

# **Younger Adults' Retirement Saving and Wealth Accumulation in Britain**

## **A Quantitative Investigation**



**Ellie Suh**

Department of Social Policy

London School of Economics and Political Science (LSE)

A Thesis submitted to the Department of Social Policy of the London School  
of Economics and Political Science, London  
*Doctor of Philosophy*

June 2020

A te.

# **Declaration**

## **Declaration of authorship**

I certify that the thesis I have presented for examination for the MPhil/PhD degree of the London School of Economics and Political Science is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).

The copyright of this thesis rests with the author. Quotation from it is permitted, provided that full acknowledgement is made. This thesis may not be reproduced without my prior written consent.

I warrant that this authorisation does not, to the best of my belief, infringe the rights of any third party.

I declare that my thesis consists of 65,432 words and four publishable papers.

## **Statement of use of third party for editorial help**

I can confirm that my thesis was proofread for conventions of language, spelling, and grammar collectively by the Margaret Swinson and Philippa Mullins.

Ellie Suh

June 2020

## **Acknowledgements**

First of all, I would like to express my wholehearted gratitude to my supervisors, Professor John Hills and Professor Irini Moustaki. They have been a constant source of inspiration, encouragement and unfailing support throughout this journey. Thank you, John, for allowing me to draw on your expertise and experience. Our monthly meetings provided me with a map to navigate and shaped me as a researcher. And thank you, Irini, for being the guiding light and continuously motivating me to develop myself further.

I have been fortunate to complete my studies under the wings of the Centre for Analysis of Social Exclusion (CASE), and obtain support from its brilliant researchers. I am thankful to Dr Polly Vizard for introducing me to the world of research back in 2012, to Dr Tania Burchardt for her guidance and mentoring throughout the process, and Dr Eleni Karagiannaki for offering both academic and practical guidance. I also benefited greatly from discussions with Professor Howard Glennerster and Dr Abigail McKnight and career advice from Dr Ludovica Gambaro and Dr Tammy Kempbell.

I am also grateful to Professor Philipp Lersch for hosting me at Humboldt-Universität zu Berlin during late spring of 2019. I spent a beautiful month in Berlin, indulging in writing perfectly balanced between productive solitude and the pleasant company of Nicole Kapelle and Theresa Nutz. I am thankful to the Gender and Wealth Inequality Network (GWIN) who provided an avenue to discuss and build a future research agenda.

I enjoyed discussions with fellow retirement saving researchers working on young people, Dr. Hayley James at University of Manchester and Dr. Lynne Robertson-Rose at University of Edinburgh. Many thanks also go to Laura Webster and her team at the Department for Work and Pensions (DWP), to Tim Pike and Daniela Silcock at the Pensions Policy Institute (PPI), and Tiffany Tsang at the Pensions and Lifetime Savings Association (PLSA) for offering their time and expertise in retirement saving policies.

My friends have always been there for me. Heini Väisänen, Melissa Shannon, Elena Mariani, and Liz Bailey and offered substantial support and entertainment. I would also like thank Julia Philipp for delightful afternoon coffee breaks; my mathematician friends Johannes Ruf, Albina Danilova, Christian Julliard and Beatrice Acciaio for providing a welcome distraction on many occasions; my CASE buddies Mario Battaglini, Kerris Cooper, Aapo Hiilamo, Rana Khazbak, Liz Mann, Nora Ratzmann and Joel Suss for occasional Friday drinks; and to my past and present officemates Ewa Batyra, Ginerva Floridi, Philippa Mullins, Rishita Nigiri, Laura Sochas and Arthika Sripathy for everyday PhD camaraderie. Obligatory compatriot thanks to Doyoung Oh, Didi K Han and Jae Hyung Park, with whom I bonded over Korean language and cuisine.

The LSE studentship funded my research. CASE provided software licences crucial for my analysis. Santander Bank enabled my research visit to Berlin. I have also benefited from bursary schemes from various academic societies including the Society for Longitudinal and Life Course Studies (2018 & 2019), the Society for Advancement of Socio-Economics (2019), the Housing Studies Association (2019), the British Society for Gerontology (2019) and the Social Policy Association (2018). Suntory and Toyota International Centres for Economics and Related Disciplines (STICERD) also provided support.

My family and friends in Australia, Greece, Italy and Korea have been my strongest supporters. I thank my mother for her unmatched confidence in me and continuous encouragement to achieve my best, and my dad for his comforting reassurance and reminder to think of the bigger picture; my Greek family, Evangelia Marathefti and Bill Kardaras, for providing love and support throughout; Jayoung Suh, Lorenzo Casavecchia and Gayoung Suh for wonderful Christmas breaks filled with laughter in Australia. I am especially grateful to my Italian family, Teresa Pallucchini and Edmondo Bruti Liberati, for their love and providing the sanctuary which has been a tremendous comfort to me.

My partner, Constantinos Kardaras, suffered slightly during my PhD journey: summer holidays cancelled in favour of screensavers exhibiting exotic beaches, and weekend outings replaced by working at home. Despite all these, he has shown unending love and support for me with an inexhaustible sense of humour — thank you.

## **Abstract**

Recent developments in the pension landscape have resulted in an increased level of uncertainty for the younger generation's retirement saving, the nature of which has consequently become more akin to wealth accumulation. Young adults are increasingly encouraged to save more for the future; however, not much is known about their approaches to retirement saving and wealth accumulation. This thesis aims to assess these approaches; it first focuses on the younger generation's current economic autonomy in retirement saving and further expands it to investigate young adults' wealth accumulation patterns.

The thesis consists of four studies. The first study examines the role of human agency in retirement saving using structural equation modelling, and argues that individuals' economic autonomy is closely linked to their socio-economic arrangements. The second study further investigates gender differences in retirement saving decision-making process using SEM multi-group analysis, and documents the negative impact of the male-breadwinner income model on women's financial resilience. The third study examines the role of financial support from family in young adults' homeownership in discrete-time event history analysis. The results point to a substantial amount of both direct help (money) and indirect assistance (co-residence). The last study assesses wealth accumulation patterns by establishing four saver types using factor mixture modelling. Transition between the saver types over time is analysed using latent transition analysis. The results show that, while the transitions between saver types over time are mostly stable, more upwards movement is observed for individuals from a higher socio-economic background.

This thesis provides evidence on how young adult's ability to manage uncertainty and organise their lives is influenced by socio-economic arrangements. In particular, it documents the increasing role of family background and the effects of systematic (dis)advantage among young adults. These findings point to a need for coordination of a wide range of policies that alleviate economic insecurity in the short- and mid-term in order for the younger generation to plan for the long-term future with autonomy.

# Table of contents

<b>List of figures</b>	<b>xi</b>
<b>List of tables</b>	<b>xiii</b>
<b>List of abbreviations</b>	<b>xv</b>
<b>1 Introduction</b>	<b>1</b>
1.1 Motivation: saving behaviour in transition . . . . .	1
1.1.1 Research questions . . . . .	5
1.1.2 The ‘younger’ generation . . . . .	6
1.2 The life course approach . . . . .	7
1.3 On the methodological approach . . . . .	9
1.4 The policy context . . . . .	11
1.4.1 The state in the development of British pension policy . . . . .	11
1.4.2 Policy structure and individuals’ perceptions and expectations . . .	12
1.4.3 Retirement saving and wealth accumulation . . . . .	16
1.5 Structure of the thesis . . . . .	17
<b>2 Retirement saving among the younger generation</b>	<b>22</b>
2.1 Abstract . . . . .	22
2.2 Introduction . . . . .	23
2.3 Current pension landscape for the younger generation . . . . .	25
2.3.1 Pension policies changes and retirement income expectations . . . .	25
2.4 Research questions . . . . .	28
2.5 Retirement saving decision-making process . . . . .	29
2.5.1 Retirement saving and the scope of this study . . . . .	29
2.5.2 The life course approach . . . . .	29
2.5.3 A modified model of financial planning . . . . .	30
2.6 The role of economic autonomy in retirement saving . . . . .	31

2.6.1	Financial resilience . . . . .	31
2.6.2	Long-term perspective and retirement planning . . . . .	32
2.6.3	Financial knowledge and retirement income confidence . . . . .	33
2.6.4	Economic and socio-demographic characteristics . . . . .	34
2.6.5	Workplace pension schemes . . . . .	36
2.7	Data and analytical strategy . . . . .	37
2.7.1	Data: Wealth and Assets Survey . . . . .	37
2.7.2	The outcome variable . . . . .	39
2.7.3	Analytical strategy . . . . .	40
2.8	Results . . . . .	42
2.8.1	Latent constructs for attitudinal and behavioural factors . . . . .	43
2.8.2	Relationship between latent constructs and covariates . . . . .	45
2.9	Discussion and conclusion . . . . .	49
2.10	Appendix to Chapter 2 . . . . .	54
2.10.1	Additional information on the conceptual framework . . . . .	54
2.10.2	Additional information on the sample and the variables . . . . .	56
2.10.3	SEM for ordinal variables using underlying variable approach . . . . .	58
2.10.4	More information on factor analysis in this chapter . . . . .	60
2.10.5	Measurement Invariance Testing . . . . .	63
2.10.6	Additional information on the structural model . . . . .	68
2.10.7	Sensitivity analysis on one-step and two-step estimations . . . . .	69
<b>3</b>	<b>Gender difference in retirement saving decision-making</b>	<b>71</b>
3.1	Abstract . . . . .	71
3.2	Introduction . . . . .	72
3.3	Gender in retirement saving . . . . .	74
3.3.1	Gender difference in this chapter . . . . .	74
3.4	Women's life course and its implications . . . . .	75
3.4.1	Employment patterns and the state and workplace pensions . . . . .	75
3.5	Gender difference in retirement saving decisions . . . . .	79
3.5.1	A modified version of the model of financial planning . . . . .	79
3.5.2	Financial Resilience . . . . .	80
3.5.3	Pension Knowledge . . . . .	81
3.5.4	Future orientation and retirement funding consideration . . . . .	82
3.5.5	Broader socio-demographic and economic arrangements . . . . .	82
3.6	Research questions . . . . .	84
3.7	Data and Analysis . . . . .	85



3.7.1	Data and the outcome variable . . . . .	85
3.7.2	The study sample . . . . .	86
3.8	Analytical strategy . . . . .	86
3.8.1	Covariates . . . . .	89
3.9	Results . . . . .	89
3.9.1	The measurement model and measurement invariance testing . . . .	90
3.9.2	Structural model and gender differences . . . . .	92
3.10	Discussions and conclusion . . . . .	96
3.11	Appendix to Chapter 3 . . . . .	100
3.11.1	Measurement invariance testing by gender . . . . .	100
3.11.2	Structural equivalence testing . . . . .	103
<b>4</b>	<b>Young British adults' homeownership circumstances</b>	<b>105</b>
4.1	Abstract . . . . .	105
4.2	Introduction: the British context . . . . .	106
4.3	Younger adults' perspectives on homeownership . . . . .	107
4.4	Homeownership for young British adults . . . . .	110
4.4.1	The affordability issue . . . . .	110
4.4.2	Socio-economic background and homeownership outcomes . . . .	114
4.5	Research questions . . . . .	119
4.6	Data and methodology . . . . .	120
4.7	Who were the 'already-homeowners' in 2010/12? . . . . .	120
4.7.1	Analytical strategy . . . . .	120
4.7.2	Results . . . . .	122
4.8	Who became homeowners between 2008/10 and 2014/16? . . . . .	126
4.8.1	Analytical strategy . . . . .	126
4.8.2	Results . . . . .	129
4.9	Discussion . . . . .	136
4.10	Appendix to Chapter 4 . . . . .	140
4.10.1	Additional charts and tables . . . . .	140
4.10.2	More information on the variables . . . . .	142
4.10.3	'Bank of Mum and Dad' . . . . .	143
<b>5</b>	<b>Wealth accumulation patterns among the younger adults</b>	<b>145</b>
5.1	Abstract . . . . .	145
5.2	Introduction . . . . .	146
5.3	Patterns of wealth accumulation . . . . .	148

5.3.1	Policy relevance of wealth building . . . . .	150
5.3.2	The younger generation . . . . .	152
5.4	Research questions . . . . .	152
5.5	The Balance Sheet approach . . . . .	152
5.5.1	Wealth, assets and debt – definitions and characteristics . . . . .	153
5.5.2	Hypothesised saver types and movements over time . . . . .	154
5.6	Data . . . . .	156
5.6.1	The study sample . . . . .	156
5.6.2	Individual balance sheet . . . . .	156
5.6.3	Covariates . . . . .	159
5.6.4	Descriptive analysis . . . . .	161
5.7	Analytical strategy . . . . .	162
5.7.1	The two-part approach: a factor mixture model . . . . .	162
5.7.2	Longitudinal extension: changes in class membership over time . . . . .	167
5.8	Results . . . . .	170
5.8.1	Cross-sectional results: saver types . . . . .	170
5.8.2	Longitudinal results: initial conditions and transitions . . . . .	175
5.9	Discussion . . . . .	181
5.10	Conclusion . . . . .	183
5.11	Appendix to Chapter 5 . . . . .	186
5.11.1	Descriptive analysis on financial wealth . . . . .	186
5.11.2	Model selection procedure for three-stage FMM modelling . . . . .	191
5.11.3	Consistency of FMM solutions over three time points . . . . .	195
<b>6</b>	<b>Conclusion</b>	<b>198</b>
6.1	Summary findings . . . . .	199
6.2	Policy implications and future directions . . . . .	203
6.2.1	Enhancing the economic autonomy of the younger adults . . . . .	204
6.2.2	Ameliorate growing within-generation inequality . . . . .	206
6.2.3	Future direction of long-term saving policies . . . . .	208
6.3	Study limitations . . . . .	211
6.4	Contributions . . . . .	213
6.5	Further research agenda . . . . .	215
	<b>References</b>	<b>218</b>

# List of figures

1.1	The thesis structure . . . . .	19
1.2	Workplace pension awareness campaign by DWP in 2016 . . . . .	21
1.3	Pension awareness campaign by Pensionwise in October 2016. . . . .	21
2.1	Expected source of income in retirement by age group (2012/14) . . . . .	27
2.2	A modified version of the Model of Financial Planning . . . . .	32
2.3	Proportions of all savers and retirement savers by age group (WAS, 2012/14)	39
2.4	Results from the structural part of the model . . . . .	46
2.5	Comparison of net individual yearly income distributions according to the ONS figures and WAS (4 <sup>th</sup> Wave) . . . . .	56
2.6	Factor loadings by dichotomised income groups: below (Lower) or above (Upper) the median household income) (2012/14, n=5,755) . . . . .	65
2.7	Response pattern differences between upper and lower income groups (2012/14)	66
2.8	Path diagram of the direct effect of income on financial resilience and its items only (Standardised coefficients, 2012/14, n=5,755) . . . . .	67
2.9	Results from the structural model with household income . . . . .	68
3.1	A modified version of the model of financial planning . . . . .	81
3.2	The structural part of the model for men (2012/14) . . . . .	94
3.3	The structural part of the model for women (2012/14) . . . . .	94
3.4	Structural equivalence testing between men and women (2012/14) . . . . .	95
3.5	Response pattern differences between men and women (2012/14) . . . . .	101
4.1	Housing tenure by age group in 2014/16 . . . . .	112
4.2	Nominal and real house price increase between 1975 and 2017 (in 2017 prices)	113
4.3	Direct financial support- percentages of individuals who reported inheritance receipts valued over £1,000 (2008/10-2014/16) . . . . .	115
4.4	Direct financial support - percentages of individuals who reported cash gift receipts valued over £500 (2008/10-2014/16) . . . . .	116

4.5	Direct financial support - percentages of individuals who reported a loan from family or friends valued over £500 (2008/10-2014/16) . . . . .	116
4.6	The proportions of adults in owner-occupation (left) and indirect support via parental co-residence (right), by age group (WAS, 2008/10-2014/16) . . . .	118
4.7	Homeownership status: predicted probabilities of the four scenarios . . . .	125
4.8	The relative effects of direct (transfer) and indirect financial help (living at home) . . . . .	131
4.9	Predicted probabilities by household income and indirect support . . . . .	133
4.10	Predicted probabilities of the four scenarios . . . . .	135
4.11	Housing tenure by household income quintile and age groups (2014/16) . .	140
5.1	A factor mixture model with binary and continuous observed indicators . .	167
5.2	A multi-group LTA with covariates for the initial state . . . . .	168
5.3	Conditional item probabilities in the four-class solution in FMM (2014/16)	171
5.4	Expected means of financial assets and debts by saver types (2014/16) . . .	173
5.5	Expected means of housing assets and debts by saver types (2014/16) . . .	173
5.6	Expected means of pension assets by saver types (2014/16) . . . . .	174
5.7	Predicted probabilities of saver type membership by socio-economic status and social origin at the first observation (2010/12) . . . . .	178
5.8	Predicted probabilities for the four saver types at the initial stage by age and parental homeownership (2010/12) . . . . .	180
5.9	Predicted probabilities for the four saver types at the initial stage by household income and parental homeownership (2010/12) . . . . .	180
5.10	Wealth accumulation stages and risk perspectives . . . . .	182
5.11	Median financial asset (cash, ISA and shares) by financial asset decile (2010/12)	186
5.12	Mean value per financial asset type for retirement savers and non-savers (CPIHY adjusted) (2010/12-2014/16) . . . . .	186
5.13	Median net financial assets by income quintile between 2010/12-2014/16 .	187
5.14	Net financial wealth by birth cohort (2010/12-2014/16, price adjusted) . . .	187
5.15	Household Net financial wealth by housing tenure (2014/16, price adjusted)	188
5.16	Mean value per financial asset for men and women (2014/16, price adjusted)	188
5.17	Conditional item probabilities in the four-class solution in FMM (2010/12)	195
5.18	Conditional item probabilities in the four-class solution in FMM (2012/14)	195
5.19	Conditional item probabilities in the four-class solution in FMM (2014/16)	196
5.20	Saver types assuming over time consistency in LTA (2010/12-2014/16) . . .	196
5.21	Class proportions across three time points in LTA (2010/12-2014/16) . . . .	197
5.22	Factor loadings in FMM (2010/12-2014/16) . . . . .	197

# List of tables

2.1	Perceptions of the safest and the best-value options for retirement saving by age group (2012/14) . . . . .	28
2.2	The characteristics of the study sample and general population in WAS (2012/2014) . . . . .	38
2.3	Results from the final three-factor measurement model with direct income effects . . . . .	44
2.4	List of Hypotheses and results based on the final model . . . . .	53
2.5	Theoretical framework and variables in Hershey, Jacobs-Lawson, McArdle and Hamagami (2007) and this study . . . . .	54
2.6	List of hypothesised factors and the survey questions . . . . .	55
2.7	The study sample by age and gender . . . . .	56
2.8	The characteristics of retirement savers compared to all savers (2012/2014)	57
2.9	Polychoric correlation matrix of the identified survey questions . . . . .	61
2.10	Measurement invariance models in the multi-group analysis framework . .	64
2.11	Measurement model estimates using the one-step and two-step approaches (2012/14) . . . . .	69
2.12	Structure model estimates using the one-step and two-step approaches (2012/14)	70
3.1	Proportions and mean values of DB and DC schemes by age and gender (2012/14) . . . . .	78
3.2	Characteristics of the study sample and the WAS sample by gender (2012/14)	87
3.3	Results from the final three-factor measurement model with direct income effects . . . . .	91
3.4	Measurement invariance testing for the measurement model by gender . . .	102
3.5	Models for testing structural invariance in the multi-group analysis framework	103
3.6	Different levels of structural equivalence using the multi-group analysis (Structural model, Males/Females, 2012/14) . . . . .	103
3.7	Equivalence testing on the structural model (Males/Females; 2012/14) . . .	104

