

Household Wealth in Great Britain: Distribution, Composition and Changes 2006–12*

ROWENA CRAWFORD,[†] DAVE INNES[‡] and CORMAC O'DEA[§]

[†]*Institute for Fiscal Studies*
(rowena_c@ifs.org.uk)

[‡]*Institute for Fiscal Studies*
(david_i@ifs.org.uk)

[§]*Institute for Fiscal Studies*
(cormac.odea@ifs.org.uk)

Abstract

For many years, survey data on household wealth have been somewhat limited, but the situation is improving in the UK and internationally. This paper uses the new Wealth and Assets Survey (WAS) to document some key features of the distribution of household wealth in Great Britain. We quantify the extent of inequality in total wealth and in its broad components (financial wealth, housing wealth and pension wealth). Exploiting the fact that WAS is a longitudinal survey, we show trajectories of wealth and its components over

*Submitted August 2015.

The authors gratefully acknowledge funding from the IFS Retirement Saving Consortium and the Economic and Social Research Council (ESRC) through the Centre for the Microeconomic Analysis of Public Policy at IFS (grant number RES-544-28-5001). The IFS Retirement Saving Consortium comprises Age UK, Department for Work and Pensions, Financial Conduct Authority, HM Treasury, Institute and Faculty of Actuaries, Investment Association, Just Retirement and Money Advice Service. The Wealth and Assets Survey is collected by the Office for National Statistics, is provided by the UK Data Service (<http://www.ukdataservice.ac.uk>), is Crown copyright and is reproduced with the permission of the Controller of HMSO and the Queen's Printer for Scotland. The authors would like to thank Thomas Crossley and an anonymous referee for comments and Robert Joyce for providing them with Gini coefficients for income. The views expressed and any errors are the authors' alone.

Keywords: wealth, wealth distribution, inequality.

JEL classification numbers: D31, D14.

the period 2006 to 2012 for different birth cohorts. Total wealth on average increased in real terms over this period for working-age households and fell for retirement-age households. However, wealth held outside pensions fell on average over this period for all except the youngest cohort.

Policy points

- A household's level of wealth is a crucial indicator of its material well-being.
- There has traditionally been less micro data available on household wealth than on income or spending. However, since 2006, the new Wealth and Assets Survey has been collecting such data for Great Britain.
- Average household wealth increased in real terms between 2006 and 2012 – the most recent year for which data are available – though the increases are driven by increases in pension wealth.
- Average household wealth held outside pensions fell in real terms between 2006 and 2012 for all except the youngest households.

I. Introduction

A household's level of wealth is a crucial indicator of its material well-being. A household with enough wealth can maintain its living standards when income falls unexpectedly (for example, due to unemployment), when income falls expectedly (for example, due to retirement) or when needs increase (for example, due to a negative health shock). Wealth holdings can also have implications for the descendants of those who currently hold wealth: when wealth is bequeathed from one generation to the next, it gives opportunities to recipients that might not be available to those who have not received inheritances.

In spite of the important role that household wealth plays in decision-making and well-being, data on wealth in the UK and elsewhere have, for many years, been limited. There are four main sources from which empirical evidence on the distribution of wealth can be derived: wealth tax data, estate tax data, investment income data and household survey data. Davies and Shorrocks (2000) provide an excellent discussion of the advantages and disadvantages of these methods and they survey the empirical evidence that has been derived across the world from these different sources. Piketty (2014) is one of the most-cited recent applications of these methods.

In the UK context, the absence of any form of general wealth taxation means that there are no administrative data on wealth holdings collected by the government for tax purposes. However, taxes on estates on death have existed in one form or another for over three centuries. The 'estate method' of estimating the distribution of wealth by multiplying up the estate data by

the reciprocal of the mortality rate therefore has a long pedigree in Britain.¹ The ‘investment income method’ of estimating wealth by working backwards from the distribution of income using a rate of return multiplier also has a long history in Britain.² Atkinson and Harrison (1978) suggest that the results are less reliable than the estate multiplier method, and an obvious limitation is that many forms of wealth – particularly property – do not necessarily yield an income flow. However, this method has received renewed attention in recent years as popular focus has shifted to those at the top of the wealth distribution, for whom income-yielding forms of wealth are relatively more important.³

Neither the ‘estate method’ nor the ‘investment income method’ provides direct measurement of the wealth distribution, and neither is well placed to inform about the wealth distribution below the top end in the UK, since only a small proportion of estates are liable for inheritance tax or are dominated by income-yielding assets. This leaves a clear and important role for household survey data to collect direct measures of wealth holdings across the population.⁴

While the UK has had a survey measuring food spending since 1940, one measuring income and spending since 1961 and a dedicated income and living standards survey since 1994, nationally-representative comprehensive data on wealth were collected for the first time in 2006, when the Wealth and Assets Survey (WAS) started.⁵ In this paper, we use the latest available WAS data (collected in 2010–12) to describe the distribution and composition of household wealth in Great Britain. We then use all three existing waves of WAS data to explore the trajectories of wealth and its components over the period since WAS was first introduced in 2006. This was a period that is both unusual and interesting when considering the evolution of household wealth, since it encompasses the time of the financial crisis and the associated turmoil in asset prices.

The paper is structured as follows. Section II gives some further details about the WAS data. Section III describes the distribution and composition of household wealth in 2010–12, while Section IV shows how household wealth has changed over time. Section V concludes.

¹See Baxter (1869) for an early study, Atkinson and Harrison (1978) for a review of much of the relevant literature and Atkinson (2013) for a recent application.

²See Giffen (1913).

³See, for example, Saez and Zucman (2014).

⁴The paper by Alvaredo, Atkinson and Morelli in this issue discusses some shortcomings of survey data on wealth, most notably low response rates and a failure to capture the concentration of wealth in the top tail of the distribution. We discuss these shortcomings further in Section II. However, while survey data are problematic for estimating wealth holdings of the wealthiest, they do provide detailed estimates of wealth across the majority of the distribution, which is the focus of this paper.

⁵Occasional wealth questions have been included in other surveys. The Family Resources Survey contains some limited questions on liquid wealth. The British Household Panel Survey contains questions on housing wealth in each wave and included questions on liquid wealth in 1995, 2000 and 2005 (see Crossley and O’Dea (2010)) and on pension wealth in 2001 and 2005 (see Emmerson and Wakefield (2009)).

