

Chapter 9: Wealth, Top Incomes, and Inequality

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Abstract

Although it is heartening to see wealth inequality being taken seriously, key concepts are often muddled, including the distinction between income and wealth; what is included in ‘wealth’; and facts about wealth distributions. This chapter highlights issues that arise in making ideas and facts about wealth inequality precise, and employs newly available data to take a fresh look at wealth and wealth inequality in a comparative perspective. The composition of wealth is similar across countries, with housing wealth being the key asset. Wealth is considerably more unequally distributed than income, and it is distinctively so in the US. Extending definitions to include pension wealth, however, reduces inequality substantially. Analysis also sheds light on life-cycle patterns and the role of inheritance. Discussion of the joint distributions of income and wealth suggests that interactions between increasing top-income shares and the concentration of wealth and income from wealth towards the top are critical.

Keywords:

Inequality, Wealth, Income, Households, Inheritance, Top Incomes, Cross-national, Comparative

¹ The chapter uses data from the Eurosystem Household Finance and Consumption survey, distributed by the European Central Bank, and from the Luxembourg Wealth Study Database (runs completed between May and June 2016). We are grateful to staff from the Luxembourg Income Study for support in analysis of Luxembourg Wealth Study data. Comments by Ed Wolff on an earlier version of this chapter are gratefully acknowledged.

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9.1 Introduction

We are now in an era when a book with the title *Capital in the Twenty-first Century* can become a bestseller (Piketty, 2014), and politicians of both left and right find it prudent to make reference to the accumulation and ownership of personal wealth. This was not always so. In the twentieth century there was a great deal of academic and policy interest in income distribution and inequality: wealth only occasionally peeked through as a distinct issue.² Although it is heartening to see wealth inequality being taken seriously in economic discussion, key concepts are often muddled, including the distinction between income and wealth; what is to be included in ‘wealth’; and the facts about wealth distribution. The purpose of this chapter is to highlight the main issues that arise in making important ideas and facts about wealth distribution and wealth inequality precise, and to employ newly available data in order to take a fresh look at some of the basic questions about wealth and wealth inequality in a comparative perspective.³

We begin with a review of the fundamental concepts of private wealth and the problems of interpreting them empirically (section 9.2). This means making clear what is and is not included in wealth statistics gathered at household level, and discussing the problems involved in valuing a wide range of financial and non-financial assets, as well as the ways in which measurement of inequality presents particular difficulties in the case of wealth. We also briefly describe comparative survey data on household wealth now becoming available from the Eurosystem Household Finance and Consumption Survey (HFCS) and the Luxembourg Wealth Study (LWS).

In sections 9.3 and 9.4 we use this data to examine the size and composition of household net worth in eight countries—France, Germany, Italy, Luxembourg, and Spain from HFCS, and Australia, the UK and the US from LWS—and compare wealth inequality and income inequality across them. We then focus on the mechanisms that determine the dynamics of wealth distributions. The first aspect concerns what happens within a person’s lifetime. In section 9.5 we focus, as intra-generational life-cycle models do, on how variation in people’s income and wealth over their life cycle contributes to wealth inequality. Public pension rights present special problems in this context and, as discussed in section 9.6, they can substantially influence one’s estimates and interpretations of wealth inequality. The connections between generations through bequests and inheritances are addressed in section 9.7. This has the potential to be a major force in the creation and perpetuation of wealth inequality, and the role of the family is likely to be more important than that of the

² Honourable exceptions to this neglect include Atkinson (1974), Atkinson and Harrison (1978), Miller and McNamee (1997), Revell (1967), and Wolff (1995).

³ Extended discussion and more detailed empirical analysis are available in a longer, discussion paper version of this chapter in Cowell *et al.* (2016).

market in explaining transmission mechanisms. Finally, the attention now being paid to rising income inequality, especially at the top, is a major factor driving interest in wealth and its distribution. Section 9.8 focuses on the relationship between top incomes and wealth inequality, and investigates the wealth holdings of those at the top of the income distribution in household surveys.

9.2 Measuring wealth with survey data

The empirical measurement of wealth is even more challenging than that of income. Here we highlight some of the distinctive empirical and statistical issues; Cowell and Van Kerm (2015) provide a more detailed discussion. The most common concept used to analyse the distribution of household wealth is current net worth, defined as the difference between the monetary value of a household's assets and its total liabilities. Empirically, this definition requires a decision about what assets—financial and non-financial—are included, which is typically dictated by data availability. In general, one will include among non-financial assets the value of the household's main residence and other real estate property, the value of self-employment business, and the value of additional real assets such as cars and jewellery. Financial assets will usually include deposits on current or savings accounts, mutual funds, bonds, shares, and other financial assets. Financial assets also often include life insurance and voluntary *private* pension plans. On the other side of the balance sheet, liabilities typically include home-secured debts, loans and lines of credit, as well as informal debt.

There are two main issues with respect to this definition of net worth. The first is that it misses public pension entitlements (also referred to as social security wealth). One motive for wealth accumulation is to finance consumption in old age, and incentives for accumulation are lower when people are entitled to generous pensions organized through public transfer mechanisms. Ideally, one would like to be able to capture the 'wealth equivalent' of future pension entitlements in a comprehensive measure of net worth which would reflect better the capacity of people to finance future consumption. While this is generally done with private pension plans, it is a difficult task for public pensions, since this requires knowledge of employment careers and of future state pension parameters.

The second key issue is the valuation of assets, especially of real assets, where the choices made may have a major impact on measured wealth inequality, including, for example, the market price, the imputed rent, or the self-reported price for housing (see Bastagli and Hills, 2013, on the UK, and Wolff, 2012, on the US). In a survey context, respondents' assessments of the current market value of financial assets such as stocks and shares and insurance-related long-term savings may not be well-informed. There are even greater difficulties in assigning a market value to unincorporated businesses, which will be very important for the minority of households affected.

Inequality in the distribution of income is generally analysed using the household as the recipient unit, converting total household income into 'single-adult equivalent income' to

take into account economies of scale in household spending and the lower needs of children versus adults. By contrast, application of equivalence scales to household wealth data is more controversial (Bover, 2010, Jäntti, Sierminska and Van Kerm, 2013, OECD 2013, Sierminska and Smeeding, 2005), since the conceptual and empirical issues arising are distinctive. If wealth is interpreted as the value of potential *future* consumption, it is not current but future household composition that matters. If one is interested in wealth as an indication of status or power, there is little reason to adjust for household size. One might also be interested in the wealth held by individuals rather than households—particularly from a gender perspective—but the information required may not be available. Choices can legitimately differ according to the purpose of the analysis; here we analyse the wealth (and income) distribution across households rather than individuals, and do not take differences in household size and composition into account.

Turning to data, various sources have historically been used to obtain information on wealth at the ‘micro’ level: wealth tax data; estate tax data; capitalization methods based on capital income data; and direct surveys. We focus on household surveys, which allow coverage of a wide range of assets for representative samples of a population, and which are becoming available in a growing number of countries. Collecting survey data on wealth is notably more complicated than collecting data on income, with issues of sampling and non-sampling error compounded by the nature of wealth data and its distribution. When sampling from a highly skewed distribution like that of wealth, most samples will underestimate inequality. This can be addressed by over-sampling the upper tail if a sampling frame allowing this to be done satisfactorily is available. Non-sampling errors take the form of differential unit non-response and misreporting of asset (or debt) amounts. Misreporting commonly takes the form of under-reporting or item non-response (which may be particularly high for the wealthy). Re-weighting to improve the representativeness of the sample will be of some help, but as Davies (2009) points out, a perfect fix for differential response is not available. He also notes that under-reporting and item non-response appear to be most severe for financial assets—notably stocks and bonds—whereas house values show little bias and mortgage debt is, on average, only moderately under-reported.

For comparative survey data on household wealth, the Eurosystem Household Finance and Consumption survey (HFCS), initiated and coordinated by the European Central Bank, is an important development. Two waves of HFCS data have been collected to date, but at the time of writing only the first, collected in late 2010 and early 2011 in fifteen Eurozone countries, is available (Household Finance and Consumption Network, 2013). The HFCS provides comparable data based on an *ex ante* harmonized approach involving centrally coordinated definitions of core target variables, a harmonized questionnaire template, and coordinated sampling design and processing. Procedures were adopted regarding (multiple) imputation of missing data; over-sampling of wealthy households; the provision of bootstrap replication weights; and the design of the questionnaire on the model of the US Survey of Consumer Finances (SCF). (for details see Household Finance and Consumption Network, 2013 and 2014, or Bover *et al.* 2016).

The other source we draw on for comparative data is the Luxembourg Wealth Study (LWS, 2016), a large-scale project of *ex post* harmonization of household survey data on wealth from different countries (a sibling of the well-established Luxembourg Income Study, providing harmonized data on household *incomes* across forty-eight countries since the early 1980s). The LWS database contains variables constructed from independent surveys collected in different countries, with a template of variables about household assets, debt, and income filled out adhering as closely as possible to the common LWS definitions (Sierminska, Brandolini and Smeeding, 2006). After the release of a first pilot database in 2007, a new version of LWS has been available since 2016, containing more countries and years—including datasets originally collected through the HFCS for a few countries. It is therefore now possible to go beyond the Eurozone by combining data from the HFCS with LWS, as we do here.