4.1	Perception of retirement saving options by tenure types (Age 25-44; 2014/16)	109
4.2	Housing tenure changes between 2008/10 and 2014/16 by age group (GB)	111
4.3	Odds ratio of a logistic regression of owner-occupier versus non-owner households (HRP age 25-44, n= 2,999)	123
4.4	Homeownership status in 2010/12: four scenarios	125
4.5	Number of events in each interval (n=691)	128
4.6	The odds ratio for homeownership transition among renters	130
4.7	Four hypothetical scenarios	135
4.8	The structure and usage of the WAS dataset	140
4.9	Homeowner and non-homeowner household characteristics (2010/12; GB)	141
5.1	Categories of asset and debt using the balance sheet approach	155
5.2	Five hypothesised saver types	155
5.3	Descriptive statistics of the longitudinal and the cross-sectional WAS population	157
5.4	Proportions ownership and mean values of asset and debt holding (2010/12-2014/16, n=2,456)	160
5.5	Transition probabilities for four classes for time $t$ and $t+1$	168
5.6	Factor loadings and item intercepts by saver type (2012/14)	171
5.7	Transition probabilities between saver types by parental homeownership (2010/12-2012/14 and 2012/14-2014/16)	176
5.8	Class membership probabilities in 2010/12 and transition probabilities by parental homeownership between 2010/12 and 2014/16.	177
5.9	Median and Mean amounts (nominal) by types of financial wealth (2008/10-2014/16)	189
5.10	Characteristics of the British adults in 25-49 and 50-65 in 2010/12	190
5.11	Model fit statistics for 3, 4, 5, and 6 class LCA solutions for binary indicators only	192
5.12	Proportions of individuals allocate to each class by LCA models (2010/12-2014/16)	193
5.13	Model fit statistics for four different specifications of FMM (2010/12-2014/16)	194

# List of abbreviations

## Abbreviations

ABI	Association of British Insurers
AE	Automatic Enrolment
AIC	Akaike Information Criterion
BIC	Bayesian Information Criterion
BLRT	Bootstrapped Likelihood Ratio Test
BOMAD	Bank of Mum and Dad
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CML	Council of Mortgage Lenders
CPI	Consumer Price Index
CPIHY	Consumer Prices Index including owner occupiers' housing costs but excluding indirect taxes
DB	Defined Benefit
DC	Defined Contribution
DCLG	Department for Communities and Local Government
DWP	Department for Work and Pensions
EHA	Event History Analysis
FA	Factor Analysis
FMM	Factor Mixture Modelling
HMRC	Her Majesty's Revenue and Customs
HRP	Household Reference Person
IFoA	Institute and Faculty of Actuaries
ISA	Individual Savings Account
LRT	Likelihood Ratio Test

---

LTA	Latent Transition Analysis
LTV	Loan-to-Value
MAS	Money Advice Service
MHCLG	Ministry of Housing, Communities & Local Government
MI	Measurement Invariance
MIMIC	Multiple Indicators Multiple Causes Model
NAO	National Audit Office
NEST	National Employment Savings Trust
NI	National Insurance
NIC	National Insurance Contribution
nSP	New State Pension
NSSEC	National Statistics Socio-Economic Status
OECD	Organization for Economic Cooperation and Development
ONS	Office for National Statistics
PC	The Pensions Commission
RMSEA	Root Mean Square Error of Approximation
RPI	Retail Price Index
S2P	State Second Pension
SEM	Structural Equation Modelling
SERPS	State Earnings-Related Pension Scheme
SPA	State Pension Age
SRMR	Standardized Root Mean Square Residual
TLI	Tucker-Lewis Index
TPB	Theory of Planned Behaviour
TUC	Trade Union Congress
UVA	Underlying Variable Approach
WAS	Wealth and Assets Survey
WLSMV	Weighted Least Squares Mean and Variance
ZIP	Zero Inflated Poisson



# Chapter 1

## Introduction

### 1.1 Motivation: saving behaviour in transition

This thesis concerns the economic autonomy and its implications for the long-term financial wellbeing of Britain's younger generation. It is motivated by the observation that the uncertainty in the current economic, political and policy environment has increased and that it affects savers' ability to plan for the future. The younger generation's current living conditions have been negatively affected by the economic climate since the financial crisis of 2007. Policy responses to the concerns of young adults, however, have been given a lower priority under decade-long austerity compared with other social issues. This is not only problematic for young adults' wellbeing today but also detrimental to their future welfare; current circumstances are not conducive to projecting their future, as they undermine the economic autonomy to plan financially through retirement saving and wealth accumulation.

The changes in the pension landscape in particular have brought a fundamental change in the way the younger generation saves for their future. Low-risk vehicles for retirement saving have now been largely withdrawn and replaced by more market-based saving mechanisms. This shift signifies greater risk in accumulating and producing income for the later stages of life, which carries mainly two implications: a) the increased risk requires that individuals take a more active approach to future planning; and b) wealth is going to be more important for long-term financial security than previously.

Societal ageing and changing economic environments have stirred up a number of discussions on the fiscal sustainability of the state and the ability of employers to meet pension obligations. Trends in the pension reforms in the United Kingdom (UK), and more generally in ageing societies, involve a reduced role of the state, while the gap is expected to be filled by an increase in private pension provision. Private provision includes workplace pension schemes, which in the UK have benefited many of the baby boomer generation. But workplace pension schemes have become less generous; most workplace pension schemes have moved from Defined Benefit (DB) to Defined Contribution (DC) schemes. These changes point to the reduced roles of the vehicles that were sources of retirement income. Individuals now bear a greater risk in saving for their retirement and their participation has become far more critical for those who want more than modest means in retirement (PC, 2004).

While some consider a degree of risk-sharing necessary (Delfani, De Deken and Dewilde, 2014), this shift in responsibility is often seen as individualisation of the pension policy. Rowlingson (2002) argues that it is a step backwards from the progressive welfare state; risks are now expected to be managed at the individual level while the fundamental issues in the financial markets remain unaddressed. Others voice concerns on its potential effect on social exclusion (Meyer, Bridgen and Riedmueller, 2007; Price, 2007). These discussions raise several questions that re-evaluated the role of the state (and individuals) in pension provisions as well as the overall direction of the British welfare system.

The Pensions Commission's (2006) final report sets out the future direction which argues for a solution that combines 'higher private pension saving, higher average retirement ages, and an increased percentage of national income spent on state pensions'. With the demographic shift, the role of the state is likely to focus on preventing poverty for all, rather than administering retirement income to produce an adequate replacement ratio for the pensioners. Given the current arrangement, the low level of retirement saving among younger adults is highly problematic (Department for Work and Pensions (DWP), 2012). This study begins with the recognition that the current architecture of British pension system calls for a

more active engagement from the younger generation and aims to assess the current state of long-term saving.

A key policy change in the pension system is Automatic Enrolment (AE). Introduced in October 2006, it mandates employers to provide pension schemes to eligible employees. By directing employers to provide a platform for employees to save via work, the majority, according to studies on ‘inertia’ (Choi, Laibson, Madrian and Metrick, 2005; Thaler and Benartzi, 2004), are likely to remain in the same ‘default’ state of being enrolled. AE has been successful in that the proportion of individuals saving for retirement has increased substantially (DWP, 2019). The sufficiency of saving, however, remains a challenge for policy makers. A limited number of individuals make additional contributions as most contribute the minimum rate, initially at 2% of qualifying earnings when first introduced and increased to 8% in April 2019 (DWP, 2017).<sup>1</sup>

Around the time of the introduction of AE, the government ran campaigns to increase public awareness of pensions. DWP used a character called ‘Workie’ in a campaign for promoting workplace pension schemes in October 2015 (see Figure 1.2 in p. 21). Pensionwise pursued a similar campaign, targeting the younger generation, who were considered to be more knowledgeable about types of coffee than pension options (see Figure 1.3).

Before AE came into effect, DWP conducted a triennial surveys titled ‘Attitudes towards pensions’ to understand public perceptions of and behaviours around retirement saving. From the last survey in 2012, MacLeod and colleagues reported that individuals recognise their role in retirement saving being greater than previously (MacLeod, Fitzpatrick, Hamlyn, Jones, Kinver and Page, 2012). Their saving behaviours, however, do not appear to correspond the increasing awareness. During the same year, DWP (2012) reported that many were ‘undersaving’, after assessing the saving amounts required to meet the replacement ratio set out by the PC (2004). A couple of years later, DWP (2014a) updated these estimates. They conclude that the undersaving issue is slightly less severe for the younger cohorts retiring in 2050s. Their figures, however, still show that about four out of ten are estimated to be undersaving (DWP, 2014a). The pensions industry also echoes this concern, as their reports

---

<sup>1</sup>[https://www.thepensionsregulator.gov.uk/en/business-advisers/automatic-enrolment-guide-for-business-advisers/about-automatic-enrolment/minimum-contribution-increases-planned-by-law-\(phasing\)](https://www.thepensionsregulator.gov.uk/en/business-advisers/automatic-enrolment-guide-for-business-advisers/about-automatic-enrolment/minimum-contribution-increases-planned-by-law-(phasing))

show that most young individuals delay or do not engage with retirement planning despite recognising the need to do so (Old Mutual, 2017; Scottish Widows, 2016).

Wealth is less widely discussed despite its importance for long-term financial wellbeing. From the asset-based welfare perspective, wealth is important for its potential to fund retirement and care (Doling and Ronald, 2010; Malpass, 2008; Prabhakar, 2008). Wealth accumulation, however, has been considered somewhat separately from retirement saving as a supplementary source of future income to the state or the workplace pensions and discussed to a much lesser extent compared to decumulation.

Not much is known about how individuals accumulate wealth partially due to the fact that the previous generation's wealth was mostly built through the favourable economic conditions. The baby boomer generation has accumulated substantial wealth, in particular housing and pension wealth; households headed by 55–64-year-olds were estimated to hold nearly double the national median wealth during 2010/12 (Hills and Bastagli, 2013). This is as mentioned previously largely driven by the macroeconomic factors. The housing price boom after 1995 explains most of their housing wealth increase (Bastagli and Hills, 2013), while DB pension schemes account for about half of private pension wealth (Finney, 2015). Retirement saving for the previous generation is largely perceived to consist of the nearly risk-free pension income from the state and the workplace provisions, while wealth may have been perceived as a safety net. This approach, however, is no longer adequate for the younger generation's long-term financial planning in the current pension landscape.

The wealth accumulation outlook for the younger generation is less optimistic for several reasons. Their early years of adulthood have been affected by negative economic conditions since the financial crisis in 2007. Earnings have stalled and costs have risen, reducing individuals' capability to save for future (Corlett, Finch and Whittaker, 2016). Homeownership, which is an important aspect of British life, has been out of reach for many young adults as house prices have soared despite low earnings growth (Corlett and Judge, 2017). They are also saving considerably less for their retirement than previous cohorts (Corlett, 2017). This generational experience provides an important context that shapes perspectives and approaches to long-term saving. The baby boomer generation's housing and pension wealth

have improved their standard of living in retirement. However, projecting the younger generation's future wellbeing based on the previous cohorts' circumstances is highly problematic because the structural difference in the economic and policy environment calls for a different approach to long-term saving. Despite their importance, issues of the younger generation's future planning and wealth accumulation capability have been relatively under-researched.

### 1.1.1 Research questions

The above discussions lead to question the following: How does the younger generation save for the long-term and what are the implications for their future wellbeing? This study considers two aspects of discretionary long-term saving – retirement saving and wealth accumulation – and raises further questions: Who saves for retirement and what distinguishes a retirement saver from a non-saver? And, how does the young generation accumulate wealth?

The first sub-question concerns the retirement saving decision-making process, by assessing the role of human agency in their social environment. Human agency (indicated by attitudes and behavioural tendencies) is influenced by socio-economic environments (indicated by demographic and socio-economic characteristics) (Elder, 1994; Kristiansen, 2014), suggesting understanding the interplay between these may be crucial to examining retirement saving behaviours. This interplay on the other hand, points to potential differences between males and females, as demographic behaviours associated with the younger generation indicate the socio-economic arrangements may be arranged according to the social and cultural gender norms (Ginn and Arber, 1996a; Grady, 2015; van der Horst, Lain, Vickerstaff, Clark and Baumberg Geiger, 2017).

The second question concerns wealth accumulation from the younger generation's perspective. Given its social and economic importance of homeownership in the British context (Malpass, 2008; Ronald, 2008a; Saunders, 1990), homeownership as a means to accumulate wealth is important, which motivates investigation of homeownership circumstances. With the increasing importance of family support in homeownership (Appleyard and Rowlingson, 2010; Coulter, 2018), the role of intergenerational support is examined as a potential enabler.

Similarities and differences in the patterns and extent of wealth holding may inform how the younger generation approaches wealth accumulation. Individual and parental socio-economic status may explain the extent to which individual differences are meaningful.

### 1.1.2 The ‘younger’ generation

This study focuses on the British adults, under 50 years of age. This age group is referred to as ‘the younger generation’ and ‘young adults’ in this thesis and a precise age group is defined in each paper. This population comprises of Millennials, Generation Y and Generation X, who were born between the mid-1960s and mid-1980s. These terms are, however, not used in this study as they indicate a shared cultural identity rather than a demographic description of an age group (Katz, 2017). Also, there is no consensus on the precise age bands that sufficiently distinguish one ‘generation’ from another. Oxford dictionaries, for example, refers to a millennial as ‘*a person reaching young adulthood in the early 21st century*’, leaving the definition subject to the interpretation of ‘adulthood’. Furthermore, these terms are widely used to describe life styles of young adults, often with a negative connotation. Millennials are often described as the ‘latte-sipping, avocado toast-eating’ adults who spend too much and fail to save money for later.<sup>2</sup> This study focuses on individuals organising their economic lives, therefore, the study population is described as ‘the younger generation’ or ‘young(er) adults’.

There are several reasons for studying the younger generation. First, they are affected by the shift in the retirement saving culture the most; yet, studies on their behavioural responses and the long-term implications are scarce. Second, their experience of economic and political uncertainty and its effect on inequality are unique (e.g. Corlett, 2017; Corlett et al., 2016; Hood and Joyce, 2013). In particular, the increasing importance of family background in young adults’ economic outcomes suggests that the equality within generation is likely to widen in the future (Coulter, 2018; Karagiannaki, 2012; McKnight and Karagiannaki, 2013). Third, policies that require a long-term perspective have often given a lower priority to the

---

<sup>2</sup><https://www.theguardian.com/lifeandstyle/2017/may/15/australian-millionaire-millennials-avocado-toast-house>

younger generation.<sup>3</sup> The issues, such as undersaving, are largely under-researched despite the benefits of a well-coordinated policy structure that supports long-term planning (Walker, 2018).

## 1.2 The life course approach

This thesis examines the research questions raised in the Section 1.1.1 through the life course perspective. The tenet of the life course perspective is that events in the earlier stages of life are linked to the outcomes in later life, which is widely applied to epistemology and other bio-social sciences (Kuh and Ben-Shlomo, 2004; Kuh, Ben-Shlomo, Lynch, Hallqvist and Power, 2003) as well as psychology (Diewald and Mayer, 2009).

The approach taken in this thesis takes one widely used in sociology. In the article titled '*Time, Human Agency, and Social Change: Perspectives on the Life Course*', Elder (1994) argues that individuals' lives are connected to others and interact with immediate and broader environment, and that human agency should be interpreted within the context in which it operates. Kristiansen (2014) sees human agency as 'the ability to influence one's life' (Mortimer and Shanahan, 2003, as quoted in Kristiansen 2014). Life course scholars have examined the influence of the structural factors on human agency (Meyer and Dalal, 2009; Moen, 2013), individuals' ability to overcome institutional boundaries (Marshall, 2005) and the interplay between agency and structure (Elder, Johnson and Crosnoe, 2003). The interpretation of human agency as a mediating factor between the environment and outcomes (Elder, 1994; Kristiansen, 2014) is particularly useful for examining differences in individuals' retirement saving behaviour as well as wealth accumulation in the current British pension landscape.

Kristiansen (2014) argues that human agency is a socially constructed concept, which is placed in the broader environment. Historical time provides crucial information for

---

<sup>3</sup>During the financial year 1997/8, the UK government spent about \$61.7 billion in 2012/13 price social expenditure for providing pension-relevant benefits and about the same amount for the working age population and children. In 2012/13, the UK government spent \$12 billion more for pensioners than working age population and children combined. Author's own calculation using the Social security expenditure in the United Kingdom, including Scotland (DWP, 2014b).

understanding *lives* (Elder, 1994); ‘lives and historic time’ suggests that the economic, political and policy environment, which is characterised by unique social norms and cultural development of the era, influences individuals differently. Generational experience of an era is described as ‘the timing of lives’, which encompasses the notion of the stages of life placed in a specific historical time (Elder, 1994; Elder and George, 2016; Eliason, Mortimer and Vuolo, 2015; Mortimer and Moen, 2016). Recent British studies on the younger generation in the current economic circumstances can be understood from the life course perspective (Corlett, 2017; Corlett et al., 2016; Hood and Joyce, 2013). This confluence of historical time and individuals’ stages of life provides the context of this thesis, aiding a meaningful evaluation of individuals’ economic autonomy today and an assessment of its long-term implications.

Individuals’ lives are placed along the temporal dimension, continuity of which constructs a *life course*. Life course scholars view that experience of past events can influence assimilation of the current state or events, focusing on the ‘developmental’ and ‘cumulative’ nature of the life course (Elder et al., 2003). In addition to this retrospective angle, time in individuals’ lives can be also studied prospectively – how individuals organise and evaluate their current stages of life with respect to their imagined future. In the retirement saving context, psychologists have suggested concepts such as future time perspective (e.g. Hershey et al., 2007; Jacobs-Lawson and Hershey, 2005), where the opposite concept of ‘myopia’ is discussed in various other disciplines including economics (e.g. Benartzi and Thaler, 1999), law (e.g. Shaviro, 2015) and social policy (e.g. Foster, 2017; Hills, 2006a).

Another important element of the life course approach is the notion of ‘linked lives’. Individuals’ lives are also connected through family and social relations, and are affected by and experienced through the lives of others. A few examples in this area include studies of the parental effect on adult children’s homeownership circumstances (Coulter, 2018; Lersch and Luijkx, 2015; Mulder, Dewilde, van Duijn and Smits, 2015), similarities in wealth outcomes between parents and their adult children (Pfeffer and Killewald, 2018) and partner effects on retirement transitions (Tang and Burr, 2015; von Bonsdorff, 2009). The relational aspect is explored in the first two studies in human agency in retirement saving,



and individuals' attitudes towards and behaviours in retirement saving are evaluated in the broader socio-economic circumstances (Mortimer and Moen, 2016).

The life course approach has been also applied to understanding group- and population-level phenomena by analysing patterns of a group's (population) shared experience of social structure and relations. Two studies taking this approach are particularly useful in the context of younger generations' future economic wellbeing: Komp and Johansson (2016) propose a conceptual framework that aids a systematic evaluation of structural and social relations at macro- (societal and institutional), meso- (family and other social network) and micro-levels (individuals' characteristics). Foster and Ginn (2018) also assess women's disadvantages in pension outcomes that result from the historical development of pension policy structure, which informs the examination of the gender dimension in the retirement saving context. A similar approach is taken to understand the social context of human agency in the retirement saving decision-making process in this thesis.

### **1.3 On the methodological approach**

It is important to point out that none of the four studies in this thesis claims to make a causal inference. Causal inference, in this context, refers to the potential outcomes framework (Holland, 1986) and the body of literature that builds on it (Angrist, Imbens and Rubin, 1996; Angrist and Pischke, 2009; Imai, Keele, Tingley and Yamamoto, 2011; Macmillan and Hannan, 2019; Rosenbaum, 2010). There are several conceptual and practical reasons for this, which are outlined below.

First, the research questions raised in this thesis are not of a causal nature. Chapters 2, 3, and 5 deal with questions of a descriptive, but not causal, in nature. For example, Chapters 2 and 3 concern the human agency and its interplay with one's immediate environment in long-term saving behaviour, while Chapter 5 attempts to build typology based on similarities and differences in wealth accumulation patterns. In these studies, identifying a cause to effect (or an effect of a cause, see Holland, 1988) may be challenging and not always meaningful. Second, studies that examine causality, such as experimental studies in psychology or

randomised control trials (RCTs) in epidemiology, have a clearly defined context to which the findings of the study apply (Macmillan and Hannan, 2019). As the context of this thesis is relatively broad (additional retirement saving and wealth accumulation of the younger half of the British working-age population, answering causally motivated research questions pose numerous methodological challenges. A number of studies have discussed strategies on identification (Angrist et al., 1996; Angrist and Pischke, 2009; Holland, 1986; Rosenbaum, 2010) and omitted variable bias (Dinga and VanderWeele, 2016; Lawlor, Tilling and Smith, 2016) in particular in the causal SEM framework (Imai et al., 2011; Pösch, 2019; Stavola, Daniel, Ploubidis and Micali, 2015), just to mention a few. Designing a methodologically robust study may result in too narrow a context to be useful, given the aims of the thesis.