II. The Wealth and Assets Survey

WAS is a household survey that aims to measure the assets and liabilities of the private household population in Great Britain.⁶ WAS is a longitudinal survey: each wave covers a two-year period and interviews have been attempted with the same individuals every two years. The first wave of interviews were conducted between July 2006 and June 2008 and involved 71,268 individuals in 30,595 households. Currently, data from interviews in 2006–08, 2008–10 and 2010–12 are available.

Alvaredo, Atkinson and Morelli (this issue) highlight the low response rates associated with wealth surveys, and WAS is no exception, with a response rate of 54.6 per cent in the first wave. Attrition is also an issue as only 43.1 per cent of households interviewed in the first wave of WAS also appeared in the following two waves. A particular concern is that non-response and attrition rates may differ according to households' wealth. It is not possible to directly test whether there were differential response rates by household wealth in the first wave of WAS, but Crawford, Innes and O'Dea (2015) show that wealthier households were more likely to appear in all three waves of WAS, after conditioning for other household characteristics. It is therefore important to appropriately weight any analysis conducted using WAS.

Since a large proportion of wealth is held by a relatively small number of very wealthy individuals, WAS purposely oversamples wealthy households, using income tax records to target addresses likely to have high levels of financial wealth.⁷ The importance of such oversampling for producing efficient estimates for the top end of the wealth distribution has been demonstrated by Vermeulen (2015) amongst others. However, oversampling the wealthiest households will not deal with biases due to differential non-response among the resulting sample, and Vermeulen finds that WAS, like other wealth surveys, is likely to underestimate the concentration of wealth in the upper tail. Comparing estimates using WAS with those using a combination of WAS and the Forbes List of the World's Billionaires and assuming a Pareto distribution, the author estimates that WAS underestimates the top 1 per cent share of wealth by between 1 and 5 percentage points.

1. Components of wealth

WAS collects very detailed information on households' asset holdings and liabilities. The values of each asset or liability are self-reported, but participants

⁶WAS does not sample individuals living in communal establishments, such as prisons and nursing homes, nor does it sample the homeless. This may affect the extent to which the very oldest groups included in the survey (those aged 85 and over) are representative of all surviving individuals in this age group, but it is unlikely to introduce a significant bias to the results for younger groups.

⁷Office for National Statistics, 2009.

are asked to consult statements where possible and the Office for National Statistics has conducted internal analysis which suggests that WAS wealth estimates are comparable with those from other administrative and survey sources.⁸

The definition of ‘total net wealth’ that we use in our analysis is the sum of net property wealth, net financial wealth and pension wealth. A short description of the contents and calculation of each of these is given below:

- *Net property wealth.* This is the self-reported value of all property held (primary residences, buy-to-let properties, other housing, other buildings, UK and overseas land) *less* outstanding mortgage debt on the main residence and other property or land.
- *Net financial wealth.* This includes positive balances in current accounts, savings accounts (including tax-advantaged Individual Savings Accounts), fixed-term and investment bonds, equities, gilts and other investments *less* the value of any non-mortgage debt (including overdrafts on current accounts, credit card balances and arrears, formal and informal loans and student loans).
- *Pension wealth.* This includes accumulated defined contribution (DC) pension funds, and the ‘value’ of future defined benefit (DB) income and of pensions that are in receipt.⁹ This value is calculated as the size of fund that would be required today to purchase the future pension income stream, given current annuity rates and the number of years that an individual is from retirement (if the pension is not already in receipt).

Being able to include pension wealth in our measure of ‘total net wealth’ is one advantage of using survey data, and means our measure of wealth differs from those typically estimated using the ‘estate method’ or ‘investment income method’. As we will illustrate in Sections III and IV, including pension wealth makes an important difference both to the level of wealth holdings and to the trajectory of household wealth between 2006–08 and 2010–12.

We do not include physical wealth (the total value of household goods, collectibles and valuables, and vehicles) in our measure of total net wealth, though information on these components is solicited in WAS. In this respect, our definition of total net wealth differs from that used by previous analyses.¹⁰ We exclude physical wealth primarily due to the concern with the way the value of household goods is collected. The question asked of households is:

⁸Office for National Statistics, 2009.

⁹DC pensions are those where contributions are paid into a fund that accumulates a return over time, and where that fund is then used to purchase a retirement income stream. DB pensions are those where the pension income is calculated based on the individual’s salary and tenure in the scheme.

¹⁰Hills et al., 2015; Office for National Statistics, 2009, 2012 and 2014.

Thinking about the (other) items in this property that you own, what is the approximate replacement value of the household contents? ... the replacement value is the approximate cost of replacing the items now, and may be similar to the insured value.

We do not believe that in thinking about households' wealth, the replacement value of goods is the most appropriate metric. Many households will own goods that have heavily depreciated and are worth substantially less than what they might consider to be the replacement value. Furthermore, responses may be dragged up by asking respondents to consider the insured value. Empirically, the reported levels of physical wealth are large, even at the bottom of the distribution – the 25th percentile in 2010–12 is £15,000, and even among renters the 25th percentile is £7,500. We therefore exclude physical wealth from our analysis in this paper, but the interested reader is referred to Crawford, Innes and O'Dea (2015), who summarise the distribution of reported wealth held in each component of physical wealth. We also do not include business assets in our definition of total household wealth. WAS attempted to collect data on business assets held by households, but while 12 per cent of households reported having business assets in 2006–08, only 4 per cent provided a valuation of those assets.¹¹ It is therefore highly likely that the information on business assets available in WAS is not representative of the wealth held in businesses by households.

2. Level of analysis

We consider wealth at the household level. This has the practical advantage that some components of wealth, such as property wealth, are collected at the household level in WAS. However, it also reflects the facts that most households operate as a financial unit and that it is the total wealth held by the household that affects the household's standard of living. To make comparisons of wealth between households, it is necessary to take into account the size of the households. There is no consensus on the best equivalence scale to use for wealth, so we take the simple approach of showing household wealth per adult (excluding children of the 'household reference person' who are aged under 25¹²) in the household.

