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Adequacy in retirement:
A segmentation of savers in the
wealth and assets survey

This report is based upon analysis commissioned by the Pensions and Lifetime Savings Association.

PENSIONS AND LIFETIME SAVINGS ASSOCIATION

A Technical Modelling Report by Tim Pike and Shamil Popat

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Report Summary

Project purpose

The characteristics of savers have evolved alongside the pensions landscape. There have been fundamental changes to the occupational pension scheme landscape in recent time. Private sector employers have tended to withdraw Defined Benefit (DB) schemes and introduce Defined Contribution (DC) pension schemes in their place. This has placed greater uncertainty upon the outcome of retirement saving for individuals with many at risk of under-saving for retirement.

The Pensions and Lifetime Savings Association (PLSA) commissioned the Pensions Policy Institute (PPI) to segment working age savers in Great Britain. This is to be used within a wider PLSA project designed to assess the adequacy of the long-term savings of individuals through projecting representative individuals' outcomes. These individuals are derived from characteristics of the population of working age savers.

This report details the segmentation of the saving population to allow the projection of these individuals to retirement so that the adequacy of their savings can be assessed. The population is taken from the Wealth and Assets Survey (WAS) Wave 4 dataset which covers survey data from interviews from 2012 to 2014.

The projection modelling is being performed by Hymans Robertson using their Guided Outcomes® methodology. This model assesses the probability an individual's pension saving will meet income goals in retirement, based upon recommended replacement ratios taken from the first report of the Pensions Commission.¹ Analysis of the projection results is provided by the PLSA. These parts of the project are not covered here, but in the PLSA's report Retirement Income Adequacy, generation by generation.²

Introduction

The analysis performed by the PPI categorises savers into segments by criteria representing the key influences of retirement outcomes. The data is segmented by the key drivers of projected saving outcomes and the significant modelling assumptions required in the projection of these individuals.

The Wealth and Asset Survey (WAS) Wave 4 dataset³ has been segmented for working age individuals who will have an outcome influenced by their long-term saving over their working life.

¹ Pensions Commission (2004)

² PLSA (2016)

³ ONS (2016a)

For each segment the data output includes:

- Model point information to be used in Hymans Robertson's Guided Outcomes® methodology.
- Additional information detailing other forms of wealth and potential sources of income.

The analysis of other aspects of wealth, included both assets, debts and liabilities secured against these assets. The components of wealth that were included were financial wealth, physical wealth, pension wealth and property wealth. Specifically:

- **Pension wealth**; composed of both Defined Contribution (DC) and Defined Benefit (DB) pension wealth. DC wealth included occupational and personal pensions. The value of Defined Benefit is calculated from the expected income to be received from the DB scheme.
- **Financial wealth, net of financial debt**; composed of savings accounts, current accounts, ISAs, national savings products (e.g. Premium bonds), shares, gilts, employee shares and options, unit and investment trusts, insurance products, children's assets and other formal and informal financial assets.
- **Physical wealth**; includes goods, collectables and vehicles. This is collected at a household level so was assigned to the main individual or split between a couple.
- **Property wealth, net of secured loans and mortgages**; includes all aspects of property including land.

Chapter one: segmentation criteria

Chapter one considers the criteria used to segment the saving population in a manner appropriate to enable modelling the projected outcome.

The population to be segmented

The aim of the overarching Pensions and Lifetime Savings Association's (PLSA's) project is to consider the adequacy of savings in retirement for the working population. The population is taken from the Wealth and Assets Survey (WAS) Wave 4 (2012-2014) as this data includes wealth and saving data as well as weighting information against the population of Great Britain. WAS samples private individuals and households in Great Britain and is reliant upon data provided during interviews with these respondents. The PPI work carried out cross-sectional analysis of the population, to provide data for the projection of representative individuals.

Working restrictions:

The segmented population is restricted to those in paid employment who may be in a position to save into an occupational or private pension. Full time students and the long-term unemployed are excluded as well as those employees who do not have an income (e.g. unpaid family workers) which could be directed to long-term savings.

Age restrictions:

The segmented population has been restricted to individuals aged between 22 and 65. This age restriction corresponds to those ages which are eligible for automatic enrolment.

The upper age bound eliminates those who have effectively completed their saving for retirement and have insignificant time to notably impact their saving circumstances. However a proportion of these older individuals may already be in receipt of private pension income. There are individuals who remain working and saving beyond State Pension age (SPa), however this effect is not considered here.

Population for analysis:

After the above restrictions have been applied to the dataset, there are 17,490 individuals of interest, which, when weighted (on a cross-sectional basis) represents 25.5m UK individuals. This corresponds to the Great Britain workforce between 22 and 64 who are self-employed or in remunerated employment.

The UK population in 2013 (mid-point of the WAS Wave 4 survey period) includes 29.8m people in employment.⁴ The difference is due to individuals

⁴ ONS (2014a)

resident in Northern Ireland, outside the age range of interest, in unpaid employment or full time students with a part time job who would all be included in the labour force count. This is in addition to the impact of the differing survey methodologies.