9.3 Evidence on household wealth in eight countries

We now take advantage of survey data available in the HFCS and LWS to provide fresh empirical evidence about the size and distribution of household wealth in developed countries. Of course, one must bear in mind the difficulties in collecting accurate micro-data on household wealth described in the previous section, especially regarding the wealth holdings of the ‘very rich’. We focus on eight countries covering a range of economic environments as well as institutional and cultural backgrounds: Germany, France, Italy, Luxembourg, and Spain (from HFCS), and Australia, the UK, and the US (from LWS). Surveys were run around the years 2010–11 in all countries. Compiling household wealth data that is accurate *and* comparable across countries is an even greater challenge. The HFCS and the newly released LWS data is likely to be the most reliable source available for this purpose; yet, results need to be contemplated keeping in mind the potential limitations of collecting survey data on wealth, and evidence needs to be cautiously interpreted.

Table 9.1 presents the level of net worth in the eight countries examined. The first two columns provide values for average and median net worth expressed in euros.⁴ To convey the size of net worth compared with household income, subsequent columns express net worth in terms of average annual gross household income,—an informative metric for cross-country comparisons.

If we except Luxembourg and, to a lesser extent, Australia, cross-country differences in average net worth are not very large, from just under €200,000 in Germany to €290,000 in Spain and the UK, up to €350,000 in the US. Cross-country variations are further muted when average net worth is expressed in years of average household income, from a low 4.5

⁴ For non-Eurozone countries, original values were converted from national currency at the September average exchange rate of the year of survey.

years in Germany, between 6 and 7 years in France, Australia, the UK and the USA, about 8 years in Italy and Luxembourg and up to 9.3 in Spain.

Since the distribution of net worth tends to be very skewed, it is also useful to examine differences in median net worth, where we see that cross-country differences are much larger. The US now has the lowest value at just under 1 year worth of average annual income, close to Germany. This is more than five times less than the median net worth in Luxembourg (4.8), Italy (5), or Spain (5.8). Cross-country differences are of similar orders of magnitude if we look at the other two quartiles (the 25th and 75th percentiles), also shown in Table 9.1. These figures provide a first indication that, although the aggregate levels of net worth are not hugely different in the countries considered here, their distribution across households is remarkably different.

[Table 9.1 about here]

It has been well documented that the lion's share of total assets is in the form of *real* assets, and in particular in the value of owner-occupied households' main residence (Sierminska, Brandolini and Smeeding, 2006; Cowell and Van Kerm, 2015). Figure 9.1 depicts the composition of net worth in the eight countries examined here. In each panel, the unit length bar at the top represents total household assets. The white segment shows how much total assets are reduced by debts to give net worth. The following four shorter segments show the composition of total assets across four broad asset types: financial assets first (in light grey); and then three real asset types (in dark grey)—the value of households' main owner-occupied residence, the value of self-employment businesses, and the value of other real assets (such as other real estate, cars, jewellery, etc.). (The actual values of net worth, debt, and each component expressed in years of average household income are shown on the segments.)

Figure 9.1 shows that, in the aggregate, the level of debts represents a relatively small fraction of total assets, in the range of 5–15 percent. This is in line with estimates provided, such as in Davies (2009). The largest incidence of debt relative to total assets is in the US, Australia and the UK, being somewhat lower in the Eurozone countries, especially in Italy. On the other side of the balance sheet, the importance of real assets—housing wealth in particular—over financial assets is clear. Households' main residence is on average worth between two years of income (in Germany or the US) and five years of income (in Spain and Italy). On average, households have about one year's worth of average income in financial assets in almost all countries—the US again being an exception with about three years' worth.

[Figure 9.1 about here]

How distinctive is the composition of net worth for the wealthiest? The surveys are unlikely to adequately represent the richest households in the population given the difficulties in capturing this segment in surveys, but comparing the wealthiest in our samples to the rest of

the population remains an illuminating exercise.⁵ Figure 9.2 shows the asset composition of the wealthiest 5 percent. Their average net worth ranges from about forty years of the average annual income in Germany and the UK, to up to eighty years in the US (that is more than ten times the national average). Debts account for a much smaller proportion of total assets than in the overall population, although higher in absolute value on average. The share of financial assets is not much bigger than in the rest of the population, but among real assets, both self-employment businesses and ‘other real assets’ (which notably include real estate other than one’s own residence) are more important.

[Figure 9.2 about here]

9.4. Evidence on wealth vs. income inequality

As is well known, wealth is much more unequally distributed than income. Figure 9.3 displays Lorenz curves and Gini coefficients for gross household income, total assets, and net worth.⁶ The Lorenz curve plots cumulative wealth (or income) shares against cumulative population shares, where being further from the main diagonal indicates a more unequal distribution. The Lorenz curve for net worth briefly cumulates below zero since households with the lowest net worth have liabilities exceeding the value of their assets.⁷ The much larger inequality in wealth compared with income is clear: Lorenz curves for wealth are further away from the 45° line and their Gini coefficients are larger. This holds even though we look at inequality in gross income (direct taxes further reduce inequality). The *degree* to which wealth is more unequally distributed, however, varies across countries. The difference is smallest in Australia, Spain, and the UK (where the Gini of net worth is still around nineteen points larger than the Gini of income), and it is largest in Germany, Spain, and France (where the net worth Gini is about thirty points larger than the income Gini). Countries also differ remarkably in terms of the level of inequality: from the lowest net worth Gini of 0.580 in Spain to the highest of 0.758 in Germany and 0.852 in the US. These cross-country variations are bigger than those observed for income inequality which range between 0.384 (France) and 0.440 (UK) or 0.548 (USA).

In all countries, inequality of net worth is greater than inequality of assets: deducting liabilities from household assets further exacerbates inequality. This means that the burden of debts is disproportionately carried by households with lower assets too. It is again in the US where this effect is the strongest, while it is hardly noticeable in Italy, Germany, or France.

⁵ All but the Italian samples attempt to over-sample wealthy households.

⁶ The Gini coefficient is prominent in wealth analysis because it remains appropriately defined in the presence of negative values, unlike many other measures based on logarithmic or fractional power transformations of the data. For further discussion see Cowell and Van Kerm (2015).

⁷ The fraction of households having zero or negative net worth is relatively low, and comparable across countries at about 2–4 percent, with notable exceptions of Germany (9 percent) and the US (14 percent).

[Figure 9.3 about here]

Popular debates tend to emphasize the gap between ‘the top’ and ‘the bottom/rest’. How much does the distance between the wealthiest and the rest of the population drive overall inequality? Given a partition of the population into two groups, we can examine how much of the overall Gini coefficient can be attributed to inequality *within* versus *between* the groups. Table 9.2 shows decomposition components for a partition into the richest 5 percent and the bottom 95 percent. The first four columns report Gini coefficients (overall, within the bottom 95 percent, within the top 5 percent, and between the two group means), while the last four show contributions of each component divided by overall Gini. Clearly, overall inequality is not just a matter of inequality between these groups. There is more inequality within the bottom 95 percent (column 2) than between the two groups (column 4). Moreover, inequality within the top 5 percent is substantial. Inequality within the bottom 95 percent accounts for between 45 and 55 percent of overall inequality, while inequality between the groups accounts for between 44 and 54 percent. In the US, however, inequality between the two groups accounts for 66 percent. Inequality within the top 5 percent accounts for only a very small share of overall Gini, mostly due to the small size of this group.

[Table 9.2 about here]

9.5. Accumulation over the life cycle: age profiles in wealth holdings

At least in part, households accumulate assets during their working life to provide income security and finance consumption in old age. The variation in wealth across the life cycle and wealth inequality *within* cohorts for people at the same stage of their lives are thus of particular interest (Paglin, 1975; Almas and Mogstad, 2012). Figures 9.4 and 9.5 display average and median household net worth by age of the household head, expressed in terms of average annual income in each country. As expected, wealth displays a hump shape when plotted against age. Because we use a single cross-section of the population, the age profiles that we show here may reflect a generational pattern (a cohort effect) or a genuine household-level accumulation process over the life cycle. But the similarity of age profiles across countries is worth pointing out: the shape predicted by basic life-cycle models is observed in all eight countries. Peaks in average or median net worth are observed at 60 or 65 years of age, with only very few exceptions.

The steepness of the ‘accumulation phase’ of the age profile varies somewhat across countries, with Australia and Luxembourg seemingly exhibiting the fastest growth of average and median net worth between the ages of 25 and 65 (or 55 in Australia). The growth is also fast in the US if we examine average net worth, but it disappears completely if one examines median net worth which grows at a slow, but continuous pace. There is also some cross-

country variation in the ‘decumulation phase’ after age 60–65: in most countries, average net worth at age 80 is about the same as at age 40–45. Notable exceptions are Australia and the US, which display a much slower decline in net worth—both in the average and the median.