Where we wish to make comparisons between households according to their age, we do so using the age of the household reference person (HRP). In households with multiple individuals, WAS takes the HRP to be the individual

¹¹Office for National Statistics, 2009.

¹²We do not count these individuals as adults as they tend to hold only a small proportion of total household wealth and are arguably only temporarily part of the household. For example, when considering the wealth of a household made up of a couple both aged 50 and that of a household made up of a couple both aged 50 and their 20-year-old son or daughter who is living with them, it feels more comparable to divide the total wealth of the second household by two rather than three.

with the highest income (and where householders have the same income, the older individual is the HRP).

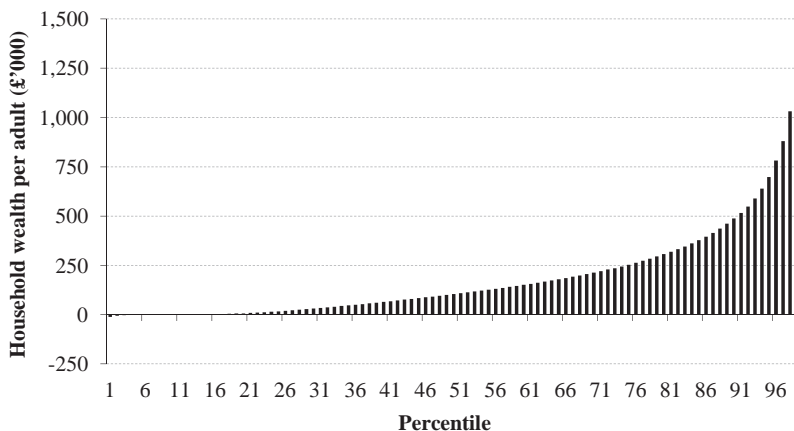
III. The distribution and composition of household wealth, 2010–12

In this section, we first describe the wealth distribution in the most recent wave of WAS (covering 2010–12) and then detail its composition.

1. The distribution of total wealth

Figure 1 shows a percentile plot of the distribution of total wealth. The figure immediately makes clear the well-documented fact¹³ that wealth is distributed very unequally. One per cent of households have negative net wealth of greater than £12,000 per adult (the 1st percentile), while the 9th percentile is £0 so 9 per cent of households have no positive net wealth. Wealth at the median is £104,000 per adult. Wealth at the very top increases dramatically across a small number of percentiles – the 95th and 99th percentiles are £0.7 million and £1.4 million per adult respectively. In fact, the estimates of wealth held at the very highest percentiles could be underestimates; as previously discussed, it is suspected that wealth surveys such as WAS are not able to capture the wealth levels of those at the very top of the wealth distribution.¹⁴

FIGURE 1
Percentile plot of total household wealth per adult

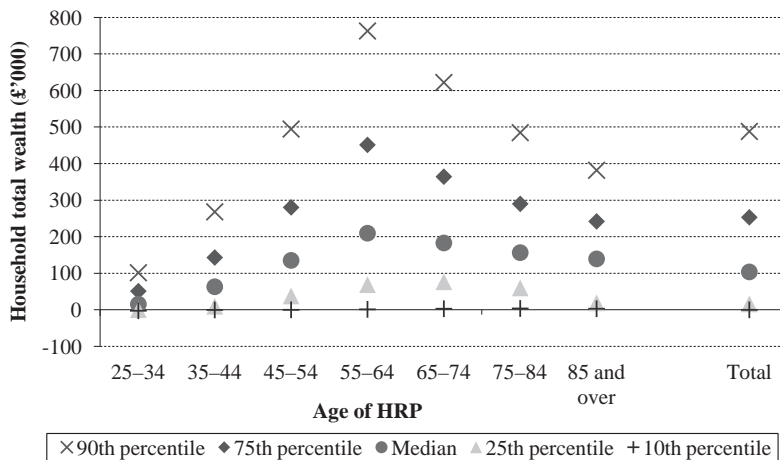


Note: Weighted sample of all households interviewed in WAS Wave 3 (2010–12).

¹³See, for example, Atkinson and Harrison (1978) and Piketty (2014).

¹⁴See Vermeulen (2015) for a discussion of this phenomenon.

FIGURE 2
Distribution of total household wealth per adult by age



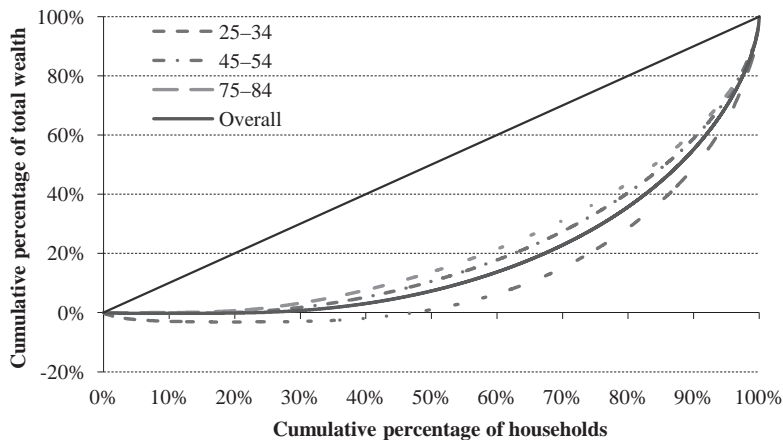
Note: Weighted sample of all households interviewed in WAS Wave 3 (2010–12).

The inequality evident in Figure 1 represents a combination of inequality across different households of the same age and inequality across households of different ages. Attitudes to these two types of inequality might plausibly be very different. *Some* inequality between households of different ages is a natural consequence of older households having built up a stock of wealth to fund their retirement while younger households will not yet have had a chance to save to the same extent. Inequality between households of the same age, however, is much more likely to be indicative of permanent differences in living standards.

To separate the extent to which features of the wealth distribution represent differences between ages or differences between households of similar ages, the rest of the analysis in this section is presented conditional on age groups of the household reference person. These groups are 25–34, 35–44, 45–54, 55–64, 65–74, 75–84 and 85 and over.

