     | 1.982***<br>(0.647) | 1.247<br>(0.808)     | 1.249<br>(0.775)    | 1.917***<br>(0.571)  |
| Primary or below                    |                     | -2.357**<br>(1.037) | -2.588**<br>(1.077)  | -2.505**<br>(1.085) | -1.697**<br>(0.741)  |
| Upper secondary                     |                     | 2.788**<br>(1.226)  | 2.937**<br>(1.217)   | 3.099**<br>(1.220)  | 3.549***<br>(0.920)  |
| Tertiary                            |                     | 2.604**<br>(1.290)  | 2.588*<br>(1.331)    | 2.570**<br>(1.285)  | 3.236***<br>(0.851)  |
| One child                           |                     |                     | -0.554<br>(1.146)    | -0.087<br>(1.184)   | 2.588**<br>(1.112)   |
| Two children                        |                     |                     | -2.046<br>(1.679)    | -2.271<br>(1.684)   | -0.449<br>(1.745)    |
| Three+ children                     |                     |                     | 2.983**<br>(1.421)   | 3.109**<br>(1.377)  | 5.431***<br>(1.508)  |
| Never married                       |                     |                     | 4.339*<br>(2.618)    | 2.479<br>(2.860)    | -3.641<br>(2.986)    |
| Divorced                            |                     |                     | 3.666<br>(2.761)     | 2.173<br>(2.902)    | -3.641<br>(2.901)    |
| Widowed                             |                     |                     | 5.163*<br>(2.874)    | 3.576<br>(2.916)    | -3.035<br>(2.783)    |
| Large inheritance                   |                     |                     |                      | 3.171***<br>(0.668) | 1.313**<br>(0.648)   |
| Small inheritance                   |                     |                     |                      | 1.589<br>(1.306)    | 0.173<br>(0.820)     |
| Employee with<br>temporary contract |                     |                     |                      |                     | -1.990*<br>(1.170)   |
| Employer                            |                     |                     |                      |                     | 2.555**<br>(1.273)   |
| Self-employed                       |                     |                     |                      |                     | 0.722<br>(0.775)     |
| Unemployed                          |                     |                     |                      |                     | -0.470<br>(1.358)    |
| Out of labor force                  |                     |                     |                      |                     | 1.256<br>(1.413)     |
| retired                             |                     |                     |                      |                     | -0.193<br>(1.215)    |
| Work/Age Ratio                      |                     |                     |                      |                     | 2.337*<br>(1.367)    |
| Weekly working hours                |                     |                     |                      |                     | 0.025<br>(0.028)     |
| Business assets                     |                     |                     |                      |                     | -2.351<br>(1.697)    |
| Home ownership                      |                     |                     |                      |                     | 5.439***<br>(0.791)  |
| Collateralized debt                 |                     |                     |                      |                     | -1.884**<br>(0.897)  |
| Unsecured debt                      |                     |                     |                      |                     | -3.807***<br>(0.927) |
| Constant                            | 8.390***<br>(1.033) | 8.190***<br>(1.268) | 2.966<br>(4.218)     | 4.759<br>(4.415)    | 8.589*<br>(4.602)    |
| $R^2$                               | .027                | .180                | .209                 | .242                | .506                 |

Notes: This table shows OLS estimates of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Table 20: Net wealth of single households at the mean - Slovakia

|                                  | (1)                 | (2)                 | (3)                  | (4)                  | (5)                  |
|----------------------------------|---------------------|---------------------|----------------------|----------------------|----------------------|
|                                  | Base                | Age & Education     | Family               | Inheritance          | Labor & Assets       |
| Female                           | 0.309<br>(0.412)    | 0.012<br>(0.396)    | -0.641*<br>(0.389)   | -0.490<br>(0.426)    | 0.383<br>(0.349)     |
| IMR                              | 1.889***<br>(0.374) | 2.045***<br>(0.402) | 5.985***<br>(1.011)  | 5.464***<br>(1.011)  | -0.368<br>(0.737)    |
| Aged 25-34                       |                     | -0.572<br>(0.850)   | -0.514<br>(0.891)    | -0.324<br>(0.869)    | 0.634<br>(0.622)     |
| Aged 45-60                       |                     | 0.934<br>(0.847)    | 0.771<br>(0.842)     | 0.788<br>(0.822)     | -0.009<br>(0.561)    |
| Primary or below                 |                     | 0.000<br>(.)        | 0.000<br>(.)         | 0.000<br>(.)         | 0.000<br>(.)         |
| Upper secondary                  |                     | 0.166<br>(0.692)    | 0.230<br>(0.595)     | -0.005<br>(0.642)    | 0.609<br>(0.500)     |
| Tertiary                         |                     | 1.497**<br>(0.738)  | 1.431**<br>(0.722)   | 1.046<br>(0.748)     | 1.038**<br>(0.527)   |
| One child                        |                     |                     | -3.238***<br>(0.558) | -2.871***<br>(0.577) | -0.691<br>(0.498)    |
| Two children                     |                     |                     | -2.737**<br>(1.102)  | -2.257*<br>(1.192)   | 0.136<br>(0.961)     |
| Three+ children                  |                     |                     | -4.799**<br>(1.757)  | -4.844**<br>(1.792)  | 4.512<br>(2.780)     |
| Never married                    |                     |                     | 7.148***<br>(1.409)  | 6.488***<br>(1.464)  | -2.187*<br>(1.317)   |
| Divorced                         |                     |                     | 8.176***<br>(1.627)  | 7.625***<br>(1.711)  | -1.919<br>(1.479)    |
| Widowed                          |                     |                     | 8.975***<br>(1.731)  | 8.311***<br>(1.797)  | -1.839<br>(1.608)    |
| Large inheritance                |                     |                     |                      | 2.003***<br>(0.397)  | 0.850*<br>(0.438)    |
| Small inheritance                |                     |                     |                      | 1.003**<br>(0.400)   | 0.544<br>(0.374)     |
| Employee with temporary contract |                     |                     |                      |                      | -1.537**<br>(0.737)  |
| Employer                         |                     |                     |                      |                      | 1.011<br>(0.864)     |
| Self-employed                    |                     |                     |                      |                      | 0.024<br>(0.791)     |
| Unemployed                       |                     |                     |                      |                      | -2.983**<br>(1.304)  |
| Out of labor force               |                     |                     |                      |                      | 0.470<br>(1.106)     |
| retired                          |                     |                     |                      |                      | 0.081<br>(0.929)     |
| Work/Age Ratio                   |                     |                     |                      |                      | 0.038<br>(0.756)     |
| Weekly working hours             |                     |                     |                      |                      | 0.008<br>(0.021)     |
| Business assets                  |                     |                     |                      |                      | 0.686<br>(0.649)     |
| Home ownership                   |                     |                     |                      |                      | 4.751***<br>(0.554)  |
| Collateralized debt              |                     |                     |                      |                      | -0.578<br>(0.375)    |
| Unsecured debt                   |                     |                     |                      |                      | -3.099***<br>(0.834) |
| Constant                         | 8.289***<br>(0.569) | 7.642***<br>(1.185) | -2.422<br>(2.882)    | -1.897<br>(2.912)    | 7.830***<br>(2.315)  |
| $R^2$                            | .064                | .112                | .196                 | .229                 | .578                 |

