Wealth Distribution and Wealth Mobility in U.S.-German Comparison

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INTRODUCTION

The collapse of the U.S. housing and stock market in 2007 and 2008 quickly spread to a European, if not, global financial crisis (Blinder 2013). The effects of this crisis on the growth of national economies differed widely. The United States entered its deepest recession since the Great Depression (Grusky et al. 2011, Danziger 2013), while the economy of other nations suffered only a minor set back and enjoyed a quick reemergence. In this paper, we compare the United States to Germany, a country whose macro-economic performance took a very different path following the financial collapse. We study the economic situation of households in the United States and Germany leading up to and following the financial collapse by investigating trends in the distribution of wealth (net worth) and the movement of households along the wealth distribution. For the United States, we update prior estimates by Pfeffer et al. (2014) that had to rely on early release data.

We find that these two national cases diverge greatly in terms of the structure of their wealth distribution over the last decade, with households in the United States not only suffering widespread losses but the distribution of wealth also becoming acutely more unequal. Germany, in contrast, is marked by a striking degree of stability in its wealth distribution over the same period of time, with wealth levels and inequality in wealth in 2012 barely notably different from ten years earlier. Despite this stark contrast in the aggregate flutuation of wealth, the fluidity of the wealth distribution is very similar and quite limited. More households lost than gained over the last decade, but the relative position of households has remained very stable. The U.S-German comparison thus

demonstrates that rigidity in the wealth distribution is a pervasive feature of the wealth structure that, in this case, is largely independent of its level and development.

DATA

We draw on data from two widely used household panel studies, the Panel Study of Income Dynamics (PSID) and its sister study, the German Socio-Economic Panel (SOEP). While these surveys provide nationally representative estimates of the wealth, they also allow us to track the wealth trajectories of households over time.

The PSID is the world's longest-running, nationally-representative longitudinal survey. Since 1968, it has collected a broad range of socio-economic and other information on families on an annual basis and since 1997 on a bi-annual basis. It first introduced an extensive wealth module in 1984, which was repeated every five years until 1999 and has since then become part of the bi-annual main survey. Here, we draw on wealth measures from 2003 and 2007 to describe trends before the outbreak of the financial crisis and on wealth measures from 2011 to assess post-financial crisis wealth. More than 8,900 households with a total of close to 25,000 individuals were interviewed in 2011. The prior study by Pfeffer et al. (2014) relied on early release wealth data from 2011 that did not include all households (namely splitoffs and move-ins) and was based on uncleaned and unimputed data. Here, in contrast, we are able to use the final release data and tailor the analyses to facilitate the comparison to the German case.

The PSID wealth module covers all major wealth components – namely, housing wealth, a range of different financial and real assets, and various types of liabilities – that can be combined into a net worth measure. The validity of the PSID wealth data is

generally high, but – like other representative surveys – it does not capture the wealthiest 1-3% of households (Juster et al. 1999; Pfeffer et al. 2014).

The SOEP is a representative longitudinal survey of individuals living in private households in Germany (Wagner et al. 2007). The survey started in 1984 in West Germany and extended to East Germany in 1990. At present, the survey consists of eleven different subsamples with an oversampling of migrants and in particular high income households, which is crucial for this paper. In 2012 more than 21,000 adult individuals in more than 10,000 private household has been interviewed. Each household fills out a household questionnaire, while all household members over 17 years of age respond to an individual questionnaire. In contrast to the PSID and other wealth surveys, the SOEP collects wealth information at the individual level for all adult household members (17 years of age and older). Collecting wealth at the individual level has the potential to also capture minor wealth components, in particular in multi-person households, and allows the analysis of intra-household wealth inequality. A complete wealth module has been collected three times in SOEP, 2002, 2007 and 2012. The wealth questions comprise owner-occupied property, other property, business assets, private insurances, financial assets, valuable assets (including jewelry, gold, arts, etc.), building loan contracts, and liabilities such as consumer credits and mortgages for own and other property. Again, summing up all of these components and aggregating them at the household level[2] yields the measure of household net worth used here.