Third, it is not always clear how a ‘treatment’ should be defined when multiple mechanisms are at work and whether the treatment effect can be assumed to be homogeneous for all individuals, which is referred to as Stable Unit Treatment Value Assumption (SUTVA) (Rosenbaum, 2010). For example, Chapter 4 tests to what extent the homeownership outcome of the younger generation is related to their parents’ socio-economic status. Two critical mechanisms discussed in the literature include the financial resources transfer (money and space) as well as implicit transmission of preference of homeownership through the socialisation process. However, these two are interlinked, which makes it challenging to identify a clear cause-effect relationship. Defining ‘treatment’ in this case can be deemed somewhat arbitrary.

Fourth, data limitations in Wealth and Assets Survey can be a threat to validity for testing a causal relationship under the potential outcome framework. For example, in Chapter 4, the lack of information on precise timing between financial support from family and home purchase implies that the temporal order required for a causal study – that the treatment precedes the effect – could not be established reliably. This resulted in the study using the relative timing of the two events over the six-year period in two-year blocks, which is explained in more detail in Chapter 4. Furthermore, concerns on selection bias (Heckman, 1981) cannot be ruled out when using longitudinal datasets (Sampson, 2008).

For the reasons mentioned above, studies in this thesis focus on *studying informative patterns* that tell a story (Macmillan and Hannan, 2019). Then it might raise questions on to what extent the policy implications and recommendations discussed in this thesis may be meaningful. These are discussed in the section on policy implications in relevant chapters and in Conclusion (Chapter 6).

## 1.4 The policy context

This section discusses the policy context of the younger generation's retirement saving and wealth accumulation patterns. A brief account of British pension policy chronology is provided, which focuses on the three actors in accumulating and providing retirement income: the state, employers (workplace) and individuals. This actor-focused approach is initially discussed by the World Bank (World Bank, 1994), in the form of a multi-pillar approach, in relation to fiscal sustainability in pension policy facing ageing society. It also provides a useful tool to assess the structure of the pension policy and how its evolution may have shaped individuals' perception of and expectations for retirement saving.

### 1.4.1 The state in the development of British pension policy

The role of the state in providing pensioners' income has been central to the development of the British pension landscape from its infancy. The origin of the state pension in the UK goes back to the early 20th century when old age poverty was prevalent. It was introduced by the Old Age Pensions Act in 1908, which provided pensions for citizens aged over 70 with a low-income who had not contributed towards a pension (Office for National Statistics (ONS), 2005). The Liberal Asquith government during that time considered old age poverty as a temporary phenomenon and therefore funded pensions as a provisional measure through the general tax system (Glennerster, 1992). The government, however, required those on a low income and their employers to contribute to voluntary schemes in order not to erode the moral values attached to voluntary contribution schemes (Glennerster, 1992). Beveridgean policies in the 1940s inherited this contributory principle (Glennerster, 1992; Hills, 2006b), but placed

a greater emphasis on the collective social insurance scheme and provided protection for uncertainty such as sickness or unemployment (Harris, 1994), and the inability to work in old age (Hills, 2006*b*).

The role of the state in the British pension policy is the greatest among the three actors, which becomes clearer when contrasting the three-tier British pension system distinguished by the mechanisms of funding. The first-tier pension provision refers to the basic state pension of the contributory ‘pay-as-you-go’ system through taxation (PPI, 2017*b*). The second-tier provision is of the earnings-linked nature, such as State Earnings-Related Pension Scheme (SERPS) in the late 1970s, with an option of ‘contracting-out’ – replacing it by the private pension products in lieu of paying part of National Insurance Contributions (NICs). SEPRs was replaced by the State Second Pension (S2P) in the early 2000s. The third tier, which played a smaller role historically, refers to the private pension schemes. It includes employer-funded schemes, employer contribution to a workplace pension plan, or individuals themselves. From the actor-based viewpoint, the role of the first pillar (the state) is greatest in the UK system as the first and second tiers are predominantly administered and designed by the state.

One of the challenges for the government in pensions is that it is difficult to achieve a good balance between raising revenue for funding pensions and redistribution for reducing intra- and intergenerational inequality (Danzer, Disney, Dolton and Bondibene, 2016). Not many policies directly sought to increase the private pension saving (the third-tier), which includes employers as well as individuals, prior to the AE in 2012. Many policies prior to that targeted a subset of individuals, which were designed to encourage or dissuade specific saving behaviours, often through tax relief. The usage of such policies is limited to those who have knowledge and resources to benefit from such policies.

### **1.4.2 Policy structure and individuals’ perceptions and expectations**

The discourse around balancing funding from the three actors, especially by promoting the role of individuals, has had positive and negative reactions. Some welcomed it as for being a more sustainable and balanced approach to funding pensions, increasing fiscal and social

sustainability and enhancing individuals' capability to save for their future. Others expressed concerns, viewing it as a shrunken role of the welfare state which intensifies social exclusion (Meyer et al., 2007; Price, 2007; Rowlingson, 2002). While both viewpoints are valid, the below discussions focus on how individuals' perceptions and exceptions may have been shaped in retirement saving.

The idea that individuals save their retirement is not new. The Beveridge report in 1942 proposed using the tax system as a vehicle for individuals to save for their pensions. The principle was that individuals accumulate their pension entitlement through National Insurance (NI) payments during their working-age years (Bozio, Crawford and Tetlow, 2010; Hills, 2004). However, the social security needs in the UK after the two World Wars called for an immediate response from the state (Fraser, 2003) as individuals did not have sufficient time to accumulate the entitlement after the wars and needed access immediately. The state therefore funded those benefits through the tax revenue from the working-age population at the time (Bozio et al., 2010). This is how today's state pension functions – in the form of the contributory 'pay-as-you-go' system – which has developed differently from the form Beveridge originally envisaged (Hills, 2004). Under the Beveridgean principle, individuals were expected to accumulate their state pension entitlement (the first pillar), keeping a close connection between their ongoing contribution and the future benefit, on an individual basis (Bozio et al., 2010; Hills, 2006*b*; Rowlingson, 2002). However, the current 'pay-as-you-go', unfunded system focuses on intra-temporal social solidarity: working-age citizens' tax finances older generations' pensions (Crawford, Keynes and Tetlow, 2013). The contributory principle has thus become less clear (Hills, 2006*b*).

Paying tax in the funded system, for most individuals, is a way of saving for retirement. The accrual of entitlement in a citizen's mind, in this case, is the notion of 'a citizen's right' to a pension in the future in return of today's contribution. Therefore, the generosity of the state pension may become the primary factor for judging 'fairness'. The state pension system developed in such a way that, in fact, the meaning of retirement saving on an individual basis became less of a focus compared to a system that reflects the Beveridge principles more closely (Crawford et al., 2013; Hills, 2006*b*). The focus on the intergenerational solidarity in

funding pensions may have shaped perceptions of their role in retirement saving, in particular how individuals save.

The development of workplace pensions also shows the way in which individuals may have understood retirement saving as accumulating entitlement through years of service to the employers (the second pillar). Most companies offering pension schemes during the early 20th century did so not only to attract employees but also to provide care for employees' old age after their long service (Thane, 2000). The UK government welcomed this movement and allowed a tax relief to companies that provided pensions to their employees since the early 1920s (Finance Act 1921). This tax incentive increased employers' enthusiasm for funding employees' retirement more actively (Thane, 2000). The role employers played is noticeable also in the social insurance model of the British pension system in the 1950s, as the private sector pension was designed to generate additional pension for individuals who hoped for a better replacement ratio (Disney, 2016). While individuals were building their entitlement to future income, the structure of workplace pension indicates that it was naturally occurring through their employment rather than by any means of additional saving.

The link between contribution and benefit at the individual level was stronger for the earnings-linked part of the state pension, which was considered as a supplementary income in addition to the modest flat-rate state pension. SERPS was introduced in 1978, which added the earnings-related element of the state pension. This is an approach closer to Bismarckian than Beveridgean principles (Hills, 2004; Meyer, 2015), as its main aim was to enhance the replacement ratio for individuals with higher lifetime earnings. Funding the second-tier state pension resulted in erosion of the relative value of the basic state pension. This was because the basic state pension was changed to become price-linked from earnings-linked to make more room for funding SERPS,<sup>4</sup> effectively undermining its function for poverty prevention as it became more means-tested (Hills, 1997, 2004). SERPS was later reformed to be S2P (State Second Pension) in 2002, which had a more distributional effect than SERPS. S2P still provides a significant proportion of income to current pensioners to this day (PPI, 2017a).

---

<sup>4</sup>Hills (1997) shows that while the proportions of Gross Domestic Production (GDP) spent on pensions were stable, the proportions allocated to SERPS increased and those to the basic state pension decreased.

The two-tier structure also brought a mixed bag of results. Employers who opted for contracting-out were required to match the level of retirement income to at least that of SERPS. This feature is said to have influenced many employers to choose DB schemes over DC plans (Disney, 2016), but such employers may have also been overly optimistic about their ability to fund pension and about the economic outlook. Individuals who were provided with a DB pension during the working-age years benefited greatly from its generous and (nearly) risk-free pension income (Finney, 2015; Hills and Bastagli, 2013). However, exponentially growing pension liabilities slowly dissuaded most of the employers from offering DB provisions and they switched to the DC schemes.

This shift has had a huge implication for individuals; they could afford to take a relatively passive role in saving for their retirement as the entitlement-based DB schemes required less engagement from individuals. However, the success of the contribution-based DC schemes largely depends on individuals' active participation (e.g., increased contribution rates) and informed decision-making (i.e., selecting and adjusting a portfolio). This puts a greater burden of responsibility for retirement saving on the individuals.

Discussions on individuals' roles in retirement saving and means to enabling it were found to a much lesser extent until the introduction of AE. More individuals are saving via work, and the opt-out rate is reported to be stable despite the contribution rate increase to 8% in April 2019 (NEST Corporation, 2019). Some may question whether individuals should focus on saving via workplace pension schemes. The initial position of the PC, taking the final contribution rate of 8% into account, was that making additional provisions was strongly recommended due to the uncertainty and risk involved (PC, 2005). This view was echoed by others who argued that the legal minimum contribution rate may be insufficient for their retirement income (Institute and Faculty of Actuaries, 2016; PPI, 2015a).

While it is a widely accepted view that individuals need to save more, discussions regarding the role of individuals have focused on structural factors such as the architecture of workplace pension schemes and contribution rates, private pension subscription, and the pension tax credits (Association of British Insurers (ABI), 2015; PPI, 2015b). Despite its growing relevance to policy (Danzer, Disney, Dolton and Bondibene, 2016), individual-led

retirement saving is often considered as voluntary and secondary retirement saving (Gough and Niza, 2011). This leaves questions regarding individuals' attitudes to retirement saving and their relationship to other financial behaviours largely unanswered.

### **1.4.3 Retirement saving and wealth accumulation**

The distinction between retirement saving and wealth has become less meaningful due to a series of changes in the pension landscape. Retirement saving previously has been earmarked and was not accessible unless for the purpose of purchasing annuities. 'Pension freedom', which was introduced in 2015 removed the compulsory condition and made a draw-down of pension savings more accessible. Cannon, Tonks and Yuille (2016) report a drastic 75% reduction in annuity purchases in 2014/15 from its peak in 2012, hinting a diversion of pension savings usage. It could now be used as any other form of savings (wealth) – for example, investing in private property (Soaita, Searle, McKee and Moore, 2017) or paying off a mortgage (Overton and Mahony, 2015).

For the younger generation, the accumulation aspect of wealth is more relevant to retirement saving today. One of the important implications of the removal of the earnings-related portion of the state pension (i.e. SERPS, S2P) and the shift from the DB to the DC schemes is that the boundaries between retirement saving and wealth accumulation have become less clear. To understand why this may be the case, a brief discussion on the individuals' risk-bearing structure may be useful. Regardless of the recent changes in the pension system, individuals contribute to their retirement saving via the NIC or through the workplace schemes (DB or DC). On average, however, the previous system is considered to be more beneficial. DB pensions, for example, are often referred to as 'gold-plated' pensions in the private sector (e.g. Old Mutual, 2017). For the earnings-linked part of the state pension, as it is funded through the tax system, there was almost no risk for the pension recipients. Risks do exist, but in relation to a potential decrease in the pension amount or the change to a less favourable uprating mechanism, not regarding the certainty of a retirement income. Similarly, DB schemes are more valuable because employers, not individuals, bear the risks in accumulating and providing a pension income. This is a substantial advantage for DB



holders, considering the length of retirement. Two key aspects of the risks involved are explained in details below.

Market risk refers to the risk involved in accumulating (or producing) a pre-determined level of retirement income. Pension funds, like any other funds, build and manage asset in the financial system. The value of the portfolio (a collection of investments) held in the funds can go up as well as down. Even if the value decreases, employers are responsible for providing the agreed retirement income under DB schemes. Conversely, in a DC scheme, employees bear this market risk, like any other investors do in the financial markets. This implies that contributing to a pension scheme *per se* may not be sufficient; individuals do not only have to factor in the sufficiency of saving, but also the risks of asset devaluation along the accumulation path.

Additionally, longevity risk is related to generating an income for the entire duration of the retirement and it increases as people live longer. In DB schemes, a continuous income is provided from retirement until death. In DC schemes, on the other hand, there is no such arrangement.

Retirement saving for the younger generation involves both types of risk previously borne by the state or the employers. Due to this shift in risk-bearing structure, the role of wealth in supporting retirement is expected to be greater for this population. The discretionary retirement saving and wealth accumulation during the life course has become more similar. Both are built on a series of saving (and investment) activities, and integrated in individuals' economic decisions and activities during the life course. In this sense retirement saving and wealth accumulation are more closely linked, and an individual-initiated saving behaviour is integral to understanding behaviours that underpin both retirement saving and wealth building (Danzer, Bondibene, Danzer and Dolton, 2016).

## 1.5 Structure of the thesis

The long-term saving this study concerns has two elements: discretionary retirement saving and wealth accumulation. Each theme consists of two papers: the first two papers examine

how and to what extent attitudinal and behavioural factors are linked to additional retirement saving activity, and how these factors interact with individuals' socio-economic arrangements. The third study focuses on the housing wealth, as it is one of the most important elements of wealth in the UK. The fourth paper examines overall wealth accumulation including financial, housing and pension wealth. This structure is summarised in Figure 1.1.

The first study (Chapter 2) focuses on mapping the decision-making process for additional retirement saving, building on the *model of financial planning* developed by Hershey and colleagues (2007) in the structural equation modelling (SEM) framework. In doing so, a behavioural measure termed *financial resilience* is constructed to account for the ability to manage everyday financial affairs in a responsible manner. Taking the life course approach, the model controls for a set of characteristics to indicate individuals' stages of life. Intergenerational links and pension scheme structure are also accounted for in the model.

Descriptive analysis during the first study sheds light on the substantial gap in private pension wealth between men and women in their 30s and 40s. This leads to further investigation on the first study. Chapter 3 investigates gender difference in economic autonomy in the social context of gender norms and tests the male breadwinner hypothesis (Lewis, 1997). A novel methodological approach used in this study is the use of multi-group analysis in the SEM framework, which allows model parameters to be estimated separately but simultaneously for men and women.

Chapter 4 presents an investigation into young adults' homeownership circumstances. It first examines how homeowners differ from non-homeowners, accounting for individuals and parental socio-economic status and parental financial support. The second part of the study focuses on testing the transition probabilities of moving from renting to homeownership using discrete-time event history analysis (EHA). Key independent variables include two identified mechanisms of parental support – money and space – as well as parental homeownership.

The last empirical chapter (Chapter 5) concerns how individuals accumulate wealth. The data from Wealth and Assets Survey (WAS) are reorganised using the balance sheet approach, which distinguishes the type, ownership status, ease of access and amounts. This approach is meaningful in understanding how individuals may be motivated and able to

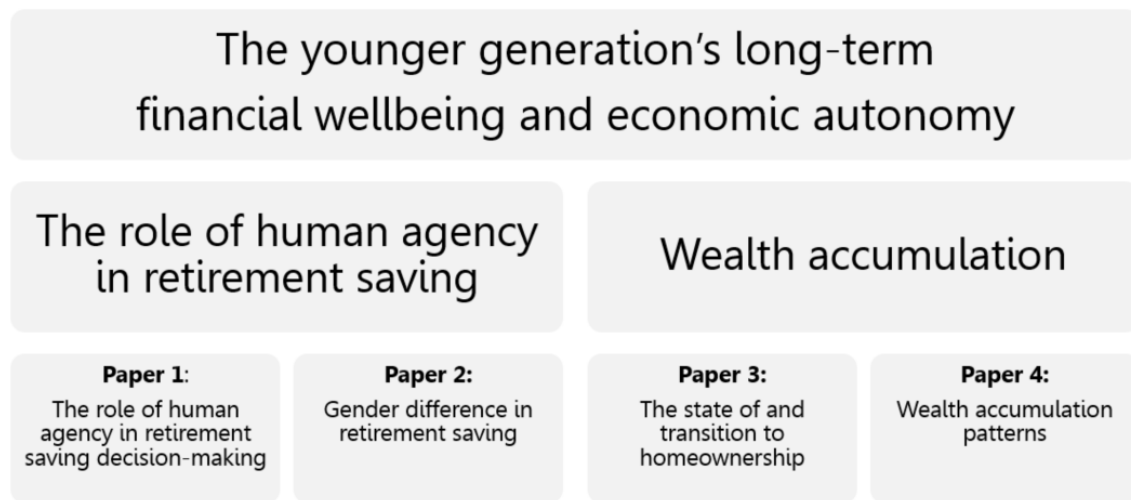


Fig. 1.1 The thesis structure

choose a particular method of wealth building, as it decomposes wealth into more nuanced and detailed wealth categories with distinctive characteristics. Using these reconstructed data, four saver types are established using factor mixture modelling (FMM). Transitions between these saver types across three time points are also tested using the latent transition analysis (LTA). The effect of parental background (using parental homeownership as a proxy) is examined in detail using multi-group LTA, accounting for individual demographic and socio-economic characteristics as well as intergenerational transfer.

The last chapter, Chapter 6, provides the conclusions of this thesis, synthesising findings from the four studies. Limitations of the studies as well as future research opportunities are discussed. The thesis concludes with policy implications and future directions.

The four studies in this thesis are connected through three elements: individuals, money and a time horizon. Individuals are studied through information not only about their demographic and socio-economic characteristics but also through their attitudinal and behavioural characteristics. The research questions are answered from an individual's perspective in their social context. The notion of an individual perspective and its interpretation using the life course approach are discussed in detail in the following section. Money is studied not simply by focusing on its economic function but by considering social aspects of individuals'

functioning with money. Time horizon connects past experiences to formation of current economic autonomy and abilities that influence future outcomes.

Connecting the three elements required an interdisciplinary approach. This study is motivated by the academic literature in social policy but draws on studies from multiple disciplines including sociology, psychology, economics and accounting. The primary goal of the thesis is to investigate a generalisable pattern by providing empirical evidence. Therefore, quantitative techniques are used in all four studies. The study sample includes the younger generation, whose precise age group varies in the context of the study, as well as data availability in each study. Questions regarding economic resources and behaviours have been predominantly studied by economists using mainly econometric techniques. This thesis instead borrows analytical tools from statistics, for the suitability and flexibility of the methods to study the question from the individuals' point of view.

All studies use the WAS dataset, which has been carried out biennially since 2006/8 in three countries (England, Scotland and Wales) and excludes Northern Ireland (ONS, 2018*d*). There are now five waves of data available and the latest wave available is 2014/16. The details of dataset and methodology for each study are addressed in the respective chapters with additional information made available in the Appendices at the end of each chapter.

Certain terms, such as 'interaction' and 'significance', have different statistical connotations. When used in the text, it is with regards to their ordinary meaning. Corresponding statistical notions are indicated by a specific context such as, 'an interaction effect' or 'statistical significance'.

Each empirical chapter is a stand-alone research paper with its own background and conclusion sections. These studies are written with a broader social science audience in mind. This thesis was originally submitted in September 2019 and successfully defended in February 2020. As of May 2020, Chapter 2 is under revision for the journal *Ageing and Society*. The study presented in Chapter 3 has been submitted to the journal *Feminist Economics*. Chapter 4 has been published in the journal *Longitudinal and Life Course Studies*. Chapter 5 is being reorganised to be submitted to an appropriate journal.

