predicted values. However, since in our sample this is only the case in about 4% of the cases (with mostly low absolute values) the inequality levels calculated are almost the same based either on $\hat{W}_i + \sqrt{\hat{W}_i^2 + 1}$ or $\hat{W}_i$.

Empirical results

In order to describe the situation of wealth distribution in the analysed countries, we start by taking a look at the inequality of wealth and income across countries. Table 1 presents the Gini indices of wealth of households. We can observe that both gross and net wealth are distributed much more unequally compared to household gross income. Moreover, the Gini indices for household wealth are much higher in Germany and Austria, while lowest in the group of countries analysed in this paper in Poland, Belgium and Spain. Bequests and gifts at present value are even more unequally distributed than net wealth. Taking into account the underreporting of inheritances, the inequality of bequests may be even higher. This is an effect of the relatively low rates of households having acquired an inheritance (or substantial gift) up to the date of the survey. In Italy only an estimated 20.1% of all households received bequests, while in Austria and France the share is 37.6% and 38.8%, respectively.

Table 1: Descriptive statistics of inheritance and gifts, gross and net wealth and household income

	AT	BE	DE	ES	FR	IT	LU	PL	PT
Number of households	2,997	2,238	4,461	6,106	12,035	8,156	1,601	3,455	6,207
received inheritance or gift	37.6	30.2	26.7	33.6	38.8	20.1	29.7	23	22.6
received inh. or gift before 1960	1.2	2.5	0.7	2.8	0.9	2.8	1.8	1.5	2.4
Gini coefficients[1)]									
	(0.654)	(0.528)	(0.711)	(0.528)	(0.627)	(0.574)	(0.569)	(0.562)	(0.597)
Gross wealth	0.709	0.547	0.728	0.550	0.646	0.589	0.601	0.573	0.613
	(0.764)	(0.566)	(0.746)	(0.573)	(0.665)	(0.605)	(0.633)	(0.585)	(0.630)
	(0.678)	(0.570)	(0.746)	(0.575)	(0.659)	(0.587)	(0.615)	(0.574)	(0.663)
Net wealth	0.731	0.589	0.762	0.599	0.676	0.603	0.646	0.587	0.678
	(0.784)	(0.607)	(0.777)	(0.623)	(0.694)	(0.619)	(0.677)	(0.600)	(0.693)
	(0.869)	(0.861)	(0.897)	(0.898)	(0.885)	(0.930)	(0.877)	(0.993)	(0.942)
Inheritance - present value	0.897	0.874	0.917	0.929	0.907	0.940	0.898	0.997	0.956
	(0.925)	(0.886)	(0.937)	(0.96)	(0.928)	(0.950)	(0.919)	(1.000)	(0.970)
	(0.336)	(0.368)	(0.429)	(0.419)	(0.365)	(0.402)	(0.404)	(0.389)	(0.418)
Gross household income	0.349	0.392	0.449	0.437	0.374	0.416	0.417	0.401	0.437
	(0.362)	(0.416)	(0.468)	(0.454)	(0.383)	(0.430)	(0.430)	(0.414)	(0.456)

Note: 1) Lower and upper bounds of 95% confidence interval in parentheses.
Source: HFCS 2014 - UDB 2.0, wiiw calculations.

Regression analysis

The Shapley value decomposition approach described above requires first to regress the IHS-transformed net wealth level of the households on the explanatory variables. In our case these are first the IHS-transformed (calculated) present values of five different groups of specific asset types inherited or acquired

as gifts. Further explanatory variables are a dummy for the expectation of future substantial bequests or gifts, gross household income and a set of socioeconomic characteristics[4]: the average age of the household members (and the square of this variable), the average education level of household members and the number of adults and children in the household. Moreover, we apply dummies for the marital states of the reference person of the household. We expect wealth of households to increase conditionally on amounts of inheritances (and substantial gifts) acquired and household gross income respectively.