A major challenge in collecting wealth data at the micro-level is measurement error from various sources such as rounding, misreporting and non-response (see, e.g., Riphahn

[2] Wealth for children is not collected in SOEP thus total household net worth is slightly underestimated. However, wealth holdings by children are presumably rather small.

and Serfling 2005). On the one hand, separately asking all adult household members instead of a single household representative may increase the accuracy of wealth reports for each individual. On the other hand, this increases the probability of item-non response on at least one single wealth component within the household and the risk for inconsistent information (e.g., two partners providing non-matching information on the asset, such as a jointly owned home). Inconsistencies have been taken care of by means of editing on a case-wise basis, while missing data have been corrected for by multiple imputation techniques, explicitly considering the potential selectivity of the underlying missing mechanisms (for a description of these procedures see Frick et al. 2010b). A comparison with corresponding information from national balance sheets however indicates that the SOEP wealth data performs rather well (Frick et al. 2010a).

Like most prior wealth research, our net worth measures to not include the value of durables and vehicles and, most importantly, public pension entitlements.. In Appendix A, we briefly review how a consideration of pension wealth may impact the comparative assessment of wealth, that is, the trends in wealth inequality and the cross-national differences we find.

Our analyses of the PSID and SOEP data reported are weighted to provide nationally representative estimates. All absolute wealth values are reported in constant 2011 dollars, with an adjustment of purchasing power for Germany based on OECD purchasing power parities for private consumption for 2011. For longitudinal analyses we use a balanced sample of households that responded in 2007 and 2011 (PSID) or 2007

and 2012 (SOEP). We restrict the panel analyses to households with the same household head in both years to reduce the impact of household split-offs and move-ins.[3]

THE DISTRIBUTION OF WEALTH

To track changes in the distribution of wealth, we first apply a cross-sectional analysis of three panel waves of the PSID and SOEP. We investigate changes leading up to the financial crisis (2003-2007 for the United States, 2002-2007 for Germany) and following the financial crisis (2007-2011 for the United States, 2007-2012 for Germany) by documenting wealth levels at different points of the wealth distribution. We then put our focus on the consequences of these changes for the overall level of wealth inequality.

Changes in the Wealth Structure

For the United States, Table 1a documents an increase in net worth for the upper half of the distribution and, consequently, rising average net worth before the financial crisis (see also Figure 1a that displays some of these trends as relative changes). These increases were quite substantial, with $10,500 in median net worth and $83,300 in average net worth added between 2003 and 2007. In contrast, net worth at the 25th percentile was lower in 2007 than in 2003 (inflation adjusted) and even further down the distribution we observe increases in net debt. Housing is a central component of the wealth portfolio in both countries. In the United States, it has been subjected to the most vigorous fluctuations during and after the housing market bubble. When we exclude housing wealth (home equity and real estate) from the net worth measures (lower panel of Table

[3] This restriction excludes 2,132 households in the PSID and 548 households in the SOEP.

1a and Figure 1c), we see that wealth declined even at the median during this period. In other words, rising home values – now known as a housing bubble – concealed a trend of falling median wealth even before 2007. In the aftermath of the financial crisis (2007-2012), wealth losses were substantial and can be observed across the full distribution. However, the top of the distribution (90th and 95th percentile) lost less wealth than they gained during the prior period, leaving them with significantly more wealth in 2011 than in 2003. All lower points in the wealth distribution have sunk below 2003 levels (see Figures 1a and 1c)

Table 1b reports net worth levels across the distribution for Germany. First, we note a considerably lower level of median and average net worth in Germany compared to the United States – less than half at the beginning of the time period investigated here (mean net worth of $141,200 compared to $325,700 and median net worth of $35,100 compared to $85,000).[4] The magnitude of the wealth losses observed in the United States becomes yet more noticeable when compared these figures: The typical U.S. household was worth $41,000 less in 2011, after the financial crisis, than the typical U.S. household in 2007. In other words, the U.S. recession destroyed more wealth at the median than the typical German household has at its disposal.