Fig. 1.2 Workplace pension awareness campaign by DWP in 2016



Note: Workie was a character initially employed by the Department for Work and Pensions (DWP) to promote workplace pension schemes around October 2015. DWP used the character again in 2016 after a short break. Image taken from a web news article page published by West & North Yorkshire Council on 18th May 2016.  
<https://www.wnychamber.co.uk/employers-are-hearing-workies-message-now-what-should-they-do/>

Fig. 1.3 Pension awareness campaign by Pensionwise in October 2016.



Note: Photograph of an advertisement from Pensionwise, a government body. Taken by the author on Kingsland Road in Shoreditch, London on 26th October 2016. Shoreditch is a popular area among the younger generation and employees who work near by in the banking sector.

## **Chapter 2**

# **Can't save or won't save – the role of economic autonomy in retirement saving among younger British adults**

### **2.1 Abstract**

This study examines the role of human agency in additional retirement saving activity for British adults in their 30s and 40s on the premise that individuals are increasingly encouraged to save more and from earlier on. Younger adults' inadequate retirement saving has largely been explained by undesirable attitudinal or behavioural tendencies, such as myopia, the disinclination to save ('won't save') or a simple lack of financial resources ('can't save'). The study examines to what extent these two aspects may help to explain younger adults' retirement saving decision-making processes. Using a modified version of Hershey and colleagues' *Model of Financial Planning*, the study analyses how attitudinal and behavioural tendencies and their socio-economic characteristics interact, and to what extent such interaction is meaningful. Results show that financial resilience, which refers to individuals' everyday financial behaviours, is the strongest predictor of additional retirement saving activity beyond formal pensions. This quality, however, is very closely connected to an individual's socio-economic situation, such as household income and homeownership.

These findings suggest that individuals' attitudes and behaviours are highly relevant to understanding retirement saving decisions but are also intertwined with their social and economic arrangements.

## 2.2 Introduction

The way in which the younger half of the working-age population saves, and is expected to save, for retirement has changed drastically as a result of recent changes to state and workplace pension schemes in the UK. Most employer pension schemes have shifted from a DB to a DC basis since the 1980s and DB schemes are no longer offered to new employees in the private sector. AE was introduced in 2012, which requires employers to enrol eligible employees to pension schemes for them to save through their working-age years. The state pension was redesigned as well. Introduced in 2016, the new State Pension (nSP) functions as a social security net and provides a flat-rate pension. The most important implication of these developments is that the risks associated with accumulating and generating retirement income beyond a minimum have been largely transferred to individuals. Concerns regarding the adequacy and sufficiency of retirement income remain and a greater emphasis is put on the individuals' responsibility to save for their retirement.

The timing of the policy changes in the UK has left a particular group of the population caught in the transition. Individuals in their 30s and 40s, who are broadly defined as 'young' adults in this chapter, are unable to benefit from the DB schemes and are also unable to take full advantage of AE as most of them had been working for many years by the time AE was introduced in 2012. This group of young adults will retire under the flat-rate new state pension system. However, studies suggest that their attitudes to and behaviours regarding retirement saving are similar to those of their parents' generation (MacLeod et al., 2012; Pettigrew, Taylor, Simpson, Lancaster and Madden, 2007; Robertson-Rose, 2018). It would seem reasonable to expect the younger generation to accumulate wealth in a similar fashion to previous cohorts. The baby boomer generation accumulated substantial wealth to support their retirement – in particular, private pensions and housing wealth in Britain (Hills &

Bastagli, 2013). Studies show, however, that the trajectory of the current younger generation is drastically different from those of previous generations (Corlett, 2017; Corlett et al., 2016).

Despite the increasing importance of saving from earlier on, the undersaving issue persists. According to the DWP (2014a), retirement saving for this age group was mostly inadequate to generate a retirement income which was considered to be a median target by the PC (2004). Private sector reports later echo this concern, stating that the behavioural adjustment required for the changing pension landscape is largely absent (e.g. Old Mutual, 2017), although individuals are aware of an increasing need for saving (MacLeod et al., 2012). These findings suggest that there is a gap between the assumptions behind the policies that seek changes in saving behaviour and the younger generation's approaches to retirement saving.

Discussions on young adults' undersaving issues can be broadly categorised into two strands – ability and willingness. The first is that young people *can't save* due to a lack of resources. The other is that saving is a choice and some fail to recognise the importance of saving for the future and just *won't save*. Myopic attitudes explain why young people may focus on short-term goals without considering the long-term perspective or even the cost of future benefits. Although they focus on different aspects, these two strands essentially raise the same question regarding the role of human agency in retirement saving. Recent studies on young adults' retirement saving have argued the importance of examining attitudes and abilities concurrently and in a comprehensive manner (Foster, 2017; PPI, 2018; Robertson-Rose, 2018). None of these studies, however, have provided evidence on how these factors are interlinked and to what extent their interaction is meaningful in the individual-led retirement saving activities.

This study aims to fill this gap. Focusing on those in their 30s and 40s (hereafter, younger adults), it assesses the role of attitudinal and behavioural factors in the retirement saving decision-making process, taking the broader social-economic arrangements into account. By doing so, it is possible to provide a more nuanced picture of the role of human agency. The retirement saving decision-making process is mapped based on a modified version of the *model of financial planning* (Hershey et al., 2007), taking the life course approach (Elder, 1994). The analysis is performed using the fourth wave of WAS, which was carried



out between July 2012 and June 2014, in the SEM framework. Results show that the everyday economic behaviour – financial resilience – is found to be the strongest predictor for identifying a retirement saver among the younger adults. However, financial resilience is predicted by having a long-term view as well as by household income and homeownership. It shows that younger adults' retirement saving is an outcome of an interplay between ability and willingness to save. These findings are relevant to countries that share a similar pension policy structure with an increasing emphasis on the individuals' responsibility for future financial well-being.

This paper is structured as follows. The next section describes the current British pension landscape from the younger generation's perspective and discusses the implications. The life course approach and the model of financial planning are introduced. The next section provides a literature review on individuals' internal qualities, demographic and socio-economic factors that are included in the modified version of the model of financial planning (Hershey et al., 2007). In the following section, data and analytical procedure are explained. Then, the results are discussed, before the study concludes with a short section of policy implications.

## **2.3 Current pension landscape for the younger generation**

### **2.3.1 Pension policies changes and retirement income expectations**

The roles that played by the state and workplace pension in accumulating and generating retirement income have reduced since the 2000s, with the aim of improving equitability and fiscal sustainability. The focus of the British state pension is on the redistributive social insurance function based on Beveridgean principles (e.g. Hills, 2004), rather than achieving a specific target replacement ratio. Receipt of a pension income under nSP, introduced in April 2016, still depends on NI contribution records through taxation, which requires 35 years for full entitlement for both men and women.<sup>1</sup> Although a minimum of ten-year

---

<sup>1</sup>The current requirement for full entitlement to the state pension is 35 years of NIC, which increased from 30 years (2010 – 2016) but reduced from 44 and 39 years respectively prior to that (before 2010). A minimum of 10 years is required for a minimum entitlement of £48.00, which increased proportionally to a maximum flat-rate of £164.35 per week in 2018/19 with an NI contribution of 35 years or more. The maximum NI

contribution is required, a wider range of NI credits is available, and the individuals now accumulate entitlement on their own (independent of a partner's NIC record).<sup>2</sup> These changes increase the certainty of a minimum retirement income, particularly for those with short or interrupted employment patterns. On the other hand, the earnings-linked portion of the state pension is now removed, and a greater NIC amount will not provide additional income (unlike the previous system). As a result, the state pension has become more redistributive; however, individuals who would like more retirement income will need to contribute more to workplace pension schemes or by making additional provisions.

The outlook for workplace pensions is also not as promising. Many employers now have either shifted from DB to DC schemes or changed the calculation method. In the private sector, only around 10% of employers were offered DB schemes in 2012, compared to 40% in 1997 (Cribb and Emmerson, 2016). DB schemes are still offered in the public sector in Britain, but the changes in the indexation and entitlement method have reduced their value substantially. Due to these changes, the average value of a public DB scheme accrued for a year has decreased in value from 26% of an employee's annual salary to 11% (Cribb and Emmerson, 2016). Although it is still better value than the average DC scheme, it is unwise to expect that a DB scheme entitlement would resolve the concerns for retirement income sufficiency.

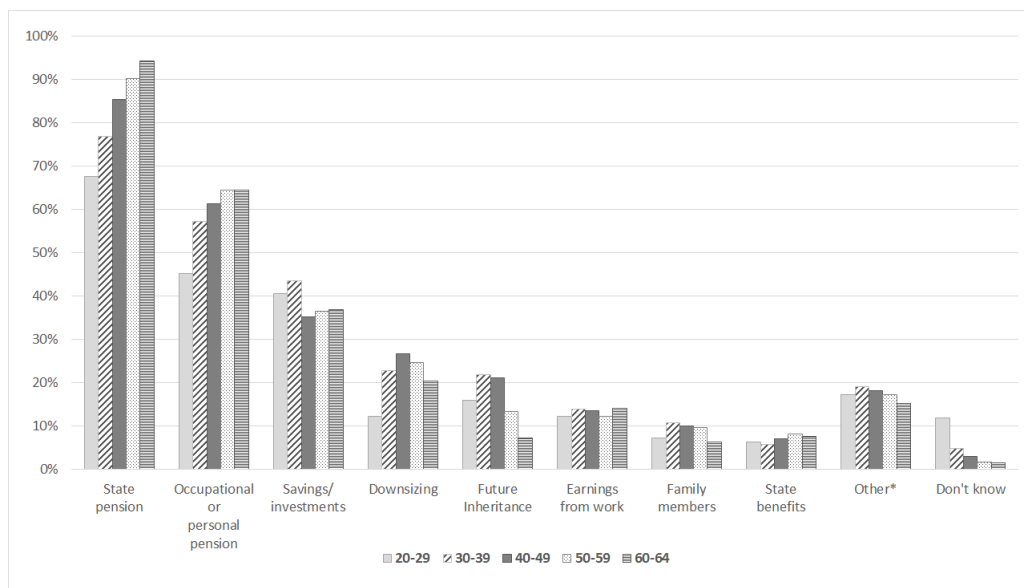
As Figure 2.1 shows, while younger age groups are less likely to include a state pension as one of their possible income sources, this decrease is not compensated by increases in other sources. While those in their 30s have counted savings and investments as being additional sources to a greater extent compared to older age groups, less than half viewed savings or investment as a potential source. Future inheritance is less frequently mentioned compared to other options, although it is more frequently mentioned among those in their 30s and 40s. While more of the younger age group (30-39) mentioned sources such as own savings and

---

required for state pension entitlements for men and women who retired before 6 April 2010 were 44 and 39 years respectively, while these reduced to 30 years briefly before being further increased to 35 years for both men and women who retired after 6 April 2016 (PPI, 2017b).

<sup>2</sup>The second report of the Pension Commission 2005 stated that improving the state pension entitlement for those with caring responsibilities and interrupted careers has been one of the key motivations. For more information, see There are differences between the changes proposed by the PC and those implemented by the government.

Fig. 2.1 Expected source of income in retirement by age group (2012/14)



Note: Other\* category includes income sources from borrowing against a home, letting a home, selling a property, selling a business and other sources unlisted in the showcard for the survey question.

investments, more older individuals (40-49) identified retirement income sources such as the state pension, occupational pension and housing.

The younger generation's perception on the safest or the best way to save for retirement also reveal that these expectations may have been built based on the previous generation's experience. More than four out of ten believe investing in property yields the highest return, and just around a quarter view that contributing to the employer pension scheme is the most effective way to save (See Table 2.1). On the other hand, nearly four out of ten believed that saving through employer pension scheme is the safest option, while only around three out of ten considered property investment as the safest option. These expectations on future income sources and perceptions of saving mechanisms reiterate the gap between the awareness and behaviours in retirement saving in the changing pension policy environment.

An increasing number of studies have shed light on the British younger generation's retirement saving. Robertson-Rose (2018) reported a variation in retirement saving behaviours among adults in their 30s. The author also argues that increased income is expected to have a positive but limited role in increasing saving rates. A study by PPI (2018) also found that individuals' perceptions of their current stages of life play an important role in the workplace

Table 2.1 Perceptions of the safest and the best-value options for retirement saving by age group (2012/14)

	Best value option		Safest option	
	30-39 (%)	40-49 (%)	30-39 (%)	40-49 (%)
Investing in property	46.8	43.0	30.6	28.9
Paying employer pension scheme	24.0	26.7	38.5	40.5
Investing in stocks or shares	8.8	7.0	0.8	0.9
Saving into an ISA	6.8	7.4	10.0	9.0
Saving into a high rate account	5.6	5.6	5.8	4.9
Paying into a personal pension scheme	4.9	5.9	9.8	9.9
Other	3.2	4.3	4.5	5.9
Total	100.0	100.0	100.0	100.0

pension saving decision among adults aged between 25 and 45. Foster (2017) documented the importance of considering attitudinal aspects, such as myopia and trust, in retirement saving of adults aged between 18 and 30. While these recent accounts provide useful insights into understanding young adults' retirement saving behaviour, the studies examined the workplace pension saving, therefore, focuses on individuals' attitudes to the introduction and implementation of AE. The question of how these factors may be interlinked and to what extent remains largely unanswered.

## 2.4 Research questions

This study focuses on the individual-led retirement saving activities outside the automatically occurring NIC or workplace pension schemes in order to examine the role of human agency through individuals' attitudinal and behavioural characteristics. If the younger generation is expected to save more for their retirement and make additional provisions, who is saving for retirement and who is not? How are they different in terms of their ability, attitudes and behaviours to retirement saving and to what extent? Adults in their 30s and 40s are in the stages of life in which socio-economic arrangements are crucial for planning the next stage. To what extent do demographic and socio-economic characteristics contribute to explaining abilities, attitudes and behaviours to saving for retirement?

## **2.5 Retirement saving decision-making process**

To assess how attitudinal and behavioural factors are interlinked and how they may interact with the environmental factors, this study uses the model of financial planning (Hershey et al., 2007). It is modified to suit the context of British younger generation's retirement saving decision-making process, taking the life course approach. This section introduces the model and the life course approach. The aspects of the modifications are explained in the following section.

### **2.5.1 Retirement saving and the scope of this study**

Retirement saving in this chapter refers to individual-initiated additional saving activities other than the state and workplace pension scheme contribution. This type of saving was previously described as voluntary retirement saving (Gough and Niza, 2011) and is also referred to as additional retirement saving in this thesis. The focus is on the action of having saved, which is distinguished from passive saving via the participation in a saving programme developed by professionals (Le Grand, 2006). It is also connected to the everyday understanding of saving as putting money in a savings account (Kempson, McKay and Collard, 2005), which is integrated with everyday economic activities.

### **2.5.2 The life course approach**

Life-course scholars argue that individuals' life courses take place as an outcome of an interplay between human agency and environmental factors (Elder, 1994; Elder and George, 2016). Making decisions about the future, such as retirement saving, would inevitably be based on their current socio-economic circumstances and the perception of priorities in their lives. To evaluate the relevance of the environmental factors, the framework proposed by Komp and Johansson (2016) is useful. Initially developed to understand population ageing, it distinguishes environmental factors at a macro- (e.g. national), meso- (e.g. family and friends) and micro-level (e.g. individuals), as outlined in the previous chapter. The meso- and micro-level factors are particularly important here as they are helpful in understanding

the social roles associated with partnership and family formation during the early stages of adulthood (Mortimer and Moen, 2016). This leads to including not only income but also homeownership status and inheritance receipts that are considered to be highly relevant to young British adults' economic circumstances today (Corlett, 2017; Hood and Joyce, 2013; Karagiannaki, 2015, 2017; Karagiannaki and Hills, 2013).

### 2.5.3 A modified model of financial planning

A modified version of the model of financial planning (Hershey et al., 2007) is used to map the decision-making process. The original model was developed on the premise that individuals' saving behaviours are an outcome of a decision-making process, which is an interplay between psycho-social characteristics, task complexity and available economic resources (Hershey et al., 2007).

The study argues that psycho-social factors provide insight into individuals' internal qualities, such as future time perspective (positive outlook on retirement), retirement goal clarity and financial knowledge. The model provides a quantitative mapping of the decision-making process, which provides a useful framework for this study. In addition, these psycho-social factors mediate the effects of socio-demographic characteristics on retirement saving behaviour. The underlying assumption is that individuals not only form attitudes based on their internal controls and are also influenced by their socio-economic environment, which is broadly consistent with the tenets of the life course approach. This framework is therefore particularly useful for examining how the role of human agency and its interaction with the broader socio-economic characteristics into consideration.

The modified model includes a behavioural indicator, *financial resilience*, which represents individuals' economic agency in everyday finance today. The motivation for this modification comes from the difference in the outcome variables; the original study defined a saving contribution decision as a behavioural outcome, while the current study examines a past action of saving as an outcome.

## **2.6 The role of economic autonomy in retirement saving**

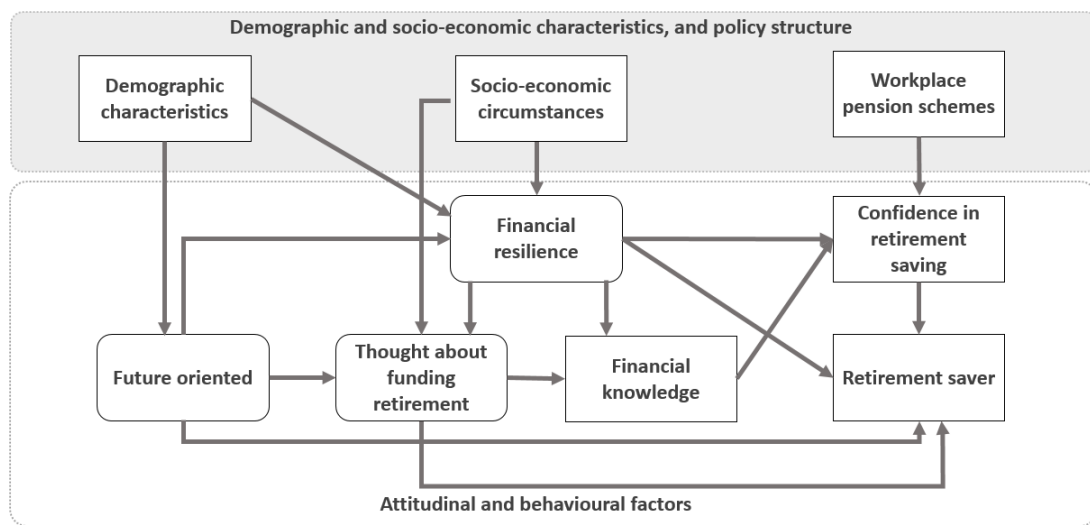
This section discusses the basis for the modified version of the model of financial planning for this study. The behavioural and attitudinal characteristics central to the adapted model are introduced first, before the demographic and socio-economic characteristics that provide the context of the individuals' living arrangements. The concepts and relationships described in this section are summarised in Figure 2.2.

### **2.6.1 Financial resilience**

The recurring nature of everyday financial behaviour provides insight into individuals' views and preferences on economic behaviours, which may explain different decisions made by individuals with a similar level of income. Financial resilience represents this notion. Curchin (2016) argues that understanding human behaviours, rational or irrational, is important as it provides insights into understanding human agency. For the younger generation, retirement saving is expected to be more integrated in the everyday saving behaviour. In this sense, individuals' present economic behavioural tendencies are a good starting point that connects to the additional retirement saving activity. Financial resilience is conceptually close to 'financial capability' (Atkinson, Marlier, Cantillon and Nolan, 2009; Atkinson, McKay, Kempson and Collard, 2006; Kempson, Collard and Moore, 2005). In a study to conceptualise financial capability, Kempson, Collard and Moore (2005) identify knowledge, skills and attitudes as its underpinning elements which enable individuals to be competent and confident in dealing with financial matters. This is implied in the notion of financial resilience in this study; however, to emphasise the current day to day economic behaviours, rather than competency or confidence, financial resilience is termed differently in this study.

