Real net worth of households in Germany fell between 2003 and 2013

By Markus M. Grabka and Christian Westermeier

Studies indicating the development of household wealth in Germany are typically based on nominal values and do not take account of price rises and thus the actual purchasing power of those assets. DIW Berlin took inflation into account in a recent evaluation and concluded that the average net worth of households in Germany decreased in real terms by almost 15 percent from 2003 to 2013. This figure, based on the German Income and Expenditure Survey (Einkommens- und Verbrauchsstichprobe, EVS) of the Federal Statistical Office, is confirmed by data from the German Socio-Economic Panel (SOEP) study and shows that real assets declined by more than 11 percent between 2002 and 2012. In particular, the weak performance of the estimated fair value of owner-occupied real estate is likely to have contributed to this decline. In contrast to DIW Berlin's findings, the national accounts system (Volkswirtschaftlichen Gesamtrechnungen, VGR) indicated an increase in real net worth of around 19 percent between 2003 and 2013. This discrepancy is likely due to the different valuation methods used.

The development of wealth held by the most affluent individuals is not likely to be responsible for the decline in the overall volume of real assets: Although the EVS and SOEP samples do not provide any details concerning the development of wealth held by the most affluent individuals, because these are either not meaningful or did not appear in the surveys at all, an analysis of the fortunes asset-holders based on information provided by manager magazin suggests that between 2007 and 2012 their assets stagnated on average.

The relevant factors for successful wealth accumulation are regular saving, capital gains, and, in particular, inheritances and gifts. In addition, net asset values held by private households rise considerably whenever debtors pay off their liabilities in accordance with contracts.

The findings presented in this report are based on a research project funded by the Hans Böckler Foundation to analyze the distribution of wealth in Germany[1] and they complement previous findings by DIW Berlin on wealth inequality by also including analyses of wealth mobility.[2] The empirical basis for this is primarily data from the longitudinal Socio-Economic Panel (SOEP) study captured by DIW Berlin in cooperation with the survey institute *TNS Infratest Sozialforschung*.[3] Individual assets were recorded in 2002, 2007, and 2012. This information is supplemented by data from the Income and Expenditure Survey conducted by the German Federal Statistical Office. Measuring wealth is inherently difficult — both conceptually and in practical terms (see box).

Nominal asset gains, real losses

Statistics for asset development in Germany are typically given as nominal values.[4] In the following, assets are shown in real terms to account for the impact of inflation. Since there is no general asset-specific price index, the general consumer price index from the Federal Statistical Office is used to determine the real level of welfare in 2010 prices.[5] This is based on the idea that

1 "Vermögen in Deutschland – Status quo-Analysen und Perspektiven," (Project no.: S-2012-610-4; project management by Markus M. Grabka).

2 See M. M. Grabka and C. Westermeier, "Persistently High Wealth Inequality in Germany," *DIW Economic Bulletin*, no. 6 (2014); and C. Westermeier and M. M. Grabka, "Significant Statistical Uncertainty over Share of High Net Worth Households," *DIW Economic Bulletin*, no. 14–15 (2015).

3 SOEP is an annual representative longitudinal survey of individual households conducted in West Germany since 1984 and also in eastern Germany since 1990, see G. G. Wagner, J. Goebel, P. Krause, R. Pischner, and I. Sieber, "Das Sozio-oekonomische Panel (SOEP): Multidisziplinäres Haushaltspanel und Kohortenstudie für Deutschland – Eine Einführung (für neue Datennutzer) mit einem Ausblick (für erfahrene Anwender)," *AStA Wirtschafts- und Sozialstatistisches Archiv* (2) (2008): 301–328.

4 See, for example, German Federal Statistical Office, "Wirtschaftsrechnungen. Einkommens- und Verbrauchsstichprobe. Geld- und Immobilienvermögen sowie Schulden privater Haushalte," 15 (2) (2014); or Grabka and Westermeier, "Persistently High Wealth Inequality."

5 Consumer prices rose by 17.5 percent between 2002 and 2012.

Box

Data sources for the measurement of wealth

Not only does the national accounts approach face a number of methodological and statistical problems, but so too does the analysis of the distribution of wealth based on micro data representative of the population.

Neither approach takes into account – as is common the world over – the entitlements to statutory pension insurance. Accumulated pension-related claims are converted into personal earning points which do not unequivocally indicate social security assets and therefore are hardly directly ascertainable in a survey; this applies equally to occupational pension entitlements. However, since the majority of the working population is subject to compulsory pension insurance or has pension-related claims, for example, in the form of training or childrearing periods, social security assets in the statutory pension scheme in particular can be assumed to represent the most frequent component in household net worth. Pension insurance data analyses have shown that 91 percent of men and 87 percent of women aged 65 or over have statutory pension entitlements. (In eastern Germany, the corresponding figures are even higher at 99 percent.)

Population surveys

The burden for the respondents to provide fair market value of assets also presents such surveys with a fundamental problem. This leads to increasing non-response rates for all questions regarding the wealth situation, adding to the generally high sensitivity regarding questions concerning the financial situation.

Some components of individual's or household's wealth are usually left out of the equation, as their fair valuation is especially difficult. This includes in particular the household goods and the market value of vehicles. Both components are not covered by the definition of net assets that is the basis of this report.