Identified segmentation criteria

The data is segmented by characteristics which influence the projected pensions saving outcomes at retirement. For each segment a synthetic individual derived from the summary information that can be used to define a model point for use in Hymans Robertson’s Guided Outcomes® methodology.

Metrics for other forms of wealth (e.g. property wealth) are not projected in in Hymans Robertson’s Guided Outcomes® methodology, however these are analysed within the PLSA report.

The following criteria have been used to segment the population under consideration. This results in a potential 1,216 permutations, of which 783 are populated. The categorisation of the data is broken down according to the features and subdivisions detailed in Table 1.1.

Table 1.1: The criteria used to categorise the population

Category	Segments			
Gender	Male		Female	
Age band	22-34	35-44	45-54	55-64
Retained pension rights	None	Defined Contribution	Defined Benefit	Defined Benefit and Defined Contribution
Employment status	Employee		Self Employed	
Current pension scheme	None	Occupational pension scheme DB DC DB and DC		None Private pension
Occupational classification	Managerial & professional occupations	Intermediate Occupations	Routine and manual occupations	n/a
Income tax band	Non-tax payer	Basic rate	Higher / additional rate	n/a

Occupational classification and earnings apply only to employees

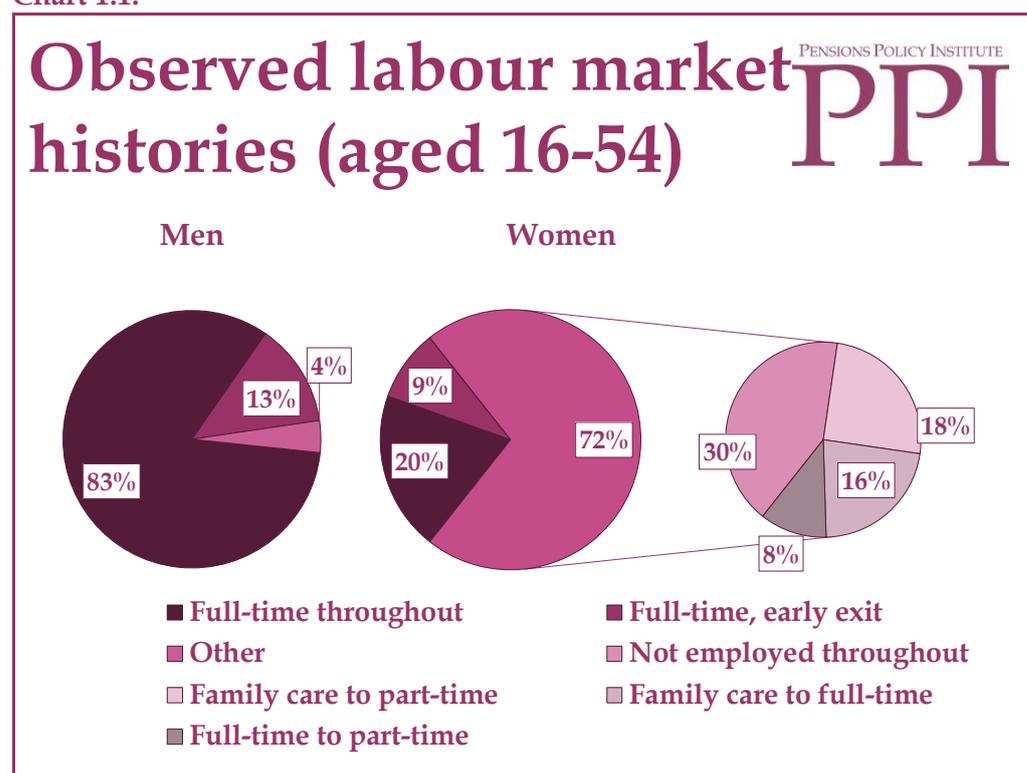
Gender

While the gender of an individual does not affect the wealth and savings directly there is a significant correlation of pension saving between the sexes. The accumulation of future wealth and of retained pension rights are dependent upon the life course experienced by the individual. Women have historically followed work patterns which are more likely to be interrupted by career breaks, impacting their pension saving. National Insurance credits are awarded to those who are claiming caring benefit maintaining their State Pension accrual.

However where adequacy depends upon private pension saving this will be impacted from the loss of occupational pension scheme contributions.

Analysis grouping similar labour market experience over a career history from age 16 to 54 has shown 34% of women to take a career break for family care where men do not significantly exhibit this behaviour, Chart 1.1.⁵

Chart 1.1:⁵



Age band

The current age of an individual correlates with pensions savings to date, as a result of the length of time available to make contributions and for their pensions savings to accrue value.

The impact upon future accrual is dependent upon projected earnings over the period until retirement. Earnings patterns vary by age, with both promotional wage increases and work patterns depending upon the age of the individual.