Notes: This table shows OLS estimates of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.



### A.3 Quantile Regression of Net Wealth

Tables 21 to 28 show the detailed results of a quantile regression at the 95<sup>th</sup> percentile of the net wealth distribution for each of the eight countries studied. Conditional on statistical significance, the control variables in models (2)-(5) show the expected effects found in the literature. Younger single households have lower and older single households have higher wealth.<sup>21</sup> Wealth decreases with primary education, and it increases with higher secondary and tertiary education relative to lower secondary education. The parameters are mostly economically significant — having completed tertiary education goes along with net wealth between less than 50% (Spain, model (4)) and 180% (Austria, model (3)) higher compared to single households in which the adult completed just lower secondary education.

Family characteristics are strongly linked to net wealth at the top of the distribution, and the size of coefficients is economically significant; only in Spain are neither children present nor marital status statistically significant. Single households in which there are children present have lower net wealth; effects range from roughly 70% lower wealth (one child in France, model (4)) to almost 6 times lower wealth (three or more children in Slovakia, model (3)). Regarding marital status, never having been married, being divorced and widowed are positively correlated to net wealth with the exception of Slovakia in model (5): vis-à-vis the married reference group, it is around 2.7 times higher for divorced single households in Germany (model (3)) and about 6.8 times higher for widowed single households in Austria (model (3)).

Having received a large inheritance is statistically significant in all countries except Portugal, and they remain statistically significant in the full model (5) in all countries except Belgium and Slovakia. The size of the effect is, again, economically significant, but varies across countries. Having received a large inheritance goes along more than 50% higher wealth in Slovakia, up to 360% higher wealth in Belgium. Small inheritances are not statistically significant at the top of the distribution.

Of labour market characteristics and assets, only home ownership is fairly consistently associated with net wealth at the top of the distribution; the only exceptions are Spain and Greece. The other variables are statistically significant more sporadically across countries. Owning business assets indicates higher wealth in Austria, Germany, and in France. Unsecured debt (Austria) signals lower wealth, while collateralized debt (i.e., mortgages) are not statistically significant in any country. Of the variable capturing employment outcomes, temporary contracts (Germany, France), unemployment, and retirement (both France) indicate lower net wealth, whereas employing others (France, Portugal) and historical labour market attachment (work/age ratio, Germany<sup>22</sup>) go along with higher net wealth.

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<sup>21</sup>The only exception is age 45-60 in Greece in model (3).

<sup>22</sup>In Spain, the work/age ratio is negatively correlated with higher wealth.

Table 21: Net wealth of single households at the top of the distribution - **Austria**