Trends in the German wealth structure are notably different from those in the United States (see also Figures 1b and 1d). Before and even after the global financial crisis, the distribution of net worth in Germany has been remarkably stable. Median net worth fell by merely $1,000 between 2002 and 2007 and rose by $3,400 between 2007 and 2011. Even declines in net worth that are observed at the top (90th and 95th

[4] Findings by the recently established Household Finance and Consumption Survey (HFCS) organized by the European Central Bank also provide evidence on the low level of net worth in Germany compared to other Euro-area countries (see ECB 2013).

percentiles), which could be interpreted as one of the few signs of a financial crisis, are merely a continuation of a trend that is already apparent between 2002 and 2007. A major decline in net worth, in relative terms, can be observed at the 25th percentile. Here again, these declines may not necessarily stem from the impact of the financial crisis. In fact, asset portfolios at this distributional point are relatively less exposed to the impact of financial markets. Instead, net worth decreases at the 25th percentile may be indicative of the fundamental changes in the regulation of welfare and unemployment benefits that took effect in 2005 (Hartz IV) and that defined low asset levels as eligibility requirements for continued welfare payments and, in effect, forces families to draw down on assets to receive social assistance. Another explanation for this finding is that thanks to very low interest rates, liabilities, in particular in the form of consumer credits, quickly gained relevance in Germany over the last. Debt-based financing of consumption is especially prevalant in the lower part of the wealth distribution and may thus contribute to the observed decrease of net worth. The otherwise great stability in the German wealth structure is even more pronounced when excluding the housing wealth (lower panel of Table 1b and Figure 1d): The distribution of non-housing wealth in 2012 was largely the same as in 2002 (inflation adjusted).

Changes in Wealth Inequality

The structural changes discussed above foreshadow how overall inequality in the wealth distribution has evolved in these two countries over the last decade. The gini coefficient of net worth for the United States, reported in Table 2a, reveals a considerable rise in inequality, with the largest increase – from 0.83 to 0.89 – occurring in the aftermath of

the financial crisis (from 2007 and 2011). Changes in percentile ratios document the shape of this increasing inequality: The wealthy (95th percentile) have pulled away from the rest of the distribution, holding 14 times as much wealth as the median in 2003, 17 times as much as the average household in 2007 and, after the financial collapse in 2011, 25 times as much. At the same time, the bottom of the wealth distribution has lost out more than the middle: Median net worth in 2003 was 9 times higher than the wealth hold at the 25th percentile. In 2011, it was 23 times higher than wealth at the bottom.

For Germany, Table 2b again documents overall stability in the wealth distribution. The overall level of inequality is lower than in the United States (gini coefficient of 0.76).[5] The most pronounced change in the shape of wealth inequality occurred at the bottom of the German wealth distribution. Wealth at the 25th percentile was already low in 2002 compared to the rest of the wealth distribution (the typical German household had 19 times more net worth) and fell much further behind over the next decade (the typical German household had 42 times more net worth than the 25th percentile by 2012).

WEALTH MOBILITY

We have shown that the wealth distribution in the United States has spread out significantly while the German wealth distribution, although at an overall lower absolute level of wealth, has remained remarkably stable (with an important exception at the bottom of the distribution, namely net worth declines at the 25th percentile). Now we seek to understand the experience of U.S. and German households as they move or do not

[5] Although the gini coefficient for Germany is smaller than for the United States, Germany has the highest level of wealth inequality in the Euro-area (Mooslechner 2013).

move across the wealth distribution. In other words, we switch from a cross-sectional analysis that analyzes the changes at specific distributional points to a panel analysis that tracks the wealth of households over time. Since the largest shifts in the wealth structure occurred in the aftermath of the financial collapse in the U.S., we focus on changes between 2007 and 2011/12.