Salignac, Marjolin, Reeve and Muir (2019) provide a multidimensional framework to conceptualise financial resilience using Australian data. The authors propose encompassing four different aspects in the measurement: economic resources, financial resources, financial knowledge and behaviour, and social capital. Here, financial resources refers to access

Fig. 2.2 A modified version of the Model of Financial Planning



to basic financial products such as bank account, credit facilities and insurances. This definition is more comprehensive than one employed in this study, although low levels in both definitions would indicate financial vulnerability.

Financial resilience can also serve as a measure for a possible behavioural change. The study by Thaler and Benartzi on the Save More Tomorrow (SMarT) programme (2004) documented the difficulties in changing saving behaviours. The resistance to behavioural change will be greater if a more extreme behavioural change is required. Individuals who currently save and plan for the future, even if not specifically for retirement, may find starting to save for retirement easier and respond more positively than those who do not currently save or plan.

### 2.6.2 Long-term perspective and retirement planning

The 'time' element in retirement from young adults' perspectives can be viewed in two different ways – as a general 'far future' event (*future orientation*) and in the more precise context of retirement (*thoughts about funding retirement*). The general 'far future' aspect is in line with having a long-term view. Studies have argued that myopic, or impatient, individuals overestimate the costs today and discount future benefits heavily (e.g. Browning



and Lusardi, 1996; Fisher, 1930). However, the source of such myopic tendency is not clear. Some describe it as continuous discord between rational thinking and irrational tendency, or between the planner who looks out for long-term well-being and the selfish and myopic doer (Loewenstein, 1996; Metcalfe and Mischel, 1999; Thaler and Shefrin, 1981). It also involves other aspects beyond the issue of resource allocation over an extended time frame. Having a long-term view is also related to self-projection over a long time horizon; individuals were found to be more willing to save for their future selves if their emotional connection between their present and future selves was strengthened (Hershfield, 2011). Individuals' positive outlook to retirement, termed 'future time perspective', was found to be positively associated with retirement saving contribution rates (Hershey et al., 2007).

Thinking about a distant future event involves a high degree of abstract thinking beyond that which individuals would generally engage in on a daily basis (Canova, Rattazzi and Webley, 2005; Lusardi, 2008; Lusardi and Mitchell, 2007). Studies have found that a retirement-specific context reduces the degree of abstractness by prompting individuals to develop more concrete ideas. Studies found that clarity in retirement goal was found to be associated with a higher level of saving contribution (Hershey et al., 2007; Stawski, Hershey and Jacobs-Lawson, 2007) and financial preparation (Hershey, Mowen and Jacobs-Lawson, 2003). These studies suggest that thinking about retirement and developing retirement-specific goals help to build a concrete context in which thinking about saving, and potentially leads to an act of saving, is encouraged. In addition, the retirement-specific time perspective connects the general long-term view and a retirement saving activity by matching the level of specificity so that attitudes contribute to explaining behaviours (Ajzen and Fishbein, 2005). A similar approach to this is taken in a British study of pension-related risk perception (Clark and Strauss, 2008).

### **2.6.3 Financial knowledge and retirement income confidence**

Financial knowledge and confidence in retirement saving are also important factors to consider in the decision-making process. Financial literacy scholars have argued that as the complexity in financial products increases, the ability to obtain and understand financial

information has become critical in order to make a sound decision (Lusardi and Mitchell, 2007; van Rooij, Lusardi, Alessie, Rooij, Lusardi and Alessie, 2011). Others argue that financial knowledge enables individuals to realise the need to save for retirement (e.g. McKenzie and Liersch, 2011) and increases the willingness to engage with sophisticated financial instruments (van Rooij, Lusardi and Alessie, 2011). In terms of financial knowledge assessment, a subjective measure was found to be more relevant to financial behaviours than the objective score because knowledge internalisation increases self-efficacy (Serido, Shim and Tang, 2013). Similar findings are reported in the context of retirement saving (Hershey et al., 2007), responsible financial behaviours (McCormick, 2009), changes in financial attitudes (Shim, Barber, Card, Xiao and Serido, 2010) and attitudes and behavioural intentions of saving (Borden, Lee, Serido and Collins, 2008).

Financial knowledge is also positively associated with how accurately individuals estimate the size of the required funding for retirement, as the study comparing American and Dutch adults shows (Van Dalen, Henkens and Hershey, 2010). An American study documented that some individuals were overly optimistic about their ability to fund retirement as the level of expected funding was not substantiated by their asset holding (Helman, Copeland and Vanderhei, 2015). A British study documented an overestimation of future private pension income (Banks, Emmerson, Oldfield and Tetlow, 2005). Therefore, it is expected that over-confidence is highly relevant as financial knowledge may influence how one perceives the need to save for later.

#### **2.6.4 Economic and socio-demographic characteristics**

Income is one of the most relevant factors in understanding retirement saving behaviour (see e.g. Browning and Lusardi, 1996). Many studies have found a strong positive relationship between income and retirement saving, whether it is measured as a saving rate (Dynan, Skinner and Zeldes, 2016), enrolment to saving schemes (Bassett, Fleming and Rodrigues, 1998) or contribution rates for workplace pension schemes (Hershey et al., 2007; Stawski et al., 2007). Recent qualitative studies of British young adults, however, suggest that an

increase in income may have a positive but limited effect on increasing saving through workplace pension schemes (PPI, 2018; Robertson-Rose, 2018).

In addition to income, homeownership is highly relevant in the context of a British study (Dewilde and Raemaekers, 2008). Owning a home is a possible way to save for retirement, with the idea that down-sizing may provide extra funding (Crawford, 2018a; Hancock, 1998). On the other hand, housing difficulties also affect individuals' saving ability in the short-term. They spend a longer period renting (Clarke, Corlett and Judge, 2016), which now costs almost three times more than their grandparents' generation at their age (Corlett et al., 2016). As young adults also desire to own their own home, difficulties in homeownership are expected to influence their long-term saving decisions.

Inheritance and other financial help from family (such as cash gifts and informal loans) may replace the need to save for later in life. intergenerational transfers have become more prevalent in recent years (Karagiannaki, 2015, 2017; Karagiannaki and Hills, 2013). Three-quarters of British adults born in the 1970s have either received an inheritance or were expecting one (Hood and Joyce, 2017). Family financial help may also improve the current economic situation, helping descendants to devise long-term plans. For example, an industry report stated that around half of 30- to 45-year-olds expected to receive an inheritance in the future and that such a receipt could prompt them to consider retirement saving (Old Mutual, 2017).

Age functions as a proxy to measure the temporal distance between age today and at retirement (Elder and George, 2016). Young age is often found to be associated with myopia, (e.g. Foster, 2017; PPI, 2018), which is also connected to a higher opt-out rate for workplace pension schemes among young males (Bryan and Lloyd, 2014). A study by a financial services company reports little difference in considering retirement saving among individuals aged between 30 and 45; adults in their 30s consider they have another 8 to 10 years before starting to save, while the number of years only marginally reduces to 6 to 8 years for adults in their 40s (Old Mutual, 2017).

Previous studies have attributed women's lower level of pension saving to the gendered employment patterns and lower lifetime earnings during the life course (Bardasi, Jenkins and

Rigg, 2002; Ginn and Arber, 1996a; Möhring, 2018). Other gender differences documented in the UK and internationally include a lower level of financial literacy for women (Bucher-Koenen, Lusardi, Alessie and van Rooij, 2014; Lusardi, 1997), with men having more specific retirement goals (Wang, Worsley, Cunningham and Hunter, 2014) and women being more risk-averse than men in their investment choices for retirement saving (Clark and Strauss, 2008; Watson and McNaughton, 2007).

Marital status and number of children provide information on an economic unit, which shows how retirement saving decisions may affect the partners (Knoll, Tamborini, Whitman and Security, 2012). Couples often make a collective decision, which increases the level of financial socialisation and helps to strengthen consistency in their economic activities for a common goal (Noone, O'Loughlin, Kendig, Loughlin and Kendig, 2012; Payne, Yorgason and Dew, 2014). Cohabitation has become more common in Britain (Vogler, 2005), especially among young adults (Pahl, 2005).<sup>3</sup> While cohabiting couples have a similar financial advantage to married ones by pooling income and sharing cost (Grinstein-Weiss, Zhan and Sherraden, 2006), marital status is considered more relevant to retirement saving as married couples are known to have more formal arrangements such as having a joint account (Burgoyne, Reibstein, Edmunds and Dolman, 2007).

Educational qualification levels are also found to be related to financial capability, time perspective and financial knowledge (Atkinson et al., 2006; Hayes, Collard and Kempson, 2014; Serido et al., 2013). Financial activities that require high cognitive abilities such as planning, staying informed and choosing products were found to show substantial differences by educational qualification levels (Finney, Hayes and Hartfree, 2015).

### **2.6.5 Workplace pension schemes**

Workplace pension scheme membership is also relevant to understanding additional retirement saving. A potential trade-off exists between workplace and private pension saving (Bryan, Lloyd, Rabe and Taylor, 2011; Mitchell and Moore, 1998); that is, individuals may

---

<sup>3</sup>In fact, 45% of single individuals and 24% of separated, divorced, or widowed individuals (legal status) are found to be in cohabitation (defacto status) using the WAS data (2014/16).

consider additional saving unnecessary because they have a workplace pension scheme. In addition, depending on the types of workplace pension schemes, individuals may adjust saving behaviour based on the perceived need for additional saving. For instance, saving through work may be deemed sufficient, especially if it is a DB scheme and there is no urgent need to make other provisions. On the other hand, DC holders may save more or via other means in recognition of greater uncertainty in DC pensions.

Discussions above resulted in a modification to the model proposed by Hershey and colleagues (2007). A comparison between the original model and the adapted version proposed here is provided in Table 2.5 in Appendix.

## **2.7 Data and analytical strategy**

### **2.7.1 Data: Wealth and Assets Survey**

The fourth wave of the WAS (ONS, 2018*d*), which was carried out between July 2012 and June 2014 (2012/2014 hereafter), is used in this chapter. WAS is a biennial survey introduced in 2006/8 that focuses on the wealth holding and economic well-being of British households. It provides rich information not only on detailed wealth holding but also on the individuals' attitudes and economic activities that are essential for this chapter. Since the third wave in 2010/12, an additional sample was interviewed alongside the panel sub-sample to ensure that the dataset is nationally representative at each wave. The fourth wave produced around 20,200 household and 38,300 individual interviews (ONS, 2016*c*).

The analytical sample for this study includes those in their 30s and 40s ( $n=5,755$ ). This accounts for 88% of the respondents in employment (including self-employed, see Table 2.7 in Appendix). The sample only includes those who are employed, excluding self-employed, because different pension system structures apply to them. For example, the pensions of self-employed individuals are likely to be classified as private (non-workplace) pensions. This is an important characteristic as this study focuses on exploring the decision-making process for those who are employed and therefore could access the workplace pension scheme either

Table 2.2 The characteristics of the study sample and general population in WAS (2012/2014)

		Study population (30-49)	General Population (30-49)
<b>Age group (2012/14)</b>	Aged 30-39	47.7%	47.1%
	Aged 40-49	52.3%	52.9%
<b>Gender</b>	Males	47.3%	45.7%
	Females	52.7%	54.3%
<b>Marital Status</b>	Married	62.6%	59.7%
	Separated/Divorced /Widowed	11.8%	12.6%
	Single	25.6%	27.7%
<b>Education level</b>	Degree holders	38.3%	34.0%
	Non-degree holders	61.7%	66.0%
<b>Household income (Equivalentised)</b>	Mean	£34,300	£30,600
	Median	£29,000	£25,900
<b>Inheritance, gift and informal loans</b>	Yes	17.3%	16.1%
	No	82.7%	83.9%
<b>DB schemes</b>	Yes	41.0%	29.6%
	No	59.0%	70.4%
<b>DC schemes</b>	Yes	22.2%	16.5%
	No	77.8%	83.5%
<b>Number of observations</b>		5,755	8,020

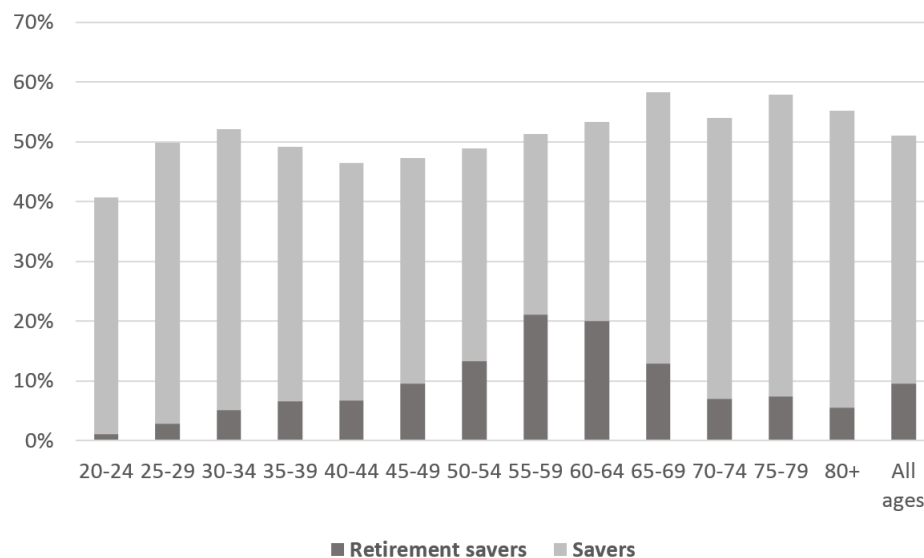
Note: Author's own calculation. Estimates are weighted. The proportions include a minority of individuals who have both DB and DC schemes.

through occupational pension scheme or employer-organised group pension schemes (PPI, 2017b).

Characteristics portrayed in Table 2.2 show that the study sample is more likely to possess a university degree compared to all respondents in the same age group in WAS. They have a higher household income on average and are more likely to have a workplace pension scheme, whether it is a DB or a DC scheme.<sup>4</sup> While both groups refer to individuals aged between 30 and 49, there are some notable differences owing to the inclusion of the employed individuals only. The two groups have similar demographic characteristics such as age, gender or marital status. These differences are taken into consideration in interpreting the model results at a later stage.

<sup>4</sup> Automatic enrolment was introduced in October 2012 most of which was a DC scheme, its implementation was staged depending on the size of the employer (i.e., number of employees). As the survey was carried out between July 2012 and June 2014, coinciding with the roll out of the automatic enrolment. Therefore, it is also likely that those who are employed in large firms would have been enrolled during this period, leading to a slightly increased proportion of the DC scheme holders.

Fig. 2.3 Proportions of all savers and retirement savers by age group (WAS, 2012/14)



Note: All figures are weighted. All age groups have 1,000 or more respondents, except for the age group 20-24 (968). Non-retirement savers are those who reported having saved but did not mention that they were saving for future retirement income.

## 2.7.2 The outcome variable

Additional retirement savers (hereafter, ‘retirement savers’) are identified as those who have saved any of their income in the last two years (for example, by putting something away in a bank, building society or Post Office account other than to meet regular bills’) if one of their reported motivations includes to provide income for retirement. The motivation of saving is identified through synthesising individuals’ survey responses. One saving activity may serve multiple purposes (Wärneryd, 1999). Especially for those in their 30s or 40s, a shorter-term goal of saving a deposit for a home may help them achieve a longer-term goal of saving for retirement. Co-existing saving motivations are recognised, and individuals are identified as retirement savers if they have saved during the past two years, and at least one of their motivations includes the retirement saving motivation ‘to provide income for retirement’ (ONS, 2016b).

It is reasonable to question whether the distinction between the two saver types provides any insight, as general savings become part of wealth-building that can fund retirement. Indeed, as both concern putting resources aside, there are similar patterns associated with both types of savers, such as degree-level educational qualification or household income

levels (See Table 2.8 in Appendix). This, however, is not a concern because individuals also save for short-term consumption such as holidays and future purchases that are not necessarily contributing to wealth building in the long-term. In addition, the patterns of retirement savers and savers regardless of motivations ('all savers') by age group are not similar; those in the age group nearer to the retirement age show higher proportions of retirement savers compared to younger age groups, although less of those in older age groups were saving in general compared to younger individuals (see Figure 2.3). Further analysis of attitudinal and behavioural factors can contribute to explaining this gap. This points to a retirement-specific saving behaviour.

### 2.7.3 Analytical strategy

The analysis is conducted through SEM in the Multiple Indicators Multiple Causes Model (MIMIC), using Mplus software version 8.4 (Muthén and Muthén, 2017). The analysis is conducted in three stages. First, a measurement model is built using factor analysis based on hypothesised relationships between observed items and factors (see Table 2.6). This part of the model helps to construct measures for qualities that are not directly observable (Bartholomew, Steele, Galbraith and Moustaki, 2008). A set of survey questions that are theoretically relevant to a latent quality are selected and tested using factor analysis. The idea here is that an attitude, for example, although it is not directly observable, it can be measured via a set of survey questions that collectively reveal information about it.

Each relationship between a latent variable ('construct' or 'factor') and its survey questions ('observed items') can be understood as a regression model where the latent variable functions as an explanatory variable for the outcome variables (the survey responses). As the survey questions are on the Likert scale, these were treated as ordinal. The factor model is tested using the underlying variable approach (UVA) (see Equations 2.2 and 2.1 in Section 2.10.3). The quality of the measurement is judged by the strengths of associations between the latent variable and its observed items ('loadings'), similar to coefficients in regression analysis) as well as the model fit statistics. Factor loadings are indicative of the contribution



of the items to the factor; the relative size of the loadings guides qualitative interpretation of factors.

As latent factor variables are constructed, the model parameters (factor loadings and item intercepts) may differ depending on the study sample, sometimes by characteristics such as gender. Measurement Invariance (MI) testing is a procedure that checks the consistency in the factor loadings and item intercept terms. Factor loading invariance would indicate that the factors can be interpreted consistently across groups, while intercept non-invariance across groups<sup>5</sup> would mean that the expected response for some survey questions, holding other variables (including latent factors), differ by groups (Kuha and Moustaki, 2015; Millsap, 2011). The survey questions which help measure financial resilience may be answered differently depending on different income levels. This is tested following the MI testing procedure (Millsap, 2011; Millsap and Yun-Tein, 2004). The models tested are explained in Section 2.10.3 in Appendix.

The second stage involves testing relationships among the latent factors from the first stage. Arrows indicate the direction of the associations between the factors in a path diagram. These relationships can be direct or indirect. A direct relationship exists if an explanatory variable is associated with the outcome variable (Kline, 2011), which is represented by a straight arrow pointing to the outcome variable in a path diagram. An indirect relationship exists when two factors are not directly linked except through another variable, of which process is described as ‘mediation’ (Kline, 2011). The sum of these two effects represents the total effect. Each path is tested based on a set of hypotheses based on the discussions in the previous section, and only statistically significant paths are retained.

The last stage expands the structural model by adding a set of demo-socio-economic characteristics (covariates) to the model (see Equation 2.6 in Section 2.10.3). The procedure is similar to the second stage. Covariates are defined as follows. Age is grouped to contrast respondents in their 30s and 40s. Sex distinguishes males versus females. Marital status identifies individuals who are single or separated from those who are married. The education level variable distinguishes individuals with a university degree and those without. The two

---

<sup>5</sup>The intercept terms of items for the latent variable are interpreted analogously to those in regression analysis; they are the expected value of survey response when the latent factor score is zero.

workplace pension types included are DB and DC, although some individuals may have both or none. Household income is (log) net annual household income which includes any benefit receipts and other regular income (such as rent income) but excluding any one-off transactions. It is equivalised using the modified OECD equivalisation factor. Homeownership status is derived from housing tenure, distinguishing home-owning households and households in other tenure types. Any receipt of an inheritance, a cash gift or an informal loan from family and friends in the last two years greater than £1,000 is recorded at the household level as a binary variable.

## 2.8 Results

As the analysis is conducted in three stages, the measurement model is established each time the structural part of the model is tested (Bakk and Kuha, 2018). With regards to the possible changes in the measurement model, sensitivity testing was performed. Two versions of the penultimate models were compared. In the first version, the loadings were freely estimated, while factor loadings were fixed according to the previous measurement only model in the second version. The results show that the loadings obtained in the two versions model are not identical, but those differences are marginal (see Table 2.11 and Table 2.12 in Appendix).<sup>6</sup> As there was no substantive change in terms of factor interpretations, the one-step model is retained for the final model for its better goodness of fit.