The results presented in Table 2 below show that in general the coefficients have the expected signs and are significant for a large part of the explanatory variables in most countries. The explained part of the variance amounts to 20% on average (unweighted over countries) as shown by the R^2. For those three asset types being most important in the total value of inherited wealth on average (household main residence, land and further dwellings) the positive conditional correlation with net wealth is highest for Germany and Austria. All inherited asset types are positively correlated with net wealth if coefficients are significant. Almost all results are significant, with the only exceptions of inherited money in the case of Spain, land in the case of Belgium and Luxembourg, businesses securities and shares also in the of Belgium, Luxembourg and Italy; furthermore in the case of Poland the coefficient for asset types not specifically classified ('Other assets') is not significant. The expectation of a substantial gift or inheritance is a robust conditional predictor of higher net wealth values only in five out of the nine countries analysed. For income the regression results are obviously very robust. Households with higher earnings tend to be wealthier.

The higher the average age of the household, the more the members had time to accumulate wealth. Coefficients for age and age^2 show that household net wealth rises with increasing average age of the (adult) household members; however no significant results concerning age could be found for Austria. For most countries on average the peak of wealth is reached between 55 and 65 years (average age of adult household members). Households with higher average education levels hold conditionally higher net wealth, a robust result in all countries but Luxembourg. In general, larger households seem to have the possibility to accumulate higher wealth. More children in the household in general correlate with lower levels of net wealth. However, only in the case of Austria and Portugal the coefficients are significant. As expected, households where the reference person is married or lives in a consensual union have conditionally higher wealth compared to all other households. For completeness we should also mention here that in an earlier version of the regression model we included also the gender of the reference person as an explanatory variable and the share of female members in households. However, the results were non-significant.

In addition to net wealth of households we also regress gross wealth levels on the above-described explanatory variables. The results are presented in Table A.1 in the appendix and are not discussed in detail here. However, described in brief they are similar to those with respect to household net wealth. Coefficient signs remain in general the same, whilst the share of the explained variance increases to an R^2 of some 35%. This is no surprise since the underlying decisions of households to borrow money for private or business purposes are influenced by reasons more difficult to be described with the information available from the

[4] Obviously one could apply different explanatory variables particularly for detecting the influence of household characteristics. In a robust check we also used alternatively the household type dummies applied by Fessler et.al. (2014). The results concerning the contributions of inheritance and gifts, income and education remained robust. The advantage of our set of explanatory variables is that we can identify the individual effects of age, number of adults and children and marital status of reference persons, which are in the case of the above mentioned household type dummies intermingled.

HFCS, thus the individual amounts of net wealth are more difficult to be estimated compared to gross wealth. Regression results in general show (see Table A.1), that the signs of the coefficients do not change, compared to the regression results based on net wealth, and are significant in more cases. The size of the coefficients decline for most variables unsurprisingly, since the values of individual household gross wealth are obviously higher than the ones of net wealth.