|                                     | (1)                  | (2)                  | (3)                 | (4)                 | (5)                  |
|-------------------------------------|----------------------|----------------------|---------------------|---------------------|----------------------|
|                                     | Base                 | Age,<br>Education    | Family              | Inheritance         | Labor &<br>Assets    |
| Female                              | -0.972**<br>(0.384)  | -0.107<br>(0.451)    | -0.734<br>(0.560)   | -1.067**<br>(0.491) | -0.206<br>(0.354)    |
| IMR                                 | 1.637**<br>(0.689)   | 1.701*<br>(0.887)    | 5.192**<br>(2.276)  | 4.222**<br>(1.642)  | -1.012<br>(1.459)    |
| Aged 25-34                          |                      | -0.471<br>(0.490)    | -0.296<br>(0.471)   | -0.313<br>(0.503)   | -0.792**<br>(0.351)  |
| Aged 45-60                          |                      | 1.210**<br>(0.489)   | 1.461***<br>(0.488) | 1.032**<br>(0.453)  | 0.066<br>(0.450)     |
| Primary or below                    |                      | -2.952<br>(2.215)    | -2.711<br>(2.567)   | -2.436<br>(1.858)   | -2.112<br>(2.346)    |
| Upper secondary                     |                      | 0.782<br>(0.556)     | 1.030<br>(0.755)    | 1.184**<br>(0.547)  | 1.005*<br>(0.529)    |
| Tertiary                            |                      | 1.490**<br>(0.659)   | 1.802**<br>(0.747)  | 1.799**<br>(0.724)  | 1.322**<br>(0.590)   |
| One child                           |                      |                      | -0.874<br>(0.996)   | -0.253<br>(1.101)   | 1.028<br>(1.055)     |
| Two children                        |                      |                      | -1.022<br>(1.018)   | -0.098<br>(0.855)   | 0.867<br>(0.730)     |
| Three+ children                     |                      |                      | -1.546<br>(6.155)   | -0.734<br>(6.249)   | 0.816<br>(6.241)     |
| Never married                       |                      |                      | 5.965<br>(3.661)    | 4.299<br>(3.082)    | -3.703<br>(2.745)    |
| Divorced                            |                      |                      | 6.470*<br>(3.704)   | 4.520<br>(3.025)    | -3.671<br>(2.780)    |
| Widowed                             |                      |                      | 6.804*<br>(3.545)   | 5.357*<br>(3.139)   | -3.107<br>(3.132)    |
| Large inheritance                   |                      |                      |                     | 1.672***<br>(0.510) | 1.626***<br>(0.525)  |
| Small inheritance                   |                      |                      |                     | 0.331<br>(0.734)    | 0.683<br>(0.416)     |
| Employee with<br>temporary contract |                      |                      |                     |                     | 0.815<br>(0.661)     |
| Employer                            |                      |                      |                     |                     | 0.892<br>(0.941)     |
| Self-employed                       |                      |                      |                     |                     | -0.133<br>(0.905)    |
| Unemployed                          |                      |                      |                     |                     | 1.373<br>(1.080)     |
| Out of labor force                  |                      |                      |                     |                     | -0.349<br>(1.146)    |
| Retired                             |                      |                      |                     |                     | 0.807<br>(1.009)     |
| Work/Age Ratio                      |                      |                      |                     |                     | 0.435<br>(0.846)     |
| Weekly working hours                |                      |                      |                     |                     | 0.010<br>(0.019)     |
| Business assets                     |                      |                      |                     |                     | 1.874**<br>(0.768)   |
| Home ownership                      |                      |                      |                     |                     | 1.389**<br>(0.553)   |
| Collateralized debt                 |                      |                      |                     |                     | 0.486<br>(0.669)     |
| Unsecured debt                      |                      |                      |                     |                     | -0.852***<br>(0.325) |
| Constant                            | 13.432***<br>(0.443) | 11.413***<br>(0.939) | 3.775<br>(4.280)    | 5.554<br>(3.765)    | 14.287***<br>(3.112) |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Table 22: Net wealth of single households at the top of the distribution - **Belgium**

|                                     | (1)                  | (2)                  | (3)                 | (4)                 | (5)                |
|-------------------------------------|----------------------|----------------------|---------------------|---------------------|--------------------|
|                                     | Base                 | Age,<br>Education    | Family              | Inheritance         | Labor &<br>Assets  |
| Female                              | -0.188<br>(0.296)    | -0.255<br>(0.252)    | -0.094<br>(0.333)   | -0.011<br>(0.377)   | -0.043<br>(0.498)  |
| IMR                                 | 0.970***<br>(0.265)  | 1.020***<br>(0.254)  | 4.041***<br>(0.948) | 3.948***<br>(0.908) | 2.982**<br>(1.231) |
| Aged 25-34                          |                      | -1.134**<br>(0.523)  | -0.825<br>(0.606)   | -0.866<br>(0.670)   | -0.311<br>(0.616)  |
| Aged 45-60                          |                      | 0.674***<br>(0.227)  | -0.054<br>(0.343)   | -0.107<br>(0.333)   | 0.029<br>(0.604)   |
| Primary or below                    |                      | -1.576*<br>(0.830)   | -0.904<br>(0.999)   | -0.857<br>(1.144)   | -0.691<br>(1.049)  |
| Upper secondary                     |                      | 0.073<br>(0.546)     | 0.491<br>(0.717)    | 0.463<br>(0.940)    | 0.179<br>(0.739)   |
| Tertiary                            |                      | 0.624<br>(0.509)     | 1.325<br>(0.762)    | 1.279<br>(1.031)    | 1.048<br>(0.755)   |
| One child                           |                      |                      | -2.157**<br>(0.890) | -2.178**<br>(0.885) | -1.377<br>(0.931)  |
| Two children                        |                      |                      | -1.965**<br>(0.971) | -2.042**<br>(0.967) | -0.035<br>(1.121)  |
| Three+ children                     |                      |                      | -1.699**<br>(0.712) | -1.606*<br>(0.859)  | -0.986<br>(0.782)  |
| Never married                       |                      |                      | 4.003**<br>(1.601)  | 4.016**<br>(1.484)  | 3.404**<br>(1.620) |
| Divorced                            |                      |                      | 4.514**<br>(1.649)  | 4.553***<br>(1.465) | 3.662*<br>(1.815)  |
| Widowed                             |                      |                      | 4.898***<br>(1.508) | 4.931***<br>(1.446) | 3.722**<br>(1.524) |
| Large inheritance                   |                      |                      |                     | 3.565**<br>(1.556)  | 0.745<br>(1.154)   |
| Small inheritance                   |                      |                      |                     | 0.041<br>(0.349)    | -0.037<br>(0.379)  |
| Employee with<br>temporary contract |                      |                      |                     |                     | -0.570<br>(0.594)  |
| Employer                            |                      |                      |                     |                     | 0.109<br>(0.938)   |
| Self-employed                       |                      |                      |                     |                     | 1.972<br>(1.315)   |
| Unemployed                          |                      |                      |                     |                     | 0.228<br>(0.782)   |
| Out of labor force                  |                      |                      |                     |                     | 0.853<br>(1.216)   |
| Retired                             |                      |                      |                     |                     | 1.246<br>(0.962)   |
| Work/Age Ratio                      |                      |                      |                     |                     | 1.860**<br>(0.764) |
| Weekly working hours                |                      |                      |                     |                     | 0.011<br>(0.017)   |
| Business assets                     |                      |                      |                     |                     | 0.869<br>(0.685)   |
| Home ownership                      |                      |                      |                     |                     | 0.878*<br>(0.482)  |
| Collateralized debt                 |                      |                      |                     |                     | -0.175<br>(0.352)  |
| Unsecured debt                      |                      |                      |                     |                     | 0.008<br>(0.377)   |
| Constant                            | 13.236***<br>(0.251) | 12.628***<br>(0.573) | 6.697***<br>(2.330) | 6.724***<br>(2.312) | 5.559**<br>(2.338) |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Table 23: Net wealth of single households at the top of the distribution - **Germany**