The model of the fit statistics from the final model indicates that the model is well-fitted; root mean square error of approximation (RMSEA) is reported to be 0.023 (P-value  $RMSEA \leq 0.05$ , 1.000), Comparative Fit Index (CFI): 0.971, Tucker-Lewis Index (TLI): 0.963, standardized root mean square residual (SRMR): 0.059, compared to a benchmark of  $RMSEA < 0.06$ , CFI and TLI  $> 0.950$ , and SRMR  $< 0.08$  (Hu and Bentler, 1999). The measurement part of the model is presented in Table 2.3, and the structural part of the model is presented in Figure 2.4.

<sup>6</sup>Sensitivity testing is performed using the penultimate model which included the direct income effect on 'understand' for consistency with the initial MI testing results. This direct effect is subsequently removed in the final model as it did not contribute to the model in a substantive manner despite it being statistical significance at the 5% level.

### 2.8.1 Latent constructs for attitudinal and behavioural factors

The three latent variables – *financial resilience*, *future orientation* and *self-reported financial knowledge* – are constructed based on conceptually related survey questions (see Table 2.3), with minor modifications based on modification indices. Factor interpretations are provided after a short discussion on the MI testing and sensitivity analysis.

MI testing results show that it is reasonable to assume the loadings and item intercepts are invariant concerning gender and age. In terms of household income, however, only the factor loadings can be assumed invariant, as intercepts vary by levels of household income (not reported; available upon request). It is more useful to interpret these direct effects of income together with its indirect effects. For example, despite the effect of income on ‘run-out’ being negative (-0.173, see Table 2.3), the total effect of income on this item is positive (0.222, standardised) due to the strong positive effect of income on financial resilience (0.472, see Figure 2.4) that in turn increases the expected value of ‘run-out’ via its loading (0.836, standardised). Further information on measurement invariance testing is provided in Section 2.10.5 in Appendix.

After a satisfactory level of MI testing and sensitivity analysis, the factors can be interpreted. *Financial resilience* indicates a responsible and cautious approach to money management behaviour. Individuals who have high scores on financial resilience are more likely to budget and control outgoings and to keep up with current financial commitment. They also anticipate near-future uncertainty and are better prepared in case of a loss in income. As conservative consumers, financially resilient individuals are more likely to save up for a purchase that is not immediately affordable rather than using credit cards. Therefore, financially resilient individuals are expected to be more financial capable (Atkinson et al., 2006) and exercise self-regulation, as discussed in an earlier American study (Perry and Morris, 2005).

*Future orientation* represents having a long-term perspective with regards to resource allocation, which is the opposite of myopia (Foster, 2017). Individuals with high future-orientation scores are more conscious of future financial security, more conservative in consumption and less likely to utilise a credit facility. They are thus more likely to have a

Table 2.3 Results from the final three-factor measurement model with direct income effects

Survey questions included	Factor loadings			Direct income effect*
	Financial Resilience	Future Orientation	Financial Knowledge	
<b>Run-out:</b> Frequency of running out of money at the end of week or month needing to use a credit card or an overdraft facility (1. Always – 5. Never)	(fixed to) 1.000			-0.173
<b>Bills:</b> Difficulty keeping up with bills and financial commitments (1. Having a serious problem, falling behind – 6. No commitment)	0.968			
<b>Sustain:</b> Duration for which you can sustain yourself if the primary source of income is lost (1. Less than a week – 6. Twelve months or more)	0.857			
<b>Money-left:</b> Tendency to make sure money is left at the end of each period (1. Disagree strongly – 4. Agree strongly)	0.754	0.463		-0.143
<b>Credit:</b> Tendency to buy on credit than to wait and save up (1. Disagree strongly – 4. Agree strongly)	0.212	0.330		-0.148
<b>Tomorrow:</b> Tendency to live today and let tomorrow take care of itself (1. Disagree strongly – 4. Agree strongly)		(fixed to) 1.000		
<b>Long-term:</b> Getting more satisfaction spending than saving it for the long-term (1. Disagree strongly – 4. Agree strongly)		1.022		
<b>Retirement:</b> Tendency to choose today's good living standard versus saving for retirement (1. Disagree strongly – 4. Agree strongly)		0.970		
<b>Understand</b> Feeling that I understand enough to make decisions about saving for retirement (1. Disagree strongly – 4. Agree strongly)			(fixed to) 1.000	
<b>WP-pension:</b> Knew about the workplace pension (auto-enrolment)* (1. Haven't heard – 5. Know a great deal)			0.476	

Note: \*Standardised direct effects are reported. Unstandardised loadings are reported to facilitate the interpretation of factors using the anchored item scales (fixed at 1 for each factor). n=5,755. Survey weight is used, and the household structure is accounted for in the analysis. Fit statistics: Chi-square test statistic: 629.830 (degrees of freedom: 158, p-value <0.001); RMSEA = 0.023 (P RMSEA <=0.05, 1.000); CFI: 0.971; TLI: 0.963; SRMR 0.059).

positive attitude to retirement saving in general. Future orientation here refers to a general long-term perspective, without reference to a precisely defined future time point.<sup>7</sup>

*Financial knowledge* (self-reported) is a subjective measure of financial knowledge relating to retirement saving. A higher score indicates being well-informed about new developments in pension policy, such as the introduction of AE in October 2012, the implementation of which coincides with the survey period (July 2012 – June 2014). They are also more likely to be confident in making retirement saving decisions.

Although not shown in Table 2.3, there are two other attitudinal variables that are useful to interpret here. These variables are built based on one observed item as no other survey questions could provide information for these measures. Consideration for funding retirement corresponds to the measure ‘retirement goal clarity’ (Hershey et al., 2007). It is based on the survey question ‘Have you ever thought about how many years of retirement you might need to fund?’. It anchors ‘retirement’ as a concrete time point with the explicit reference to ‘the number of years to fund in retirement’, which differs from the general notion of future used in future orientation. The measure, therefore, distinguishes those who have thought further about the funding aspect.

Confidence in retirement saving measures whether individuals consider their current level of saving is sufficient to support the lifestyle they would like to achieve in retirement. It prompts individuals to make a judgement about the ‘sufficiency’ of their current saving. Therefore, it is understood in line with confidence in the current retirement saving progress.

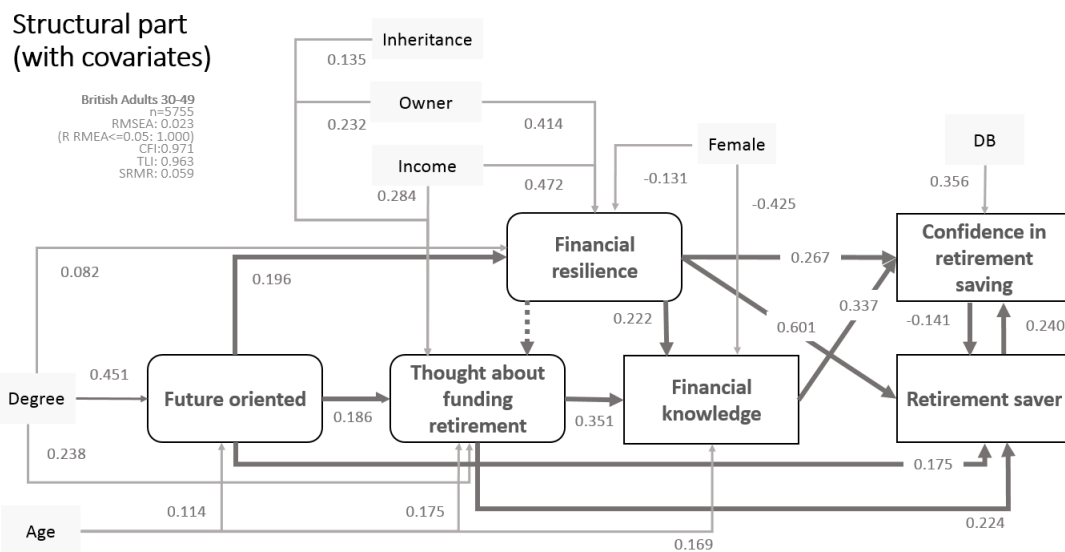
### 2.8.2 Relationship between latent constructs and covariates

The results from the structural model with covariates show that attitudinal and behavioural factors play an essential role in understanding retirement saving behaviour, broadly in line with the findings by Hershey and colleagues (2007). There are, however, appreciable differences in how and to what extent the internal and external factors are associated. The results from the final model are shown in Figure 2.4. All paths shown are found statistically

---

<sup>7</sup>The term ‘retirement’ is mentioned in one of the survey questions used to measure this quality. However, respondents are more likely to have understood it as a hypothetical event in the far future, as they were not provided with a prompt to build a specific context.

Fig. 2.4 Results from the structural part of the model



Note: The dotted line indicates the path that became statistically not significant at the 5% level compared to the structural model without covariates (but with household income for measurement invariance structure). Partial effects on household income that are not reported in the graph are: Degree (0.635), Female (-0.131), Owner (0.487), having a DB pension (0.103) and having a DC (0.196).

significant (solid line) with one exception which lost its significance (dotted line) compared to a structural model without covariates other than income (see Figure 2.8 in Appendix to this chapter). Coefficients are standardised therefore are equivalent to correlation. Figures used in the discussion below are presented in Figure 2.4.

First of all, financial resilience is found to be the strongest predictor of being a retirement saver (coefficient: 0.601). This strong association is plausible as the qualities indicating their financial prudence today may also be helpful for financial planning for the future. One might argue that it is mostly driven by income, as individuals in high-income households are more likely to be resilient, being able to put aside more resources. In fact, financial resilience is strongly correlated with income (0.472), although *how* income is related to financial resilience may differ by income levels as found in the measurement model (see Table 2.3 or alternatively Figure 2.8 in Appendix). Therefore, the lack of a direct income effect on retirement saving behaviour indicates that it should be considered together with how it might influence attitudes towards or behaviours of retirement saving. This is in line with previous studies on British younger adults' workplace pension savings (PPI, 2018; Robertson-Rose, 2018).

There are two possible explanations. First, financial resilience mediates the positive effect of income on retirement saving, which indicates that an individual's approach to resource allocation and money management is more meaningful than income per se. Second, homeownership is also positively associated with financial resilience (0.414). It indicates that income alone may not provide an accurate picture of young British adults' economic circumstances that influence the perception of priorities in planning their life stages.

Homeownership and intergenerational transfers are also relevant to individuals' chances of having considered funding for retirement (0.232 and 0.135 respectively), which is comparable to the partial effect of income (0.284). As these two variables are added, the effects of income on financial resilience and consideration for funding retirement are reduced. Also, consideration for funding is no longer predicted by financial resilience (dotted line). It may mean that the current economic circumstances are crucial for thinking about the future for British adults aged 30 to 49.

Future orientation and having thought about funding retirement, are found positively associated with retirement saving activity (0.175 and 0.224 respectively). The marginally higher effect of the retirement-specific time perspective may be understood in a similar sense to an American study that reported increased chances of saving among those who calculated the required funding size to support their retirement (Bernheim, Garrett and Maki, 2001). The associations are weaker than expected, however; it indicates that adults in their 30s and 40s are not necessarily acting on their future considerations (if they had any). On the other hand, it is also possible that individuals prefer other saving methods, such as purchasing a private pension or increasing contributions to workplace pension saving or deciding not to save after all. These scenarios are realistic, especially in the near-zero interest rate environment in Britain, following the recent financial crisis since 2007.

Being in one's 40s as opposed to being in 30s has a positive but weak effect on having both a general and retirement-specific long-term view (0.114 and 0.175 respectively), indicating that those in their 40s are not much more likely to be long-term focused than those in their 30s. Considering that those in the mid- to late-40s have already been working for half their working-age years before retiring, this is somewhat alarming as individuals are strongly

encouraged to save from earlier on. On the other hand, university education has a strong positive effect on the cultivation of a long-term view (0.451) and a moderate effect on the retirement-specific time perspective (0.238).

Financial knowledge is found to increase confidence in the progress of current retirement saving (0.267) but does not have a direct association with retirement saving activity. It is not surprising as the outcome variable refers to having saved using a bank account, which is easily understood and widely used among British adults today. Also, the older group is found to have a slightly higher level of confidence in their financial knowledge (0.169). The gender difference in financial knowledge (Hasler and Lusardi, 2017; Lusardi, 2008) is also observed in this chapter; females have an alarmingly strong negative association with financial knowledge (-0.425).

Lack of confidence may incentivise saving more for retirement, and in turn, saving more may increase the level of confidence. This hypothesis was tested by having a non-recursive structure for these two factors, indicating one is the explanatory variable for the other and vice versa at the same time. When tested in the model without co-variates, no statistically significant retirement saving effect was found on confidence, which is indicated by the absence of an arrow from 'Retirement saver' to confidence (not reported). As the co-variates are introduced in the model, however, a weak negative effect of confidence reducing retirement saving activity (-0.141) is statistically significant at the 5% level. The inclusion of the type of DB workplace pension schemes may explain this as the positive effect of having a DB pension on confidence (0.356). Having DC schemes was also tested but not found to be an important factor. It appears that British adults in this age group recognise the difference in the risk structure in DB and DC schemes, which requires further investigation. If this is the case, it signals a change in risk perception compared to about ten years ago when a previous study documented no significant difference in risk perception between the two scheme holders in Britain (Clark and Strauss, 2008).

The negative effect of confidence on retirement saving is weaker than expected. There are a few possible explanations. First, the confidence measure may convey a general evaluation of saving 'enough' for retirement at present, compared to a precisely defined saving activity



in the past two years. For the younger population who have many years to save, retirement saving confidence may represent future saving plans, regardless of having done so recently. Secondly, saving enough for retirement can be considered as continuously being financially resilient until retirement ('If I keep doing what I am doing now, I will be fine'). A positive direct relationship between financial resilience and self-assessed retirement saving sufficiency supports this as a possibility. Lastly, confidence may derive from using other means to save for retirement, such as buying a property or private pension, other than financial saving.

## 2.9 Discussion and conclusion

This study has assessed individual-led retirement saving activity among British adults in their 30s and 40s. It examines how and to what extent human agency, reflected by attitudes and behavioural tendencies, interact with their broader socio-economic circumstances in the context of retirement saving. The study has found that only one in ten people put aside money for retirement outside of workplace pension schemes and NI contributions in the past two years. The low level of saving indicates a slow behavioural response to recent developments in pension policy that call for greater individual responsibility.

The findings of this study show that the low level of retirement saving activity is an outcome of a complex interplay between the lack of economic resources ('can't save') or the lack of willingness ('won't save') alone, because individuals' attitudes and behavioural tendencies are likely to be formed and modified by improvements in broader socio-economic arrangements. Financial resilience, which is a measure of everyday financial behaviour, is found to be the strongest predictor of additional retirement saving activity. At first glance, it appears to be in line with the 'won't save' argument in explaining the low level of additional retirement saving among the younger generation, as this measure directly refers to economic self-regulation and inclination to account for uncertainty. Its moderately strong association with household income and homeownership, however, indicates that how individuals conduct their everyday financial matters is influenced by their broader socio-economic circumstances that are outside their control.

This study also found that demographic and socio-economic factors play an important role in understanding how individuals may be encouraged to think about the long-term future more actively. Taking the life course approach, these factors provide an insight into the socio-economic environment, which is particularly important for the stages of life studied here. Many adults in their 30s and 40s are engaged in partnership formation and bringing up a family, and therefore, want to create an ideal environment for the next stages of life. For example, employment stability and secure housing are prioritised in order for the younger generation to feel ‘settled down’, rather than saving for retirement (PPI, 2018). This could also be interpreted in such a way that individuals of a similar age may be in different stages of their lives. The notion of ‘getting older’ extends beyond chronological ageing to ‘social ageing’; that is, individuals may judge their current socio-economic circumstances against a set of benchmark conditions according to their stages of life, rather than their age per se. In this sense, the social ageing perspective may be more informative in understanding potential barriers to retirement saving than the chronological one.

The above findings have important implications for current retirement saving policy that aims to increase saving participation. Individuals’ immediate economic circumstances cannot be ignored when promoting retirement saving participation because the difficulties experienced today become barriers to retirement saving. The large role of human agency indicates that improvements in environmental factors may not be as effective as expected in changing individuals’ saving behaviour. For instance, increasing income levels alone to encourage saving may be less effective in isolation without increasing their financial resilience today. On the other hand, income inequality, homeownership and inheritance within the study population imply that a degree of inequality in financial resilience is expected and that it is expected to widen in the future. Some can move forward and build their retirement saving, while others may be continuously set back by managing short-term personal financial issues while unable to prepare for retirement. Policies aimed at increasing long-term saving participation therefore should take a holistic viewpoint and work concurrently with existing policies that impact individuals’ immediate economic well-being.

One might argue that an increase in the state pension may relieve individuals from the increasing pressure to save for their retirement instead of seeking behavioural changes. It will be welcomed if it is funded in a fiscally and socially sustainable manner which does not put pressure on future generations. Findings from this study are also in line with the view that saving for retirement is an on-going process that occurs during the entire ageing process, where ageing is a life-long process not confined to old age (Walker, 2018). Furthermore, being able to plan and save for the future can be understood as an economic autonomy that is valuable even if the state could provide a generous pension for all. On the other hand, current financial difficulties affect future economic autonomy and the social outcomes along the life course are not likely to be ameliorated by increasing retirement income in the future.

There are, however, several limitations to this study. The study population only includes those who are employed. Consequently, retirement saving for self-employed or other forms of employment is not studied. Also, while the term ‘gender’ was used interchangeably with ‘sex’, the scope of this study is limited to highlighting the differences in patterns rather than examining gender issues (Ginn and Arber, 1996a; Grady, 2015; Price, 2007), which is the focus of the next chapter. Furthermore, socialisation theory (Henretta, 1984) suggests that it may be an important factor to consider how young adults acquire information and knowledge about pensions from their immediate social circles (e.g. MacLeod et al., 2012). This process may have more impact on forming attitudes towards discretionary retirement saving (such as future orientation) rather than on knowledge acquisition as new pension saving rules apply to the younger generation. Therefore, whether and to what extent it alters the findings of this study may require further sensitivity analysis (Dinga and VanderWeele, 2016). Similarly, the aspect of trust in actors involved in retirement saving (Foster, 2017) has not been explored. Lastly, while inheritance expectations were mentioned, they were not explored in-depth. Future studies may be able to examine whether intergenerational transfer may reduce, or replace, the need for retirement saving.

This study also presents several opportunities for further studying the younger generation’s retirement saving. Kempson, Collard and Moore (2005) point out that financial capability is a relative concept as the extent of financial capability depends on one’s financial

circumstances. In this study the meaning of financial resilience is assumed to be consistent across the income distribution in this analysis. While additional sensitivity testing found that it is not unreasonable, it would be interesting to examine if there are different interpretations of financial resilience depending on previous experiences of economic vulnerability and how it may shape future planning depending on the income level. Also, it would be interesting to examine whether internal characteristics, such as financial resilience as well as future orientation, change over time, and if so, how. The relationship between the reverse scale of financial resilience and social capital, for instance availability of support network in adverse financial events may be studied, following the definition of financial resilience by Salignac et al. (2019).

The younger generation is faced with greater responsibility and increased uncertainty for its future financial well-being. The results of this study show that the role of individuals' attitudes and behavioural tendencies are highly relevant to their retirement saving decision-making processes. Their slow response is not simply due to a lack of motivation or inability to save, but due to the daily challenges they face in their social and economic circumstances. In order to encourage individuals to save for later life, retirement saving policies would be most effective when connected to other policies that seek to change the savings culture, as well as improving British adults' current social and economic circumstances.