Systematic variations in average net worth by age are indicative of ‘between- (age) group inequality’. Countries with steep accumulation and decumulation profiles, such as Luxembourg and possibly Spain or Italy, can plausibly be seen as displaying the largest between-group inequality. To capture inequality that is not driven by age profiles in wealth accumulation, Figure 9.6 shows *within-group* Gini coefficients by age. In general inequality tends to decline with age. However, the profile differs across countries for older ages: it keeps declining in the UK and US, but may also flatten out (in Spain or France) or even increase in very old age.

In section 9.4 we contrasted the net worth of the top 5 percent and of the bottom 95 percent. Figure 9.7 shows where the top 5 percent are distributed by age group: it plots the probability of being in the top 5 percent by age of household head. The hump shape observed in average net worth is again clear, And the similarity of this plot across countries is again striking, with the peak at age 60–65 in all countries.

Figure 9.7 also shows the probability of being in the top 5 percent of *income* distribution. This probability is again hump-shaped, but with a peak at an earlier age of around 50. With the exception of France, older households have a very low probability of being in the top 5 percent of income distribution. In contrast, they are largely over-represented in the top 5 percent of the net worth distribution, except in Germany and Spain. At the other end of the age range, households whose head is younger than 35 are under-represented in the top of both income and net worth distribution.

[Figures 9.4, 9.5, 9.6, 9.7 about here]

9.6. Pension wealth and inequality

Standard measures of household wealth include only marketable wealth—i.e. the value of actual holdings such as savings, bonds, housing, and loans, and sometimes the value of private pension balances. The present value of expected future pension streams stemming from the accumulation of pension entitlements during a person’s career is generally not taken into account. However, Feldstein (1974) estimated that public pensions reduce personal saving by 30–50 percent in the US. Such a ‘crowding-out effect’ of public transfers on private wealth can therefore mislead the analysis of wealth distributions. Given that the levels of private wealth observed today have been affected by the accumulation of social security contributions, it is reasonable to include what is called ‘social security wealth’ in

comprehensive measures of household wealth. Wolff (2015) illustrates this with US data for 2010 relating to heads of households aged 47–64 years, and shows that the Gini index of net wealth falls from 0.83 to 0.80 after private pension wealth is added, and that it is further reduced to 0.66 with the inclusion of social security wealth.

The ideal database with which to compute pension wealth and its contribution to wealth inequality is one that includes social security administrative records, allowing calculation of future pension entitlements and household wealth holdings. Such databases are scarce, and hence most studies rely on household surveys on wealth holdings and employ alternative methods to compute pension wealth. Focusing on elderly households only, however, simplifies the computation. For retirees, the computation of pension wealth is easy because the benefits are already received and reported by individuals.⁸ Here, we explore the distributional effects of including public and private pension wealth in an augmented measure of household wealth among retirees in thirteen European countries participating in the first and only available round (circa 2010) of the HFCS. We restrict the analysis to all households whose reference person is aged 65–84.

Country-, age- and sex-specific individual survival probabilities are drawn from Eurostat’s life tables. We assume that future pensions retain their real value—i.e. future increases in pensions and inflation are balanced out. Similar to Frick and Grabka (2013) and Crawford and Hood (2016), we assume a discount rate of 2 percent, but instead of simply employing the life expectancy as the horizon to receive pensions, we compute an ‘annuity price’ for each individual and multiply it by the corresponding pension. The value of pension wealth is simply the product of the annuity price of the individual and the value of the yearly pension; see Cowell *et al.* (2016) for details. Pension wealth is computed for the reference person of the household and the spouse if she/he also receives a pension. We then sum up the pension wealth of both the reference person and spouse to obtain the measure of pension wealth at the level of the household, which is then added to the household’s net worth.

[Table 9.3 about here]

[Figure 9.8 about here]

Table 9.3 reveals a sharp fall in wealth inequality when pension wealth is included in the measure of household wealth. Germany is the country that experiences the largest drop in the Gini index, which decreases from 0.681 to 0.436—i.e. 0.245 points. Austria, the Netherlands and France record a decrease in the Gini index of around 0.19–0.21 points. Spain is the country that reports the most modest decrease in the Gini index, which

⁸ In the case of non-retirees, some studies have employed various forms of statistical matching between survey information and social security data (Frick and Grabka 2013; Engelhardt and Kumar 2011), self-reported social security information (Wolff 2007), and self-reported retrospective and subjective information (Alessie, Angelini and van Santen, 2013).

decreases by 0.073 points, from 0.554 to 0.481. Public pensions have a sizeable and clear equalization effect on the distribution of wealth. The effect of private pension wealth on the distribution of wealth is, in general, not very important after public pension wealth has been included, although Austria and Finland are exceptions. The Gini index of wealth in Austria falls from 0.696 to 0.450 when public pensions are added, but it increases to 0.485 when both public and private pensions are included in the measure of household wealth. The opposite effect is found in Finland where both public and private pension wealth reduces wealth inequality. In that country, the Gini index drops from 0.516 to 0.453, and to 0.379 after public and private pension wealth is included, respectively, in household wealth. One of the distinctive characteristics of the Finish pension system is the existence of a state pension for all citizens and a well-developed system of compulsory occupational pension plans. A similar case is the Netherlands, although the occupational pensions have a negligible effect on the distribution of household wealth. In other European countries, the pensions are mostly based on public schemes, while the market for occupational pensions is limited.

Figure 9.8 plots the difference between the Gini indexes of net worth and augmented wealth (the last column of Table 9.3, which we call ‘equalization power’) against the relative size of pension wealth, which is measured as the ratio of the means of total pension wealth over national net worth. It is quite clear that, in line with Marx, Nolan and Olivera (2015), a low level of inequality in rich economies cannot be achieved with a low level of social spending: countries that spend more in pensions are also able to reduce wealth inequality to a greater extent. The correlation between the equalization power of pensions and the size of pension wealth is large at $r = 0.70$. Interestingly, the correlation becomes stronger ($r = 0.97$) after removing Finland and the Netherlands, which in our sample are the countries with the most developed systems of occupational pensions.

9.7 Inheritance

The importance of bequests in the accumulation of wealth has been widely acknowledged, but there is no agreement as to whether they have equalizing or dis-equalizing effects on the distribution of wealth. Inheritances may reduce wealth inequality because they represent a larger share of the holdings of poorer households, but they can also significantly increase the wealth of individuals who are already wealthy and therefore increase inequality. Wolff and Gittleman (2014) report that around 20–30 percent of household wealth in the US stems from bequests and other forms of wealth transfers, and find that inheritances have equalizing effects on wealth distribution. Boserup, Kopczuk and Kreiner (2016) use information from Danish wealth registers and find that bequests reduce top wealth shares. Inheritances can also reduce wealth inequality according to the simulations by Gokhale and Kotlikoff (2002) and Gokhale *et al.* (2001), but they have a limited role in the generation of wealth inequality, with earnings inequality being a much more important determinant of wealth inequality. In the same line, Hendricks (2007) points out the importance of accounting for the joint distribution of wealth and earnings in order to build a satisfactory

theory of wealth inequality;⁹ and the survey by Benhabib and Bisin (2016) identifies stochastic earnings as one of the key factors for generating wealth distributions (together with stochastic returns and exploding wealth accumulation).

We can also exploit our data to examine the potential role of inheritance in the build-up of the measures of net worth inequality reported earlier in this chapter. Our HFCS data contains information about inheritance elicited from the following question: ‘Have you/has any member of the household ever received an inheritance or a substantial gift, including money or any other assets (from someone who is not part of your current household)?’ We also know the amount received for the three most significant transfers. We use this information to assess the total value of those transfers and inheritances.¹⁰ Similar information is available in the three LWS countries.

Table 9.4 presents the share of households that report having inherited, and the estimated total value thereof for different levels of current net worth. The last panel of the table also reports the share of households that *expect* to receive income in the future (although this information is available only for three countries). The share of households having received inheritance or a substantial gift rises from a low 13 percent in the UK to as high as 40 percent in France. For the other six countries with available data it is in the range of 20–27 percent. Variations are of similar magnitudes if we consider the mean value of those inheritances, from a low 0.1 year of average annual income in the UK up to 0.9 year of annual income in France. These amounts are low compared with the average values of net worth in Table 9.1—one-sixtieth of average net worth in the UK, and one-seventh in France. But of course these are valued at the time of the transfer, whereas net worth is valued at current prices. We also often know the year the transfer was received and could therefore make a valuation to current values by assuming, for example, a 2.5 percent constant annual return. Unfortunately, missing data on the timing of the transfer often limits the ability to reliably convert the nominal value of transfers to current values, and we do not pursue this in this chapter.

[Table 9.4 about here]

An indirect indication that inheritance plays a role in building up wealth inequality is that the share of people receiving inheritance increases with the position of households in the distribution of net worth. The share of people having inherited among the 20 percent least wealthy is much lower than average, from 7 percent (in Germany) to 15 percent (in France). In contrast, the share of households having received some transfer among those in the top 5 percent of the net worth distribution ranges from 45 percent (in the US and Luxembourg) to

⁹ See Jäntti, Sierminska and Van Kerm (2013, 2015) for an examination of the joint distribution of income and wealth.