We begin by describing the distribution of changes in net worth from 2007 to 2011/12 and then investigate whether these changes have triggered intra-generational mobility across the wealth distribution.

The distribution of wealth losses & gains

In the United States, the loss of net worth in the aftermath of the financial collapse was pervasive. More than half of all households lost wealth between 2007 and 2011 and every third household lost at least $50,000 (see Table 3a). However, in the same time period, another third of households was able to increase their wealth, with 7% of households gaining at least $250,000 in net worth. In Germany, absolute losses and gains between 2007 and 2012 were distributed more evenly with 39% and 37%, respectively. Every fourth German households stayed within $5,000 gains or losses (compared to 14% of U.S. households). Considering changes in relative terms, namely whether net worth increased or decreased by at least 10%, controls for some the cross-national differences in baseline wealth that we observed above and indicates some more movement for the German case. Half of all German households (compared to 58% of U.S. households) lost at least 10% of their net worth, while 38% of German households (compared to 32% of U.S. households) gained at least 10%. Also, the share of households who lost more than

100% of their wealth, namely households who went into net debt, is perhaps more similar across these two countries than one would expect (9% in the United States vs. 6% in Germany).

Among those households who lost any wealth, the typical amount lost (median loss) was three times the size in the U.S. compared to Germany ($72,800 vs. 24,100) while the typical amount of gains among those who have gained was nearly three quarters higher in the U.S. compared to Germany ($42,200 vs. 24,300). However, these large differences in absolute losses and gains reflect the difference in baseline wealth found above. When expressed in relative terms, the extent of losses and gains among those whose wealth changed is quite similar across the two nations. Households who have lost wealth, typically lost half of it in both countries (53% in the United States and 47% in Germany) and households who gained typically increased their wealth by more than 60% (65% in the United States and 62% in Germany). In short, the division into wealth losers and winners differed between these two nations – with more losers in the United States than in Germany and more winners in Germany than in the United States – but among the winners and the losers, the relative changes in net worth were very similar.

The stability of the wealth hierarchy

Above, we discussed the shape of changes in household's net worth between 2007 and 2011. We now ask whether to which extent the documented changes in household's wealth level amount to fluctuation in their overall position in the wealth distribution. Specifically, we are interested in how many households move up or down the distribution. To this point, we have documented structural changes in the aggregate

distribution of wealth (particularly for the U.S. case) and considerable fluctuation in household's wealth levels in both countries. Yet, both of these types of instability may coexist with a largely stable ordering of households along the wealth distribution. And, in fact, Table 4 documents a great degree of rigidity in the wealth structure in spite of the aforementioned changes. It shows outflow percentages from wealth quintiles in 2007 to wealth quintiles in 20011/12. Immobility (bold cells) is high, in particular at the bottom and, even more so, at the top. The incidence of downward or upward moves beyond the adjacent wealth quintile is quite low and in the single digits for all cases expected the probably of U.S. households in the middle net worth quintile in 2007 to fall down to the lowest quintiles in 2012 (12%). More surprising than this high level of immobility may be the great similarity in the wealth mobility of households in the United States and Germany. Immobility in the lowest quintile is basically just as high in Germany (58%) as it is in the United States (60%) and the same holds for immobility in the highest quintile (72% in Germany, 73% in the United States). Immobility in the third and fourth quintile are somewhat higher in Germany than in the United States, due to more extended downward mobility from the middle of the wealth distribution in the latter case, as stated earlier. Overall, though, the pattern and level of rigidity in the wealth hierarchy is highly similar across the two nations – and additional tests based on log-linear and log-multiplicative models (not shown) provide no statistical evidence that the level of mobility in these two countries differs significantly.

