

# How Inheritances Shape Wealth Distributions: An International Comparison

Timm Bönke  
Marten v. Werder  
Christian Westermeier

School of Business & Economics

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HOW INHERITANCES SHAPE WEALTH DISTRIBUTIONS:  
AN INTERNATIONAL COMPARISON

Timm Bönke<sup>a,1</sup>, Marten v. Werder<sup>a,2</sup>, Christian Westermeier<sup>a,b,2</sup>

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<sup>a</sup> School of Business and Economics, Freie Universität Berlin, Boltzmannstraße 20, 14195 Berlin, Germany

<sup>b</sup> German Institute for Economic Research (DIW Berlin), Mohrenstraße 58, 10117 Berlin, Germany

**Highlights:**

- Decomposition of net household wealth inequality in the inequality loadings of wealth transfers and net worth without transfers.
- The first study of this kind that resorts to the HFCS data which provides comparable data on household wealth for several Euro-countries.
- Shows that intergenerational transfers widely equalize relative wealth inequality.

**Abstract:** We use data from the European Household Finance and Consumption Survey in order to examine the distributional effect of intergenerational wealth transfers on the net worth distribution in 8 European countries and compare it to recent findings for the US. To do so, we resort to the decomposition of the coefficient of variation as suggested and applied by Wolff (1987, 2002, 2015) and Wolff and Gittleman (2014). The results hint that inheritances and gifts have a vastly equalizing effect on inequality in household wealth in all 8 countries.

**Keywords:** Inheritance, Household wealth, Inequality.

**JEL Classification:** D31 E21

This paper uses data from the Eurosystem Household Finance and Consumption Survey. The results published and the related observations and analysis may not correspond to results or analysis of the data producers.

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<sup>1</sup> Corresponding Author: [tim.boenke@fu-berlin.de](mailto:tim.boenke@fu-berlin.de)

<sup>2</sup> Further E-Mail addresses: [marten.werder@fu-berlin.de](mailto:marten.werder@fu-berlin.de); [cwestermeier@diw.de](mailto:cwestermeier@diw.de)

## 1. Introduction

Intergenerational transfers are known to be a major factor in households' wealth formation (e.g. Piketty, 2011; Piketty et al., 2013). Economists have recently devoted much attention to the question of how intergenerational transfers affect the inequality in aggregated wealth (Elinder et al., 2016; Boserup et al., 2016; Tiefensee and Westermeier, 2016). Different methodological approaches have so far mainly confirmed previous research in this field: Bequests accrue disproportionately to the benefit of poorer households and thereby tend to reduce relative wealth inequality. Nonetheless, while the literature appears rather conclusive, results often lack comparability over countries as wealth-related research is particularly sensitive to the specifics of the underlying data. The issue of international comparability was substantially improved on the European level with the availability of the Household Finance and Consumption Survey (HFCS). Initiated by the European Central Bank and designed in a similar fashion as the Survey of Consumer Finances (SCF) for the US, the HFCS brings together representative and consistent microdata on household wealth from 15 countries of the euro area. Fessler and Schürz (2015) and Humer et al. (2016) already address the nexus of inheritances and household wealth using the HFCS and find that bequest reception entails a major rise in the households' wealth rank. The pattern of country-specific estimates in these two papers appears to be coherent, the variations in size and location are however sizeable over countries. We find it helpful to provide some descriptive underpinning to these works: Differences in the properties of the national wealth and transfer distributions might well account for much of the variation over countries. We resort to an insightful decomposition of household wealth inequality as measured by the coefficient of variation (*CV*). This method has been developed by Wolff (1987) and has found fruitful applications in Wolff (2002, 2015) and Wolff and Gittleman (2014). The broad methodological consistency with Wolff (2015) finally permits us to compare our European results with those from the US.