In population surveys, assets are usually recorded at the household level. In this context, the SOEP methodology has a special feature since it records the individual assets of each respondent aged 17 or over. In contrast to only recording household assets, this approach can show differences within households and partnerships while it still allows the individual worth to be added to obtain a result for a particular household. The data collection methods do not gather information on the assets held by children, so this, too, is underestimated.

Comparing national accounts and survey data

A comparison of aggregated assets based on the SOEP and the sectoral and overall economic balance sheets of the German Federal Statistical Office (FSO) and Deutsche Bundesbank is complicated by a number of differences in distinctions and definitions. Additionally to all differences addressed in the text, a few more pitfalls need to be considered:

In addition to durable consumer goods, other types of assets are also included in the national accounts which are not recorded in the SOEP, including cash, the value of livestock and crops, equipment, intangible fixed assets, claims against private health insurance companies, commercial loans, and commercial holdings in residential buildings.

The SOEP as well as the EVS generally record the current market value of structures while the FSO and Deutsche Bundesbank calculates its replacement value. However, the market value differs significantly from the replacement value of portfolio properties, as calculated by the FSO and Deutsche Bundesbank following international standards. The deviating trends of market values and replacement values are, in parts, explained by different assumptions. First, calculating the replacement value involves an estimation of the costs of rebuilding a structure in its original state. Second, the replacement value depends on the original acquisition costs and the assumed duration of use, thus, incorporating write-downs due to aging as well as wear and tear. Information on real investments trace back as far as 1799 and are re-evaluated using the price indices of construction. Hence, market values and replacement values deviate, if demand significantly increases (decreases) and the resulting purchasing price increases (decreases) faster than the calculated replacement value. Moreover, cumulating small deviations may result in deviating trends for both measurement concepts, especially once the calculation draws from long investment sequences that need to be re-evaluated for the computation of current replacement values.

As a result, the SOEP's 2002 calculation for net worth on this basis totaled almost 90 percent of the balance sheet figure arrived at by the FSO and Deutsche Bundesbank, but it was only 64 percent in 2012 in the case of real estate, the quantitatively most important asset component, the comparison quota fell from 129 percent in 2002 to slightly under 103 percent in 2012. Additionally, the German subsample of the Euro-area *Household Finance and Consumption Survey* (HFCS) reports for 2011 a comparison quota at only 85 percent compared to the national accounts.[1] The aggregate gross monetary assets

1 See European Central Bank 2013. The Eurosystem household finance and consumption survey. Methodological report for the first wave. Statistics paper series No. 1, April, Table 10.5

are at 33 percent, the SOEP, as in most other wealth surveys worldwide, has significantly underestimated their value.[2]

Notes on survey methods

Since 2002, the SOEP has included a subsample of "high-income households" in a concerted effort to counter the widespread problem in population surveys of not having a statistically significant subgroup of higher incomes and assets. In the context of high inequality in personal wealth distribution, this subsample and the sufficiently large number of wealthy households in the SOEP is especially important. In particular, the relationship between income and wealth distribution for all groups, and above all for the group of high-income earners, can also be shown in greater detail, since assets, asset income, and savings depend to a large extent on disposable income. Nevertheless, despite this dedicated subsample, the problem remains that surveys such as the SOEP effectively do not contain top high net worth individuals. This applies in particular to billionaires as well as multi-millionaires with a net worth in the triple-digits million range.[3] Germany presently has no available external statistics to validate this potential underestimation.

Not only does the SOEP conduct extensive consistency checks on the individual data, but it also uses multiple imputations to replace all missing asset values. Due to the use of longitudinal data from the repeated wealth surveys in 2002, 2007, and 2012, the quality of the imputation is better than in the case of a single survey.

After extrapolation and weighting factors are applied, the SOEP micro data underlying these analyses give a representative picture of the sample in households and thus allow conclusions to be drawn about the entire population. Members of the population in institutions (for example, in nursing homes) were not taken into account. The weighting factors correct differences in the designs of the various SOEP samples as well as the participation behavior of respondents after the first interview. The framework data of the micro census is adjusted to increase its compatibility with official statistics.

Table 1

Real wealth and debt in Germany
Average values in households in euro[1]

	2003	2008	2013	Difference 2003/2013	Relative change 2003/2013 in percent
Gross financial assets	44,978	48,377	44,276	−701	−1.6
Consumer credits	−1,563	−1,724	−1,703	−140	9.0
Student loans		−304	−473		
Net financial assets	43,415	46,349	42,100	−1,315	−3.0
Gross wealth in real estate	122,433	97,769	98,202	−24,231	−19.8
Mortgages on real estate	−28,571	−24,848	−23,463	5,109	−17.9
Gross wealth	167,411	146,146	142,479	−24,932	−14.9
Debt	−30,134	−26,876	−25,639	4,495	−14.9
Net assets	**137,277**	**119,270**	**116,840**	**−20,437**	**−14.9**
For informational purposes:	**2002**	**2007**	**2012**		
Lower threshold[2]	87,215	79,510	76,409		
Individual net assets (SOEP)	**90,676**	**83,779**	**80,136**	**−10,540**	**−11.6**
Upper threshold[2]	94,137	88,049	83,863		
Individual gross wealth in real estate	77,794	69,955	66,677	−11,117	−14.3

1 in 2010 prices, harmonized index of consumer prices.
2 95-percent confidence interval.