|                                     | (1)                  | (2)                  | (3)                  | (4)                 | (5)                  |
|-------------------------------------|----------------------|----------------------|----------------------|---------------------|----------------------|
|                                     | Base                 | Age,<br>Education    | Family               | Inheritance         | Labor &<br>Assets    |
| Female                              | -0.553<br>(0.548)    | -0.342<br>(0.373)    | -0.732*<br>(0.414)   | -0.895**<br>(0.426) | -0.163<br>(0.365)    |
| IMR                                 | 1.246<br>(0.966)     | 1.291*<br>(0.668)    | 3.460***<br>(0.834)  | 3.339***<br>(0.903) | -0.159<br>(1.434)    |
| Aged 25-34                          |                      | -0.320<br>(0.375)    | -0.662*<br>(0.387)   | -0.674*<br>(0.395)  | -0.076<br>(0.497)    |
| Aged 45-60                          |                      | 0.553*<br>(0.329)    | 0.627*<br>(0.342)    | 0.392<br>(0.342)    | 0.489<br>(0.415)     |
| Primary or below                    |                      | -3.816<br>(2.884)    | -2.762<br>(3.146)    | -2.874<br>(3.242)   | -2.698<br>(3.053)    |
| Upper secondary                     |                      | 0.191<br>(0.822)     | 0.484<br>(0.735)     | 0.162<br>(0.691)    | -0.047<br>(0.726)    |
| Tertiary                            |                      | 1.589*<br>(0.855)    | 1.653**<br>(0.808)   | 0.946<br>(0.689)    | 1.085<br>(0.741)     |
| One child                           |                      |                      | -0.716<br>(0.772)    | -1.217**<br>(0.569) | 0.678<br>(0.579)     |
| Two children                        |                      |                      | -0.877<br>(0.774)    | -0.824<br>(0.655)   | -0.447<br>(0.686)    |
| Three+ children                     |                      |                      | -1.766***<br>(0.667) | -1.754**<br>(0.713) | 0.004<br>(0.901)     |
| Never married                       |                      |                      | 3.470***<br>(0.977)  | 3.432***<br>(1.145) | -0.283<br>(1.722)    |
| Divorced                            |                      |                      | 2.694***<br>(0.886)  | 2.863***<br>(1.037) | -0.456<br>(1.597)    |
| Widowed                             |                      |                      | 3.910***<br>(1.136)  | 3.224***<br>(1.169) | -0.651<br>(1.833)    |
| Large inheritance                   |                      |                      |                      | 2.039***<br>(0.510) | 0.903**<br>(0.440)   |
| Small inheritance                   |                      |                      |                      | 0.170<br>(0.361)    | 1.057**<br>(0.464)   |
| Employee with<br>temporary contract |                      |                      |                      |                     | -0.989*<br>(0.507)   |
| Employer                            |                      |                      |                      |                     | 0.034<br>(0.787)     |
| Self-employed                       |                      |                      |                      |                     | -0.531<br>(0.588)    |
| Unemployed                          |                      |                      |                      |                     | -1.181<br>(0.883)    |
| Out of labor force                  |                      |                      |                      |                     | 0.404<br>(0.976)     |
| Retired                             |                      |                      |                      |                     | 1.210<br>(1.104)     |
| Work/Age Ratio                      |                      |                      |                      |                     | 1.235**<br>(0.613)   |
| Weekly working hours                |                      |                      |                      |                     | 0.019<br>(0.016)     |
| Business assets                     |                      |                      |                      |                     | 0.844*<br>(0.485)    |
| Home ownership                      |                      |                      |                      |                     | 1.314**<br>(0.639)   |
| Collateralized debt                 |                      |                      |                      |                     | 0.362<br>(0.524)     |
| Unsecured debt                      |                      |                      |                      |                     | -0.413<br>(0.305)    |
| Constant                            | 12.872***<br>(0.450) | 11.678***<br>(0.927) | 7.330***<br>(1.428)  | 7.680***<br>(1.438) | 10.136***<br>(2.474) |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Table 24: Net wealth of single households at the top of the distribution - **Spain**