## 2. Wealth Data

We use the first wave of the HFCS which provides nationally representative data on household assets and liabilities for 15 Euro countries surveyed in 2009/10. From this, we draw the joint distribution of *household net worth* and *wealth transfers received*, on which we base our analysis. The HFCS is purposefully designed to improve the comparability on wealth accumulation and portfolio choices over European countries. The nationally conducted surveys nonetheless differ in some respect so that we exclude some countries based on recommendations by Tiefensee and Westermeier (2016) and Tiefensee and Grabka (2014):

Finland and Italy are excluded as they lack crucial information on wealth transfers, while the Netherlands are dropped due to a peculiarly low incidence of intergenerational transfers. We further exclude Luxembourg and Malta whose small samples are likely to cause problems when assessing subpopulations on the national level. We finally drop Slovakia, Slovenia and East German observations<sup>3</sup> as these countries were no market economies before 1990. This leaves us with a sample of eight countries comprising Austria, Belgium, Cyprus, France, West-Germany (henceforth Germany), Greece, Portugal and Spain. The HFCS survey design is in many respects built on the SCF, which is why both data sets are considered to be highly comparable (Vermeulen, 2014). In order to put our results in a wider context, we compare them to decomposition results based on the 2010 wave of the SCF (Wolff, 2015).

Survey data on wealth is known to be only partially representative due to unit and item non-response and the particularly skewed distribution of wealth. The HFCS deals with these problems by nationally conducted oversampling of wealthy households and multiple imputation. Despite these efforts, the HFCS falls short of covering the very top of the wealth distribution (Vermeulen, 2014).

### *2.1 Value and size of past transfers*

Households report the value, year and portfolio of up to three past inheritances or gifts to HFCS. The calculation of the present values of these past transfers follows Kotlikoff and Summers (1981) and was also adopted by Wolff and Gittleman (2014) and Wolff (2015): This approach attributes returns to bequests fully to the transfer value and may yield negative net-of-transfer wealth if the present value of transfers received exceeds observed net worth. Although the approach has found famous critics in Modigliani (1988) and recently in Piketty et al. (2014), we favor it for the sake of comparability to Wolff and Gittleman (2014) and Wolff (2015). Our results are computed with a real interest rate of 3% per annum since the year of transfer receipt and are expressed in prices of 2010.<sup>4</sup> We assume that bequests are fully saved and did not displace regular household savings.

Table A1 presents basic descriptive statistics on wealth transfers including country-specific means and medians as well as national samples. Table 1 gives an overview of the inequality in

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<sup>3</sup> Hence the analysis is restricted to households with heads aged 21 and older.

<sup>4</sup> We use the country-specific consumer price indices provided by Eurostat:

<http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>

Inheritances and gifts received before 1960 are capitalized as if they would have been received in 1960, which is only affecting few observations and, simultaneously, serves as a cushion for outliers in the oldest cohorts, which would otherwise be generated.

the national net worth and wealth transfer distributions.<sup>5</sup> The Gini values for transfers are comparable over countries and indicate that wealth transfers are most unequally distributed in Portugal and most equally in Germany.<sup>6</sup>

*Table 1: Inequality of net worth and wealth transfers received*

Country	Austria	Belgium	Cyprus	France	Germany	Greece	Portugal	Spain	US
Survey year	2010/11	2010	2010	2009/10	2010/11	2009	2010	2008/09	2010
Gini coefficients									
Wealth transfers ( <i>WT</i> )									
- All households	0.901	0.926	0.914	0.948	0.881	0.931	0.977	0.943	0.966
- Recipients only	0.723	0.767	0.727	0.87	0.687	0.774	0.915	0.81	0.833
Net worth ( <i>NW</i> )	0.758	0.607	0.698	0.675	0.717	0.557	0.669	0.58	0.87
Coefficient of Variation ( <i>CV</i> )									
Wealth transfers ( <i>WT</i> )									
- All households	4.378	16.4	6.119	12.843	3.324	5.822	26.938	16.284	19.895
- Recipients only	2.489	9.19	3.331	8.074	1.895	3.117	13.905	8.898	8.938
Net worth ( <i>NW</i> )	2.925	1.625	2.477	3.582	2.825	1.271	3.767	4.068	6.618

Note: Figures based on the net present value of bequests, capitalized with a real interest rate of 3%. Mean over 5 implicates. Source: Own computations based from HFCS (2013); US figures from Wolff (2015).