Sources: EVS, German Federal Statistical Office (2014): https://www.destatis.de/DE/ZahlenFakten/GesellschaftStaat/EinkommenKonsumLebensbedingungen/VermoegenSchulden/Tabellen/GeldImmobVermSchulden_EVS.html 24.7.2014, SOEPv30, calculations by DIW Berlin..

assets can be liquidated and potentially converted into consumption at any time.

According to the EVS, the nominal average net worth of households increased by 500 euros, or about 0.4 percent, from 2003 to 2013. If, however, inflation is taken into account, German households in 2013 had an average real net worth of just under 117,000 euros — and consequently more than 20,000 euros or around 15 percent less than in 2003 (see table 1). The weak development of real estate values in particular, which fell by an average of around 24,000 euros or almost 20 percent, contributed considerably to this situation. The SOEP data also point to a real loss in net worth: more than 11 percent from 2002 to 2012.[6] The value of gross real estate assets actually declined by more than 14 percent.

According to the macroeconomic and sectoral balance sheet of the German Federal Statistical Office and Deutsche Bundesbank, however, the net worth of households including non-profit organizations[7] increased in real terms by almost 20 percent between 2003 and 2013.

2 See OECD 2008. "Growing Unequal," p. 277.

3 Westermeier, C. and Grabka, M. 2015. "Significant Statistical Uncertainty over Share of High Net Worth Households," DIW Economic Bulletin, 5, issue 14/15, p. 210–219.

6 Since both samples are affected by the problem that top asset-holders are not represented meaningfully (see Westermeier and Grabka, "Significant Statistical Uncertainty"), it remains unclear what impact multimillionaires and billionaires have had on the development of average real net worth overall.

7 These also include trade unions, churches, or foundations.

There are several possible explanations for the EVS and SOEP and the national accounts indicating opposing trends:

- The valuation of real estate in the EVS and SOEP (market values) differs from that used in the national accounts (replacement costs) (see box). This means that real declines in real estate assets can be observed in population surveys, although they rose in the national accounts by almost 19 percent between 2003 and 2013 in real terms. Other sources apart from the EVS and SOEP also indicate that the market values of the real estate portfolios declined.[8] Widely reported sharp rises in rents and purchase prices since 2011 were mainly focused on certain metropolitan regions such as Munich or Berlin. On average, house prices have only increased by 1.7 percent per annum in recent years in real terms.[9]

- While the national accounts record households and non-profit organizations together,[10] the EVS and SOEP only indicate the assets held by individual households excluding institutions.[11] However, the assets of households and non-profit organizations may have followed a different pattern.

- The national accounts do not allocate operating assets to only one sector: companies with the legal form of a sole proprietorship, the self-employed, firms constituted under civil law, joint holdings of real estate, and communities of heirs are included as part of the household sector. Corporations (including joint stock companies (AG) and limited liability companies (GmbH)) and private companies (including general partnerships (OHG) and limited partnerships (KG)) form a separate sector as non-financial corporations.[12] As a result, the net assets of individual households are considerably underestimated in the national accounts.

- Households with a net income of more than 18,000 euros per month are explicitly excluded from the EVS and effectively under-reported in the SOEP.[13] If we consider estimates of the richest 300 Germans compiled by manager magazin, which include a number of assumptions and compare the asset worth of those included in this list in both 2007 and 2012[14] (more than 250 individuals, families, and their heirs), it becomes apparent that their nominal assets have remained almost unchanged on average. This appears to be a plausible finding for the observation period due to the financial market crisis.

- Estimates of fair value in population surveys are difficult, especially when the asset was inherited or acquired some time ago and the respondents do not have sufficient knowledge of its current market value.[15] Assessing business assets is also known to be notoriously difficult. In contrast to regular income, assets can be very volatile, thus further complicating their evaluation.

In addition to the issues already mentioned, there are other comparative difficulties between population surveys and the national accounts. For instance, surveys do not record some asset components (see box).

Assets change most on the margins of the distribution

From the cross-sectional analyses of EVS and SOEP mentioned above it is not possible to draw reliable conclusions about how the assets have evolved on an individual basis. In a longitudinal analysis, however, which is also possible using SOEP data, only individuals who appear in the sample at least twice are considered. Accordingly, average net worth trends change using the longitudinal perspective of SOEP data (see table 2). This perspective shows that real average net worth fell by 2,500 euros or just under three percent between 2002 and 2012. Measured against the median,[16] there was in fact real asset growth of over 4,000 euros during this period.

There are a number of reasons why real property losses in the longitudinal perspective are lower than in the cross-sectional view: the individuals included in the data have aged ten years in the period under review and have

8 See J. Möbert, H. Peters, and M. Lechler, "Deutschlands Hauspreise aus internationaler und historischer Perspektive," Wirtschaftsdienst 1 (2014): 76–78. The Federal Statistical Office's price index for existing residential real estate also shows real declining values for the period 2000 to 2010, see Federal Statistical Office, Preisindizes für Wohnimmobilien, accessed August 2015, https://www.destatis.de/DE/ZahlenFakten/GesamtwirtschaftUmwelt/Preise/BauImmobilienpreise/Tabellen_/HaeuserpreiseBauland.html?cms_gtp=469922_slot%253D2&https=1.