Table 2.4 List of Hypotheses and results based on the final model

List of Hypotheses	Results
1: Financially resilient individuals are more likely to be retirement savers.	Yes
2: Having a long-term perspective is positively associated with financial resilience.	Yes
3.(a) Financially resilient individuals are more likely to consider financial aspects of retirement, (b) which may be linked to an increased chance of information seeking and self-education that increase the level of confidence in financial knowledge.	(a) No; (b) Yes
4: (a) Household income, (b) homeownership and (c) receiving an inheritance are positively associated with individuals' financial resilience.	(a) and (b) Yes; (c) No
5: Having a long-term perspective is positively associated with retirement saving activity.	Yes
6: Individuals who have a long-term view are more likely to have thought about the number of years to fund in retirement, which increases the likelihood of saving for retirement.	Yes
7. (a) Household income, (b) homeownership and (c) receiving an inheritance are positively associated with having thought about funding for retirement.	(a), (b) and (c) Yes
8: Individuals' age is positively associated with (a) having a long-term view and (b) thinking about funding retirement.	Yes
9: Financial knowledge is positively associated with (a)retirement saving confidence and (b) retirement saving activity.	(a) Yes; (b) No
10: (a) Confidence in future retirement income is negatively associated with retirement saving while (b)saving for retirement may increase confidence in turn.	(a) & (b) Yes
11: Income and propensity to save for retirement are positively associated.	Yes
12: A receipt of inheritance is positively associated with thinking about funding retirement.	Yes
13: (a) Age is positively associated with financial knowledge while (b) being female is negatively associated with financial knowledge.	(a) Yes; (b) No
14: Marital status is positively related to retirement saving via financial resilience.	No
15: Education is positively associated with (a) the long-term perspective, (b) planning for retirement and (c) financial resilience.	(a), (b) & (c) Yes
16: (a) Individuals with a DB scheme are more likely to be confident about their retirement saving progress, while (b) those with a DC scheme are more likely to be saving more for retirement.	(a) Yes; (b) No

Note: Effects mentioned here are controlling for other variables.

## 2.10 Appendix to Chapter 2

### 2.10.1 Additional information on the conceptual framework

Table 2.5 Theoretical framework and variables in Hershey et al. (2007) and this study

Theoretical framework	Hershey et al.(2007)	Theoretical framework	This study
Psychological	Future time preference	Attitudinal	Future orientation
	Retirement goal clarity		Consideration for funding retirement
	Self-rated knowledge of financial planning for retirement	Resources (financial/knowledge)	Financial knowledge
	-		Self-assessed retirement saving sufficiency
Behavioural	-	Behavioural	Financial resilience
	Retirement planning activity level		-
Demographic, socio-economic characteristics	Age, gender, income	Resources	income
	-	Demographic, socio-economic characteristics	Age, gender
			(Defacto) marital status, education qualification,
			Homeownership,
			Intergenerational transfer
			DB/DC pension schemes

Table 2.6 List of hypothesised factors and the survey questions

Category	Concepts/ Hypothesised Factors	Concepts/ Hypothesised Factors	Short Name	Survey Question Scale
Behavioural	Approach to managing money today	Frequency of running out of money at the end of week or month needing to use a credit card or an overdraft facility	Run-out	1. Always - 5. Never
		Difficulty keeping up with bills and financial commitments	Bills	1. Having a serious problem, falling behind - 6. No commitment
		Duration for which you can sustain yourself if the primary source of income is lost	Sustain	1. Less than a week - 6. Twelve months or more
Behavioural / Attitudinal	Approach to managing money / inter-temporal discounting	Tendency to make sure money is left at the end of each period	Money-left	1. Disagree strongly - 4. Agree strongly
	Future time preference / Patience	Tendency to buy on credit than to wait and save up	Credit	1. Agree strongly - 4. Disagree strongly
Attitudinal	Inter-temporal discounting / Future time preference	Tendency to live today and let tomorrow take care of itself	Tomorrow	1. Agree strongly - 4. Disagree strongly
		Getting more satisfaction spending than saving it for the long-term	Long-term	1. Agree strongly - 4. Disagree strongly
		Tendency to choose today's good living standard versus saving for retirement	Retirement	1. Agree strongly - 4. Disagree strongly
Capability	General retirement goal clarity	Thought about how many years in retirement to fund	Thought-about	Yes / No
	Financial capability	Feeling that I understand enough to make decisions about saving for retirement	Understand	1. Disagree strongly - 4. Agree strongly
		Knew about the workplace pension (auto-enrolment) <sup>8</sup>	Workplace-pension	1. Haven't heard - 5. Know a great deal
	Retirement saving confidence	(Self-assessed) Saving sufficiently for retirement	Sufficiency	Yes / No

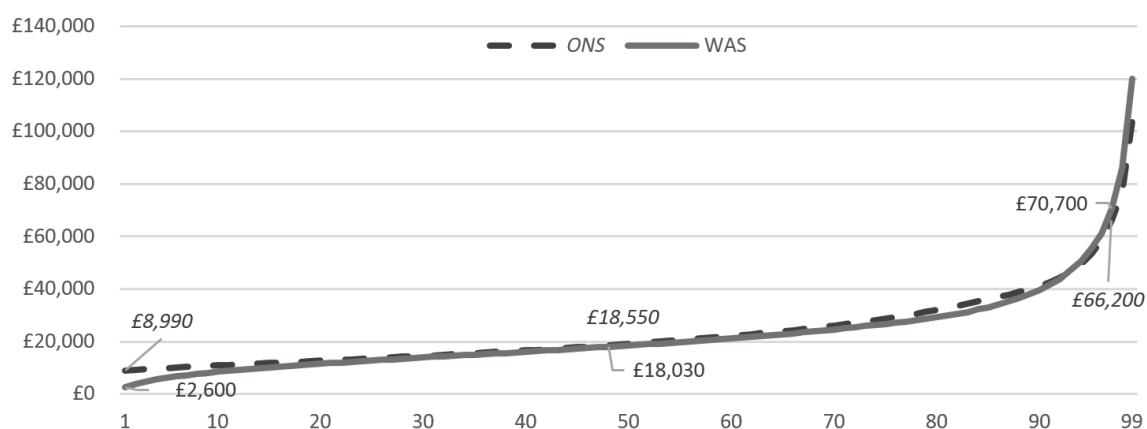
### 2.10.2 Additional information on the sample and the variables

Table 2.7 The study sample by age and gender

	In employment, incl. self-employment	In employment, excl. self-employment
<b>Age 30-39</b>	2,672 (100%)	2,389 (89%)
<b>Age 40-49</b>	3,858 (100%)	3,366 (87%)
<b>All age groups</b>	6,530 (100%)	5,755 (88%)
<b>Male</b>	3,026 (100%)	2,564 (85%)
<b>Female</b>	3,504 (100%)	3,191 (91%)
<b>All age groups</b>	6,530 (100%)	5,755 (88%)

Note: Only the respondents who generated a full interview and attended in person are included in the figures.

Fig. 2.5 Comparison of net individual yearly income distributions according to the ONS figures and WAS (4<sup>th</sup> Wave)



Net individual income percentile for ONS (2012-13/2013-14) and WAS (2012/14). After-tax individual income for population aged between 30 and 49 who are in full-time employment (including those who are self-employed). ONS income for a percentile is obtained by averaging 2012/13 and 2013/14 figures for comparability, as it is not possible to distinguish which year the respondent was interviewed. The percentile income for WAS is weighted.



Table 2.8 The characteristics of retirement savers compared to all savers (2012/2014)

		<b>Retirement savers</b>	<b>All savers</b>
<b>Age group (2012/14)</b>	Aged 30-39	6.8%	58.0%
	Aged 40-49	9.5%	55.2%
<b>Gender</b>	Males	9.5%	58.0%
	Females	7.1%	55.2%
<b>Marital Status</b>	Married	8.6%	58.5%
	Separated/Divorced /Widowed	4.5%	47.1%
	Single	8.9%	56.0%
<b>Education level</b>	Degree holders	12.2%	68.8%
	Non-degree holders	5.7%	48.9%
<b>Household income (Equivalised)</b>	Low	3.3%	36.3%
	Med	6.6%	56.6%
	High	15.4%	74.0%
<b>Inheritance, gift and informal loans</b>	Yes	10.7%	66.2%
	No	7.7%	54.5%
<b>DB schemes</b>	Yes	8.4%	63.9%
	No	8.1%	51.4%
<b>DC schemes</b>	Yes	11.5%	66.5%
	No	7.3%	53.7%
<b>All Savers</b>		<b>8.2%</b>	<b>56.5%</b>

Note: Author's own calculation based on 5,755 individuals who are employed. Estimates are weighted. The proportions include a minority of individuals who have both DB and DC schemes. All savers define respondents who have reported saving for any motivation that includes for their retirement.

### 2.10.3 SEM for ordinal variables using underlying variable approach

The idea behind the underlying variable approach (UVA) is that a latent quality of a continuous nature is observed through ordinal categories. For instance, individuals' tendency to save each month may have a continuous scale, it is observed through the Likert scale used in the survey (i.e. strongly disagree, disagree, agree and strongly agree). Put it another way, individuals response shown in one scale 'agree' may reflect a range of different degrees of agreeing to the statement, but distinguished from 'disagree' and 'strongly agree'.

Let  $j$  denote an item  $j = 1, 2, \dots, p$ .  $k$  denotes a latent variable  $k = 1, 2, \dots, q$ . The measurement model is

$$y_j^* = \lambda_{j1}\eta_1 + \lambda_{j2}\eta_2 + \dots + \lambda_{jq}\eta_q + \varepsilon_j, \quad j = 1, 2, \dots, p \quad (2.1)$$

For item  $j$ ,

$$y_j = c \quad \text{if} \quad \tau_{j,c-1} < y_j^* \leq \tau_{j,c} \quad (2.2)$$

where  $\tau_{i,c}$  are thresholds for ordinal category  $c$  and  $y_j^* \sim N(0, 1)$  for all  $j$ .  $\boldsymbol{\eta}' = (\eta_1, \eta_2, \dots, \eta_q)$  is assumed to follow a normal distribution with mean 0 and variance-covariance matrix  $\Phi$ . Finally,  $\mathbf{y}^* = (y_1 \dots y_q) \sim N(0, \Lambda\Phi\Lambda' + \Theta)$ , where

$$\Lambda_{p \times q} = \begin{bmatrix} \lambda_{11} & \dots & \lambda_{1q} \\ \lambda_{21} & \dots & \lambda_{2q} \\ \vdots & & \\ \lambda_{p1} & \dots & \lambda_{pq} \end{bmatrix} \quad (2.3)$$

$$\Phi_{q \times q} = \begin{bmatrix} \text{Var}(\eta_1) & & \text{Cov}(\eta_1, \eta_q) \\ & \ddots & \\ & & \text{Var}(\eta_q) \end{bmatrix} \quad (2.4)$$

and

$$\Theta_{p \times p} = \begin{bmatrix} Var(\epsilon_1) & & 0 \\ & \ddots & \\ & & Var(\epsilon_p) \end{bmatrix} \quad (2.5)$$

The structural model with a set of covariates  $\mathbf{x}' (x_1, x_2, \dots)$  is

$$\boldsymbol{\eta} = \mathbf{B}\boldsymbol{\eta} + \Gamma\mathbf{x} + \boldsymbol{\zeta}, \quad (2.6)$$

where  $\mathbf{B}$  captures the inter-relationship between the latent variables  $\boldsymbol{\eta}$ .  $\Gamma$  are the coefficients of covariates predicting  $\boldsymbol{\eta}$ , and  $\boldsymbol{\zeta}$  denotes errors.

### 2.10.4 More information on factor analysis in this chapter

A set of observed variables (survey questions) were chosen to represent the factor (the latent quality) based on the hypothesised factor structure (see Table 2.6). It is tested initially using the confirmatory approach; however, an exploratory element is added as the model was modified further, informed by the modification indices after the analysis.

The correlation matrix was examined prior to conducting the FA (see Table 2.9). It shows that the survey questions (a) – (k) exhibit a reasonable degree of correlation for the survey questions theoretically mapped to the three factors. The first FA is based on the hypothesis in which a survey question is predicted by only one factor, called congeneric model. Some survey questions are theoretically relevant to more than one latent concept, for instance the survey question (e), which may be indicator for two latent variables jointly, requiring a cross-loading.

Anticipated modifications of potential cross-loadings are indicated by larger correlation coefficients shown in Table 2.9 outside the hypothesised groups. For example, the item (e) is not only relevant to the how one's managing money today (*financial resilience*) but also the risk-aversion reflected in the time perspective of future (*future orientation*) (marked with \*). The pair (b-h) show a correlation coefficient slightly higher than 0.2 (denoted with \*\*). While this is not a high correlation, given the large number of observations used in this study (n=5,755), it may be picked up by modification indices, suggesting a cross-loading; or, the residual variance of these pairs may be high.

Nonetheless, the FA is tested from the simplest form of a congeneric model in order to test the subsequent hypotheses of cross-loading. The modelling sequence is as follows; if the first hypothesis is rejected, as a result of a poor model fit, then the next level hypothesis (a cross-loading) is tested. Failing to reject a hypothesis in this case would conclude that the model has an adequate fit not requiring any further modification. The final model then forms the basis for the next step of the analysis (Byrne, 2012).

Three FA models are tested. The three latent variables, financial resilience, future orientation and self-reported financial knowledge, are constructed as initially hypothesised but with a minor modifications based on modification indices. The first FA, the congeneric

Table 2.9 Polychoric correlation matrix of the identified survey questions

Hypothesised latent variables	Latent variable A: Financial Resilience				Latent variable B: Future orientation				Latent variable C: Financial knowledge	
Observed items	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
(a) Runout										
(b) Bills	<b><u>0.596</u></b>									
(c) Sustain	<b>0.500</b>	<b>0.508</b>								
(d) Money-left	<b>0.487</b>	<b>0.438</b>	<b>0.441</b>							
(e) Credit	<u>0.231</u> **	0.140	0.177	<u>0.280</u> *						
(f) Tomorrow	0.173	0.099	0.120	<u>0.361</u> *	<b>0.278</b>					
(g) Long-term	0.105	0.026	0.081	<u>0.305</u> *	<b>0.281</b>	<b>0.497</b>				
(h) Retirement	0.140	0.088	0.127	<u>0.266</u> *	<b>0.166</b>	<b>0.473</b>	<b>0.533</b>			
(i) Understand	0.121	0.164	0.119	0.171	0.013	0.082	0.045	0.067		
(j) WP-Pen	0.068	0.123	0.077	0.027	0.053	0.052	0.014	0.025	<b>0.364</b>	

See Table 2.3 or the full description of survey questions. Observed items (survey questions) that contribute to the measurement model are included here. Correlation coefficients relevant to the latent variable A are underlined in bold, B in bold, and C, italicised in bold. The two pairs which may require configurational changes are indicated by \* and \*\*.

model, showed less than an acceptable goodness of fit, using the widely accepted goodness of fit criteria of RMSEA < 0.06, Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) > 0.950 suggested by Hu and Bentler (1999). A large modification index between a factor and an item indicates the level of correlation between them which is not accounted for in the model. The largest is observed for the pair – future orientation and item (d) (underlined with \*). This indicates that individuals' intention to reserve some part of the income, survey question (d) in Table 2.9, is also explained by individuals' future orientation, of which relationship was suspected from the correlation matrix as discussed previously. This specification is tested in the second CFA model, resulting in a cross-loading model, as two factors now contribute to explaining individuals' tendency to conserve resources.

While the model's goodness of fit is improved in the second model, a higher residual correlation is noted between item (b) and (e) as suspected earlier; this reflects a degree of self-control in (item e) and individuals' current money management tendency (*financial resilience*), which was also anticipated as per its relevance to impatience. Therefore, this link is retained in the third CFA model as for its substantive relevance – which is that withholding unaffordable consumption is highly relevant to spending sensibly without running out of money (item b). The goodness of the fit has improved to RMSEA is reported to be 0.038 (P-value RMSEA ≤ 0.05, 1.000), CFI: 0.982, TLI: 0.973, indicating a good fit.

A few other pairs of factor-observed items with relatively large ( $>10$ ) modification indices are also noted. However, a further modification could not be theoretically justified; that is, the substantive importance of suggested modifications does not outweigh the merit of a parsimonious model and clarity in factor interpretation. Furthermore, given the nature of the survey questions and individuals' qualities this study aims to examine, it is somewhat unrealistic to expect an absolute conditional independence among observed items for the survey questions to be meaningful. Therefore, the third CFA model is used as a base measurement model in the following modelling stages.

The last two explanatory variables, *funding retirement* and *saving sufficiency*, and the outcome variable *retirement saving* are 'observed' as they represent one survey question or operationalised outside of the CFA framework.

### 2.10.5 Measurement Invariance Testing

Once the measurement model is established for each hypothesised construct, measurement invariance (MI) testing was performed to ensure the latent variables constructed have a consistent interpretation across independent groups. Multi-group analysis setting is chosen instead of a simpler Multiple Indicator Multiple Causes model (MIMIC) for MI testing as a previous study that reported a difficulty in detecting MI for factor loadings using a MIMIC model (Kim, Yoon and Lee, 2012).

The purpose of measurement invariance (MI) testing is to ensure that the latent constructs (factors) can be compared consistently across groups in terms of means as well as their qualitative interpretations. Loadings and intercepts are tested for invariance; loadings indicate the contribution that the observed items make to factor interpretation. Intercepts are the expected means of the observed variable when the factor score is zero.

In the MI testing, the model with more restrictions is retained if the less restricted model is not statistically significantly better, which is tested using the Chi-square difference or likelihood ratio testing. The widely accepted four levels of MI are, in the order of the least and the strictest form, Configural, Weak, Strong, and Strict MI (Byrne, 2012; Millsap, 2011). Starting with the configural model, in which the same number of observed items mapped for a latent variable, restrictions for next level of invariance are added. A weak invariance model has loadings of observed variables equal across groups in addition to the constraints of a configural model. A strong invariance model is one in which intercepts of ordinal/binary observed items are same across groups while strict invariance also tests whether the residual variances are identical between groups (Millsap, 2011; Millsap and Yun-Tein, 2004). The sequence of MI testing follows that of Millsap (2011). Details of the configuration and corresponding equations for the measurement models for group  $g$  for  $G$  number of groups are as shown in Table 2.10.

In this study, MI testing is performed using three group variables: age (aged 30-39 and 40-49), gender (male and female) and household income (below or above the median) in a multi-group analysis framework in Mplus. This framework allows the estimation of a separate set of parameters for sub-populations separately but simultaneously. The equality

Table 2.10 Measurement invariance models in the multi-group analysis framework

MI level	Model description	Equation
Configural invariance	The factor(s) predicts the same number(s) of observed items across groups.	$\mathbf{y}^{*g} = \mathbf{\Lambda}_y^g \boldsymbol{\eta}^g + \boldsymbol{\varepsilon}^g, \tau_{cq}^1 \neq \dots \neq \tau_{cq}^G$
Weak invariance	Factor loadings are restricted to be the same across groups.	$\mathbf{y}^{*g} = \mathbf{\Lambda}_y \boldsymbol{\eta}^g + \boldsymbol{\varepsilon}^g, \tau_{cq}^1 \neq \dots \neq \tau_{cq}^G$
Strong invariance	The thresholds and factor loadings are restricted to be the same across groups.	$\mathbf{y}^{*g} = \mathbf{\Lambda}_y \boldsymbol{\eta}^g + \boldsymbol{\varepsilon}^g, \tau_{cq}^1 = \dots = \tau_{cq}^G$
Strict invariance	The error variances are restricted to be the same across the groups.	$\mathbf{y}^* = \mathbf{\Lambda}_y \boldsymbol{\eta}^g + \boldsymbol{\varepsilon}, \tau_{cq}^1 = \dots = \tau_{cq}^G$

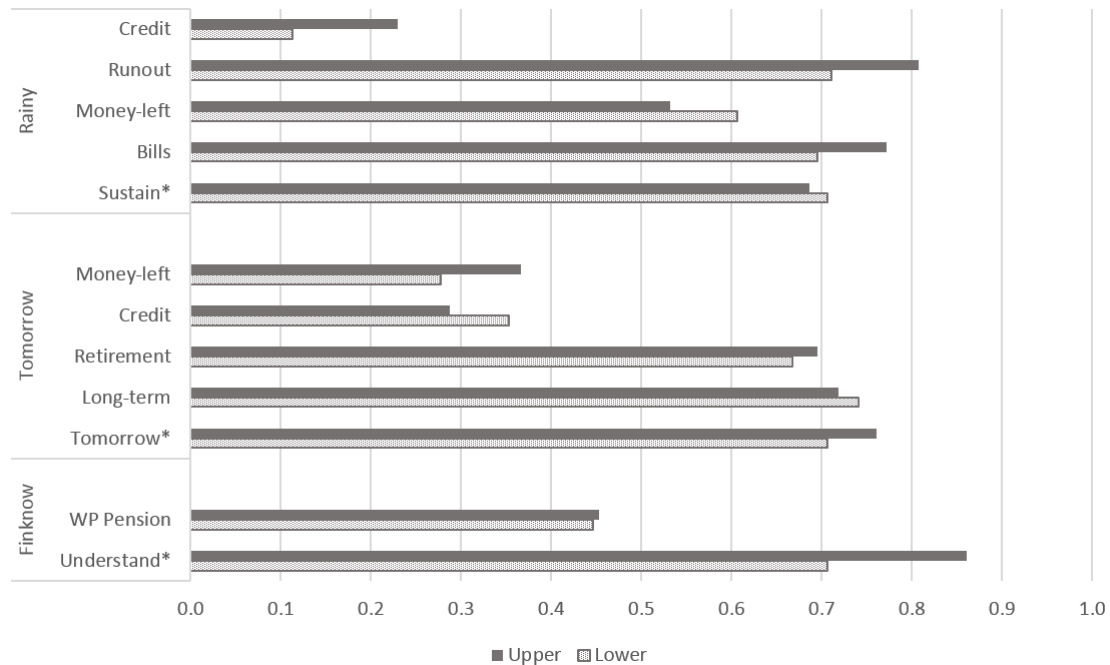
Note: Weak invariance is alternatively called metric invariance. An alternative name for strong invariance is scalar invariance.

of parameters across groups are tested using the Chi-square test of difference, DIFFTEST in Mplus, see (Muthén and Muthén, 2017). This test is performed at the three levels of MI first, before locating the source of variance (observed items) using the Chi square test of difference. Rejecting the null hypothesis, which states that the model with group-specific estimates fits the data better than the restricted model, would indicate that items (at least some of them) need to be allowed to vary across groups.