¹⁰ The HFCS also asks whether the household's main residence has been inherited or received as a gift, and if so for what share. Because the valuation of such a transfer is , and because such information is not readily available in the LWS database, we ignore this source of transfer in-kind in our analysis.

74 percent in France (the UK is exceptional here, with only 19 percent). The value of inheritance is also much higher among those in the top 5 percent.

This gradient partly reflects an age effect as older households are more likely to have received inheritance in the past *and* to have accumulated wealth through their own savings. Looking at the share of people who *expect* to receive inheritance nevertheless shows that households in the bottom 20 percent are also less likely to inherit in the future. In the US, those in the top 5 percent are also substantially more likely to inherit in the future. These numbers suggest that inheritance may reinforce inequality in net worth, at least in the tails of the distribution, and this has implications for intergenerational transmission of inequality.

9.8 Top incomes and wealth inequality

Estimates for a wide range of countries of the share of total income going to the top of the distribution, brought together in the World Top Incomes Database, show dramatic changes over time (Atkinson and Piketty, 2007 and 2010; Atkinson, Piketty and Saez, 2011). Broadly speaking, a sharp decline in top income shares has been seen across the rich countries through much of the twentieth century up to around 1980, when it either flattened out or went into reverse. The increase since 1980 has been substantial in the English-speaking rich countries, less so in the Nordic and Southern European countries, and very modest or non-existent in Continental European countries such as France, Germany, the Netherlands, and Switzerland. The linkages between these trends in top incomes, and the distribution of household wealth, have received some recent attention, but many questions about this relationship remain open. Whereas top incomes a century ago were dominated by income from capital, and much of the decline in their share was associated with declines in income from that source, in recent decades the upturn in top income shares in the UK and US has been mainly due to increased earnings, but with income from capital also contributing. Capital gains are important in this context but very difficult to trace; realized capital gains appear to have become more important in the US and Sweden (Armour, Burkhauser and Larrimore, 2013; and Roine and Waldenstrom, 2012).

The interplay between wealth and income distributions, and the role of taxation of income and wealth (including capital gains), clearly needs to be better understood. However, the top incomes estimates are, for the most part, drawn from income tax systems, which may not be readily aligned with data on incomes from household surveys, much less with data on wealth from similar household surveys or administrative sources. The World Top Income Database has recently been extended to include series on wealth-income ratios and the distribution of wealth, as well as the different forms of capital assets, and has been renamed the Wealth and Income Database.¹¹ This will facilitate the analysis of long-term trends in both income and wealth distributions, but needs to be complemented by efforts to study these

¹¹ <http://www.wid.world/#Home>

distributions jointly. The surveys we are employing here allow this to be done, subject to the major limitation that they would not be expected to reliably capture the very top of the income distribution.

We look in Table 9.5 at the mean net wealth of households in different parts of the distribution, expressed relative to the mean annual income of those households. We see that in each country this ratio is higher for the bottom quintile and top 5 percent of the distribution than for households between the 20th and 95th percentiles. The relatively high ratio for the bottom reflects the fact that mean net wealth is often as high or higher than for those between the 20th and 90th percentiles—largely the value of own residences—and is being expressed as a ratio of much lower mean incomes. Focusing on the top 5 percent of the income distribution, we see that Spain is distinctive in its relatively high wealth/income ratios across the rest of the distribution but not at the top. Germany exhibits a low net wealth/mean income ratio of about 5.5 among the top 5% of the income distribution, but so does the UK. Australia is next at 7.3, but Spain is now similar to France at around 8.5, while Italy, Luxembourg, and the US have ratios over 9.

[Table 9.5 about here]

These wealth/income ratios must be interpreted in light of the underlying distribution of income: mean income for the top 5 percent is generally about four times the mean income across all households, although the US is a striking outlier in that regard at 6.7 times the overall mean. So the mean net worth of the top 5 percent represents around twenty-two years of income for the average household in Germany or the UK, twenty-seven years for Australia, about thirty-five years in Spain, France and Italy, forty-three years in Luxembourg and, strikingly, over sixty years in the US.

[Table 9.6 about here]

The composition of the wealth held by those towards the top of the income distribution is distinctive, though rather less so than top households ranked by wealth. The value of the main residence generally accounts for only 25–30 percent of total gross assets, though in the UK it goes up to 40 percent. The US is distinctive in the share made up of financial assets, which is over 40 percent, whereas in the other countries this figure is generally around 20–25 percent. Outstanding debt generally represents 10 percent or less of gross assets for the top 5 percent.

Income generated from wealth in the form of interest, dividends, and rent accounts for a higher share of income for the top 5 percent than other households, ranging from about 3 percent in Spain and Luxembourg to 5 percent in Germany and Italy, and 8–9 percent in Australia, the UK, and the US. This is generally about twice the corresponding percentage for the households between the 90th and 95th percentiles, except in the UK. Relating the flow of income from interest and dividends to the underlying stock of financial assets reported by these households, this flow represents 3–4 percent of the stock for most of the countries

covered, but less than 2 percent in the case of the US. As Table 9.7 shows, this ‘return’ is generally higher than the corresponding figures calculated for households between the 90th and 95th percentiles (although not in the UK); the ‘return’ for the latter income group is even lower in the US than for the top 5 percent.

[Table 9.7 about here]

9.9 Conclusion

Household wealth and its distribution is a core aspect of the broader concept of wealth—the focus of this volume. This chapter has highlighted the main issues that arise in making more precise important ideas and facts about wealth distribution and wealth inequality, and has employed newly available data to take a fresh look at some of the basic questions about wealth and wealth inequality in a comparative perspective. For this purpose it has drawn on new data allowing a comparison of the distribution of household wealth in eight rich countries. The countries examined differ in institutional settings, notably pension systems, the tax treatment of assets and liabilities, and the housing market. In spite of these differences, there is much similarity in many facets of the distribution of net worth across countries. The composition and levels of assets and liabilities (when expressed in terms of average incomes) are generally similar, though the US stands out as distinctive in various important respects. (This may at least partly reflect the high quality of the US data on wealth—in particular, its capacity to cover the very rich). Wealth is considerably more unequally distributed than income, and inequality between the top 5 percent of the wealth distribution and the remaining 95 percent contributes from about half to two-thirds of total inequality.

The increasing availability of harmonized sources to measure household wealth enhances our capacity to elucidate the very concept of wealth. We have shown, for example, that extending the definition of net worth to include pension wealth substantially reduces wealth inequality. Our analysis has also shed light on both life-cycle wealth patterns and the role of inheritance in wealth accumulation. While life-cycle patterns were broadly similar across the countries studied, the share of households reporting receipt of an inheritance/transfer, and the mean value of those inheritances, was much more variable. Transfers were more common and substantial for those in the top 5 percent of the net worth distribution, and their contribution to wealth accumulation is a priority for further analysis. Our discussion of the joint distributions of income and wealth revealed that the dynamic interactions between increasing top income shares and the concentration of wealth and income from wealth towards the top is a critically important topic.