9 See Möbert et al., "Deutschlands Hauspreise," 76–78.

10 For example, the number of unincorporated foundations under civil law in Germany almost doubled between 2001 and 2014 from 10,053 to 20,784. See Association of German Foundations, accessed August 2015, http://www.stiftungen.org/fileadmin/bvds/de/Forschung_und_Statistik/Statistik_2015/Stiftungsbestand_2014.pdf.

11 These include homes for the elderly and student residences.

12 See O. Schmalwasser and A. Müller, "Gesamtwirtschaftliche und sektorale nichtfinanzielle Vermögensbilanzen," Economics and Statistics 2 (2009): 137–147.

13 Consequently, for the survey year 2012, the SOEP sample did not include any households with a net worth of more than 45 million euros.

14 See K. Boldt, "Deutschlands Reichste. Aldi-Clan dominiert Deutschlands Topmilliardäre," manager magazin, October 9, 2012, accessed August 2015, http://www.manager-magazin.de/unternehmen/artikel/a-860164.html. Since the information provided by manager magazin is largely based on estimates, these data should be used with caution. In addition, the development from 2002 to 2012 is unclear as the first half of the period is not taken into account due to insufficient sample sizes.

15 An additional valuation problem is that the market value of real estate can vary greatly from one region to another and the respondents may not be aware of precise developments in their region.

16 The median divides the poorer half of the population from the richer half.

Table 2

Real individual net assets in longitudinal section
In euro[1]

	2002	2012	Difference	Relative change in percent
Lower threshold[2]	77,878	77,320		
Mean	**88,029**	**85,505**	**−2,524**	**−2.9**
Upper threshold[2]	98,179	93,690		
Lower threshold[2]	13,576	16,122		
Median	**17,006**	**21,326**	**4,320**	**25.4**
Upper threshold[2]	20,437	26,530		

1 Real individual net assets, individuals aged 17 or older in private households, in 2010 prices, with 0.1 percent top coding, longitudinal section 2002/2012.
2 95-percent confidence interval.

Source: SOEPv30.

had the opportunity to accumulate wealth by saving regularly. Individuals who only participated in the SOEP survey once, particularly young people and those who have since died, were omitted from this analysis. Moreover, older people who typically have large assets have a positive impact on the mean of the total population.

This longitudinal analysis of asset mobility shows typical asset accumulation and depletion over the life cycle.[17] At the beginning of their working lives, young people tend to be more likely to accumulate debt. In subsequent years, they pay off this debt through rising incomes, put money aside for old age, and live off their savings again when they retire. As a result, the ten percent of individuals with the least assets (first asset decile[18]) are more than 17 years younger on average than the richest ten percent of (tenth net asset decile).[19]

The top two asset deciles, i.e., the 20 percent of those with the most assets (excluding multimillionaires), lost an average of 22 and seven percent of their assets respectively from 2002 to 2012 (see table 3). Apart from actu-

17 See also Table 5 in the present article.

18 The present analysis uses pseudo-deciles since the first two groups are qualitatively different from deciles with a positive net worth. The first group has a negative net worth, while the second group has no assets. The remaining population is distributed equally across eight deciles.

19 In the first decile, the median age is 49, falling to 43 in the third decile and then increasing again to an average of 66 in the top decile.

Table 3

Changes in real individual net assets 2002/2012 in 2002 decile groups
In euro[1]

2002 decile groups	Lower threshold[2]	2002	Upper threshold[2]	Lower threshold[2]	2012	Upper threshold[2]	Difference in euro	Relative change in percent
Mean of decile								
1st decile (in debt)	−22,575	**−14,412**	−6,250	9,060	**14,652**	20,243	29,064	
2nd decile (zero assets)	0	**0**	0	10,078	**13,607**	17,136	13,607	
3rd	1,323	**3,892**	6,462	18,809	**29,066**	39,323	25,174	647
4th	−405	**11,579**	23,563	15,213	**28,021**	40,830	16,442	142
5th	17,519	**19,841**	22,162	34,435	**45,349**	56,263	25,508	129
6th	39,739	**45,685**	51,630	55,734	**66,027**	76,321	20,342	45
7th	71,656	**75,092**	78,529	71,046	**79,667**	88,288	4,575	6
8th	117,848	**124,361**	130,873	111,760	**128,783**	145,807	4,422	4
9th	181,905	**192,888**	203,871	161,548	**179,054**	196,561	−13,834	−7
10th decile	490,864	**542,120**	593,375	368,047	**420,565**	473,083	−121,555	−22
Mean		**88,029**			**85,505**		−2,524	−2.9
Median of decile								
1st decile (in debt)	−11,352	**−7,817**	−4,282	−12	**0**	12	7,817	
2nd decile (zero assets)	0	**0**	0	−804	**0**	804	0	
3rd	1,854	**2,257**	2,661	2,726	**5,591**	8,455	3,334	148
4th	7,005	**8,346**	9,688	2,058	**6,744**	11,429	−1,602	−19
5th	16,025	**17,189**	18,353	13,095	**20,077**	27,059	2,888	17
6th	40,371	**44,049**	47,727	34,107	**42,671**	51,234	−1,378	−3
7th	70,439	**73,801**	77,163	55,604	**68,540**	81,475	−5,261	−7
8th	113,517	**120,461**	127,404	96,340	**106,870**	117,400	−13,591	−11
9th	177,198	**184,944**	192,690	144,482	**159,566**	174,649	−25,378	−14
10th decile	365,716	**416,711**	467,707	265,705	**312,829**	359,952	−103,882	−25
Median		**17,006**			**21,326**		4,320	25.4

1 Real individual net assets, individuals aged 17 or older in private households, in 2010 prices, with 0.1 percent top coding, longitudinal section 2002/2012.
2 95-percent confidence interval.