## 2.2 Decomposition

The *CV* is defined as the ratio of the standard deviation and the mean. The inequality of household net worth (*NW*) equals

$$CV(NW) \equiv \sqrt{VAR(NW)}/E(NW). \quad (1)$$

We can understand intergenerational wealth transfers (*WT*) as one of two components of the observed *NW*, in the sense that  $NW = NWX + WT$ , where *NWX* is the household's wealth net of transfers. Following Wolff (1987), a wealth component contributes to total wealth inequality along three factors: First, by its magnitude relative to total wealth. Second, by its own degree of inequality. And third, by the correlation of this component with the other wealth components. Following the decomposition properties of the variance, Wolff (1987) suggests to lay out the magnitude of these three factors by decomposing the squared coefficient of variation,  $CV^2$ :

$$CV^2(NW) = p_1^2 CV^2(NWX) + p_2^2 CV^2(WT) + 2CC(NWX, WT) \quad (2)$$

Where  $p_1 = E(NWX)/E(NW)$  and  $p_2 = E(WT)/E(NW)$  represent the relative magnitudes of the two wealth components. The term *CC* denotes the coefficient of covariation defined as

<sup>5</sup> The HFCS (2013) data are officially provided with 5 multiply imputed implicates, compensating for nonresponse biases. Additionally, replicate weights allow for the correct computation of bootstrapped standard errors. If not otherwise noted, all results are standard applications for multiple imputation data and all standard errors are bootstrapped.

<sup>6</sup> Differences in the Gini index of net worth to e.g. the study of Carrol et al. (2014) result from the restrictions we put on our sample, e.g. the exclusion of the former socialist East German states.

$CC = COV(NWX, WT)/E(W)^2$  and describes the linear relationship between the two wealth components. Hence, the decomposition breaks down the  $CV^2$  of observed household wealth into a weighted sum of the squared CVs of its components and the components' covariation.

### 3. Results

Table 2 displays the main results from the decomposition analysis. The first panel shows the inequality in household  $NW$  and the respective inequality loadings of its components  $WT$  and  $NWX$ . It is striking that inequality in net worth is universally lower than the inequality in either component. This finding mirrors the commonly cited evidence that inheritances tend to equalize the wealth distribution (Elinder et al., 2016; Boserup et al., 2016). It however also poses the key question: How can adding up two unequal components yield a less unequal aggregate? The coefficient of covariation  $CC$ , illustrating the relationship between hypothetical net-of-transfer wealth and wealth transfers, takes negative values over all countries. This finding is well in line with the year-specific results presented in Wolff and Gittleman (2014) for the US and turns out to be the pivotal figure in understanding the distributional effect of inheritances: The negative correlation between the components conveys that – in relative terms – poorer households tend to receive higher transfers. Table A5, which lists the relative bequest sizes over the national wealth distributions, looks at this finding from another angle: Wealth transfers as a percent of net worth generally decrease with increasing household net worth. Wealth transfers therefore raise the total wealth share of poorer households and entail a reduction in relative inequality. While this pattern is certainly predominant in our country sample, Table A5 indicates some more heterogeneity in the development of relative transfers over wealth distributions than the monotonically decreasing relative transfer sizes suggest that for instance Elinder et al. (2016) present for Sweden.