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Tables and Figures

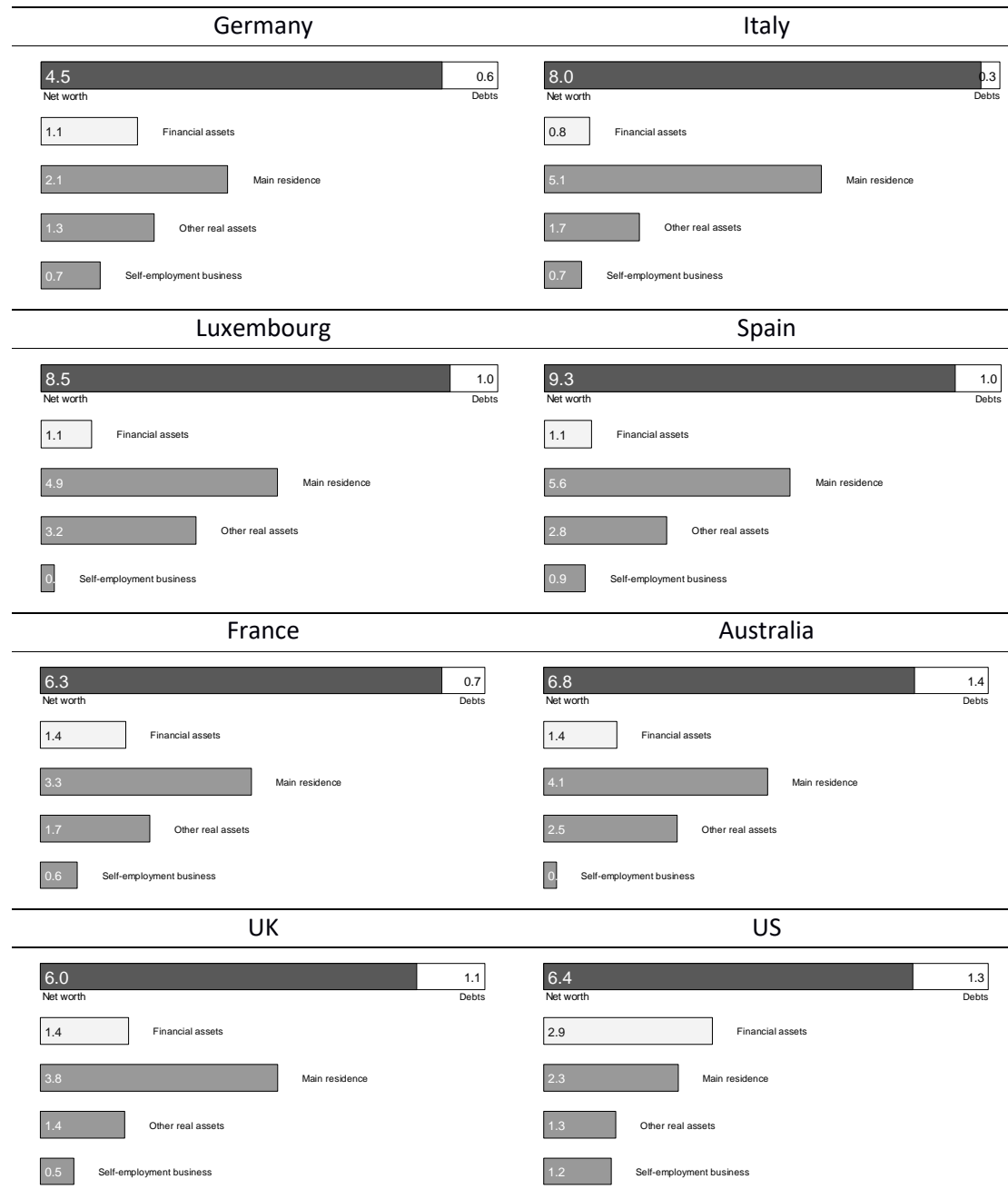
Table 9:1: Level of net worth

	Mean	Median	Mean	1st quartile	Median	3rd quartile
	€		(average annual income)			
Germany	195,170	51,358	4.5	0.2	1.2	4.8
Italy	275,205	173,500	8.0	1.0	5.1	9.4
Luxembourg	710,092	397,841	8.5	0.7	4.8	8.8
Spain	291,352	182,725	9.3	2.5	5.8	10.6
France	233,399	115,804	6.3	0.3	3.1	7.6
Australia	434,952	263,639	6.8	1.1	4.2	7.7
UK	290,285	168,096	6.0	0.8	3.5	7.2
US	348,835	51,275	6.4	0.1	0.9	3.8

Notes: Values in euros are converted at the September average exchange rate of the year of survey, namely 0.72 €/AU\$, 0.75 €/US\$ and 1.15 € /£. Values expressed in average annual income have been divided by the mean annual gross total household income in the respective country.

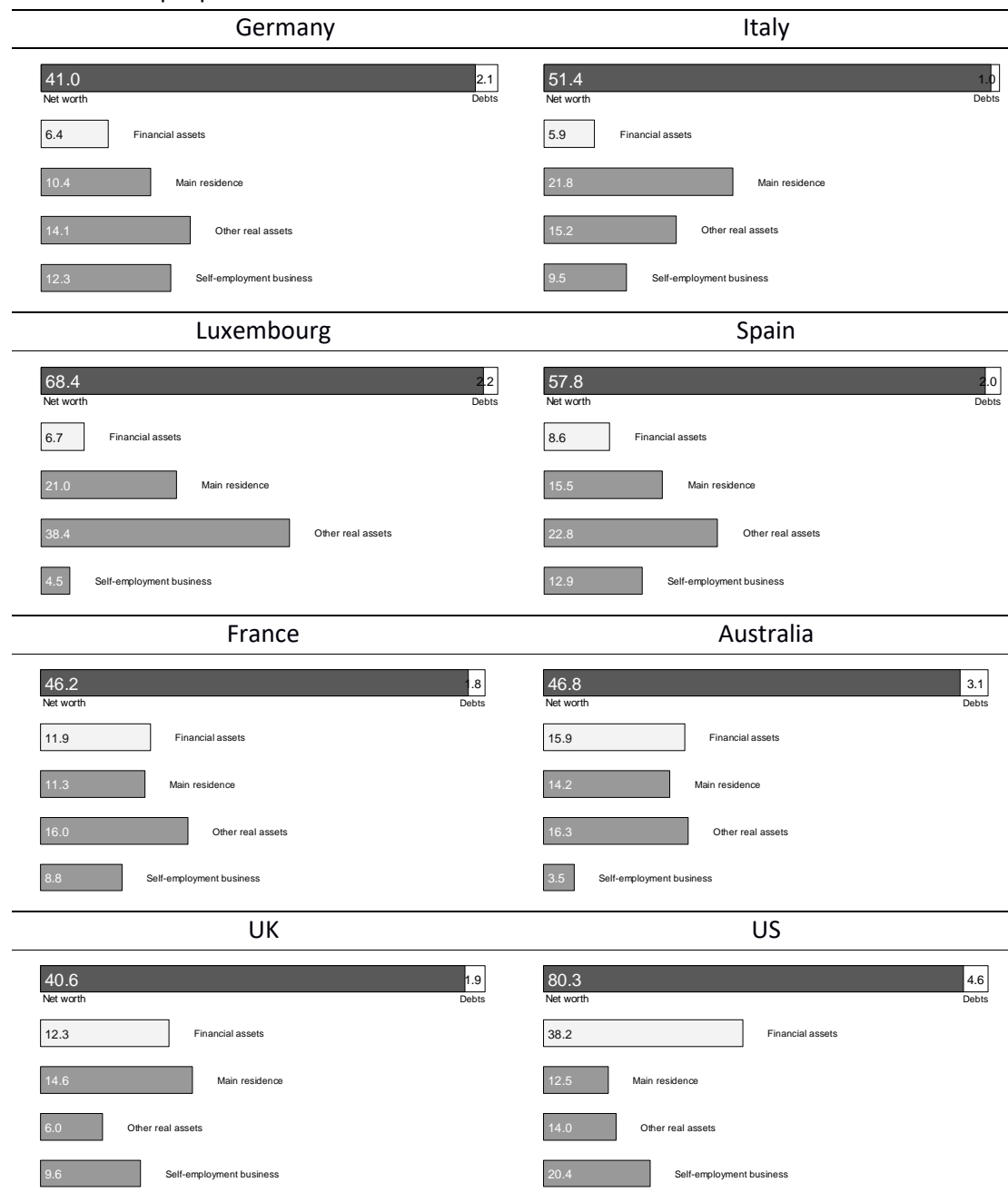
Source: Own calculations from HFCS and LWS microdata.

Figure 9.1: Composition of average net worth: real assets, financial assets, and debt



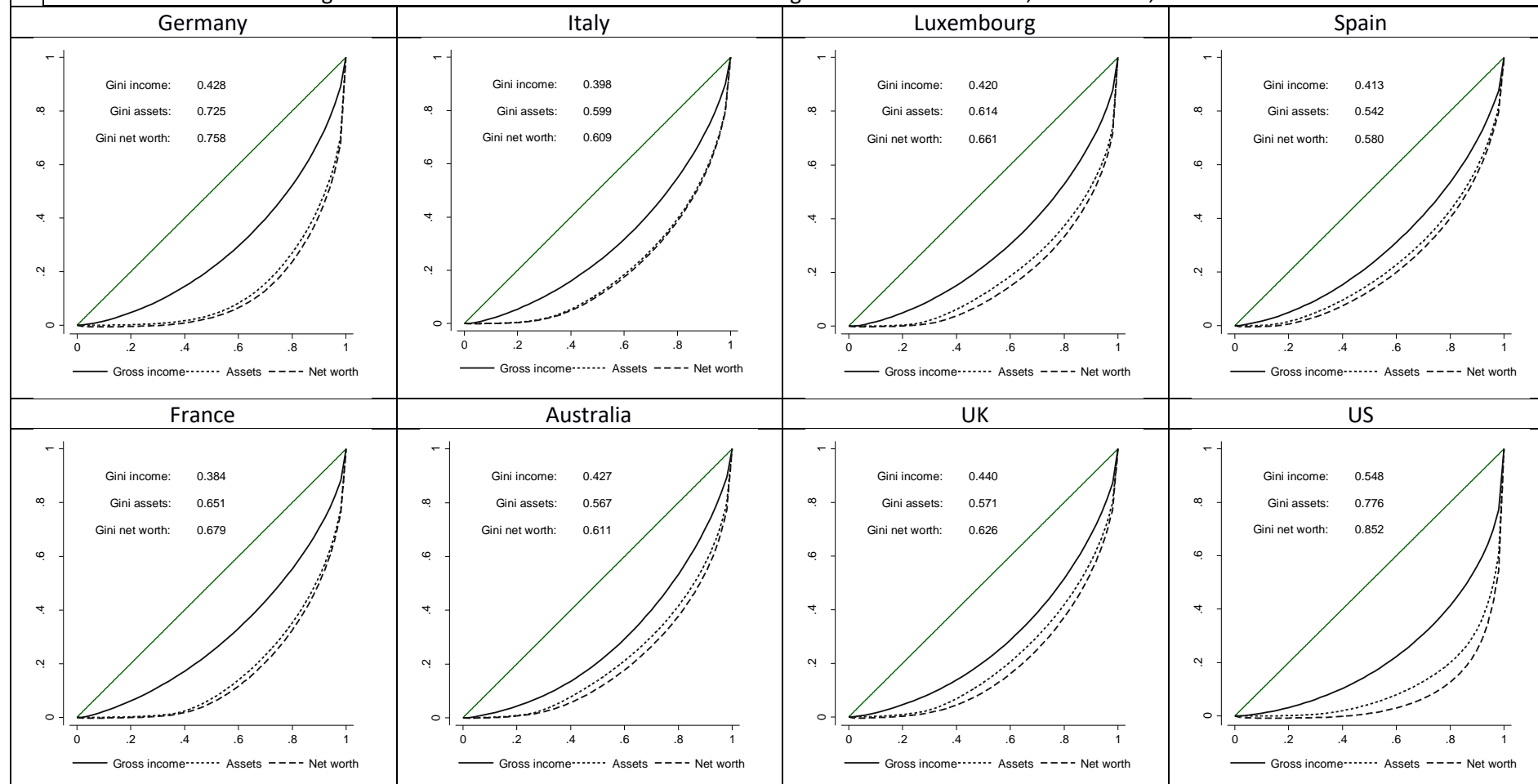
Source: Own calculations from HFCS and LWS micro-data.