Source: SOEPv30.

Table 4

Changes in real individual net assets[1]
In percent

	2002/07	2007/12
Loss (Under −1000 euro)	**41.7**	**40.0**
Under −250,000 euro	2.4	1.7
−50,000 to −250,000 euro	11.3	9.1
−10,000 to −50,000 euro	15.6	15.5
−1,000 to −10,000 euro	12.5	13.6
unchanged (−1,000 to +1,000 euro)	**13.4**	**15.8**
Gain (+1000 euro or over)	**44.9**	**44.2**
1,000 to 10,000 euro	13.5	14.9
10,000 to 50,000 euro	17.6	17.5
50,000 to 250,000 euro	11.7	10.3
250,000 euro or over	2.0	1.6
Total	**100.0**	**100.0**
Fraction of individuals with status change to negative net assets	5.1	4.3
Fraction of individuals with status change from negative to non-negative net assets	3.8	4.9
Absolute losses (population that reported losses only)		
Median in Euro	−21,303	−16,615
Absolute gains (population that reported gains only)		
Median in Euro	20,175	17,841
Changes in overall population		
Mean	−1,211	456
Median	5,349	3,376

1 Real individual net assets, individuals aged 17 or older in private households, in 2010 prices, with 0.1 percent top coding, longitudinal sections 2002/2007 and 2007/2012.

Source: SOEPv30.

al and accounting losses, one important factor explaining this sharp decline is transferring assets as gifts to younger generations.[20] Capital transfers to foundations could also play a role here.

In contrast, the lower eight asset deciles have increased their net assets as measured by average value. Those in the lowest decile were in fact able to increase their net worth by an average of around 29,000 euros — primarily by repaying consumer loans and mortgages — thereby taking themselves out of the negative asset zone.[21] Another explanation for the increase in assets might be inheritances and gifts.

Regular saving, inheritances, and gifts are relevant for asset accumulation

In order to assess the impact of the global financial and economic crises, we need to look at the development of assets in the 2000s. The following analysis is divided into two five-year periods to assess developments separately, The assets of at least one-eighth of individuals remained stable in both periods (2002 to 2007 and 2007 to 2012), i.e., changed by less than 1,000 euros (see table 4). Almost a third of individual's net worth increased by between 1,000 and 50,000 euros. More than ten percent recorded asset gains of over 50,000 euros. Conversely, more than 40 percent of all adults in households experienced asset losses in real terms.[22] Measured against the median, their losses came to 21,000 euros in the period from 2002 to 2007 and almost 17,000 euros from 2007 to 2012. Of those who experienced asset gains, their net worth grew in relation to the median by 20,000 or 18,000 euros, respectively for the two observation periods. By 2012, the declines and slumps caused by the financial market crisis had been largely wiped out, particularly in terms of average monetary assets. Compared to the period before the crisis, there was only a slight depletion of assets.

Net worth by age group shows a classic life cycle pattern for both observation periods[23] (see table 5): at the start of working life, people are able to save and accumulate wealth, while at the same time, the likelihood of receiving an inheritance also increases. As a result, the net worth of 30- to 39-year-olds showed the strongest growth when measured against the median.[24] Net worth declined from the age of 50 and fell even more after retirement.

The amount of household disposable income largely determines saving opportunities. Consequently, the growth in individual net worth was higher, the better the income position. This becomes even clearer when one looks at the amount regularly saved: while high-income individuals have the ability to set aside relatively large amounts of money and thereby increase their net worth, savings stagnate or fall for those with low incomes who save little or nothing. The latter are also dependent on low-risk forms of investment because they cannot afford to lose any of their capital. However, they pay the

20 In the underlying survey, respondents were indeed asked about regular transfers to those living outside the household, but not about larger one-off payments such as gifts, so this particular aspect cannot be further analyzed here.

21 It should be noted that individuals belonging to the first asset decile do not necessarily have low incomes. The inclusion of larger liabilities (mortgages) is dependent on the financial situation and on the household's collateral and therefore its ability to afford repayments.

22 The asset losses are likely to be overstated here because the value of the household effects or of any vehicle is not included in the analysis, whereas consumer loans are taken into account once these items have been purchased.

23 See F. Modigliani, "The life-cycle hypothesis and intercountry differences in the saving ratio," in Induction, growth, and trade: essays in honour of Sir Roy Harrod eds.,W. A. Eltis, M. FG. Scott, and J. N. Wolfe (Oxford: Oxford University Press, 1970), 197-225.