DISCUSSION

We have documented vast cross-national differences in the development of household wealth over the last decades. The United States were marked by large structural shifts, in particular following the financial crisis, towards a much more unequal wealth distribution. In the same period, the Germany wealth structure showed remarkable stability with few exceptions: The lower point of the German wealth distribution fell farther behind – like in the United States – although likely for different reasons that were not directly associated with the financial crisis. When we investigate the development of net worth at the household level, we observe more frequent wealth losses in the United States than in Germany and more frequent wealth gains in Germany than in the United States. But among those households with fluctuation wealth, the relative size of fluctuation was rather similar across the two countries. The most pronounced and most interesting cross-national similarity that we detect, however, lies in the great rigidity of the wealth distribution in both countries. Despite very different trends in the distribution of wealth and the incidence of wealth losses and gains, U.S. and German households are marked by basically the same and high degree of stability in terms of households' chances to significantly move up or down the wealth hierarchy.

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APPENDIX A: THE POTENTIAL ROLE OF RETIREMENT WEALTH

Our wealth measures do not include pensions entitlements from the social security system. Net worth measures that seek to include retirement wealth ("augmented net worth") are not readily available in the surveys used here (but see Rasner et al. 2013 for an imputation approach based on the SOEP). Even if they were, it is not obvious whether pensions entitlements should be included in the assessment of household wealth. First, acquired entitlements of old-age pension benefits to be granted once the standard age threshold has been reached represent only a notional asset. Second, simply adding them to financial and material assets is problematic because the latter have specific functions that pension entitlements largely fail to fulfill. For example, no (further) income can be gained from pension entitlements, they lack the usage function of real estate, and the possibility of bequeathing them takes only the severely limited form of provision for dependents (in the form of widow/er pensions). Additionally, the power, socialization and prestige functions of monetary wealth also do not apply to pension assets since premature liquidation of entitlements, for example to purchase real estate, is barred, as is taking an advance. What remains, then, is merely the security function. But even this function is limited to the phase of the individual's life that follows entry into retirement, to occupational disability, and to provisions for dependents.

Still, the consideration of public pension entitlements will impact the analysis of household wealth not only within but also across countries (see e.g. Frick and Headey 2009). Based on findings reported in prior research (Wolff 2014, Frick and Grabka 2010) we may therefore formulate some expectations as to how the comparative results (cross-

national differences and trends) may change if we were willing and able to consider pension wealth.

Social security wealth is widespread across the population. In the U.S. more than 95 percent of the private households hold any entitlements to Social Security benefits pension scheme (Whitman et al. 2011) while in Germany about 90 percent hold entitlements to public pensions (Frick and Grabka 2010). Besides the higher incidence of pension wealth in Germany, the net replacement rates for an average earner is also higher in Germany than in the United States, with 57 percent and 47 percent, respectively (OECD 2013). Thus, one can assume that including pension wealth in an augmented measure of net worth should reduce the absolute differences in wealth levels between the United States and Germany. In the case of Germany the present value of public pension wealth amounts to an average of 67,000 euros per adult. Adding this to individuals' financial and material wealth would increase net worth by as much as 75%.

In addition to the absolute level of wealth, wealth inequality also respond to the inclusion of public pension wealth. Thanks to the fact that nearly every gainfully employed person acquires entitlements from the national social security scheme in the United States and Germany, pension wealth is distributed more equally. Including it in the measure of net worth inequality has been shown to decrease the gini coefficient by 20% in both countries (Frick and Grabka 2010; Wolff 2014).

When, in addition to public pensions, we also consider employer-based and private pensions, we should expect even larger wealth changes in the United States, where these pensions can be drawn down largely at will, although with considerable financial penalties (Bridges and Stafford 2012, Wolff 2014). This suggests that, if

anything, we underestimate the already great cross-national difference in wealth trends – stability in Germany and a great degree of fluctuation in the United States.