Figure 9.2: Composition of net worth among the wealthy: real assets, financial assets, and debt in the top 5 percent of the net worth distribution



Source: Own calculations from HFCS and LWS micro-data.

Figure 9.3: Lorenz curves and Gini coefficients for gross household income, total assets, and net worth

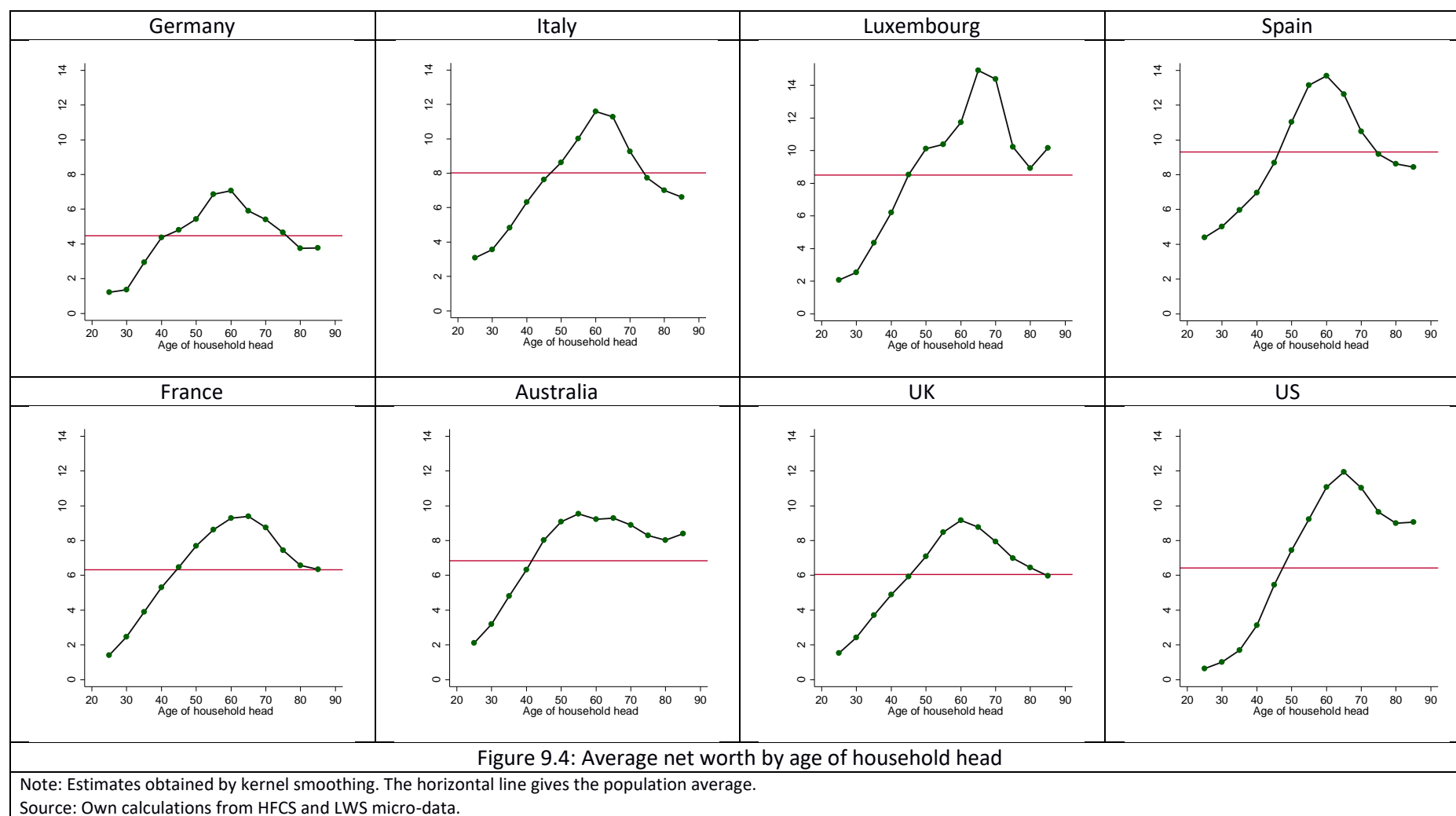


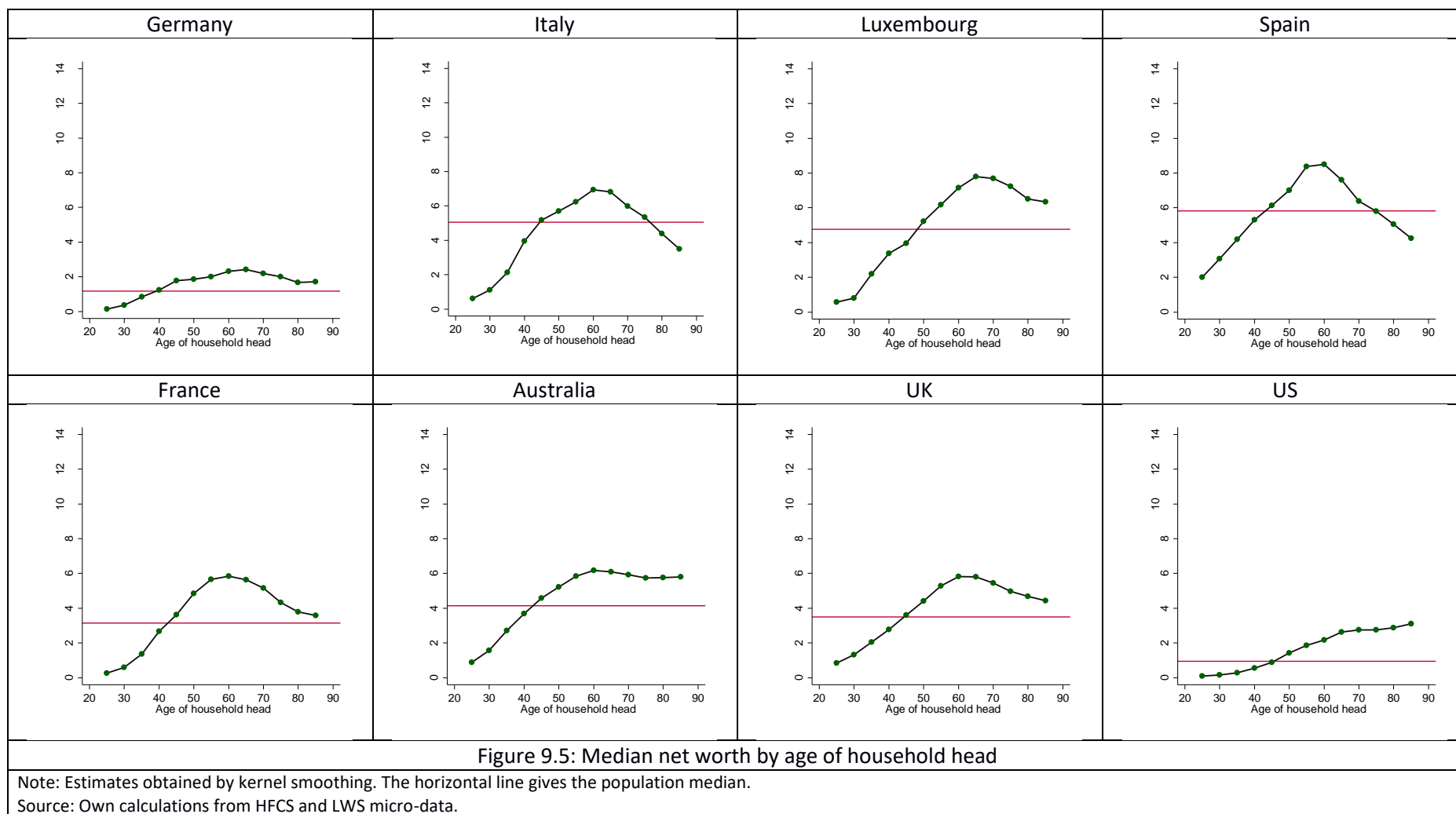
Source: Own calculations from HFCS and LWS micro-data