Segmenting by age bands allows for cohort effects to be projected appropriately upon the changing pension landscape. In the private sector active membership of Defined Benefit (DB) pension schemes has declined by over 55% in the ten years to 2014, as schemes have closed to new entrants or contributions.⁶ As a

⁵ Corna et al. (2016)

⁶ ONS (2015b)

result older workers are more likely to have spent a greater proportion of years accruing benefit in such schemes.

For practical reasons four age bands have been used, see Table 1.1.

Employment status

Occupational pension schemes have altered significantly over recent years and legislation is in place which applies a framework to occupational pension schemes. It is, therefore, paramount to treat those to whom occupational pensions apply separately from the self-employed.

Employees are eligible for automatic enrolment subject to meeting age and income criteria. There is no default opt-in or minimum contribution levels (comparable with the minimum level specified in automatic enrolment legislation) for personal pensions.

The self-employed are less likely to save into a pension scheme than the employed population and the proportion who save in such a way has decreased by 40% over a sixteen year period.⁷ They are excluded from automatic enrolment and related interventions and typically long-term saving for the self-employed has taken a different form.

Earnings

There is a positive correlation between earnings and savings. The data is segmented by employment earnings thereby improving homogeneity of pension saving within the segments (measured by standard deviation).

The self-employed have not been segmented by income. This is due to the often artificial nature of declared self-employment income and the smaller sample size of self-employed individuals.

Employees' earnings have been split across three earnings bands. These are based upon the effective marginal rate of income tax payable upon their employment earnings, Table 1.1. The personal allowance (£11,000) is close to the current automatic enrolment trigger income (£10,000), and additional segmentation around these differing values is not practicable.

The income used to derive the split is based upon earned income only which is the basis for pension contributions in the projection modelling. The result is that individuals may not be classified according to their actual marginal tax band, with some individuals paying a higher level of tax due to other sources of income (e.g. income from self-employment).

⁷ Labour Force Survey Data JOBS01 Workforce Jobs, ONS (2014b) p. 16

Occupational classification

The three class National Statistics Socio-economic Classification (NS-SEC) allows a hierarchical differentiation of employees between the categories of managerial and professional occupations, intermediate occupations, and routine and manual occupations, see Table 1.2.

Table 1.2: The categorisation of the class versions of the National Statistics Socio-economic Classification^{8 9}

Three Classes	Five Classes	Eight Classes
1. Higher managerial, administrative and professional occupations	1. Higher managerial, administrative and professional occupations	1. Higher managerial, administrative and professional occupations
		1.1 Large employers and higher managerial and administrative occupations <i>e.g. Chief Executive, Production manager</i>
		1.2 Higher professional occupations <i>e.g. Doctor, Barrister, Dentist</i>
		2. Lower managerial, administrative and professional occupations <i>e.g. Nurse, Actor, Journalist</i>
2. Intermediate occupations	2. Intermediate occupations	3. Intermediate occupations <i>e.g. Fireman, Photographer, Airline Cabin Crew</i>
	3. Small employers and own account workers	4. Small employers and own account workers <i>e.g. Builder, Hairdresser, Fisherman</i>
3. Routine and manual occupations	4. Lower supervisory and technical occupations	5. Lower supervisory and technical occupations <i>e.g. Train Driver, Plumber, Electrician</i>
	5. Semi-routine and routine occupations	6. Semi-routine occupations <i>e.g. Postman, Care Assistant, Shop Assistant</i>
		7. Routine occupations <i>e.g. Bus Driver, Refuse Collector, Waitress</i>
*Never worked and long-term unemployed	*Never worked and long-term unemployed	8. Never worked and long-term unemployed

⁸ ONS (2010)

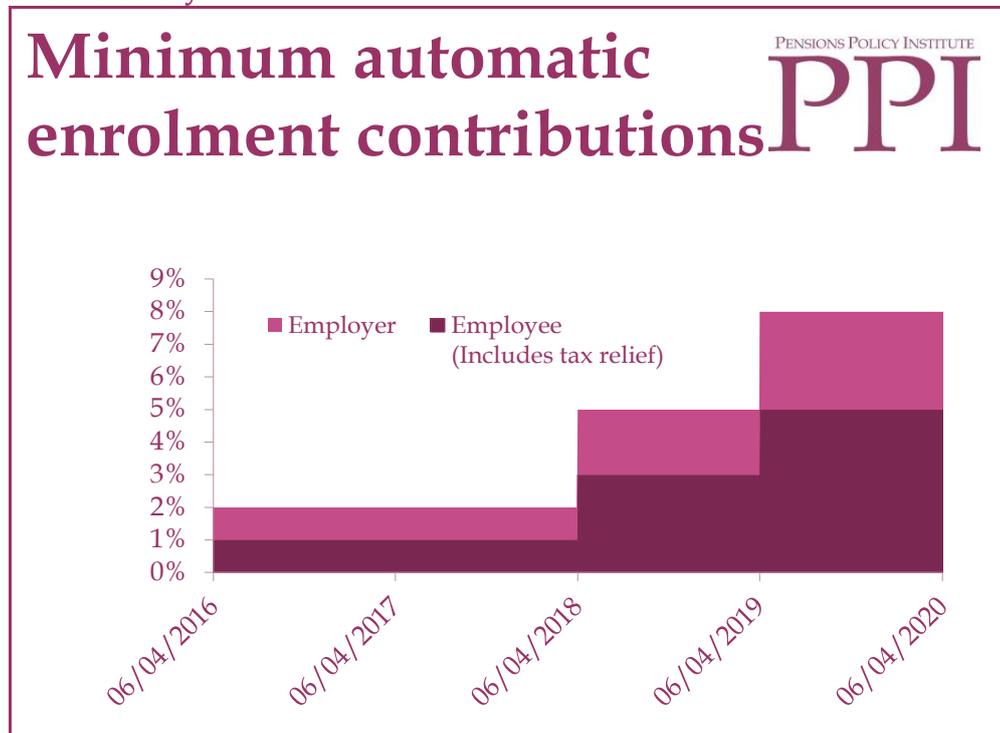
⁹ ONS (2013)