TABLES

Table 1. Changes in the Distribution of Wealth

(a) United States

				Absolute changes		
	2003	2007	2011	'03–'07	'07–'11	'03–'11
Net worth						
Mean	325,675	409,012	305,841	83,337	-103,171	-19,833
5th percentile	-9,415	-13,018	-32,000	-3,604	-18,982	-22,585
10th	0	-1,302	-9,500	-1,302	-8,198	-9,500
25th	9,781	6,726	2,400	-3,055	-4,326	-7,381
Median	84,976	95,468	54,500	10,492	-40,968	-30,476
75th	291,863	355,294	260,000	63,431	-95,294	-31,863
90th	711,599	902,068	761,000	190,469	-141,068	49,401
95th	1,151,763	1,573,059	1,331,000	421,296	-242,059	179,237
Net worth excluding housing wealth						
Mean	191,457	225,889	189,224	34,432	-36,665	-2,233
5th percentile	-16,995	-21,697	-29,000	-4,702	-7,303	-12,005
10th	-4,279	-7,594	-11,000	-3,315	-3,406	-6,721
25th	2,262	1,085	500	-1,177	-585	-1,762
Median	24,454	22,240	15,700	-2,214	-6,540	-8,754
75th	122,268	134,524	107,000	12,256	-27,524	-15,268
90th	391,257	509,562	438,952	118,305	-70,610	47,695
95th	715,267	935,576	840,000	220,309	-95,576	124,733
Observations	7,822	8,289	8,907			

(b) Germany

				Absolute changes		
	2002	2007	2012	'02–'07	'07–'12	'02–'12
Net worth						
Mean	141,248	133,840	123,861	-7,407	-9,979	-17,386
5th percentile	-3,716	-4,647	-3,572	-931	1,075	144
10th	0	0	0	0	0	0
25th	1,885	1,617	899	-269	-718	-987
Median	35,112	34,086	37,452	-1,025	3,366	2,340
75th	169,248	156,682	158,305	-12,566	1,623	-10,943
90th	340,530	324,088	305,473	-16,442	-18,615	-35,057
95th	507,600	488,771	451,782	-18,829	-36,989	-55,818
Net worth excluding housing wealth						
Mean	47,998	49,199	43,601	1,201	-5,598	-4,397
5th percentile	-5,872	-6,727	-5,774	-855	953	98
10th	0	-12	-25	-12	-13	-25
25th	0	0	0	0	0	0
Median	9,881	11,091	10,190	1,210	-901	308
75th	37,707	41,685	38,670	3,978	-3,015	963
90th	94,373	100,555	94,128	6,182	-6,427	-245
95th	164,873	169,649	161,947	4,775	-7,702	-2,927
Observations	12,212	11,453	10,607			

Table 2. Wealth Inequality

	(a) United States			(b) Germany		
	2003	2007	2011	2002	2007	2012
Gini coefficient	0.81	0.83	0.89	0.76	0.76	0.75
Percentile ratios						
P50/P25	8.7	14.2	22.7	18.6	21.1	41.7
P75/P25	29.8	52.8	108.3	89.8	96.9	176.2
P95/P25	117.8	233.9	554.6	269.2	302.4	502.8
P75/P50	3.4	3.7	4.8	4.8	4.6	4.2
P95/P50	13.6	16.5	24.4	14.5	14.3	12.1
P95/P75	3.9	4.4	5.1	3.0	3.1	2.9

Table 3. Distribution of wealth losses and gains

	(a) United States 2007-2011	(b) Germany 2007-2012
Absolute losses & gains		
Lost at least $5k	**51.6**	**38.7**
$5k–<$50k	18.1	23.2
$50k–<$250k	21.2	12.6
$250k or more	12.4	2.8
Changed by less than +/- $5k	**13.5**	**24.6**
Gained at least $5k	**34.8**	**36.7**
$5-<$50k	16.2	21.6
$50k–<$250k	11.7	12.9
$250k or more	6.9	2.2
Relative losses & gains		
Lost at least 10%	**58.0**	**49.7**
10%-<50%	24.8	21.3
50%-100%	24.5	22.8
more than 100% (feel into debt)	8.7	5.6
Changed by less than +/- 10%	**9.8**	**12.0**
Gained at least 10%	**32.2**	**38.2**
10%-<50%	11.5	12.1
50%-100%	6.1	6.9
more than 100%	14.7	19.2
Typical losses & gains		
Median loss among those having lost		
absolute	$72,812	$24,110
relative	52.5	47.1
Median gain among those having gained		
absolute	$42,247	$24,309
relative	64.9	61.7