Figure 2 shows selected percentiles – the 10th, 25th, 50th (median), 75th and 90th – of total net household wealth per adult for each of these age groups. It shows that the 10th percentile remains close to zero for all ages, while other percentiles exhibit a typical ‘life-cycle’ profile, with wealth rising through working age, peaking at the end of working life and falling during retirement as some wealth (mainly pension wealth) is decumulated. This pattern should not be understood as the life-cycle pattern of wealth accumulation and decumulation of any particular cohort. While part of the difference between

FIGURE 3

Lorenz curves for total wealth per adult for different age groups

Note: Weighted sample of all households interviewed in WAS Wave 3 (2010–12). Age groups are defined using the age of the household reference person.

TABLE 1

Gini coefficients by age: wealth and net income per adult

<i>Age of HRP</i>	<i>Total net wealth (2010–12)</i>	<i>Net income (2011–12)</i>
25–34	0.74	0.26
35–44	0.63	0.32
45–54	0.59	0.37
55–64	0.56	0.34
65–74	0.55	0.30
75–84	0.55	0.28
85 and over	0.55	0.29
All	0.64	0.34

Note: Gini coefficients for wealth are calculated using the weighted sample of households in WAS Wave 3 (2010–12). Gini coefficients for net income are calculated using the Family Resources Survey 2011–12.

age groups will represent households having had different lengths of time to accumulate wealth, part of it arises from households belonging to different birth cohorts (and so having lived through different times that will have afforded them diverse economic opportunities).

To further show the extent of inequality within ages, Figure 3 shows the Lorenz curve for total wealth per adult for selected age groups and Table 1

shows the associated Gini coefficients for all our age groups.^{15,16} To put the wealth Gini coefficients in context, we also report Gini coefficients for net household income (the definition of income used is the same as that used in the official UK analyses of poverty and living standards,¹⁷ with the exception that instead of using income per equivalised adult, we divide by the number of adults – here also excluding children of the HRP aged under 25). Two main points can be taken from Figure 3 and Table 1. First, wealth is generally distributed more equally within most age groups than it is in the whole population. That is, the age-specific Lorenz curves lie inside that for the whole population and the Gini coefficients are smaller for particular age groups than for the entire population. The exception to this is the youngest age group, which has a Lorenz curve that lies outside that of the whole population and a Gini coefficient of 0.74 – larger than the Gini for the whole population, of 0.64.¹⁸ The second point to take away is that, according to the Gini coefficients in Table 1, net income is distributed substantially more equally than wealth. The overall Gini coefficient for net income is 0.34, while that for total wealth is 0.64.

2. The composition of total wealth

Table 2 gives the mean and median of each of property wealth, financial wealth and pension wealth, by age group. Among all age groups, the mean and median are respectively £85,000 and £50,000 for property wealth, £28,000 and £4,000 for financial wealth and £85,000 and £24,000 for pension wealth. It is worth noting that, at all ages, the most liquid form of wealth (financial wealth) tends to be the smallest component; this is particularly so at the median.

Table 3 gives Gini coefficients by age and by type of wealth (including figures for total non-pension wealth, total wealth and net income). At all ages, financial wealth is the most unequally distributed. The Gini coefficients for this form of wealth are extremely high at younger ages (greater than 1 for the two youngest groups¹⁹). Except among the youngest age group, pension wealth is

¹⁵Note that, as wealth can take negative values, the Gini coefficient is not constrained to be less than 1.

¹⁶Wealth here includes gross pension wealth on which tax will be due when the wealth is drawn down. Looney and Moore (this issue) show that, in the US, there is slightly less inequality in a measure of wealth that is adjusted for this tax liability. The same is likely to be true in the UK.

¹⁷See Department for Work and Pensions (2015).

¹⁸One of the reasons that wealth inequality is higher among younger households is the fact that many have student loan debt outstanding. These debts are different from other types of debts – repayments are only made once the debtor's earnings are over a certain level, and the balance outstanding after a certain period of time is cancelled. The Gini coefficient for the youngest age group falls to 0.73 if student loan debt is not taken into account; this compares with a whole population Gini of 0.64 once student loans are excluded.

¹⁹Gini coefficients cannot be greater than 1 when all values are weakly positive. The fact that wealth can be negative means that, when there are many households with negative values, as there are in the case of financial wealth among younger households, a very unequal distribution will give a Gini coefficient of greater than 1.

TABLE 2
Distribution of types of wealth per adult by age

<i>Age of HRP</i>	<i>Property wealth (£)</i>		<i>Financial wealth (£)</i>		<i>Pension wealth (£)</i>	
	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>
25–34	21,595	2,500	5,129	256	12,006	3,990
35–44	54,566	30,000	14,764	1,088	41,597	16,043
45–54	87,036	57,500	25,293	2,689	105,116	44,952
55–64	117,597	80,000	42,935	8,634	165,771	78,743
65–74	122,597	90,000	43,457	10,500	120,444	60,793
75–84	121,792	95,000	43,918	10,104	64,081	30,248
85 and over	113,896	100,000	35,030	10,356	26,709	6,425
All	85,270	50,000	27,906	3,587	84,508	24,319

Note: Weighted sample of all households interviewed in WAS Wave 3 (2010–12).

TABLE 3
Gini coefficients by age: components of wealth (per adult)

<i>Age of HRP</i>	<i>Property wealth</i>	<i>Financial wealth</i>	<i>Non-pension wealth</i>	<i>Pension wealth</i>	<i>Total wealth</i>	<i>Net income</i>
25–34	0.80	1.70	0.86	0.73	0.74	0.26
35–44	0.67	1.07	0.70	0.70	0.63	0.32
45–54	0.61	0.95	0.65	0.67	0.59	0.37
55–64	0.57	0.83	0.60	0.64	0.56	0.34
65–74	0.56	0.77	0.58	0.65	0.55	0.30
75–84	0.55	0.78	0.57	0.67	0.55	0.28
85 and over	0.56	0.72	0.55	0.78	0.55	0.29
All	0.65	0.91	0.67	0.73	0.64	0.34

Note: Gini coefficients for wealth are calculated using the weighted sample of households in WAS Wave 3 (2010–12). Gini coefficients for net income are calculated using the Family Resources Survey 2011–12.

the next most unequally distributed, with the distribution of property wealth generally showing the least inequality. All forms of wealth, at all ages, show more inequality than net income does.