24 The median is shown here because, in contrast to the mean, it is not sensitive to outliers.

Table 5

Median of the real individual net assets by socio-demographic status

In euro[1]

	Longitudinal Section 2002/2007			Longitudinal Section 2007/2012		
	2002	2007	Difference	2007	2012	Difference
Total	19,734	25,083	5,349	16,524	19,900	3,376
Age in base year						
Under 30 years	0	3,476	3,476	1,041	2,181	1,140
30 to 39 years	11,648	19,511	7,863	11,967	20,749	8,783
40 to 49 years	34,312	37,461	3,149	26,431	30,740	4,309
50 to 59 years	60,007	57,908	−2,098	45,411	45,064	−347
60 to 69 years	65,638	50,780	−14,857	61,134	51,299	−9,835
70 or over	46,738	40,739	−5,999	35,263	32,564	−2,699
Income quintile in base year (household income based on needs-adjusted equivalence scales)						
1st quintile	1,129	1,665	536	0	0	0
2nd	7,219	8,368	1,149	7,596	7,685	89
3rd	16,948	21,061	4,113	13,424	20,629	7,206
4th	33,747	39,549	5,802	32,410	37,818	5,409
5th quintile	86,851	97,115	10,264	78,398	86,683	8,285
Quintiles of regular saving amounts						
1st quintile (no savings)	2,257	0	−2,257	0	0	0
2nd	5,214	5,191	−23	5,630	4,976	−654
3rd	20,327	22,373	2,045	15,682	19,693	4,011
4th	37,251	47,430	10,179	35,159	36,739	1,580
5th quintile	90,293	104,058	13,765	68,479	87,837	19,358
Region in base year						
West Germany	25,169	32,343	7,174	21,817	28,625	6,808
East Germany	8,594	10,406	1,812	6,483	7,823	1,340
Employment status in the past 5 years (selected groups)						
Full time 1 to 12 months	5,409	7,492	2,084	1,582	1,559	−23
Full time 13 to 59 months	6,524	12,175	5,651	5,203	8,261	3,058
Full time 60 months	33,154	45,361	12,208	29,344	45,506	16,161
Unemployed 30 to 60 months	0	0	0	0	0	0
Residential status						
Owner	112,867	107,680	−5,187	101,927	102,046	119
Change to tenant	12,077	7,794	−4,283	12,355	3,050	−9,306
Change to owner	7,743	46,202	38,459	17,480	51,577	34,097
Tenant	2,257	2,374	116	1,623	1,921	298
Marital status						
Single → Married	2,302	13,153	10,850	12,216	18,786	6,569
Married → Widowed	43,454	63,209	19,755	43,704	24,015	−19,689
Married → Divorced	13,051	3,039	−10,013	22,060	6,939	−15,121
Married	53,615	51,606	−2,009	40,543	47,217	6,673
Person in need of care in household	24,124	16,843	−7,281	20,812	14,207	−6,605
Household received (in the past 5 years) ...						
Inheritance	83,348	101,197	17,849	32,529	54,486	21,957
Gift	27,878	63,319	35,441	22,581	45,264	22,684

1 Real individual net assets, individuals aged 17 or older in private households, in 2010 prices, with 0.1 percent top coding, longitudinal sections 2002/2007 and 2007/2012.

Source: SOEPv30.

price of lower returns on safer investments, compounded by the current period of low interest rates.

Current incomes in eastern Germany are still lower than in the west almost 25 years after reunification. As a result, a difference can be observed in both real net worth and asset growth in the two parts of the country from 2002 to 2012.

The number of hours worked also affects an individual's savings. If individuals had worked full-time in the previous five years, their real net worth increased by 12,000 euros (from 2002 to 2007) and 16,000 euros (from 2007 to 2012). Where individuals had been employed full-time for a maximum of one year, however, changes to their net worth were below average. If individuals had mainly been unemployed, they had zero assets in the initial year and in subsequent years.

Socio-demographic factors such as a change in marital status or the type of housing also have an impact on assets. The data indicate that, in particular, there was an increase in the assets of those who had acquired an owner-occupied property in the past five years. The change measured against the median totaled more than 30,000 euros. The cause of this is likely to have been, among other things, rule-based saving in the form of mortgage loan repayment. In contrast, average changes in property values were less relevant because there was relatively little change in the net worth of permanent real estate owners. If owners became tenants, their net worth declined. The reasons for this might be divorce, foreclosures, or transfers to children. Long-term tenants had the lowest net worth. Their assets totaled less than 3,000 euros in the two initial years (2002 and 2007).[25] Their asset growth was also extremely low. Presumably, tenants have a higher propensity to consume and therefore accumulated virtually no assets.[26]

Those who had married in the previous five years were able to look forward to asset growth — probably because of the positive effects of economies of scale in a joint household. In contrast, as expected, those who divorced or separated suffered asset losses. Their real net worth fell relatively sharply by more than 10,000 euros.[27] In the event of widowhood, assets rose due to the transfer of assets to the surviving partner.

Adverse health effects may be associated with financial costs and rising life expectancy may also lead to increasing asset depletion in old age. This applies in particular to people needing care since statutory nursing care insurance in Germany does not cover all costs.

Ultimately, inheritances and gifts can lead to considerable asset changes. The highest increase in net worth is associated with gifts (for those who lived in households that had received a gift in the previous five years). The increase from 2002 to 2007 was around 35,000 euros measured against the median. Households that received inheritances report less net asset increases (almost 18,000 euros).[28]

Repayment of loans leads to long-term asset growth

Individual asset development depends on the type of short- or long-term investment and the level of risk. The following analysis only considers individuals with a corresponding type of investment in both study periods (see table 6). It reveals particularly strong growth for business assets of around 58,000 euros on average from 2007 to 2012.[29] It is also shown that the initial level of these assets was the highest.