Type of pension scheme, current and retained rights

Given the differing projection methodologies of occupational pension schemes, both DB and DC, and personal pensions it is necessary to define the current pension saving of individuals for projection. It also informs the way that they may be impacted by current reform or any potential future legislated changes, including:

- Members of occupational pension schemes will be subject to minimum contribution rates as a result of automatic-enrolment legislation. This minimum will increase after the date of the survey as higher contribution rates are phased in, Chart 1.2.
- Employees not currently members of an occupational workplace scheme will be potentially eligible for automatic enrolment, with the likelihood that they join an occupational pension scheme.

Chart 1.2: Minimum automatic enrolment contribution levels as a percentage of band salary



Chapter two: pension saving of the population

Data presented within this chapter relates only to those individuals who have met the selection criteria as defined in the population to be segmented, Chapter one: segmentation criteria. It represents the segmented data from the Wealth and Assets Survey (WAS) dataset and not projected results.

The data from the WAS dataset has been aggregated into the segmentation and this informs the stylised individuals and assumptions used to project their pension saving using Hymans Robertson's Guided Outcomes® methodology.

Current saving into an occupational Defined Benefit scheme by employees

Approximately 38% of employees in the sample have current membership of a DB occupational pension schemes, this amounts to a weighted sample of 8.3 million individuals. This figure includes public and private sector employees.

Only 13% of DB schemes in the private sector remain open to new members.¹⁰ This results in this type of scheme not generally being available to employees who are not already members of a pension scheme.

The calculation of the benefit level in such schemes varies. The accrual rate is linked to the occupation class where approximately 60% of individuals accrue benefit at the higher rate of $\frac{1}{60}$ a year, whereas 65% of those in the lower occupational classes accrue benefit at this higher rate, Table 2.1. However there is not such a difference when it comes to the calculation of the pensionable salary, Table 2.2.

Table 2.1: Accrual rate of Defined Benefit schemes by saver

		Occupational Classification (National Statistics Socio-economic Classification)			
		Managerial and Professional Occupations	Intermediate Occupations	Routine and manual occupations	Total
Accrual Rate	$\frac{1}{60}$	59%	65%	65%	61%
	$\frac{1}{80}$	40%	34%	35%	38%
	Other	1%	1%	0%	1%

- The higher occupational class has a lower accrual rate associated with DB pension schemes.

¹⁰ PPF/TPR (2015)

Table 2.2: Pensionable salary calculation

		Occupational Classification (National Statistics Socio-economic Classification)			
		Managerial and Professional Occupations	Intermediate Occupations	Routine and manual occupations	Total
Pensionable salary calculation	Final Salary type ¹¹	78%	76%	74%	77%
	Career average type	18%	20%	23%	19%
	Other	4%	4%	4%	4%

There is a large diversity of scheme design (including the variation of benefits structures, contributions and retirement ages) between the thousands of DB pension schemes open to further accruals. It is therefore appropriate to assume a generic scheme design for all DB pension schemes derived from the most common features.

Current saving into an occupational Defined Contribution scheme by employees

Occupational Defined Contribution (DC) pension schemes are becoming more widespread, as replacements for closing DB schemes and as more employers offer a pension scheme as a result of automatic enrolment. The dataset employed, Wealth and Assets Survey (WAS) Wave 4 is derived from survey results from 2012-2014, which is during the automatic enrolment staging process. The availability of DC occupational pensions is expected to increase from the current, observed levels.