The second panel of Table 2 illustrates the relative magnitudes of the wealth components, where  $p_2(WT)$  displays the share of inheritance-based wealth in total wealth. Despite the same capitalization rate, all countries in our sample show a higher share of inheritances in aggregate wealth than the US for which Wolff and Gittleman (2014) detect an average share of 23% between 1989 and 2007. The 2010 share for the US, as reported by Wolff (2015), equals 25% and still ranks at the bottom. These differences are mainly attributable to nation-specific interplays of inflation and growth: The stable US real annual growth over the last decades comes much closer to the 3% capitalization than for instance the German or French growth rates. Assuming instead a real growth of 0% in all countries (reflected by a capitalization of wealth transfers by 0%), thus pretty much at least halves the share of inheritance-based wealth

in total net worth for all countries in our sample and renders them in a range well comparable to the US value. The general pattern in the decomposition results remains stable as displayed in Table A6. Bönke et al. (2016) limit the maximum value of capitalized bequests to the observed household wealth as suggested by Piketty et al. (2014) and then attribute roughly 30% of German household net worth to transfers. In the original 3% capitalization scenario, capitalized bequests on average exceed actually observed household wealth in Greece and Portugal. This peculiarity results from the extraordinarily high inflation rates these countries witnessed during the 70s and 80s.<sup>7</sup> The effect of such an outstanding relative role of bequests on e.g. wealth mobility is however unclear as it crucially depends on the consumption and investment behavior that households from different wealth deciles show.

Table 2: Contribution of inheritances to overall wealth inequality.

Country	Austria	Belgium	Cyprus	France	Germany	Greece	Portugal	Spain	US
<i>Coefficient of variation/covariation</i>									
$CV(NW)$	2.926 (0.654)	1.625 (0.056)	2.478 (0.185)	3.582 (0.372)	2.826 (0.221)	1.271 (0.038)	3.767 (0.457)	4.062 (0.784)	6.618
$CV(NWX)$	12.265 (5.125)	6.76 (1.973)	3.967 (0.471)	105.574 (144.132)	7.113 (0.707)	-7.683 (1.069)	-93.875 (417.018)	14.143 (14.304)	10.474
$CV(WT)$	4.379 (0.460)	16.395 (4.105)	6.121 (0.791)	12.835 (2.087)	3.325 (0.106)	5.823 (0.906)	26.928 (6.184)	16.288 (5.870)	19.895
$CC(NWX, WT)$	-7.457 (3.517)	-21.400 (11.475)	-2.492 (1.127)	-127.124 (43.107)	-2.298 (0.447)	-579.070 (256.232)	-1438.810 (771.119)	-55.693 (82.494)	-21.418
<i>Shares</i>									
$p_1(NWX)$	0.324 (0.087)	0.712 (0.031)	0.732 (0.035)	0.111 (0.037)	0.418 (0.035)	-3.100 (0.352)	-0.411 (0.183)	0.565 (0.109)	0.745
$p_2(WT)$	0.676 (0.087)	0.288 (0.031)	0.268 (0.035)	0.889 (0.037)	0.582 (0.035)	4.1 (0.352)	1.411 (0.183)	0.435 (0.109)	0.255
<i>Decomposition of <math>CV^2(NW)</math></i>									
$p_1^2 CV^2(NWX)$	14.79	23.177	8.431	136.85	8.847	578.658	1451.619	63.355	60.881
$p_2^2 CV^2(WT)$	8.949	22.265	2.694	130.249	3.739	581.098	1440.191	64.574	25.749
$2CC(NWX, WT)$	-14.914	-42.800	-4.983	-254.249	-4.597	-1158.140	-2877.620	-111.386	-42.836
$CV^2(NW)$	8.825	2.642	6.141	12.85	7.989	1.616	14.19	16.543	43.794
$COR(NWX, WT)$	-0.645	-0.942	-0.522	-0.952	-0.400	-0.999	-0.995	-0.805	-0.541
<i>Percentage of Decomposition of <math>CV^2(NW)</math></i>									
$p_1^2 CV^2(NWX)$	1.788	8.781	1.372	10.7	1.108	358.504	102.297	3.689	1.39
$p_2^2 CV^2(WT)$	1.164	8.435	0.438	10.189	0.469	360.015	101.492	3.721	0.588
$2CC(NWX, WT)$	-1.952	-16.216	-0.811	-19.889	-0.577	-717.519	-202.789	-6.410	-0.978
$CV^2(NW)$	1	1	1	1	1	1	1	1	1

Note: All results based on multiple imputations, bootstrap standard deviations accounting for multiple imputation in parentheses. Pattern of results is robust to trimming at 99 percent. Source: Own computations from HFCS (2013); US figures from Wolff (2015).