|                                     | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  |
|-------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                     | Base                 | Age,<br>Education    | Family               | Inheritance          | Labor &<br>Assets    |
| Female                              | -0.515**<br>(0.236)  | -0.075<br>(0.130)    | -0.008<br>(0.179)    | -0.089<br>(0.197)    | -0.343<br>(0.242)    |
| IMR                                 | 0.555<br>(0.489)     | 0.354<br>(0.603)     | 0.290<br>(0.700)     | 0.363<br>(0.636)     | -0.524<br>(0.767)    |
| Aged 25-34                          |                      | -0.503<br>(0.320)    | -0.502<br>(0.412)    | -0.744**<br>(0.345)  | -0.140<br>(0.356)    |
| Aged 45-60                          |                      | 0.238<br>(0.219)     | 0.240<br>(0.215)     | 0.330<br>(0.207)     | 0.620**<br>(0.314)   |
| Primary or below                    |                      | -0.258<br>(0.238)    | -0.157<br>(0.260)    | -0.251<br>(0.258)    | -0.208<br>(0.287)    |
| Upper secondary                     |                      | 0.264<br>(0.255)     | 0.162<br>(0.245)     | 0.222<br>(0.197)     | -0.014<br>(0.291)    |
| Tertiary                            |                      | 0.763***<br>(0.233)  | 0.789***<br>(0.229)  | 0.457**<br>(0.228)   | 0.400<br>(0.354)     |
| One child                           |                      |                      | 0.052<br>(0.242)     | -0.136<br>(0.276)    | -0.138<br>(0.328)    |
| Two children                        |                      |                      | 0.173<br>(0.451)     | 0.456<br>(0.466)     | -0.192<br>(0.388)    |
| Three+ children                     |                      |                      | -0.671<br>(3.216)    | -0.333<br>(3.215)    | -0.916<br>(3.176)    |
| Never married                       |                      |                      | 1.716<br>(2.377)     | 1.868<br>(2.069)     | -0.626<br>(2.433)    |
| Divorced                            |                      |                      | 1.689<br>(2.476)     | 1.881<br>(2.201)     | -0.327<br>(2.491)    |
| Widowed                             |                      |                      | 1.841<br>(2.305)     | 1.838<br>(1.995)     | -0.283<br>(2.349)    |
| Large inheritance                   |                      |                      |                      | 0.710**<br>(0.276)   | 0.798**<br>(0.376)   |
| Small inheritance                   |                      |                      |                      | 0.247<br>(0.479)     | 0.287<br>(0.288)     |
| Employee with<br>temporary contract |                      |                      |                      |                      | -0.593<br>(0.706)    |
| Employer                            |                      |                      |                      |                      | 0.444<br>(0.733)     |
| Self-employed                       |                      |                      |                      |                      | 2.944<br>(1.790)     |
| Unemployed                          |                      |                      |                      |                      | -0.584<br>(0.838)    |
| Out of labor force                  |                      |                      |                      |                      | -0.370<br>(0.962)    |
| retired                             |                      |                      |                      |                      | -0.839<br>(1.017)    |
| Work/Age Ratio                      |                      |                      |                      |                      | -0.933**<br>(0.963)  |
| Weekly working hours                |                      |                      |                      |                      | -0.009<br>(0.021)    |
| Business assets                     |                      |                      |                      |                      | 0.565<br>(0.426)     |
| Home ownership                      |                      |                      |                      |                      | 0.591<br>(0.493)     |
| Collateralized debt                 |                      |                      |                      |                      | 0.269<br>(0.264)     |
| Unsecured debt                      |                      |                      |                      |                      | 0.142<br>(0.255)     |
| Constant                            | 13.692***<br>(0.370) | 13.062***<br>(0.499) | 11.285***<br>(2.867) | 11.037***<br>(2.550) | 14.428***<br>(3.039) |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Table 25: Net wealth of single households at the top of the distribution - **France**

|                                     | (1)       | (2)               | (3)       | (4)         | (5)               |
|-------------------------------------|-----------|-------------------|-----------|-------------|-------------------|
|                                     | Base      | Age,<br>Education | Family    | Inheritance | Labor &<br>Assets |
| Female                              | -0.241*   | -0.332*           | -0.164    | -0.199      | -0.220            |
|                                     | (0.136)   | (0.183)           | (0.224)   | (0.215)     | (0.157)           |
| IMR                                 | 0.418     | 0.467             | 2.911***  | 2.674***    | 0.218             |
|                                     | (0.319)   | (0.306)           | (0.690)   | (0.642)     | (0.346)           |
| Aged 25-34                          |           | -0.797***         | -1.116*** | -0.787***   | -0.002            |
|                                     |           | (0.207)           | (0.245)   | (0.224)     | (0.272)           |
| Aged 45-60                          |           | 0.647***          | 0.148     | 0.295       | 0.582***          |
|                                     |           | (0.172)           | (0.228)   | (0.195)     | (0.171)           |
| Primary or below                    |           | -0.333*           | -0.450    | -0.276      | -0.215            |
|                                     |           | (0.195)           | (0.303)   | (0.345)     | (0.294)           |
| Upper secondary                     |           | 0.353*            | 0.267     | 0.296       | 0.069             |
|                                     |           | (0.194)           | (0.281)   | (0.276)     | (0.286)           |
| Tertiary                            |           | 0.631***          | 0.635**   | 0.592*      | 0.798***          |
|                                     |           | (0.208)           | (0.274)   | (0.310)     | (0.303)           |
| One child                           |           |                   | -0.927*** | -0.725***   | -0.074            |
|                                     |           |                   | (0.215)   | (0.252)     | (0.234)           |
| Two children                        |           |                   | -1.104*** | -0.822**    | 0.389             |
|                                     |           |                   | (0.298)   | (0.325)     | (0.407)           |
| Three+ children                     |           |                   | -2.093*** | -1.859***   | -0.485            |
|                                     |           |                   | (0.553)   | (0.567)     | (0.364)           |
| Never married                       |           |                   | 3.210***  | 2.804***    | -0.185            |
|                                     |           |                   | (0.852)   | (0.839)     | (0.528)           |
| Divorced                            |           |                   | 3.772***  | 3.423***    | -0.095            |
|                                     |           |                   | (0.893)   | (0.886)     | (0.576)           |
| Widowed                             |           |                   | 3.947***  | 3.498***    | 0.608             |
|                                     |           |                   | (1.021)   | (0.911)     | (0.610)           |
| Large inheritance                   |           |                   |           | 1.449***    | 1.544***          |
|                                     |           |                   |           | (0.435)     | (0.453)           |
| Small inheritance                   |           |                   |           | 0.364**     | 0.545***          |
|                                     |           |                   |           | (0.151)     | (0.149)           |
| Employee with<br>temporary contract |           |                   |           |             | -0.598**          |
|                                     |           |                   |           |             | (0.240)           |
| Employer                            |           |                   |           |             | 1.229***          |
|                                     |           |                   |           |             | (0.347)           |
| Self-employed                       |           |                   |           |             | 0.424             |
|                                     |           |                   |           |             | (0.288)           |
| Unemployed                          |           |                   |           |             | -0.654***         |
|                                     |           |                   |           |             | (0.194)           |
| Out of labor force                  |           |                   |           |             | -0.442            |
|                                     |           |                   |           |             | (0.334)           |
| Retired                             |           |                   |           |             | -0.463**          |
|                                     |           |                   |           |             | (0.234)           |
| Work/Age Ratio                      |           |                   |           |             | 0.206             |
|                                     |           |                   |           |             | (0.284)           |
| Business assets                     |           |                   |           |             | 0.603***          |
|                                     |           |                   |           |             | (0.199)           |
| Home ownership                      |           |                   |           |             | 1.488***          |
|                                     |           |                   |           |             | (0.174)           |
| Collateralized debt                 |           |                   |           |             | 0.157             |
|                                     |           |                   |           |             | (0.190)           |
| Unsecured debt                      |           |                   |           |             | -0.146            |
|                                     |           |                   |           |             | (0.161)           |
| Constant                            | 13.610*** | 13.059***         | 8.628***  | 8.589***    | 11.370***         |
|                                     | (0.205)   | (0.321)           | (1.171)   | (1.221)     | (0.806)           |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Table 26: Net wealth of single households at the top of the distribution - **Greece**