IV. Changes in household wealth, 2006–08 to 2010–12

The previous section described the wealth distribution in a particular cross-section using the most recent wave of WAS. We turn now to consider how features of the household wealth distribution evolved over the period 2006–08 to 2010–12 – the period covered by the first three waves of the WAS survey.

While our focus here is largely on changes in features of the distribution rather than individual changes in wealth,²⁰ the fact that WAS is a longitudinal survey allows us to define a balanced panel of households that are observed in all three waves of WAS and that do not undergo any compositional changes that might be expected to cause changes in their wealth (for example, an adult joining or leaving the household). We further restrict the analysis to households containing a single benefit unit.²¹ The results that we show will not, therefore, be driven by changes in household composition.²² However, the cost of this sample selection is that the balanced panel will not be representative of the population, both because of our exclusion of households that change composition and because, like all longitudinal surveys, WAS suffers from non-random sample attrition. We correct for this, to an extent, by generating weights so that, on certain observable characteristics, our sample will be representative of the population in 2006–08. This process is discussed in more detail in Crawford, Innes and O’Dea (2015).

In the analysis that follows, we explore how household total net wealth per adult and its main components have evolved over time in real terms – that is, we adjust for inflation using the Consumer Prices Index (CPI). In effect, this illustrates how the purchasing power of wealth has changed. On average, nominal wealth would have had to increase by 6.0 per cent between Waves 1 and 2 and by 13.5 per cent between Waves 1 and 3 in order for real wealth to remain constant. Increases of greater than this imply that the purchasing power of the wealth has increased, while smaller increases (or falls) imply falls in the purchasing power of wealth.

Figure 4 illustrates how mean and median total household wealth have changed over time in real terms. Households are grouped into birth cohorts according to the age of the household reference person when first interviewed in 2006–08, and the points plot mean (the solid line) and median (the dashed line) wealth against the median age of the group in each wave of WAS.²³ Since there have been three waves of WAS, each group of households is

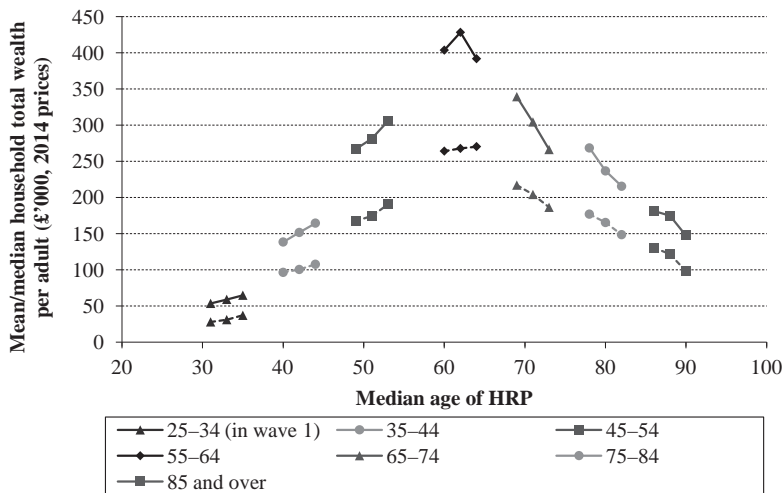
²⁰For analysis of the latter type, see Crawford, Innes and O’Dea (2015).

²¹This would exclude, for example, households containing a couple and an elderly parent of one member of that couple.

²²A further advantage of having access to panel data is that, later in this section, we can decompose the observed changes in pension wealth into changes in wealth that are due to the way future pension income is valued and changes that are due to changes in future pension income streams (the importance of this will be demonstrated shortly).

²³We will not attempt a quantitative decomposition of the observed wealth effects into an effect due to the age of the individual (an age effect), their year of birth (a cohort effect) and the year of sampling (a period effect). Credibly separating observed trends into age, period and cohort effects is not possible without further assumptions and panel data that have been running for longer than WAS has – see Deaton (1997, section 2.7) for a discussion. However, where our results are particularly suggestive of one of the three effects, we draw attention to it in the text.

FIGURE 4

Mean and median real total net wealth per adult, 2006–08 to 2010–12

Note: Weighted sample of stable single-benefit-unit households. Converted into real terms using the Consumer Prices Index for the year and month of interview. Solid lines show means; dashed lines show medians. Households are grouped according to the age of the household reference person in 2006–08.

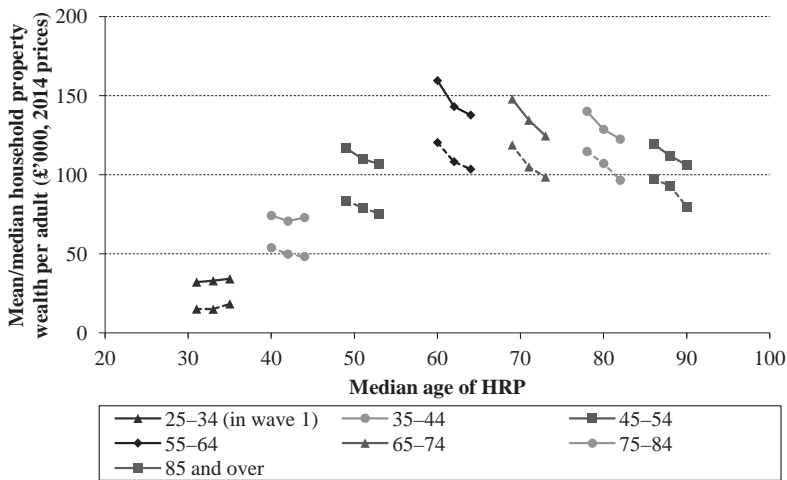
observed three times, at two-year intervals. The picture shows, within cohorts, the life-cycle profile of increasing wealth during working life and decreasing wealth during retirement that was evident in Figure 2. However, there is also some evidence of cohort differences in real wealth. For example, focusing on the cohort of households observed at ages 35–44 in the first wave of WAS, assuming average wealth within each cohort continues on the same trajectory as over the 2006–12 period would suggest that they will have lower median real wealth at each age than the cohort that preceded them.