<sup>7</sup> The average annual inflation in the 70s and 80s amounted to 16.3% in Greece and 17.5% in Portugal, which boosts the transfer values from these times when converting values to 2010 prices. Keep also in mind that our approach assumes that transfers are fully saved and capitalizes the entire transfer on an annual basis.

#### 4. Conclusion

This paper uses the internationally comparable HFCS microdata on household wealth in order to decompose wealth inequality for eight European countries. The decomposition of the coefficient of variation (Wolff, 1987) reveals a stable pattern over the sample nations: Wealth transfers have – at least when judging from the cross-section – an equalizing effect on relative wealth inequality. The effect is crucially caused by a negative relationship between net-of-transfer wealth and inheritances. Our results are in line with the recent works by Wolff and Gittleman (2014) and Wolff (2015), who both resort to the same methodological approach, and to Elinder et al. (2016) and Boserup et al. (2016). Moreover, the results are robust to the exclusion of the top 1% of the wealth distributions and to an alternative capitalization rate of past transfers.

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*Appendix and Supplemental Materials*

*Table A1: Descriptive statistics on wealth transfers.*

<b>Variable</b>	<b>Austria</b>	<b>Belgium</b>	<b>Cyprus</b>	<b>France</b>	<b>Germany</b>	<b>Greece</b>	<b>Portugal</b>	<b>Spain</b>
Share of households who received wealth transfers	35.70%	31.66%	31.46%	38.99%	38.09%	30.72%	26.75%	30.13%
	(1.28%)	(1.21%)	(1.67%)	(0.69%)	(1.74%)	(1.50%)	(1.27%)	(1.07%)
Present value of received wealth transfers, recipients only								
Mean	505,009	309,391	571,846	526,702	357,742	1,989,134	807,971	420,968
	(81,955)	(56,005)	(113,155)	(49,578)	(36,967)	(252,827)	(175,228)	(131,085)
Median	168,856	82,342	198,289	61,429	130,906	316,449	58,130	89,127
Present value of received wealth transfers, all households								
Mean	180,279	97,947	179,899	210,048	136,256	611,095	216,105	126,865
	(30,172)	(17,922)	(36,350)	(20,049)	(15,256)	(85,262)	(47,673)	(39,794)
Share of net worth	67.56%	28.78%	26.80%	88.91%	58.16%	410.02%	141.06%	43.48%
	(11.10%)	(5.30%)	5.86%)	(8.45%)	(7.03%)	(58.12%)	(31.97%)	(13.71%)
Sample size	2,825	2,307	1,234	14,929	2,825	2,915	4,393	6,188

Note: Transfers capitalized with 3% per annum. Standard errors are shown below the respective estimate in parentheses. Source: Own computation from HFCS (2013)