Table 9.2: Decomposition of Gini coefficients of net worth by groups: the bottom 95 percent versus the top 5 percent

Column	Gini coefficients				Contributions			
	All	Within bottom 95%	Within top 5%	Between	All	Within bottom 95%	Within top 5%	Between
	1	2	3	4	5 = 6 + 7 + 8	6	7	8
Germany	0.758	0.661	0.442	0.406	100	45	1	54
Italy	0.609	0.516	0.334	0.271	100	55	1	44
Luxembourg	0.661	0.531	0.436	0.349	100	46	1	53
Spain	0.580	0.480	0.374	0.259	100	54	1	45
France	0.679	0.591	0.386	0.315	100	53	1	46
Australia	0.611	0.500	0.386	0.291	100	51	1	48
UK	0.626	0.529	0.396	0.286	100	53	1	46
US	0.852	0.742	0.486	0.565	100	32	2	66

Source: Own calculations from HFCS and LWS micro-data.





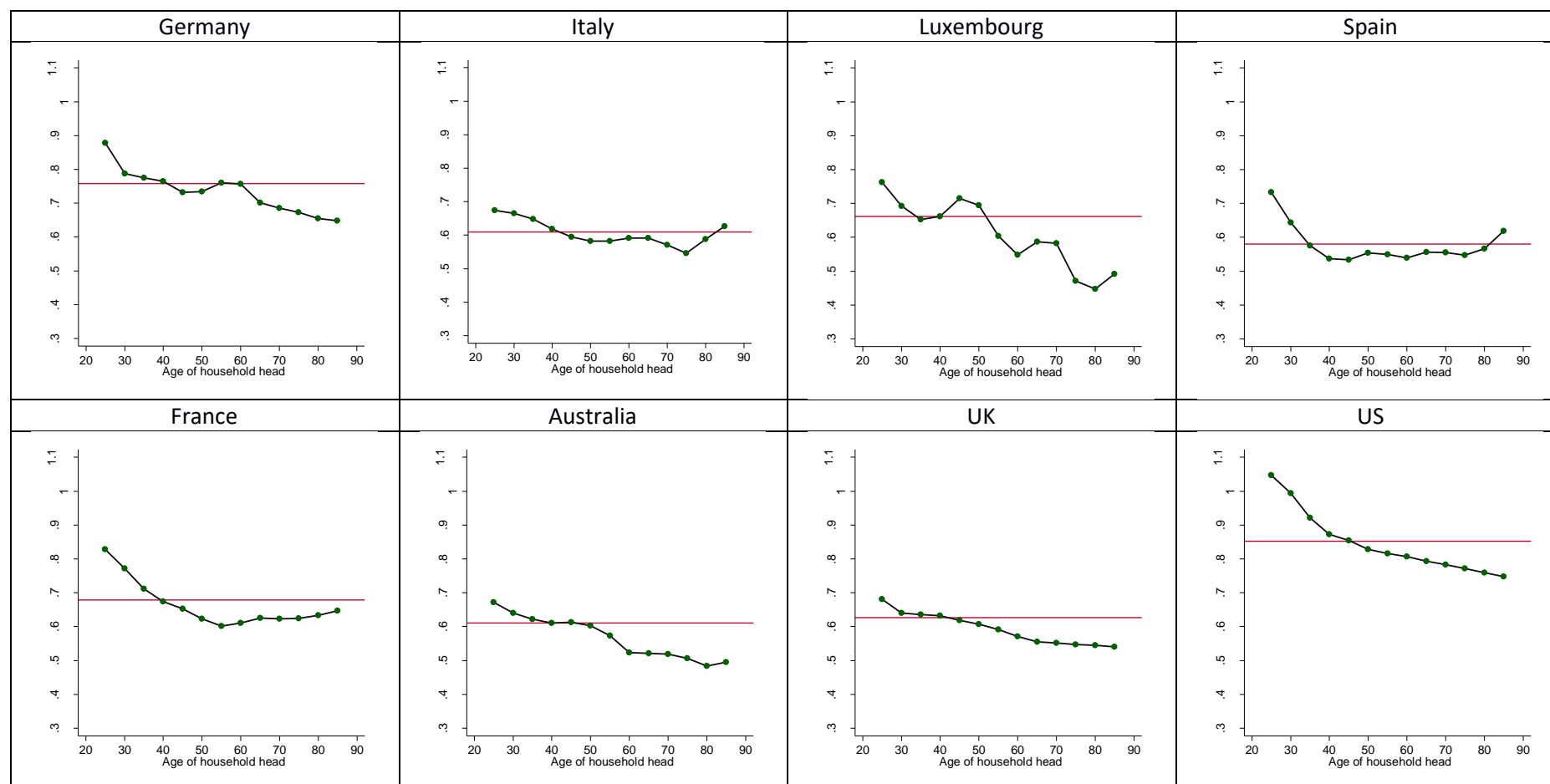


Figure 9.6: Within-cohort Gini coefficient

Note: Estimates obtained by kernel smoothing. The horizontal line gives the population Gini coefficient.

Source: Own calculations from HFCS and LWS micro-data.

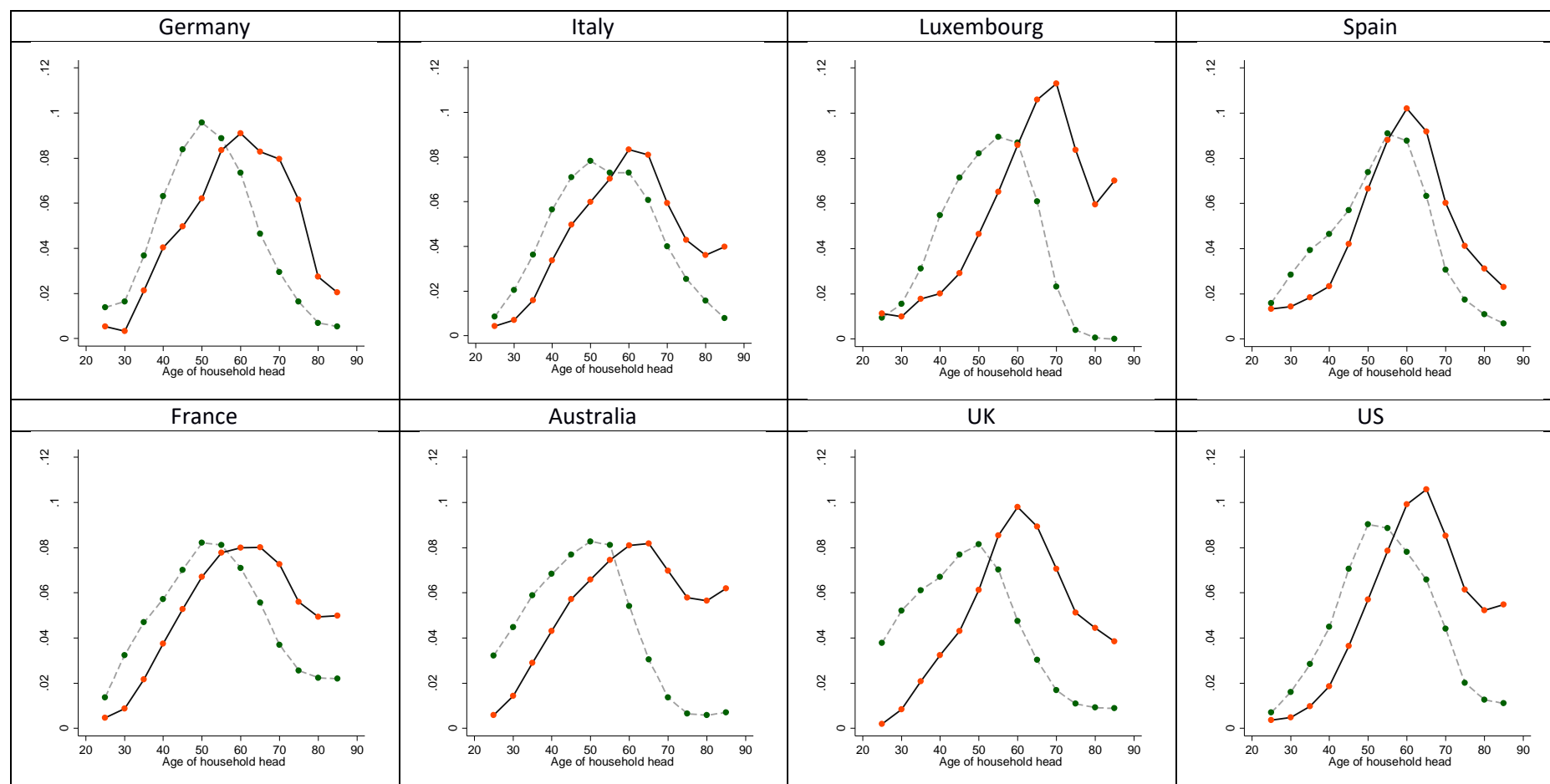


Figure 9.7: Share of households belonging to the richest 5 percent of the overall income, or net worth distribution by age of household head

Note: Estimates obtained by kernel smoothing.