This assumption about trajectories may, of course, be rather strong given the unusual volatility in asset prices experienced during this time period – the financial crisis from late 2007 onwards was associated with a collapse in property and equity prices. However, it is perhaps surprising in that context that no falls in mean or median wealth are observed among households whose HRP is of working age. To explore the reasons for this, Figures 5a–5c show the changes in each of net property wealth, net financial wealth and pension wealth over the period we consider.

Figure 5a shows the evolution of average real net property wealth. For almost all age groups, mean and median real net property wealth fell over

FIGURE 5a

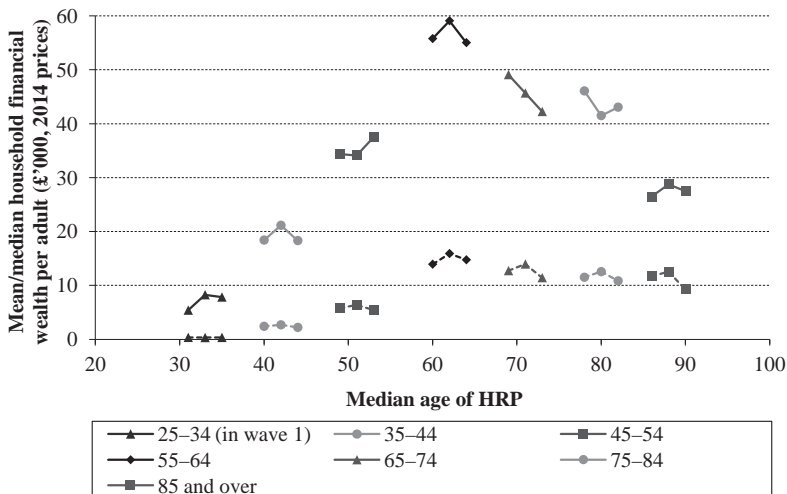
Mean and median real net property wealth per adult, 2006–08 to 2010–12, by age



Note: Weighted sample of stable single-benefit-unit households. Converted into real terms using the Consumer Prices Index for the year and month of interview. Solid lines show means; dashed lines show medians. Households are grouped according to the age of the household reference person in 2006–08.

FIGURE 5b

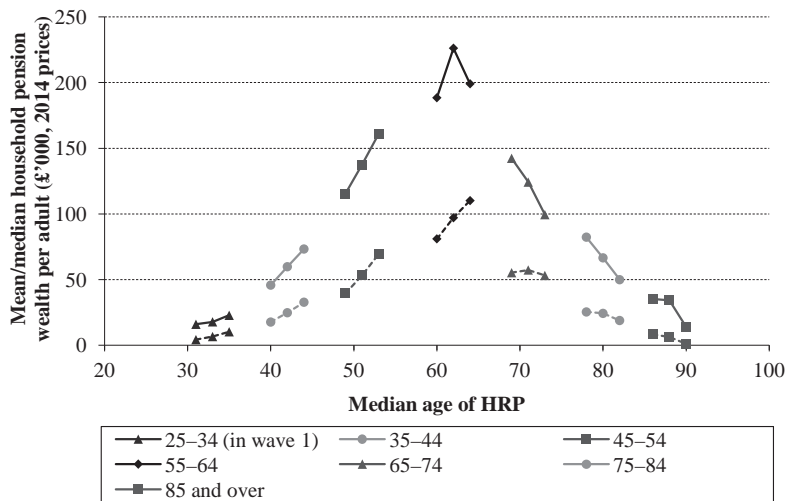
Mean and median real net financial wealth per adult, 2006–08 to 2010–12, by age



Note: Weighted sample of stable single-benefit-unit households. Converted into real terms using the Consumer Prices Index for the year and month of interview. Solid lines show means; dashed lines show medians. Households are grouped according to the age of the household reference person in 2006–08.

FIGURE 5c

Mean and median real pension wealth per adult, 2006–08 to 2010–12, by age



Note: Weighted sample of stable single-benefit-unit households. Converted into real terms using the Consumer Prices Index for the year and month of interview. Solid lines show means; dashed lines show medians. Households are grouped according to the age of the household reference person in 2006–08.

the period, largely as a result of the decline in house prices.^{24,25} Only among households aged 25–34 in 2006–08 did mean and median net property wealth increase over this period. For these households, the effect on average wealth of those purchasing homes for the first time outweighed the decline in wealth for households that owned housing and saw the gross value fall.

Figure 5b shows the change in real net financial wealth. For most working-age cohorts, mean and median financial wealth increased between 2006–08 and 2008–10, before falling between 2008–10 and 2010–12. The increases are, however, small compared with the increase in total wealth (note the different scales in Figure 4 and Figure 5b), and so financial wealth cannot explain the large increases shown in Figure 4.

Finally, Figure 5c shows that pension wealth increased dramatically for all working-age cohorts between 2006–08 and 2010–12. This component of wealth largely explains the shape of the cohort trajectories in Figure 4. However, because of the way some components of pension wealth are calculated, these increases in pension wealth do not necessarily imply that

²⁴See Crawford, Innes and O'Dea (2015).

²⁵House prices have subsequently increased in real terms, though at the time of writing (September 2015) they were still on average below their pre-crisis level in all regions of the UK other than London, the East of England and the South East, where they were 23.9 per cent, 1.3 per cent and 0.9 per cent above their pre-crisis levels respectively.

annual (current or expected future) pension incomes have changed; changes in DB pension wealth and the value of pensions in receipt could be driven by changes in the annuity rates and/or discount rates used to value future pension income. In fact, discount rates will change mechanically over time for working-age households – as they age, households get closer to retirement, and so a given future income stream is calculated to be worth more because it will be received sooner.

To investigate this, we decompose the change in pension wealth into ‘valuation changes’, which arise due to changes in the discount rates or annuity rates used to calculate pension wealth, and ‘non-valuation changes’, which are due to changes in the future pension income stream. We assume that any changes in wealth from pensions in receipt and ‘retained’ DB pensions (those where an individual is no longer accruing future entitlements) represent valuation changes.²⁶ For ‘current’ DB pensions, we exploit the panel nature of WAS to estimate the valuation change by calculating the difference between the contemporaneous estimate of pension wealth and what pension wealth would have been calculated to be had there been no change in the annuity rate or discount rate used to value that pension since 2006–08.