Higher rates of occupational DC saving are linked to higher salaries, with mean contribution rates approximately 2.5 times higher for the higher and additional rate tax-payers than those whose earnings fall below the personal allowance, Chart 2.1. Observed contribution rates should be treated with caution. Comparison with other contribution rate statistics is complex due to the varying survey approaches and timing of the investigations. Around this time the staging of automatic enrolment has resulted in a significant reduction in average contribution rates. According to Office for National Statistics (ONS) data the contribution rate has nearly halved from 9.1% to 4.7% over the course of a year (2013 to 2014).¹² Different surveys have different samples and techniques:

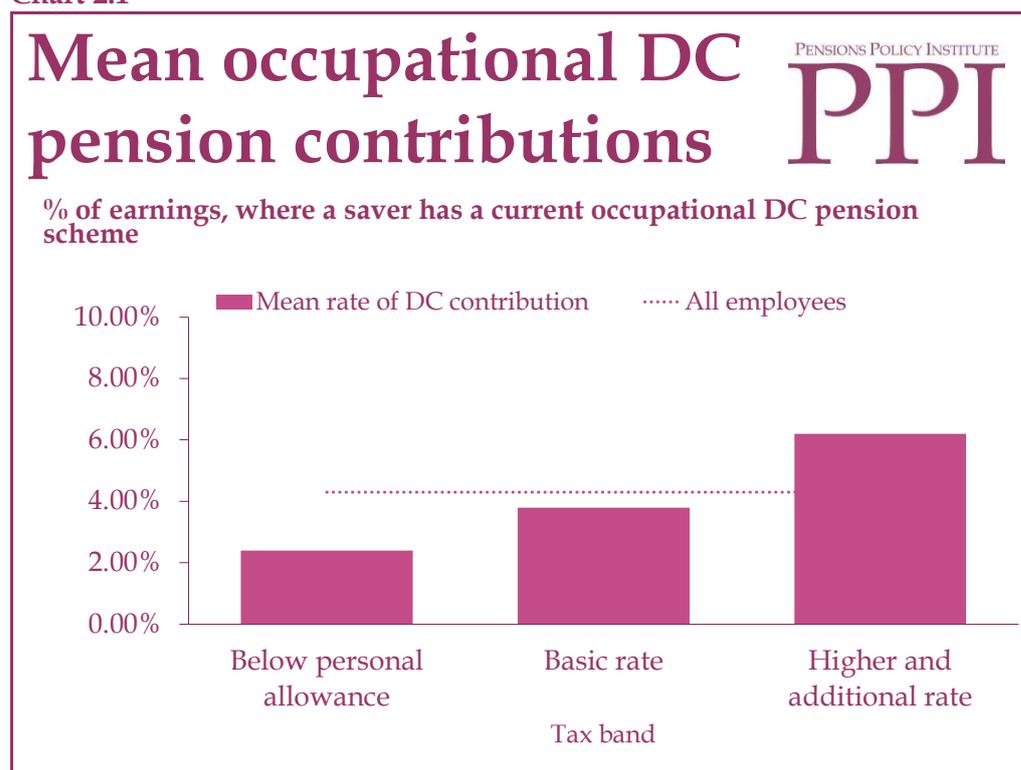
¹¹ Includes calculations based upon averages of final 3 or 5 years and best 3 years in final 10.

¹² ONS (2015b)

- WAS is a sample of individuals and covers people who report being current members of an occupational pension scheme. They report higher contribution rates where it is as a proportion of salary rather than an amount. The WAS analysis shows a mean contribution rate of 4.3% to occupational DC schemes.
- The Occupational Pension Schemes Survey (OPSS) is a sample of public and private sector occupational pension schemes and excludes arrangements such as group personal pension (GPP) arrangements which historically have had lower contribution rates than other occupational pensions.¹³ OPSS reports a weighted average contribution rate of 4.7% for occupational DC schemes for a similar period.¹⁴
- The Annual Survey of Hours and Earnings is a 1% sample of HM Revenue and Customs PAYE records. This is based upon a fixed date rather than a period of time. It reports contribution rates as a proportion of pensionable, rather than total, earnings which will result in higher reported rates.

Current legislation will increase the minimum contribution rate to 8% of band earnings by 2018, Chart 2.1.

Chart 2.1



¹³ ONS (2016c)

¹⁴ ONS (2015b)

It is reasonable to assume a higher contribution rate than the median observed in WAS. This reflects the higher reported contribution rates in other data sources, such as OPSS, as well as presenting a more realistic long-term position. This reduces the short-term impact upon the observed data of the introduction of automatic enrolment schemes with low contributions. Using an assumption in line with the 75th percentile values from the dataset and an underpin of the legislative minimums preserves the distribution of contribution rates and results in similar contribution levels to longer term expectations of the current system.

Current saving into a personal pension by the self-employed

Where an individual is self-employed they do not have access to an occupational pension scheme. Self-employed individuals making pension saving into a private pension are more likely to be contributing and at a higher rate as they get older and near retirement than earlier in their career, Table 2.3.

Table 2.3: Self-employed contributions to personal pensions

		Proportion with a personal pension	Mean rate of PP contribution
Age Band	22-34	8%	4.1%
	35-44	26%	4.5%
	45-54	37%	5.0%
	55-64	28%	6.6%
	Total	26%	4.9%

- The self-employed are less likely to contribute to a pension than employees.
- Self-employed contributions to personal pensions are higher, on average, than employees’ contributions to workplace DC pensions.