Table 4. Wealth Mobility

(a) USA

	Net Worth 2011					
Net Worth 2007	1st	2nd	3rd	4th	5th	Total
1st (lowest) quintile	**60**	30	7	2	1	100
2nd	26	**44**	25	5	1	100
3rd	12	18	**44**	22	3	100
4th	6	8	20	**49**	18	100
5th (highest) quintile	2	1	5	18	**73**	100

Based on balanced panel for households with the same household head in 2007 and 2011

(b) Germany

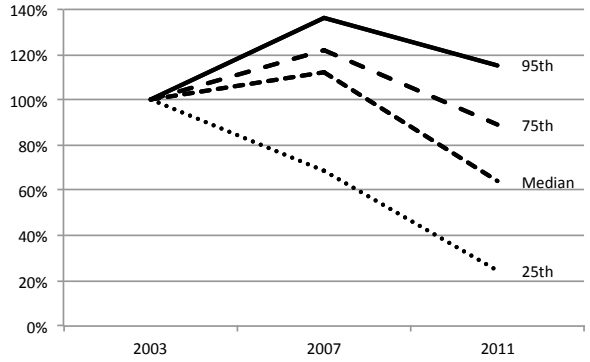
	Net Worth 2012					
Net Worth 2007	1st	2nd	3rd	4th	5th	Total
1st (lowest) quintile	**58**	29	9	3	1	100
2nd	27	**44**	22	6	2	100
3rd	8	18	**52**	18	3	100
4th	3	3	21	**56**	18	100
5th (highest) quintile	1	2	4	21	**72**	100

Note: Based on balanced panel for households with the same household head in 2007 and 2012

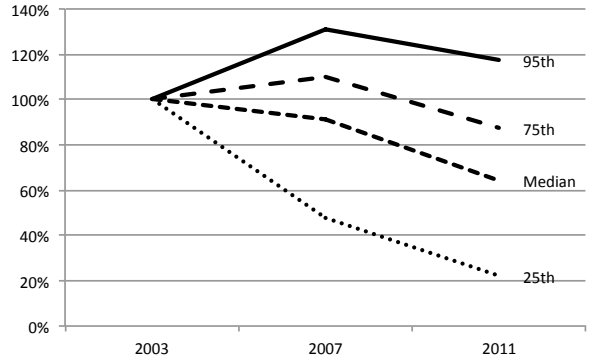
FIGURES

Figure 1. Changes in the Distribution of Wealth

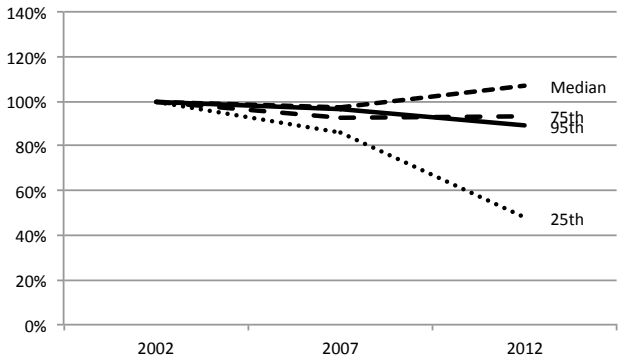
(a) United States: Net worth



(c) United States: Net worth excl. housing



(b) Germany: Net worth



(d) Germany: Net worth excl. housing