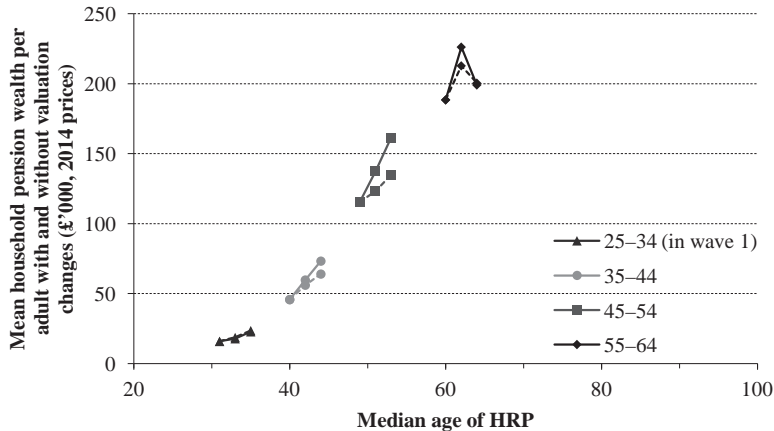
Figures 6a and 6b illustrate the effect on mean pension wealth and mean total wealth of stripping out these valuation changes to pension wealth for working-age households. The solid and dashed lines show mean wealth including and excluding these changes, respectively. For those aged 45–54 in 2006–08, over half of the increase in mean pension wealth was due to valuation changes rather than to increases in future pension income (Figure 6a). For other age groups, the impact is much smaller. In terms of total net wealth (Figure 6b), the valuation changes for pension wealth explain over two-thirds of the increase in the mean for those aged 45–54 in 2006–08, but again they have a much smaller impact for other age groups.

Even absenting valuation changes, the evolution of average pension wealth over the period 2006–08 to 2010–12 was clearly markedly different from the trajectories for financial and property wealth. Average pension wealth displays a clear life-cycle pattern, increasing with age for working-age cohorts and decreasing with age for retired cohorts. Figure 7 shows the path taken by average non-pension wealth (the sum of property and financial wealth) over this period. For all cohorts except the youngest, the paths for mean and median real non-pension wealth show falls over the period. As the falls are evident

²⁶While this is a plausible assertion for retained DB pensions, it will not entirely be the case for pensions in payment, since for these pensions the change in value over time also reflects the fact that, as households age, they can expect to receive their pension income for fewer future years. We abstract from this here, but since our focus is on working-age households, this will affect our results less than were we to also document our decomposition for retirement-age households. To the extent that pension wealth of working-age households is comprised of pensions in payment, we overstate the extent to which a decline in pension wealth is due to a valuation effect rather than to a smaller future income stream.

FIGURE 6a

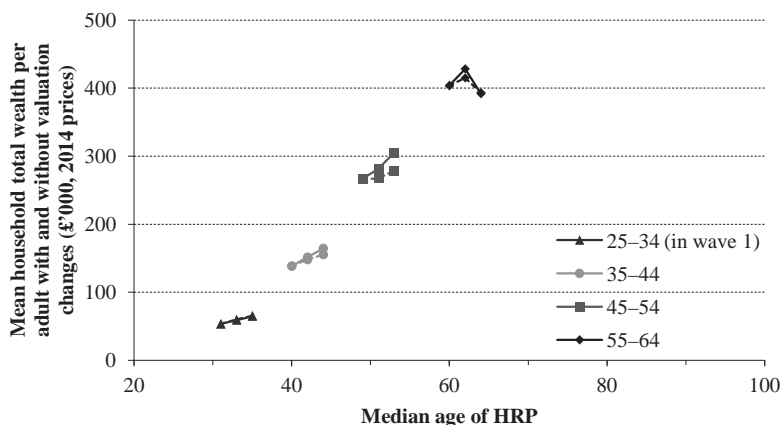
Mean real pension wealth per adult and mean real pension wealth per adult excluding 'valuation changes', 2006–08 to 2010–12, by age



Note: Weighted sample of stable single-benefit-unit households. Converted into real terms using the Consumer Prices Index for the year and month of interview. Solid lines show mean real net wealth; dashed lines show mean real net wealth excluding valuation changes. Households are grouped according to the age of the household reference person in 2006–08.

FIGURE 6b

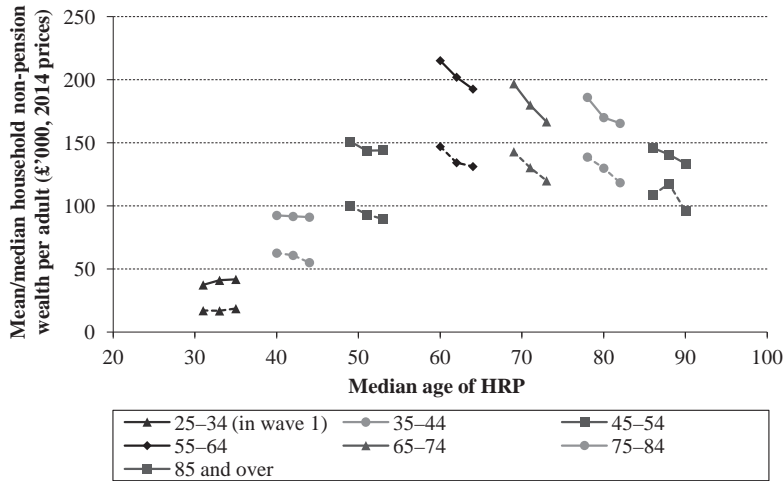
Mean real total net wealth per adult and mean real total net wealth per adult excluding 'valuation changes' to pension wealth, 2006–08 to 2010–12, by age



Note: Weighted sample of stable single-benefit-unit households. Converted into real terms using the Consumer Prices Index for the year and month of interview. Solid lines show mean real net wealth; dashed lines show mean real net wealth excluding valuation changes. Households are grouped according to the age of the household reference person in 2006–08.