|                                     | (1)                  | (2)                  | (3)                 | (4)                 | (5)                  |
|-------------------------------------|----------------------|----------------------|---------------------|---------------------|----------------------|
|                                     | Base                 | Age,<br>Education    | Family              | Inheritance         | Labor &<br>Assets    |
| Female                              | -0.435<br>(0.346)    | -0.175<br>(0.247)    | -0.348<br>(0.368)   | -0.626*<br>(0.343)  | -0.447<br>(0.413)    |
| IMR                                 | 1.617***<br>(0.460)  | 1.906***<br>(0.451)  | 2.078***<br>(0.590) | 1.343*<br>(0.717)   | 0.421<br>(1.205)     |
| Aged 25-34                          |                      | -0.549<br>(0.378)    | -0.597<br>(0.424)   | -0.450<br>(0.346)   | -0.334<br>(0.537)    |
| Aged 45-60                          |                      | -0.386<br>(0.388)    | -0.765*<br>(0.447)  | -0.522<br>(0.413)   | -0.175<br>(0.431)    |
| Primary or below                    |                      | -1.113*<br>(0.605)   | -1.090<br>(0.716)   | -0.843<br>(0.640)   | -0.229<br>(0.830)    |
| Upper secondary                     |                      | -0.558<br>(0.664)    | -0.501<br>(0.671)   | -0.119<br>(0.472)   | 0.022<br>(0.516)     |
| Tertiary                            |                      | -0.509<br>(0.724)    | -0.369<br>(0.778)   | -0.110<br>(0.639)   | 0.119<br>(0.720)     |
| One child                           |                      |                      | -1.580**<br>(0.766) | -0.912<br>(0.761)   | -0.023<br>(0.941)    |
| Two children                        |                      |                      | -0.042<br>(0.653)   | 0.110<br>(0.598)    | 0.610<br>(0.875)     |
| Never married                       |                      |                      | 5.221***<br>(1.306) | 3.392**<br>(1.600)  | 1.075<br>(2.649)     |
| Divorced                            |                      |                      | 5.736***<br>(1.496) | 4.068**<br>(1.727)  | 1.135<br>(2.883)     |
| Widowed                             |                      |                      | 5.621***<br>(1.225) | 3.965***<br>(1.442) | 0.957<br>(2.971)     |
| Large inheritance                   |                      |                      |                     | 0.762**<br>(0.371)  | 1.031**<br>(0.438)   |
| Small inheritance                   |                      |                      |                     | 0.785<br>(0.492)    | 0.817<br>(0.566)     |
| Employee with<br>temporary contract |                      |                      |                     |                     | -0.415<br>(0.521)    |
| Employer                            |                      |                      |                     |                     | -0.007<br>(0.847)    |
| Self-employed                       |                      |                      |                     |                     | -0.063<br>(0.551)    |
| Unemployed                          |                      |                      |                     |                     | -0.679<br>(1.124)    |
| Out of labor force                  |                      |                      |                     |                     | 0.392<br>(1.261)     |
| Retired                             |                      |                      |                     |                     | 0.479<br>(1.158)     |
| Work/Age Ratio                      |                      |                      |                     |                     | 0.372<br>(0.690)     |
| Weekly working hours                |                      |                      |                     |                     | -0.003<br>(0.018)    |
| Business assets                     |                      |                      |                     |                     | 0.907<br>(0.739)     |
| Home ownership                      |                      |                      |                     |                     | 0.818<br>(0.595)     |
| Collateralized debt                 |                      |                      |                     |                     | -0.039<br>(0.553)    |
| Unsecured debt                      |                      |                      |                     |                     | 0.350<br>(0.326)     |
| Constant                            | 12.034***<br>(0.442) | 12.518***<br>(0.759) | 7.224***<br>(1.854) | 8.857***<br>(2.110) | 10.827***<br>(3.705) |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