*Table A2: Population share of transfer receiving households.*

<b>Decile</b>	<b>Austria</b>	<b>Belgium</b>	<b>Cyprus</b>	<b>France</b>	<b>Germany</b>	<b>Greece</b>	<b>Portugal</b>	<b>Spain</b>
1st	10.6	9.4	6.7	14.7	8.0	1.6	5.7	5.0
	(2.9)	(3.0)	(2.8)	(1.8)	(2.5)	(0.6)	(1.4)	(1.6)
2nd	8.7	15.9	17.5	16.4	13.4	5.0	13.8	21.2
	(2.4)	(4.0)	(4.8)	(2.1)	(3.9)	(1.9)	(2.5)	(3.2)
3rd	14.0	29.5	18.5	22.6	17.8	29	21.1	25.0
	(3.2)	(5.0)	(5.4)	(2.4)	(4.2)	(3.7)	(2.8)	(3.3)
4th	18.9	20.4	26.2	33.7	22.1	35.6	27.5	26.9
	(4.0)	(4.2)	(6.3)	(2.3)	(3.6)	(4.5)	(3.5)	(3.2)
5th	37.1	29.6	39.8	38.4	33.1	39.3	30	27.4
	(4.3)	(4.5)	(6.1)	(2.3)	(4.8)	(4.3)	(3.8)	(2.9)
6th	41.9	29.1	31.5	43.7	44.7	39.2	29.1	27.7
	(4.2)	(4.0)	(6.9)	(2.4)	(5.7)	(4.4)	(3.6)	(3.4)
7th	49.3	40.8	40.7	45.9	49.2	34.8	34.6	36.4
	(4.3)	(4.5)	(6.5)	(2.3)	(4.6)	(3.8)	(3.5)	(3.3)
8th	47.6	42.4	36.2	52.3	61.9	43.6	31.1	37.0
	(4.5)	(4.7)	(5.9)	(2.2)	(4.1)	(3.7)	(3.4)	(3.9)
9th	57.9	52.2	50.8	60.3	65.3	38	37.4	40.1
	(3.9)	(5.0)	(6.7)	(2.1)	(3.8)	(3.8)	(3.4)	(3.4)
10th	71.1	47.4	46.9	70.9	65.6	41.1	37.3	54.5
	(3.8)	(3.9)	(5.8)	(1.6)	(4.3)	(3.8)	(2.7)	(3.6)

Note: Standard errors are shown below the respective estimate in parentheses Shares and standard errors in %. Deciles of the net worth (NW) distribution. Source: Own calculations based on the HFCS.

*Table A3: Average wealth transfer of transfer receiving households.*

<b>Decile</b>	<b>Austria</b>	<b>Belgium</b>	<b>Cyprus</b>	<b>France</b>	<b>Germany</b>	<b>Greece</b>	<b>Portugal</b>	<b>Spain</b>
1st	244,629 (456,232)	27,505 (10,191)	2,969,734 (4,177,901)	115,393 (56,601)	132,282 (77,737)	154,684 (88,407)	57,941 (53,095)	239,933 (225,784)
2nd	105,552 (49,297)	41,884 (11,073)	1,001,117 (1,457,878)	115,637 (44,425)	21,977 (10,357)	790,105 (664,185)	113,532 (63,334)	117,461 (91,891)
3rd	65,901 (50,056)	124,769 (63,800)	178,464 (118,392)	556,236 (374,308)	46,781 (23,895)	1,725,225 (487,532)	312,414 (187,976)	176,793 (36,325)
4th	129,310 (48,269)	116,264 (51,227)	278,454 (287,099)	257,049 (89,269)	85,825 (61,435)	1,996,569 (425,093)	1,119,003 (1,448,939)	155,669 (36,116)
5th	283,945 (190,367)	194,051 (42,100)	534,379 (286,730)	324,195 (82,453)	99,629 (50,860)	1,846,416 (464,911)	836,112 (902,108)	163,573 (71,067)
6th	280,858 (101,678)	233,714 (72,852)	394,292 (238,294)	273,842 (96,215)	373,970 (134,585)	1,752,876 (665,585)	1,026,241 (1,214,252)	172,234 (36,261)
7th	404,198 (225,629)	194,684 (44,454)	299,589 (120,853)	282,050 (61,634)	343,508 (97,203)	2,562,132 (870,926)	644,889 (412,124)	218,967 (67,170)
8th	480,309 (108,304)	406,148 (256,721)	420,299 (156,812)	449,404 (134,797)	295,426 (42,208)	1,779,020 (389,956)	586,182 (272,580)	243,314 (78,856)
9th	494,641 (159,795)	245,388 (138,478)	596,529 (242,947)	490,743 (84,496)	353,852 (50,595)	1,723,852 (467,859)	765,955 (374,309)	515,120 (208,265)
10th	1,120,183 (287,004)	851,514 (325,391)	855,867 (246,863)	1,337,839 (204,994)	823,257 (97,583)	2,752,173 (1,661,126)	1,433,794 (514,774)	1,249,591 (766,761)

Note: Standard errors in parentheses. Deciles of the net worth (NW) distribution. Source: Own computation from HFCS (2013).