Table 2: OLS estimations predicting IHS transformed household net wealth

Independent Variables	AT	BE	DE	ES	FR	IT	LU	PL	PT
Inheritance by asset types									
Household main residence - (IHS)	0.201***	0.115***	0.176***	0.093***	0.070***	0.072***	0.138***	0.058***	0.166***
	(0.013)	(0.027)	(0.024)	(0.014)	(0.016)	(0.009)	(0.021)	(0.015)	(0.019)
Money - (IHS)	0.045*	0.055**	0.100***	0.067	0.046***	0.034*	0.079**	0.088***	0.059*
	(0.026)	(0.023)	(0.033)	(0.052)	(0.009)	(0.019)	(0.031)	(0.025)	(0.033)
Dwellings excl. HH main res. - (IHS)	0.097***	0.085***	0.138***	0.086***	0.071***	0.092***	0.051*	0.086***	0.078**
	(0.023)	(0.019)	(0.020)	(0.011)	(0.008)	(0.006)	(0.026)	(0.015)	(0.031)
Land - (IHS)	0.129***	0.007	0.144*	0.061***	0.093***	0.062***	0.004	0.120***	0.103***
	(0.035)	(0.030)	(0.079)	(0.016)	(0.010)	(0.010)	(0.077)	(0.017)	(0.022)
Business, securities and shares - (IHS)	0.088***	0.048	0.186***	0.131***	0.114***	0.039	0.056	0.178***	0.172***
	(0.029)	(0.044)	(0.048)	(0.020)	(0.022)	(0.037)	(0.048)	(0.027)	(0.042)
Other assets - (IHS)	0.059*	0.088***	0.151***	0.073***	0.082***	0.093***	0.064**	-0.016	0.081***
	(0.034)	(0.018)	(0.042)	(0.019)	(0.010)	(0.035)	(0.026)	(0.114)	(0.028)
Expectation of substantial gift or inheritance	0.145	0.630***	0.994**		0.729***	0.429**	0.515	-0.211	1.095***
	(0.389)	(0.190)	(0.392)		(0.108)	(0.167)	(0.401)	(0.334)	(0.233)
Gross income - (IHS)	2.319***	1.237***	0.483***	0.325***	0.304***	0.510***	1.071***	0.682***	0.543***
	(0.258)	(0.260)	(0.165)	(0.084)	(0.049)	(0.062)	(0.270)	(0.136)	(0.142)
Household age (average of adults)	0.065	0.096**	0.105*	0.331***	0.094***	0.181***	0.127*	0.211***	0.170***
	(0.045)	(0.047)	(0.057)	(0.077)	(0.019)	(0.033)	(0.073)	(0.036)	(0.052)
Household age^2	-0.000	-0.000	-0.000	-0.002***	-0.000*	-0.001***	-0.001	-0.002***	-0.001**
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Household education (average of years of adults)	0.228***	0.193***	0.449***	0.115***	0.132***	0.179***	0.055	0.278***	0.193***
	(0.052)	(0.038)	(0.052)	(0.025)	(0.013)	(0.017)	(0.054)	(0.029)	(0.030)
Number of adults	0.087	0.446**	1.081***	0.101	0.584***	0.370***	0.670***	0.383***	0.351**
	(0.195)	(0.186)	(0.222)	(0.167)	(0.105)	(0.071)	(0.156)	(0.119)	(0.159)
Number of children	-0.353**	-0.118	-0.339	-0.145	-0.084	0.027	-0.293	-0.157	-0.293*
	(0.164)	(0.166)	(0.217)	(0.204)	(0.053)	(0.069)	(0.192)	(0.136)	(0.163)
Reference person: single	-0.766*	-0.454	-0.132	-1.413***	-0.518***	-0.036	-0.130	-0.959***	-1.399***
	(0.393)	(0.285)	(0.437)	(0.444)	(0.154)	(0.170)	(0.401)	(0.258)	(0.355)
Reference person: widowed	-0.273	0.258	-0.236	-0.181	-0.011	-0.167	0.760	-0.189	0.193
	(0.303)	(0.392)	(0.443)	(0.254)	(0.171)	(0.142)	(0.480)	(0.250)	(0.312)
Reference person: divorced	-0.882**	-1.866***	-2.019***	-1.236***	-0.919***	-0.866***	-0.691	-1.369***	-1.828***
	(0.352)	(0.534)	(0.490)	(0.427)	(0.196)	(0.250)	(0.536)	(0.312)	(0.466)
Constant	-21.77***	-9.302***	-7.801***	-3.202	1.377*	-3.139***	-7.024**	-6.828***	-3.729*
	(2.792)	(2.749)	(2.144)	(2.679)	(0.741)	(0.986)	(3.044)	(1.673)	(1.906)
$R^{2+)}$	0.223	0.228	0.215	0.199	0.239	0.195	0.145	0.188	0.136
Observations	2,945	2,177	4,370	6,097	11,143	8,143	1,597	3,267	5,763

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
+) R^2 using Fisher's z over imputed data
Source: HFCS 2014 - UDB 2.0, own calculations.