Table 27: Net wealth of single households at the top of the distribution - **Portugal**

|                                     | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  |
|-------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                     | Base                 | Age,<br>Education    | Family               | Inheritance          | Labor &<br>Assets    |
| Female                              | -0.285<br>(0.433)    | -0.326<br>(0.258)    | -0.508*<br>(0.262)   | -0.446*<br>(0.269)   | -0.161<br>(0.345)    |
| IMR                                 | -0.291<br>(0.266)    | -0.169<br>(0.391)    | -0.202<br>(1.102)    | -0.431<br>(1.175)    | -0.550<br>(0.832)    |
| Aged 25-34                          |                      | -1.401***<br>(0.448) | -1.316***<br>(0.383) | -1.147***<br>(0.434) | 0.156<br>(0.469)     |
| Aged 45-60                          |                      | 0.303<br>(0.335)     | 0.514<br>(0.390)     | 0.704<br>(0.481)     | 1.088**<br>(0.482)   |
| Primary or below                    |                      | -0.809**<br>(0.356)  | -0.898**<br>(0.357)  | -0.960**<br>(0.389)  | -0.715*<br>(0.405)   |
| Upper secondary                     |                      | 0.832*<br>(0.458)    | 1.149***<br>(0.387)  | 1.163**<br>(0.476)   | 0.855*<br>(0.449)    |
| Tertiary                            |                      | 0.904***<br>(0.349)  | 1.261***<br>(0.377)  | 1.235***<br>(0.476)  | 1.098***<br>(0.413)  |
| One child                           |                      |                      | 0.095<br>(0.552)     | 0.090<br>(0.611)     | 0.500<br>(0.613)     |
| Two children                        |                      |                      | -1.138**<br>(0.524)  | -1.177**<br>(0.560)  | -0.514<br>(0.762)    |
| Three+ children                     |                      |                      | 0.372<br>(1.179)     | 0.264<br>(1.280)     | 0.000<br>(1.291)     |
| Never married                       |                      |                      | -0.208<br>(1.536)    | -0.669<br>(1.711)    | -0.849<br>(1.440)    |
| Divorced                            |                      |                      | 0.139<br>(1.382)     | -0.320<br>(1.590)    | -0.802<br>(1.456)    |
| Widowed                             |                      |                      | 0.352<br>(1.535)     | -0.111<br>(1.732)    | -0.768<br>(1.502)    |
| Large inheritance                   |                      |                      |                      | 0.198<br>(0.324)     | 0.403<br>(0.458)     |
| Small inheritance                   |                      |                      |                      | -0.089<br>(0.306)    | -0.207<br>(0.451)    |
| Employee with<br>temporary contract |                      |                      |                      |                      | -0.153<br>(0.466)    |
| Employer                            |                      |                      |                      |                      | 2.679**<br>(1.132)   |
| Self-employed                       |                      |                      |                      |                      | 0.411<br>(0.419)     |
| Unemployed                          |                      |                      |                      |                      | -0.165<br>(0.802)    |
| Out of labor force                  |                      |                      |                      |                      | 0.537<br>(0.828)     |
| Retired                             |                      |                      |                      |                      | -0.553<br>(0.760)    |
| Work/Age Ratio                      |                      |                      |                      |                      | -0.054<br>(0.667)    |
| Weekly working hours                |                      |                      |                      |                      | 0.000<br>(0.016)     |
| Business assets                     |                      |                      |                      |                      | 0.169<br>(0.439)     |
| Home ownership                      |                      |                      |                      |                      | 1.458***<br>(0.471)  |
| Collateralized debt                 |                      |                      |                      |                      | -0.120<br>(0.303)    |
| Unsecured debt                      |                      |                      |                      |                      | -0.145<br>(0.424)    |
| Constant                            | 13.668***<br>(0.462) | 13.627***<br>(0.577) | 13.448***<br>(2.346) | 13.908***<br>(2.557) | 12.250***<br>(1.787) |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.



Table 28: Net wealth of single households at the top of the distribution - Slovakia