Above all, real estate values followed very different trends from region to region. While owner-occupied housing suffered real value losses on average in both observation periods, SOEP estimates for the fair value of other real estate from 2007 to 2012 indicated an average increase of around 20,000 euros.[30]

Monetary assets have developed positively in recent years, which is likely due to positive overall developments in the equities and bond markets. On average, there were increases of more than 9,000 euros. However, the development of private insurance and building loan contracts, including Riester pensions, was negative. While those markets at least achieved average increases

25 Another contributory factor is that owner-occupiers are on average a good six years older than tenants.

26 Another explanation might be that they are relying on their statutory and occupational pensions; these entitlements are not included in the assets examined as part of the present analyses.

27 Divorce generally results in asset depletion, in addition to the costs of furnishing a new household from existing assets.

28 The value of gifts is higher than inheritances and this can be explained in that gifts are given deliberately for taxation reasons or to purchase real estate and are more frequently larger sums.

29 This finding is consistent with data from the national accounts according to which corporate and unearned income has increased more than the employee compensation in recent years, see J. Goebel, M. M. Grabka, and C. Schroeder, "Income Inequality Remains High in Germany: Young Singles and Career Entrants Increasingly At Risk of Poverty," DIW Economic Bulletin, no. 25 (2015).

30 One explanation for the differing development of real estate prices, among others, is that the price of building land has steadily risen since 2000 in contrast to residential real estate. Other real estate also includes that abroad. See Federal Statistical Office, *Preisindizes für Wohnimmobilien. Häuserpreisindex, Preisindex für Bauland*, accessed August 2015, https://www.destatis.de/DE/ZahlenFakten/GesamtwirtschaftUmwelt/Preise/BauImmobilienpreise/Tabellen_/HaeuserpreiseBauland.html?cms_gtp=469922_slot%253D1%2526469936_list%253D2&https=1.

Table 6

Wealth mobility by wealth components
In euro[1]

	2002	2007	Difference	2007	2012	Difference
Individuals with asset/debt in base and final year only						
Mean						
Owner-occupied property	154,666	143,967	−10,699	146,574	135,548	−11,026
Other real estate	184,524	199,302	14,779	165,176	185,329	20,153
Financial assets	27,037	36,315	9,278	30,936	40,624	9,688
Business assets	256,094	269,566	13,473	195,609	253,925	58,316
Valuables	20,614	24,370	3,757	12,896	14,057	1,160
Insurance policies and building loan contracts	21,262	22,959	1,696	20,092	19,626	−466
Mortgages on owner-occupied property	−52,600	−46,771	5,829	−53,281	−45,305	7,976
Mortgages on other real estate	−104,330	−125,323	−20,993	−96,690	−113,938	−17,248
Consumer credits	−25,647	−17,778	7,870	−14,188	−13,495	693
Net assets	91,677	90,524	−1,153	85,704	86,311	607
Median						
Owner-occupied property	124,154	116,648	−7,505	114,145	105,668	−8,477
Other real estate	97,065	104,058	6,993	75,213	86,878	11,665
Financial assets	11,287	15,609	4,322	10,406	14,409	4,003
Business assets	39,241	52,029	12,788	30,199	48,031	17,832
Valuables	7,585	12,886	5,302	4,784	3,842	−942
Insurance policies and building loan contracts	9,029	10,510	1,481	8,678	9,607	929
Mortgages on owner-occupied property	−40,812	−39,230	1,582	−45,786	−38,329	7,457
Mortgages on other real estate	−58,011	−69,199	−11,187	−52,029	−43,228	8,801
Consumer credits	−8,880	−9,884	−1,004	−7,013	−7,728	−714
Net assets	19,734	25,083	5,349	16,524	19,900	3,376
For informational purposes:						
Individuals with debt in base year only						
Mean						
Mortgages on owner-occupied property	−52,600	−32,986	19,614	−53,281	−30,711	22,570
Mortgages on other real estate	−104,330	−63,982	40,347	−96,690	−58,242	38,448
Consumer credits	−25,647	−8,026	17,622	−14,188	−7,251	6,937
Median						
Mortgages on owner-occupied housing	−40,812	−19,212	21,599	−45,786	−21,956	23,829
Mortgages on other real estate	−58,011	−674	57,337	−52,029	−1,634	50,395
Consumer credits	−8,880	−519	8,361	−7,013	0	7,013

1 Real individual net assets, individuals aged 17 or older in private households, in 2010 prices, with 0.1 percent top coding, longitudinal sections 2002/2007 and 2007/2012.

Source: SOEPv30.

of around 1,700 euros from 2002 to 2007, assets in this type of investment fell by almost 500 euros from 2007 to 2012.[31] The phase of low interest rates is also likely to have played a part here.