The current contribution rate of the self-employed pension contribution is higher than for employees contributing to occupational DC schemes, however the coverage is lower. This is influenced by the staging of automatic enrolment for employees which has vastly increased the coverage, with more than 6.1 million workers enrolled by March 2016,¹⁵ however contribution rates have fallen as noted above.

¹⁵ TPR (2016)

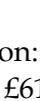
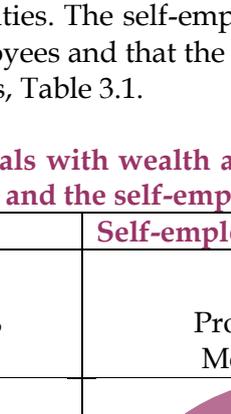
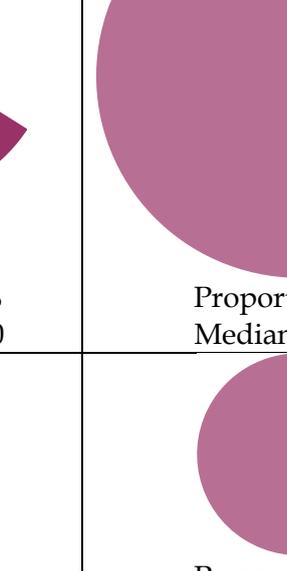
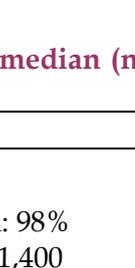
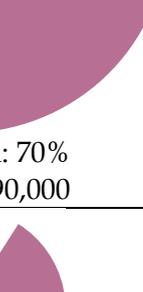
Chapter three: other forms of wealth and sources of income of the population

Chapter three considers the other forms of wealth individuals have in the segments and other forms of wealth they may expect to draw upon. This does not feed into the Hymans Robertson's Guided Outcomes® methodology, however it may contribute towards adequacy in retirement.

Other forms of wealth of the population

Current pension saving forms only part of the wealth arrangements of an individual. Other forms of wealth and liability develop over the life-course of an individual reflecting their saving priorities. The self-employed are more likely to have non-pension wealth than employees and that the value of this wealth is also of greater value than for employees, Table 3.1.

Table 3.1: The proportion of individuals with wealth and the median (non-zero) wealth by category of employees and the self-employed

Type of wealth	Employees	Self-employed
Financial	 <p>Proportion: 99% Median: £1,400</p>	 <p>Proportion: 98% Median: £1,400</p>
Property	 <p>Proportion: 66% Median: £61,500</p>	 <p>Proportion: 70% Median: £90,000</p>
Physical	 <p>Proportion: 88% Median: £20,200</p>	 <p>Proportion: 91% Median: £22,500</p>

Area is proportional to the value of the wealth.

- **Financial wealth**, net of financial debt; composed of savings accounts, current accounts, ISAs, national savings products (e.g. Premium bonds),

shares, gilts, employee shares and options, unit and investment trusts, insurance products, children’s assets and other formal and informal financial assets.

- **Physical wealth**; includes goods, collectables and vehicles. This is collected at a household level so was assigned to the main individual or split between a couple.
- **Property wealth**, net of secured loans and mortgages; includes all aspects of property including land.

Property wealth is net of mortgages (and other debt) secured against the property. The proportion of people with property wealth increases by age, most significantly at the point of being a first time buyer, Table 3.2. The average of a first time buyer in the UK is 31.¹⁶ The net value of property wealth increases as mortgages are repaid over time.

Table 3.2: The proportion of individuals with property and physical wealth

		Proportion with property wealth	Proportion with physical wealth
Age Band	22-34	39%	67%
	35-44	72%	96%
	45-54	80%	97%
	55-64	85%	98%
	Total	67%	88%

Physical wealth includes the value of items such as cars. However the total value of the wealth, median of £21,000, represents a smaller proportion of an individual’s other forms of total wealth which is dominated by property wealth.

Other expected forms of income and wealth of the population

Individuals may expect their wealth to be boosted within their life-time from other sources, such as inheritance which is not accounted within the projection modelling. Further, some people will not need to rely upon their own saving, as projected, and expect to have a source of income from their family or partner.

- 16% of the individuals expect to receive retirement income from a future inheritance.
- 7% of the individuals expect to receive retirement income from support from current family or partners.

¹⁶ ONS (2016b)

Appendix one: definitions

This appendix details the definitions used in the data analysis and maps them to the Wealth and Assets (WAS) Wave 4 2012-2014 data. This appendix should be considered in conjunction with the data dictionaries and derived variable specifications as well as the survey questionnaire.¹⁷

Eligibility criteria

To define whether an individual is eligible for the analysis exclusions are placed upon age, employment status and earnings

- **Age** – greater than or equal to 22 and less than or equal to 64. This is based upon the derived variable for integer age (DVAGEW4, only available in the restricted dataset).
- **Employment** – individuals who are not self-employed (STATW4 = 2) are only eligible where they are classified within an occupational group, thereby excluding the long-term unemployed and those who have never worked. This is performed using the three-class version of the National Statistics Socio-economic Classification identifying as either managerial & professional occupations, intermediate occupations or routine & manual occupations (NSSEC3W4 = 1 or 2 or 3).¹⁸
- **Income** – employees who receive no employment income are excluded, based on employment status (STATW4) and earnings (DVGIEMPW4 & DVGISEW4).