FIGURE 7

Mean and median real non-pension wealth per adult, 2006–08 to 2010–12



Note: Weighted sample of stable single-benefit-unit households. Converted into real terms using the Consumer Prices Index for the year and month of interview. Solid lines show means; dashed lines show medians. Households are grouped according to the age of the household reference person in 2006–08.

across all cohorts, they more plausibly represent a ‘period’ effect associated with the years 2006 to 2012 (which saw large asset price falls) than an ‘age’ effect.

While striking at first sight, these differences between the trajectories of pension and non-pension wealth need not be surprising. To the extent that much working-age wealth accumulation is undertaken to provide an income in retirement, and that such saving occurs in specific pension savings vehicles, one would expect pension wealth to display a more pronounced life-cycle pattern than non-pension wealth. Furthermore, some forms of pension wealth (namely, DB pensions) are relatively insulated from short-term asset price fluctuations and so would not exhibit the same ‘period’ effects as other forms of wealth.

V. Conclusion

This paper uses data from the relatively new Wealth and Assets Survey – the first nationally-representative survey of household wealth in Great Britain – to quantify the level and composition of household wealth. Using the panel aspect of the survey, we describe how wealth (and its components) evolved for different cohorts between 2006–08 and 2010–12. While real levels of pension wealth at the mean and at the median increased over this period, mean and

median holdings of non-pension wealth fell for most cohorts. This is likely to be explained, at least in part, by the fact that the period in question covers the financial crisis and associated recession. The falls in asset prices over this period will have led to falls in the purchasing power of wealth stocks held by households, while other economic shocks may also have affected households' normal wealth accumulation or decumulation behaviour.

The WAS is an exciting new source of data for researchers concerned with understanding issues relating to household wealth accumulation. As more waves of data become available, it will be possible to dig more deeply into many important questions, such as whether the financial crisis has led to permanent cohort differences in levels of non-pension wealth, what the relative roles of income, capital gains and intergenerational transfers are in explaining changes in household wealth over time, and how the decline of DB pensions might affect the level, timing and volatility of household wealth accumulation. The answers to such questions are not just of interest to researchers, but could also have important implications for policymakers.

References

- Alvaredo, F., Atkinson, A. B. and Morelli, S. (2016), 'The challenge of measuring UK wealth inequality in the 2000s', *Fiscal Studies*, vol. 37, pp. 13–33 (this issue).
- Atkinson, A. B. (2013), 'Wealth and inheritance in Britain from 1896 to the present', London School of Economics, Centre for the Analysis of Social Exclusion (CASE), CASEpaper no. 178 (<http://sticerd.lse.ac.uk/dps/case/cp/casepaper178.pdf>).
- and Harrison, A. J. (1978), *Distribution of Personal Wealth in Britain*, Cambridge: Cambridge University Press.
- Baxter, R. D. (1869), *The Taxation of the United Kingdom*, Macmillan.
- Crawford, R., Innes, D. and O'Dea, C. (2015), *The Evolution of Wealth in Great Britain: 2006–08 to 2010–12*, Report no. R109, London: Institute for Fiscal Studies (<http://www.ifs.org.uk/publications/8050>).
- and O'Dea, C. (2014), 'Cash and pensions: have the elderly in England saved optimally for retirement?', Institute for Fiscal Studies (IFS), Working Paper no. WP14/22 (<http://www.ifs.org.uk/publications/7357>).
- Crossley, T. F. and O'Dea, C. (2010), *The Wealth and Saving of UK Families on the Eve of the Crisis*, Report no. R71, London: Institute for Fiscal Studies (<http://www.ifs.org.uk/publications/5200>).
- Davies, J. B. and Shorrocks, A. F. (2000), 'The distribution of wealth', in A. B. Atkinson and F. Bourguignon (eds), *Handbook of Income Distribution*, Vol. 1, Amsterdam: North Holland.
- Deaton, A. (1997), *The Analysis of Household Surveys: A Microeconomic Approach to Development Policy*, Washington DC: World Bank Publications.
- Department for Work and Pensions (2015), *Households Below Average Income: An Analysis of the Income Distribution 1994/95 – 2013/14*, London (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/437246/households-below-average-income-1994-95-to-2013-14.pdf).
- Emmerson, C. and Wakefield, M. (2009), 'Amounts and accounts: reforming private pension enrolment', Institute for Fiscal Studies (IFS), Commentary no. C110 (<http://www.ifs.org.uk/publications/4541>).

- Giffen, Sir Robert (1913), *Statistics*, Macmillan.
- Hills, J., Cunliffe, J., Obolenskaya, P. and Karagiannaki, E. (2015), *Falling Behind, Getting Ahead: The Changing Structure of Inequality in the UK, 2007–2013*, Social Policy in a Cold Climate, Research Report no. 5, London: Centre for Analysis of Social Exclusion (<http://sticerd.lse.ac.uk/dps/case/spcc/rr05.pdf>).
- Looney, A. and Moore, K. (2016), ‘Changes in the distribution of after-tax wealth in the US: has income tax policy increased wealth inequality?’, *Fiscal Studies*, vol. 37, pp. 77–104 (this issue).
- Office for National Statistics (2009), ‘Wealth in Great Britain, main results from the Wealth and Assets Survey 2006/2008’ (<http://www.ons.gov.uk/ons/rel/was/wealth-in-great-britain/main-results-from-the-wealth-and-assets-survey-2006-2008/index.html>).
- (2012), ‘Wealth in Great Britain Wave 2, 2008–2010 (Part 2)’ (<http://www.ons.gov.uk/ons/rel/was/wealth-in-great-britain-wave-2/2008-2010--part-2-/index.html>).
- (2014), ‘Wealth in Great Britain Wave 3, 2010–2012’ (<http://www.ons.gov.uk/ons/rel/was/wealth-in-great-britain-wave-3/2010-2012/index.html>).
- Piketty, T. (2014), *Capital in the 21st Century*, Cambridge, MA: Harvard University Press.
- Saez, E. and Zucman, G. (2014), ‘Wealth inequality in the United States since 1913: evidence from capitalized income tax data’, National Bureau of Economic Research (NBER), Working Paper no. 20625 (<http://www.nber.org/papers/w20625>).
- Vermeulen, P. (2015), ‘How fat is the top tail of the wealth distribution?’, unpublished working paper.