The remaining debt on mortgages for owner-occupied real estate decreased by an average of up to 8,000 euros in both observation periods. Since liabilities may be fully repaid within a five-year period, the change in debt was additionally analyzed for all individuals who had debts at the beginning of a five-year period. The data shows that liabilities fell sharply in all groups analyzed. Measured against the average, these losses on mortgages and other real estate, for example, totaled around 40,000 euros in each period.[32] Holder of consumer credits appear to have accumulated appreciable savings through regular repayments: they paid back an average of almost 18,000 euros (from 2002 to 2007) and 7,000 euros (from 2007 to 2012).

Conclusion and evaluation

Over the past 20 years, the overall savings rate of households in Germany was consistently higher than nine percent.[33] Nevertheless, according to the Income and Ex-

31 See K. Hagen and A. Kleinlein, "Zehn Jahre Riester-Rente: Kein Grund zum Feiern," DIW Wochenbericht, no. 47 (2011).

32 However, mortgages on owner-occupied real estate also indicated a decrease in liabilities of around 20,000 euros in both observation periods. This equates to a repayment of 330 euros per month.

33 Federal Statistical Office, *Volkswirtschaftliche Gesamtrechnungen. Inlandsproduktsberechnung. Lange Reihen ab 1970.*

penditure Survey (EVS) conducted by the Federal Statistical Office, the real net worth of households declined by almost 15 percent between 2003 and 2013. The corresponding figure for 2002 to 2012 based on the Socio-Economic Panel (SOEP) study was more than 11 percent. The weak development of owner-occupied real estate values in the 2000s played a crucial role in this.

These findings contradict the development indicated by the national accounting system, according to which real net worth rose by almost 19 percent. Theoretically, it is possible that this discrepancy is due to a positive development for top asset holders that are de facto under-reported in the SOEP and EVS. However, an evaluation of top asset-holder by *manager magazin* suggests that these remained virtually unchanged between 2007 and 2012. It seems more plausible therefore that the national accounts show a different trend because another valuation method (replacement values) is used for real estate assets.

One reason for the decline in real net assets of households in Germany is likely to be that Germans prefer to place their assets in low-risk but low-return investments such as savings accounts, checking accounts, building loan contracts, or Riester pensions. These investements frequently do not even account for inflation.[34] Obviously, the more risk-averse investment behavior of most people living in Germany and the decline in confidence in riskier forms of investment since the financial and banking crises in 2008 has tended to lead to lower net worth. This development of the net worth can also be seen as the first sign of an aging population because older people tend to shy away from risky investments leading to gradual asset depletion, particularly at retirement age.

Government support for wealth accumulation needs improving, as its aim of reducing wealth inequality is still not being fulfilled.[35] Support for Riester pensions not only comes under criticism due to its low returns but also because its uptake among those who will be solely dependent on statutory pensions or even basic social security is still too low.[36]

Private savings are the third option for old-age security and have been increasingly important since pension reforms came into effect at the start of the millennium. Against this background, the low net worth of tenant households with modest assets of less than 3,000 euros and their low potential asset growth is problematic because even short-term bottlenecks in current income can erode net assets. In addition, these few assets do not provide effective protection against poverty in old age. Targeted support for individual wealth accumulation could counteract these developments and also contribute to reducing Germany's comparatively high wealth inequality.[37]

The present report shows that the data basis in Germany is insufficient in many areas to provide reliable socio-politically relevant figures, such as those for private assets. This is particularly evident given the under-representation of the top assets and the lack of comparability between different valuation methods due to different delimitations and definitions being used. For this reason, there is still room for improvement of the (relevant) data infrastructure in Germany.

34 Individual households alone hold more than 1.1 billion euros in cash. See German Bundesbank, Geldvermögen und Verbindlichkeiten (unkonsolidiert), accessed August 2015, https://www.bundesbank.de/Redaktion/DE/Pressemitteilungen/BBK/2015/2015_07_20_geldvermoegen_anlage.pdf?__blob=publicationFile. In addition, the phenomenon of negative real interest rates occurred repeatedly in the past 40 years. See J. Boysen-Hogrefe and N. Jannsen, "Wo liegen die Gefahren niedriger Zinsen?," Wirtschaftsdienst, no. 9 (2014): 615- 619. On the macroeconomic level, there is also evidence for significant losses in foreign assets, totaling almost 400 billion euros since 2000. See G. Baldi and B. Bremer, "Verluste auf das deutsche Nettoauslandsvermögen – wie sind sie entstanden?," DIW Wochenbericht, no. 49 (2013).

35 On general reform of government wealth accumulation policy, see, B. Boockmann, M. Borell, C. D. Dick, L. Diekmann, E. Gerhards, R. Kleimann, G. Lang, J. Riedler, and M. Thöne, "Künftige Ausrichtung der staatlich geförderten Vermögensbildung," Final Report for the Federal Ministry of Economics and Technology (BMWi), accessed August 2015, http://www.fifo-koeln.org/images/stories/vermoegensbildung-lang.pdf.

36 See G. Corneo, C. Schroeder, and J. König, "Distributional Effects of Subsidizing Retirement Savings Accounts: Evidence from Germany," Discussion Paper, no. 18 (FU Berlin, 2015), accessed August 2015, http://edocs.fu-berlin.de/docs/servlets/MCRFileNodeServlet/FUDOCS_derivate_000000005085/discpaper2015_18.pdf;jsessionid=5FCD2CC6B5096720442A9536E92159BA?hosts=,.

37 See Grabka and Westermeier, "Persistently High Wealth Inequality."

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