Segmentation criteria

The following criteria are used to segment the individuals into 1216 segments, Table A1.1 details the categorisation.

Table A1.1: Segmentation categorisation is dependent upon whether an individual is an employee or self-employed

Category	Segments					
Gender	Male			Female		
Age band	22-34		35-44		45-54	55-64
Retained pension rights	None		Defined Contribution		Defined Benefit	Defined Benefit and Defined Contribution
Employment status	Employee				Self Employed	
Current pension scheme	None	Occ. DC	Occ.DB	Occ.DB and Occ. DC	None	Private pension
Occupational classification	Managerial & professional occupations	Intermediate Occupations		Routine and manual occupations	n/a	
Income tax band	Non-tax payer		Basic rate	Higher / additional rate	n/a	

¹⁷ ONS (2016a)

¹⁸ ONS (2010)

- **Gender:** this is taken from the individual data (SEXW4).
- **Age Band:** this is grouped from the individual age data (DVAGEW4) based upon age last birthday.
- **Retained pension rights:** this is derived from the value of retained pension rights and is grouped by those categories where the value of savings is greater than zero.
 - **Defined Contribution:** retained occupational DC wealth (DVPPFCurValW4), any AVC pension wealth (DVPAVCUVW4), and where the individual is an employee any private pension wealth (DVPPValW4). The value of AVCs, while attached to DB pension schemes is included with DC wealth owing to the style of the benefit provided.
 - **Defined Benefit:** retained occupational DB wealth (DVDBrWealthValW4). This includes additional contributions made which have been used to “buy” more years of entitlement, as the benefit purchased is of a Defined Benefit nature.
- **Employment status:** the self-employed are separated from the rest of the population through their status of employment being self-employed (StatW4 = 2).
- **Current pension scheme:** this is the current scheme to which an individual is assumed to be making pension contributions. Employees are assumed to potentially contribute to an occupational (DB or DC) pension scheme and not a personal pension scheme. The self-employed are assumed to potentially contribute to a personal pension.
 - **Defined Contribution occupational scheme:** (applies to employees only) has a current occupational DC Scheme (DVHASDCW4).
 - **Defined Benefit occupational scheme:** (applies to employees only) has a current occupational DB Scheme (DVHASDBW4).
 - **Private pension:** (applies to the self-employed only) has a private pension (DVHASPPW4).
- **Occupational classification:** (applies to employees only) taken from the three class version of the National Statistics Socio-Economic Classification (NSSEC3W4)
- **Income tax band:** (applies to employees only) this is the effective marginal income tax band payable on employment earnings (DVGIEMPW4) based upon 2012-2014 income tax threshold values (average personal allowance of £8772.50, average higher rate income threshold of £41,962.50). No consideration is given to other sources of income in this banding.

Model point fields

The following fields, Table A1.2, have been used to project an individual within Hymans Robertson’s Guided Outcomes® methodology and derived from the dataset for each segment.

Table A1.2: Model point fields

Field	Description
Unique Group Number	Mapping from model point to the segment
Pension category	Descriptor variable matching segmentation
Gender	Descriptor variable matching segmentation
Professional status	Descriptor variable matching segmentation
Age band	Descriptor variable matching segmentation
Tax band	Descriptor variable matching segmentation
Age last birthday	Current age of individuals, available in restricted data, censoring applied below threshold levels.
Gross income	Income from employment
Value of retained DC pensions	Value of retained rights in DC pension schemes
Value of current DC pensions	Value of current DC pension scheme
Current employee DC contribution	Employee contribution rate to current DC saving
Current employer DC contribution	Employer contribution rate to occupational DC
Total value of retained DB pension	Value of retained rights in DB occupational pension scheme
Current scheme accrued years of DB entitlement	Number of years accrued entitlement within current DB scheme
NRA for pension scheme	NRA for current pension scheme, applies to DB pension schemes.
Volume	Number of individuals within the category
Weighted volume	Weighted count of individuals
Proportion	Proportion of the model point population

Notes:

- Age last birthday is available from the restricted data set to improve assumptions beyond the mid-point of the age band. This is censored where $n < 10$. (Median value for all individuals on the model point, weighted.)
- Expected retirement age is available for individuals aged above 40, and is used to improve upon the assumption. (Median value for all individuals on the model point, weighted.)
- Gross income is employment income as defined for tax bands, above. (Median value for all individuals on the model point, weighted.)
- Value of retained pension rights (DC and DB) is defined as for retained pension rights in the segmentation criteria. This includes Additional Voluntary Contributions (AVC) wealth in current DB schemes, which is not considered part of a current scheme as AVC contributions are not considered to be regular pensions contributions. (Median of values greater than zero, weighted.)