|                                     | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  |
|-------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                     | Base                 | Age,<br>Education    | Family               | Inheritance          | Labor &<br>Assets    |
| Female                              | -0.302<br>(0.275)    | -0.262<br>(0.218)    | -0.555*<br>(0.310)   | -0.702**<br>(0.338)  | -0.006<br>(0.225)    |
| IMR                                 | 0.202<br>(0.191)     | 0.250<br>(0.235)     | 0.780<br>(0.563)     | 0.888<br>(0.611)     | -0.438<br>(0.509)    |
| Aged 25-34                          |                      | -0.185<br>(0.306)    | 0.034<br>(0.400)     | -0.042<br>(0.389)    | 0.128<br>(0.346)     |
| Aged 45-60                          |                      | 0.404<br>(0.313)     | 0.508<br>(0.372)     | 0.437<br>(0.355)     | 0.067<br>(0.302)     |
| Upper secondary                     |                      | 0.048<br>(0.355)     | -0.180<br>(0.427)    | -0.217<br>(0.502)    | 0.283<br>(0.544)     |
| Tertiary                            |                      | 0.692<br>(0.421)     | 0.213<br>(0.505)     | 0.237<br>(0.572)     | 0.935*<br>(0.560)    |
| One child                           |                      |                      | -0.426<br>(0.370)    | -0.288<br>(0.389)    | 0.426<br>(0.416)     |
| Two children                        |                      |                      | -0.533<br>(0.331)    | -0.306<br>(0.395)    | 0.241<br>(0.538)     |
| Three+ children                     |                      |                      | -5.916***<br>(1.008) | -5.843***<br>(0.961) | -3.319**<br>(1.331)  |
| Never married                       |                      |                      | 0.755<br>(0.472)     | 0.673<br>(0.792)     | -2.132**<br>(0.949)  |
| Divorced                            |                      |                      | 1.156<br>(0.867)     | 1.029<br>(0.936)     | -1.806*<br>(0.997)   |
| Widowed                             |                      |                      | 1.076<br>(0.911)     | 1.185<br>(0.979)     | -1.990*<br>(1.020)   |
| Large inheritance                   |                      |                      |                      | 0.549*<br>(0.291)    | 0.479<br>(0.362)     |
| Small inheritance                   |                      |                      |                      | 0.110<br>(0.263)     | 0.219<br>(0.210)     |
| Employee with<br>temporary contract |                      |                      |                      |                      | -0.500<br>(0.342)    |
| Employer                            |                      |                      |                      |                      | 1.617<br>(1.386)     |
| Self-employed                       |                      |                      |                      |                      | 0.516<br>(0.942)     |
| Unemployed                          |                      |                      |                      |                      | -0.010<br>(0.634)    |
| Out of labor force                  |                      |                      |                      |                      | 1.237<br>(0.906)     |
| Retired                             |                      |                      |                      |                      | 0.698<br>(0.509)     |
| Work/Age Ratio                      |                      |                      |                      |                      | 0.191<br>(0.385)     |
| Weekly working hours                |                      |                      |                      |                      | 0.011<br>(0.112)     |
| Business assets                     |                      |                      |                      |                      | 0.005<br>(0.656)     |
| Home ownership                      |                      |                      |                      |                      | 1.428***<br>(0.414)  |
| Collateralized debt                 |                      |                      |                      |                      | -0.427*<br>(0.231)   |
| Unsecured debt                      |                      |                      |                      |                      | -0.458*<br>(0.261)   |
| Constant                            | 12.548***<br>(0.262) | 12.047***<br>(0.583) | 11.049***<br>(1.332) | 11.026***<br>(1.353) | 12.047***<br>(1.310) |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of net wealth for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.

## A.4 Quantile Regression of Unsecured Debt

Table 29: Unsecured debt of single households at the top of the distribution

|                      |        | (1)                 | (2)                 | (3)                 | (4)                 | (5)               |
|----------------------|--------|---------------------|---------------------|---------------------|---------------------|-------------------|
| Independent Variable |        | Base                | Age & Educ.         | Family              | Inheritances        | Labor & Assets    |
| Austria              | Female | -0.577<br>(0.495)   | -0.694**<br>(0.305) | -0.674*<br>(0.345)  | -0.698**<br>(0.333) | -0.388<br>(0.405) |
|                      | IMR    | -0.012<br>(0.189)   | -0.021<br>(0.212)   | 0.256<br>(0.646)    | 0.205<br>(0.631)    | 1.002<br>(0.964)  |
| Belgium              | Female | 0.319<br>(0.743)    | -0.278<br>(0.625)   | -0.571<br>(0.446)   | -0.140<br>(0.442)   | 0.135<br>(0.453)  |
|                      | IMR    | -0.372<br>(0.296)   | 0.118<br>(0.235)    | -0.066<br>(0.441)   | -0.045<br>(0.470)   | -0.132<br>(0.404) |
| Germany              | Female | 0.536<br>(0.933)    | 0.643<br>(0.433)    | 0.506<br>(0.478)    | 0.312<br>(0.378)    | 0.239<br>(0.362)  |
|                      | IMR    | 0.288**<br>(0.117)  | 0.321***<br>(0.111) | 0.331<br>(0.314)    | -0.179<br>(0.349)   | -0.333<br>(0.427) |
| Spain                | Female | 0.266<br>(0.673)    | -0.103<br>(0.527)   | 0.349<br>(0.500)    | 0.413<br>(0.551)    | -0.031<br>(0.371) |
|                      | IMR    | 0.111<br>(0.093)    | 0.102<br>(0.103)    | -0.027<br>(0.273)   | -0.058<br>(0.253)   | 0.046<br>(0.195)  |
| France               | Female | -0.014<br>(0.337)   | -0.366<br>(0.305)   | -0.138<br>(0.301)   | -0.281<br>(0.299)   | -0.034<br>(0.221) |
|                      | IMR    | 0.349***<br>(0.097) | 0.206*<br>(0.123)   | 0.626***<br>(0.240) | 0.659***<br>(0.221) | 0.273<br>(0.213)  |
| Greece               | Female | -0.190<br>(0.525)   | -0.208<br>(0.594)   | -0.507<br>(0.644)   | -0.400<br>(0.474)   | 0.121<br>(0.493)  |
|                      | IMR    | 0.113<br>(0.085)    | 0.049<br>(0.097)    | 0.241<br>(0.225)    | 0.202<br>(0.155)    | -0.200<br>(0.302) |
| Portugal             | Female | -0.154<br>(0.459)   | -0.353<br>(0.460)   | -0.448<br>(0.537)   | -0.096<br>(0.545)   | -0.350<br>(0.613) |
|                      | IMR    | -0.047<br>(0.113)   | -0.107<br>(0.105)   | -0.156<br>(0.161)   | -0.066<br>(0.157)   | -0.246<br>(0.183) |
| Slovakia             | Female | -0.606<br>(0.476)   | -0.975*<br>(0.566)  | -0.497<br>(0.420)   | -0.604<br>(0.490)   | -0.619<br>(0.450) |
|                      | IMR    | 0.299*<br>(0.156)   | 0.289*<br>(0.169)   | 0.274<br>(0.374)    | 0.289<br>(0.333)    | 0.359<br>(0.412)  |

Notes: This table shows a quantile regression at the 95<sup>th</sup> percentile of unsecured debt for single households (only one adult aged 25-60 present). Standard errors in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Source: HFCS 2010, authors' calculations.