*Table A4: Average wealth transfers for all households.*

<b>Decile</b>	<b>Austria</b>	<b>Belgium</b>	<b>Cyprus</b>	<b>France</b>	<b>Germany</b>	<b>Greece</b>	<b>Portugal</b>	<b>Spain</b>
1st	25,615 (48,516)	2,583 (1,136)	197,604 (278,322)	16,866 (8,239)	10,583 (6,745)	2,436 (1,405)	3,381 (3,485)	11,748 (10,618)
2nd	9,144 (4,960)	6,620 (2,315)	177,886 (253,323)	18,852 (7,218)	2,963 (1,267)	39,242 (28,992)	15,590 (9,055)	25,203 (20,158)
3rd	9,245 (6,890)	37,011 (19,903)	33,806 (26,670)	125,429 (87,653)	8,331 (4,384)	498,518 (151,113)	65,753 (39,658)	44,270 (10,404)
4th	24,276 (9,460)	24,015 (12,669)	75,190 (85,404)	86,592 (30,833)	18,985 (14,095)	714,066 (186,740)	303,644 (385,455)	42,034 (11,842)
5th	105,896 (73,195)	57,428 (13,520)	213,737 (120,226)	124,554 (32,539)	32,809 (16,228)	725,868 (170,580)	246,814 (253,959)	44,820 (20,380)
6th	117,176 (41,587)	67,972 (24,097)	125,212 (82,138)	119,725 (41,543)	167,300 (68,611)	684,873 (254,869)	300,617 (353,094)	47,809 (11,571)
7th	201,208 (119,175)	79,619 (20,098)	122,072 (53,914)	129,442 (29,062)	169,416 (53,327)	889,864 (295,564)	223,397 (147,294)	79,923 (25,334)
8th	229,261 (60,227)	174,037 (116,391)	150,885 (54,744)	234,699 (73,155)	182,871 (25,997)	771,528 (183,291)	182,765 (86,034)	89,723 (28,451)
9th	287,400 (99,471)	128,847 (77,887)	302,510 (126,648)	295,693 (51,267)	231,235 (37,593)	660,301 (207,722)	286,016 (137,918)	205,788 (82,724)
10th	796,326 (204,940)	402,138 (149,591)	400,514 (118,665)	948,989 (149,364)	539,642 (74,194)	1,126,952 (656,490)	534,751 (197,307)	678,094 (399,583)

Note: Standard errors in parentheses. Deciles of the net worth (NW) distribution. Source: Own computation from HFCS (2013).

Table A5: Present value of transfers as percent of net worth for all households.

Decile	Austria	Belgium	Cyprus	France	Germany	Greece	Portugal	Spain
1st	-144.9 (189.6)	-100.4 (1,946.2)	-1876.1 (3,609.8)	-328.0 (169.0)	-98.0 (49.6)	-98.0 (65.2)	-134.3 (145.2)	-137.7 (195.7)
2nd	269.6 (144.1)	76.3 (26.8)	586.9 (866.5)	533.0 (204.7)	87.0 (37.6)	492.6 (361.3)	354.9 (205.4)	90.3 (72.2)
3rd	84.4 (60.7)	79.2 (42.1)	37.2 (29.5)	1085.9 (762.3)	64.7 (33.5)	1533.4 (462.2)	340.6 (206.9)	56.1 (13.4)
4th	95.9 (37.5)	21.0 (11.3)	47.2 (52.5)	247.8 (88.1)	58.2 (42.5)	1141.4 (299.0)	707.5 (894.2)	35.1 (9.8)
5th	192.3 (140.7)	31.7 (7.5)	95.4 (54.4)	139.4 (36.5)	49.6 (24.9)	810.2 (191.0)	387.8 (399.1)	27.6 (12.4)
6th	105.5 (39.2)	28.2 (10.0)	40.4 (26.8)	80.4 (27.8)	147.9 (60.9)	592.2 (222.3)	344.7 (404.9)	23.5 (5.7)
7th	113.7 (70.4)	25.0 (6.3)	28.5 (12.1)	61.7 (13.9)	94.0 (30.3)	594.2 (196.8)	192.0 (126.7)	31.1 (9.7)
8th	88.5 (22.8)	41.5 (27.7)	24.0 (8.5)	83.0 (25.9)	69.0 (9.9)	398.1 (94.0)	113.0 (53.0)	26.9 (8.6)
9th	69.5 (22.8)	22.2 (13.5)	29.0 (12.2)	71.7 (12.4)	58.4 (9.5)	248.7 (78.5)	122.5 (59.0)	43.0 (17.0)
10th	49.2 (13.6)	26.9 (10.1)	10.4 (3.3)	80.8 (12.7)	41.9 (7.1)	195.7 (116.8)	66.2 (25.1)	53.5 (31.7)