- Value of current DC pension rights is defined as for current DC pension rights in the segmentation criteria. (Median of values greater than zero, weighted.)
- Contribution rates are defined where there is a current DC pension scheme and are the 75th percentile for all such individuals.
- Accrued years of entitlement for current DB pension scheme is used to allow projection alongside earnings pattern assumptions in the projection. This includes additional “bought” years of benefit. (Median of values greater than zero, weighted.)
- NRA refers to the current pension scheme and are reported as medians where there is a constraint.

Statistics are generally medians of values where they are non-zero with accompanying base and distributional statistics within the segment. For fields such as Normal Retirement Age (NRA) and Period of Service (PoS) restrictions upon DC saving the base is minimal and it is recommended to apply a generic assumption instead.

It should be noted that the data is not weighted for all these data items and as such the values calculated within a segment may not represent the weighted population corresponding to the segment.

Other pension scheme information

This data is as applicable to current occupational DB schemes held to inform projection assumptions.

- DB accrual rates (1/60th 1/80th etc.)
- DB benefit basis (final salary, career average etc.)

Other forms of non-pension wealth

This information covers both the values of the wealth and the distribution of key features and descriptors.

Physical wealth

- This is based on the household physical wealth (HPHYSWW4), equivalised as detailed in appendix two.
- Distribution statistics are calculated for individuals where some form physical of wealth exists (i.e. percentiles are of non-zero values).

Property wealth

- Property wealth is net of mortgages / equity release
- Total property wealth is based on the household property wealth (HPROPWW4), equivalised as detailed in appendix two.
- Property wealth is broken down into:
 - Main property (DVHValueW4 - TotMortW4)
 - Buy to let (DVBlValW4 - DVBltDebtW4)
 - Second homes (DVHseValW4 - DVHseDebtW4)
 - Other property wealth

- The other property wealth is from sources that are not the other broken out components and calculated as the total property wealth minus the sum of the other components.
- Distribution statistics are calculated for individuals who have some form of property wealth (e.g. second home wealth equal to zero is included where there is some other form of property wealth)

Financial wealth

- Financial wealth is taken from personal financial wealth statistics.
- Total financial wealth is the net position of assets minus liabilities (HFINW_ExcENDWW4 - HFINLW4). Endowments are excluded from individual financial assets contributing to wealth.
- Financial wealth is broken down into:
 - Financial assets (HFINW_ExcENDWW4)
 - Financial liabilities (HFINLW4)
- Distribution statistics where there is some financial wealth (e.g. liabilities equal to zero is included where there is some asset value)

Other income information

Incomes

- This is based on personal income data.
- Total employment income (gross) allowing for both employee and self-employed income for those who have both forms of income (GrsPayEmpORSEw4)
- Distribution statistics are calculated where that form of income is greater than zero.

Appendix two: analysis approach and methodology

The data for this analysis was gathered from the Wealth and Assets Survey (WAS) Wave 4 2012-2014. It took information for individuals and households. Individuals are linked to households through the household serial number (HHSERIALW4) allowing household level data to be associated with individuals.

Equivalisation of household wealth

Data that was reported at a household level has been split between the household reference person (HRP) and their spouse if they have one. The HRP is the reference individual for the household and is based on economic activity. If the HRP has a spouse then it assumed that the household wealth is split evenly between them both. This approach is consistent with maintaining the total wealth reported within the survey and representing the access to wealth of any individual.

In the case of a change of household circumstance (e.g. through marriage or divorce) household and potentially personal assets may be redistributed. The manner of this redistribution may not be equal between the parties and not evenly distributed across types of wealth.

Derivation of contribution rates

Contribution rates are calculated for both employers (equal to zero for private pensions) and employees. Contribution rates are calculated as the total contribution to the pension scheme, of fixed amounts, and fractions of salary. These are expressed as a proportion (in basis points) of earned salary. It is assumed that pension contributions will rise in line with salary growth.

The period during which the survey has been conducted pre-dates staging dates for some employers and the minimum contribution rates applicable to automatic enrolment schemes are below the long-term legislated amounts.

Weighting

The population is weighted by cross-section weight (W4xswgt). This allows for non-response and differential sampling probabilities. Weighting in WAS is controlled by grouping in age bands (5-10 year grouping for the population of interest) and region.¹⁹

The base within a model point may be low and the weighting is not aligned with all the factors used to segment the data. As a result of this statistics taken from unweighted data may not be representative of the part of the population that the scaled data would represent, particularly where data is limited and there is significant variance in the values which may not be included within the distribution for a particular segment.

¹⁹ ONS (2015a)

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Contact: Chris Curry, Director
Telephone: 020 7848 3744
Email: info@pensionspolicyinstitute.org.uk

Pensions Policy Institute
King's College London
Virginia Woolf Building
1st Floor, 22 Kingsway
London WC2B 6LE

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