Source: Own calculations from HFCS and LWS micro-data.

Table 9.3: Gini indices and means of household wealth (€, circa 2010)

Country	Sample		Net worth		Including public pension wealth		Including public and private pension wealth		Difference in Gini (1 – 3)
	n	N	mean	Gini (1)	mean	Gini (2)	mean	Gini (3)	
Austria	524	794,743	238,141	0.696	604,245	0.450	651,690	0.485	0.211
Belgium	620	1,062,455	477,203	0.559	782,970	0.411	787,675	0.412	0.147
Germany	1,022	9,860,230	210,224	0.681	516,755	0.430	540,263	0.436	0.245
Spain	2,242	4,170,933	300,627	0.554	443,503	0.481	443,503	0.481	0.073
Finland	1,887	524,541	199,119	0.516	228,812	0.453	548,247	0.379	0.138
France	4,169	6,271,336	287,467	0.626	632,385	0.432	633,723	0.432	0.194
Greece	546	911,786	124,338	0.507	300,943	0.361	301,860	0.359	0.148
Italy	2,592	6,914,360	292,248	0.581	567,111	0.431	574,544	0.435	0.146
Luxembourg	159	36,472	1,067,059	0.564	1,686,588	0.450	1,714,426	0.448	0.116
Netherlands	381	1,653,892	237,626	0.561	425,977	0.358	676,730	0.357	0.204
Portugal	1,406	1,101,183	154,443	0.656	294,621	0.509	297,802	0.511	0.145
Slovenia	79	169,154	101,549	0.484	190,796	0.424	197,207	0.408	0.076
Slovakia	181	357,333	71,099	0.379	140,693	0.258	141,771	0.261	0.118

Source: First round of HFCS (circa 2010) and Life tables from Eurostat, year 2010

Figure 9.8: Size and equalization power of pension wealth

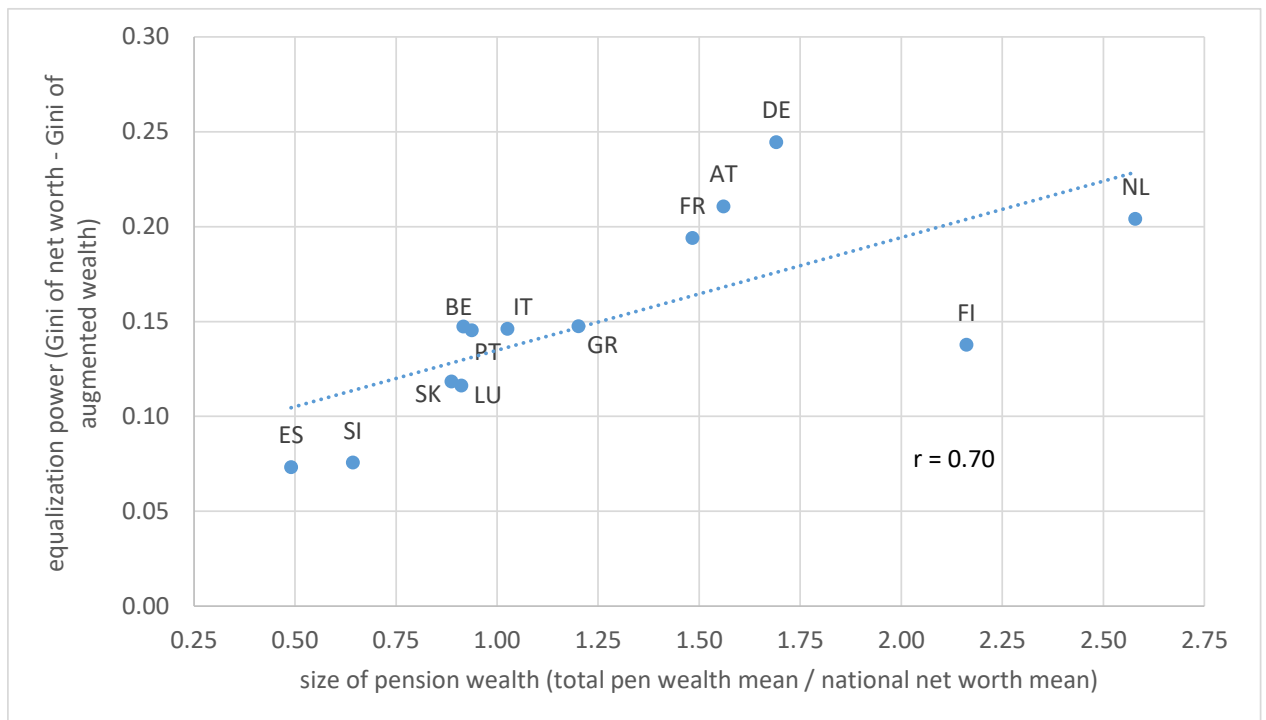


Table 9.4: Inheritance and gifts: share of households having received a gift or inheritance (top); average value of inheritance and gifts (middle); share of households expecting inheritance in the future (bottom)

	All population	Bottom 20% of wealth	Middle 20–90% of wealth	Between top 90% and top 95% of wealth	Top 5% of wealth
Share of households having received inheritance or substantial gift					
Germany	0.27	0.07	0.30	0.47	0.51
Italy	n/a	n/a	n/a	n/a	n/a
Luxembourg	0.27	0.07	0.30	0.56	0.45
Spain	0.24	0.10	0.24	0.44	0.59
France	0.40	0.15	0.42	0.69	0.74
Australia	n/a	n/a	n/a	n/a	n/a
UK	0.13	0.08	0.13	0.18	0.19
US	0.20	0.07	0.21	0.43	0.45
Average value of inheritance or gift received (in average annual income)					
Germany	0.7	0.0	0.4	2.2	5.9
Italy	n/a	n/a	n/a	n/a	n/a
Luxembourg	0.6	0.0	0.5	2.5	2.5
Spain	0.6	0.0	0.4	1.8	4.6
France	0.9	0.1	0.7	2.6	6.1
Australia	n/a	n/a	n/a	n/a	n/a
UK	0.1	0.0	0.1	0.2	0.4
US	0.5	0.0	0.3	1.4	4.3
Share of households expecting to receive inheritance 'in the future'					
Germany	0.13	0.07	0.15	0.12	0.13
Italy	n/a	n/a	n/a	n/a	n/a
Luxembourg	0.20	0.13	0.22	0.26	0.25
Spain	n/a	n/a	n/a	n/a	n/a
France	n/a	n/a	n/a	n/a	n/a
Australia	n/a	n/a	n/a	n/a	n/a
UK	n/a	n/a	n/a	n/a	n/a
US	0.11	0.10	0.11	0.14	0.19

Source: Own calculations from HFCS and LWS micro-data.

Table 9.5: Net wealth to income ratios by income category and by country

Income category	Germany	Spain	France	Italy	Luxembourg	Australia	UK	US
Bottom 20%	5.2	24.3	9.5	17.0	17.7	32.8	18.5	11.2
20–90%	4.2	9.2	5.6	7.5	8.0	6.4	6.1	4.7
90–95%	4.2	8.5	6.4	7.8	6.3	5.2	5.0	6.0
95% or greater	5.6	8.8	8.5	9.4	10.2	7.3	5.4	9.2
All	4.5	9.3	6.3	8.0	8.5	6.8	6.0	6.4

Source: Own calculations from HFCS and LWS micro-data.

Table 9.6: Net wealth to income ratios

<i>Top 5% by income</i>	Germany	Spain	France	Italy	Luxembourg	Australia	UK	US
Mean net wealth/top 5% mean income	5.6	8.8	8.5	9.4	10.2	7.3	5.4	9.2
Mean income/overall mean income	4.0	4.1	3.9	3.7	4.2	3.8	4.3	6.7
Mean net wealth/overall mean income	22.3	35.8	33.5	34.8	43.2	27.3	23.0	61.3

Table 9.7: Interest and dividends as a percentage of financial assets by income category and by country

Income category	Germany	Spain	France	Italy	Luxembourg	Australia	UK	US
90–95%	2.7	1.8	6.1	1.3	2.0	2.7	5.5	0.8
95% or greater	3.8	3.1	8.4	1.7	2.6	3.6	4.4	1.7