Note: Standard errors in parentheses. Deciles of the net worth (NW) distribution. Source: Own computation from HFCS (2013).

Table A 6: Contribution of inheritances to overall wealth inequality for  $r = 0$

Country	Austria	Belgium	Cyprus	France	Germany	Greece	Portugal	Spain
<i>Coefficient of variation/covariation</i>								
$CV(NW)$	2.926 (0.652)	1.625 (0.056)	2.478 (0.187)	3.582 (0.369)	2.826 (0.226)	1.271 (0.037)	3.767 (0.438)	4.062 (0.810)
$CV(NWX)$	4.247 (0.854)	2.454 (0.309)	2.831 (0.212)	6.333 (0.596)	3.806 (0.315)	-21.749 (7.494)	15.934 (4.607)	4.968 (1.158)
$CV(WT)$	3.603 (0.397)	10.258 (2.371)	4.192 (0.381)	8.997 (1.213)	2.722 (0.070)	4.702 (0.598)	20.967 (4.722)	12.776 (2.907)
$CC(NWX, WT)$	-0.586 (0.400)	-2.054 (1.073)	-0.139 (0.080)	-6.998 (2.268)	0.084 (0.087)	-35.890 (13.210)	-74.033 (37.479)	-3.018 (4.371)
<i>Shares</i>								
$p_1(NWX)$	0.68 (0.036)	0.849 (0.014)	0.876 (0.011)	0.679 (0.010)	0.703 (0.014)	-0.280 (0.093)	0.588 (0.045)	0.815 (0.026)
$p_2(WT)$	0.32 (0.036)	0.151 (0.014)	0.124 (0.011)	0.321 (0.010)	0.297 (0.014)	1.28 (0.093)	0.412 (0.045)	0.185 (0.026)
<i>Decomposition of <math>CV^2(NW)</math></i>								
$p_1^2 CV^2(NWX)$	8.644	4.336	6.147	18.529	7.168	36.708	87.557	16.519
$p_2^2 CV^2(WT)$	1.354	2.415	0.271	8.317	0.653	36.688	74.7	6.059
$2CC(NWX, WT)$	-1.173	-4.109	-0.277	-13.996	0.169	-71.780	-148.067	-6.035
$CV^2(NW)$	8.825	2.642	6.141	12.85	7.989	1.616	14.19	16.543
$COR(NWX, WT)$	-0.172	-0.635	-0.107	-0.564	0.039	-0.977	-0.915	-0.260
<i>Percentage of Decomposition of <math>CV^2(NW)</math></i>								
$p_1^2 CV^2(NWX)$	0.979	1.642	1.001	1.444	0.897	22.748	6.17	0.999
$p_2^2 CV^2(WT)$	0.173	0.915	0.044	0.651	0.082	22.736	5.264	0.358
$2CC(NWX, WT)$	-0.152	-1.557	-0.045	-1.095	0.021	-44.484	-10.434	-0.357
$CV^2(NW)$	1	1	1	1	1	1	1	1

Note: All results based on multiple imputations, bootstrap standard deviations accounting for multiple imputation in parentheses. Source: Own computations from HFCS (2013).

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