The results from the MI testing using age and gender show weak invariance, while a partial weak invariance is achieved when using the dichotomised income variable. The loadings for the items ‘run-out’, ‘money-left’, ‘credit’ and ‘understand’ differ depending on whether the household is below or above the median (see Figure 2.6). This implies that the factors are interpreted slightly different by income group. In particular, as the interpretation of financial resilience essentially captures individuals’ economic agency to which income is a crucial element, assuming full MI leads to biased estimation in both measurement and structural parts. However, keeping this measurement structure is only possible when the income variable is categorical. This can be interpreted in the line of an ‘interaction effect’; that is, the loading for the factor varies depending on a group membership. However, this poses an issue when the MI testing variable is continuous; in the current analytical setting in Mplus, it is not possible to measure an interaction effect between a latent factor (i.e.



Fig. 2.6 Factor loadings by dichotomised income groups: below (Lower) or above (Upper) the median household income) (2012/14, n=5,755)



Note: For the survey questions corresponding to the names, see Table 2.3.

Financial resilience) and a continuous control variable (i.e. income), whether such interaction is additive or multiplicative in nature (see Van Der Weele and Knol, 2014).

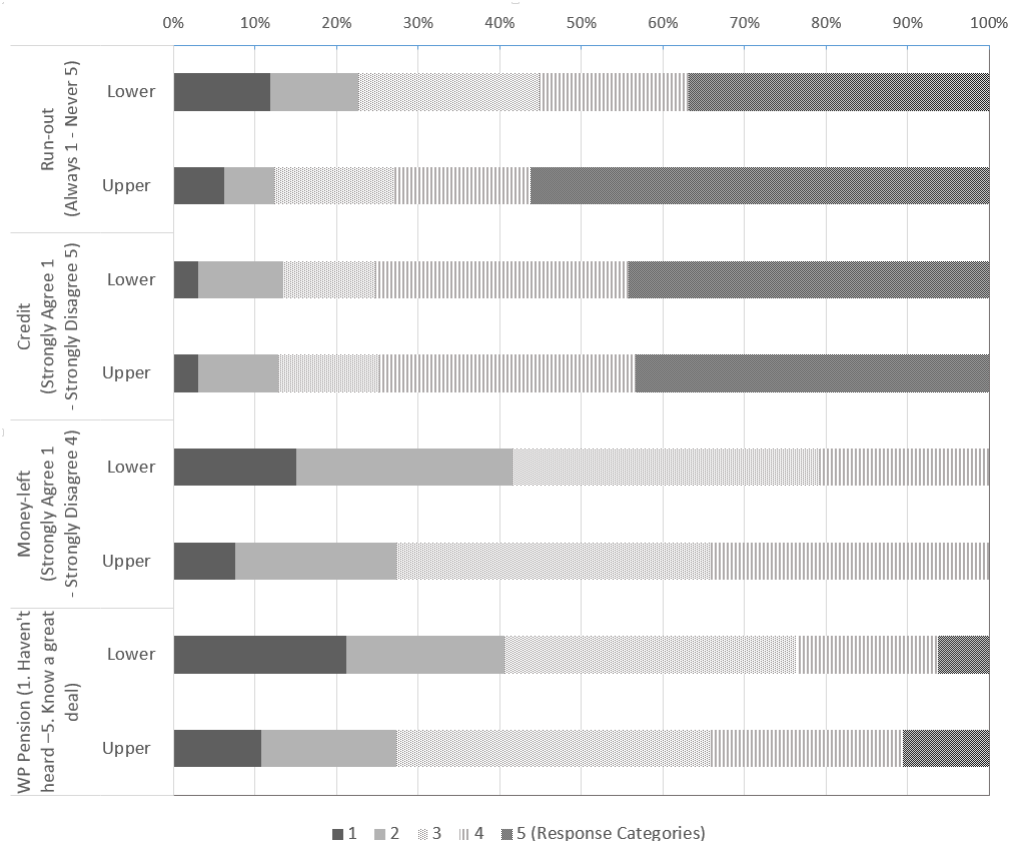
Additionally, it is important to note that these MI testing results would vary depending on the categorisation of the income variable. Also, different categorisation methods may result in more than two groups; the extent of the MI testing may differ from those obtained when using dichotomised groups. Another important aspect to consider is whether household income should be categorical for the purpose of the study. Household income is better kept as a continuous variable as categorising it arbitrarily may be costly as it is one of the key variables in the study. Therefore, factor loadings are assumed to be invariant across implicit income groups.

The intercepts, which are the expected mean of the survey question when the factor score is zero, may also vary by group. The initial MI testing using the binary income variable suggested partial weak invariance in which thresholds for observed variables were freely estimated. As the sample size is relatively large, it would be useful to examine the extent of

difference graphically and to determine whether differences are indeed meaningful. Figure 2.7 shows the proportion of respondents in each response category in selected observed items by income group. Except for ‘credit’, the patterns appear different between the Lower, and Upper income groups and these differences are deemed not ignorable. As a continuous income variable is preferred to a categorical one, these differences can be accommodated by introducing the direct effects of income on these observed variables.

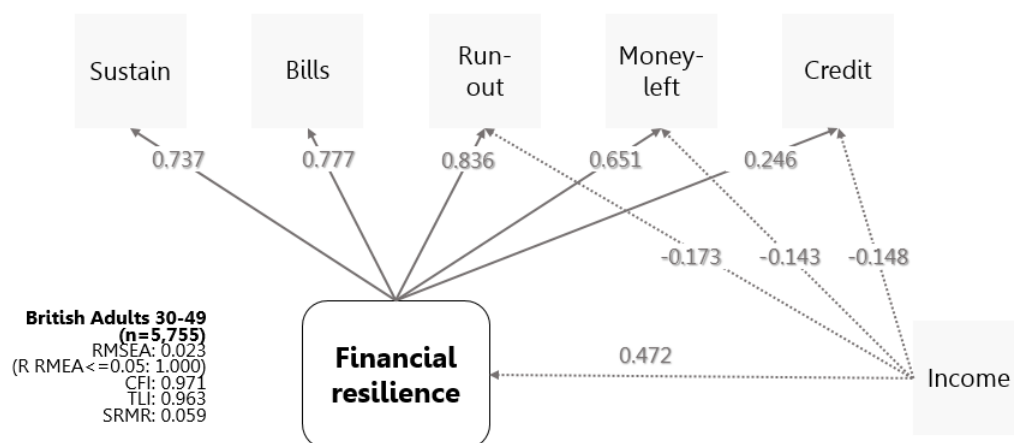
An MI testing by sex also showed three items that were non-invariant, but the extent of non-invariance was not substantial. Therefore, the cost of assuming full MI in this case is assumed to be low. This is further explained in the Appendix to Chapter 3 that investigates gender difference in retirement saving. The factors were measurement invariant with respect to age (not reported). Therefore, a weak invariance model, where income has a direct effect on the above-mentioned items, is used below.

Fig. 2.7 Response pattern differences between upper and lower income groups (2012/14)



Note: For the survey questions corresponding to the names, see Table 2.3. n=5,755.

Fig. 2.8 Path diagram of the direct effect of income on financial resilience and its items only (Standardised coefficients, 2012/14, n=5,755)

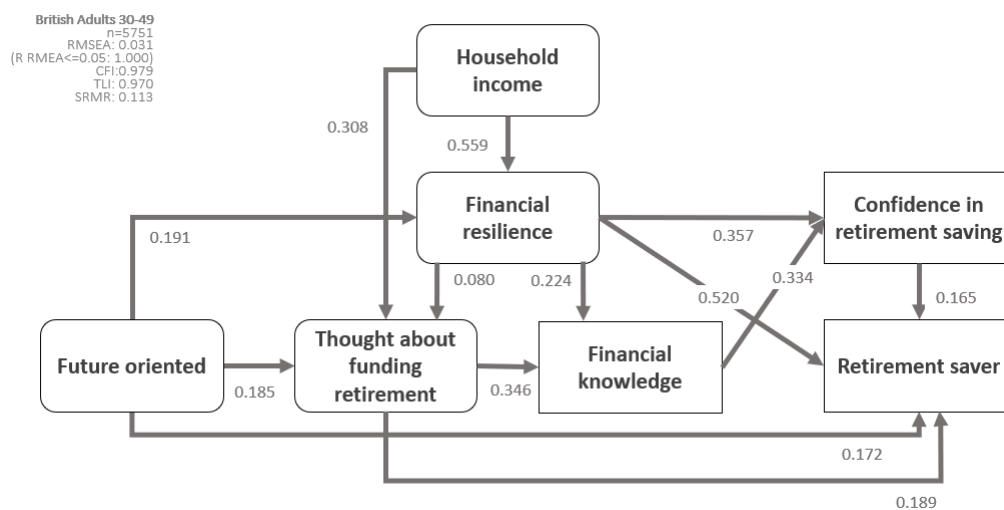


Note: Dotted lines indicate the direct effects. For the survey questions corresponding to the names, see Table 2.3.

### 2.10.6 Additional information on the structural model

Figure 2.9 shows the results of the second stage of the modelling involves assessing the relationship between latent variables. Household income is also included to account for its direct effects on three observed items (as discussed in the previous section of Appendix). The coefficient between financial resilience and thought about funding retirement (0.080) is found not to be statistically significant in the final model and therefore indicated in a dotted line in Figure 2.4 in the Results section earlier.

Fig. 2.9 Results from the structural model with household income



### 2.10.7 Sensitivity analysis on one-step and two-step estimations

Table 2.11 Measurement model estimates using the one-step and two-step approaches (2012/14)

	One-step estimation		Two-step estimation	
	Loadings	P-value	Loadings	P-value
<b>Measurement models (not standardised)</b>				
<b>Financial Resilience BY</b>				
Run-out	1.000	999.000	1.000	999.000
Sustain	0.858	0.000	0.852	999.000
Bills	0.970	0.000	0.903	999.000
Money-left	0.756	0.000	0.708	999.000
Credit	0.211	0.000	0.248	999.000
<b>Future Orientation BY</b>				
Tomorrow	1.000	999.000	1.000	999.000
Long-term	1.022	0.000	1.021	999.000
Retirement	0.970	0.000	0.956	999.000
Credit	0.330	0.000	0.431	999.000
Money-left	0.463	0.000	0.460	999.000
<b>Financial Knowledge BY</b>				
Understand	1.000	999.000	1.000	999.000
WP Pension	0.450	0.000	0.481	999.000
<b>Direct effects (of household income) ON</b>				
Run-out	-0.526	0.000	-0.505	999.000
Credit	-0.323	0.000	-0.227	999.000
Money-left	-0.425	0.000	-0.259	999.000
WP Pension*	0.107	0.010	0.220	999.000
<b>Goodness of fit statistics</b>				
Chi-Square statistic (degrees of freedom)	624.767(157)	0.000	784.454 (170)	0.000
RMSEA (prob RMSEA<=0.05)	0.023 (1.000)		0.025 (1.000)	
CFI	0.971		0.962	
TLI	0.963		0.955	
SRMR	0.059		0.061	

Note: N=5,755. For the survey questions corresponding to the names, see Table 2.3. P-values for loadings that are fixed are set as 999.000 in Mplus. \* This model is not the final model; the household income effect on WP Pension is found significant at the 5% level but omitted in the final model as the coefficient was estimated to be very close to zero (0.04), which is difficult to meaningfully interpret. There was no change in the goodness of fit statistics; the Chi square test statistics were greater by 5 (with 1 more degree of freedom). Given the sample size, this change is considered marginal.

Table 2.12 Structure model estimates using the one-step and two-step approaches (2012/14)

	One-step estimation (a)		Two-step estimation (b)	
	Coefficients	P-value	Coefficients	P-value
<b>Structural part (Standardised coefficients)</b>				
<b>Financial Resilience ON</b>				
Future orientation	0.197	0.000	0.188	0.000
Household income	0.470	0.000	0.472	0.000
University degree	0.040	0.019	0.041	0.016
Homeownership	0.182	0.000	0.184	0.000
Female	-0.066	0.000	-0.067	0.000
<b>Financial Knowledge ON</b>				
Financial Resilience	0.214	0.000	0.200	0.000
Thought about funding retirement	0.349	0.000	0.334	0.000
Age group 40-49	0.086	0.000	0.088	0.000
Female	-0.215	0.000	-0.214	0.000
<b>Future Orientation ON</b>				
University Degree	0.219	0.000	0.209	0.000
Age group 40-49	0.057	0.004	0.057	0.003
<b>Consideration for funding retirement ON</b>				
Future Orientation	0.188	0.000	0.183	0.000
Household income	0.280	0.000	0.277	0.000
University degree	0.115	0.000	0.118	0.000
Homeownership	0.102	0.000	0.101	0.000
Age group 40-49	0.081	0.000	0.081	0.000
Inheritance (past 2 years)	0.052	0.011	0.053	0.010
<b>Retirement saving confidence ON</b>				
Financial Knowledge	0.341	0.000	0.338	0.000
Financial Resilience	0.269	0.000	0.276	0.000
Having a DB pension	0.355	0.000	0.349	0.000
Retirement saver	0.237	0.000	0.239	0.000
<b>Retirement saver ON</b>				
Financial Resilience	0.601	0.000	0.603	0.000
Future Orientation	0.174	0.000	0.163	0.000
Consideration for funding retirement	0.224	0.000	0.229	0.000
Retirement saving confidence	-0.139	0.015	-0.138	0.017
<b>Control variables</b>				
<b>Household income ON</b>				
University degree	0.309	0.000	0.310	0.000
Female	-0.065	0.000	-0.062	0.000
Homeownership	0.217	0.000	0.217	0.000
<b>Having a DB pension scheme ON</b>				
Household income	0.103	0.000	0.100	0.000
<b>Having a DC pension scheme ON</b>				
Household income	0.197	0.000	0.199	0.000
<b>Goodness of fit statistics</b>				
Chi-Square statistic (degrees of freedom)	624.767(157)	0.000	784.454 (170)	0.000
RMSEA (prob RMSEA<=0.05)	0.023 (1.000)		0.025 (1.000)	
CFI	0.971		0.962	
TLI	0.963		0.955	
SRMR	0.059		0.061	

Note: N=5,755. For the survey questions corresponding to the names, see Table 2.3. P-values for loadings that are fixed are set as 999.000 in Mplus. \* This model is not the final model; the household income effect on WP Pension is found significant at the 5% level but omitted in the final model as the coefficient was estimated to be very close to zero (0.04), which is difficult to meaningfully interpret. There was no change in the goodness of fit statistics; the Chi square test statistics were greater by 5 (with 1 more degree of freedom). Given the sample size, this change is considered marginal.

## Chapter 3

# Gender difference in British young adults' retirement saving: A multi-group analysis using Structural Equation Modelling (SEM)

### 3.1 Abstract

While an increasing gender disparity in pension wealth is widely recognised in Britain, few studies have investigated gender differences in younger adults' retirement saving. This study examines whether men and women (aged 30-49) differ in their retirement saving decision-making process, and if so to what extent, based on the adapted version of the *model of financial planning* using the Wealth and Assets Survey (2012/4). A multi-group analysis in the structural equation modelling framework was utilised to investigate the gender difference in-depth. Findings show that attitudinal and behavioural factors that are linked to identifying retirement savers are similar between men and women. However, how and to what extent these factors are associated with individuals' current social and economic arrangements (represented by income, homeownership, marital status, offspring) vary by gender. The findings show that the male-breadwinner model is still applicable to the younger adults.

## 3.2 Introduction

As discussed in Chapters 1 and 2, the recent changes in the state pension and workplace pension schemes have fundamentally changed the way the younger generation saves for retirement in Britain. Risks involved in accumulating and generating retirement income have been largely transferred to individuals from the state and the employers. As a result, individuals are increasingly expected to save via work and to make an additional provision during their working-age years.

Studies, however, have argued that women have systematic disadvantages in accumulating savings and pension rights, largely due to the current pension structure that favours continuous labour market participation (Grady, 2015; Price, 2007). Women's employment patterns differ from men's, which tend to be full-time and continuous employment. Women take time off their employment, work part-time or are unable to remain in the labour market because of family-care duties (van der Horst et al., 2017). Women's interrupted work histories not only affect their state pension entitlement but also determine the level of workplace pension scheme savings, which leads to women having, on average, a smaller retirement income than men.

Not much is known, however, about whether men and women differ in terms of additional retirement saving activities outside the state or workplace pension schemes. Findings from the previous chapter hint at a potential gender difference in the decision-making process. It reported that retirement saving activity is an outcome of an interplay between internal (attitudinal and behavioural factors) and external characteristics (demographic and socio-economic factors) and that individuals' perception and ability to save vary substantially depending on broader socio-economic arrangements (see Chapter 2). These socio-economic arrangements, however, may vary between men and women who tend to have different social and gender roles during the partnership-forming and family-growing stages of life. Such differences may influence men's and women's attitudes or behaviours in the retirement saving decision-making process.

This chapter examines the gender difference in two different ways. First, it aims to test the way in which the economic autonomy in retirement saving differs between men and women.



Second, it focuses on gender difference in demographic and socio-economic circumstances and how these factors may influence men's and women's ability to organise everyday finance differently. In particular, it tests whether the traditional 'male-breadwinner' hypothesis applies to the younger generation. In other words, would men's financial behaviour be influenced by the size of financial resources available more than women's financial behaviour? And would women be more influenced by characteristics that indicate stability in family life?

The decision-making process used in this chapter follows an adapted version of the model of financial planning, which is modified to include a behavioural measure and a set of socio-economic environmental factors (see Chapter 2). Using this modified version of the model of financial planning, this study tests whether and to what extent women's and men's retirement saving decision-making differs among British adults aged between 30 and 49. Additionally, it examines in what ways the gendered life course may influence individuals' retirement saving behaviours. To do so, multi-group analysis is performed in the SEM framework using the fourth wave of WAS (ONS, 2018*d*). The multi-group analysis allows investigation of the gender difference in a more nuanced way compared to regression analysis with interaction effects (for more on interaction effects, see Van Der Weele and Knol, 2014). It also enables a direct comparison between the gender groups; this feature is an advantage compared to studies that provide models for men and women separately but only with an indirect assessment of meaningfulness of such differences.

The structure of this chapter is as follows. The next section provides an overview of how men's and women's entitlement and saving outcomes vary in the state pension, workplace pension scheme and additional saving channels. Then the discussion focuses on private saving and provides a literature review on gender differences in factors that are known to affect retirement saving behaviours, such as time perspective, financial resilience and financial knowledge. Data and analytical strategies are explained, followed by the interpretation of results. The study concludes with a short discussion of policy implications.

### **3.3 Gender in retirement saving**

#### **3.3.1 Gender difference in this chapter**

It is important to clarify the approach to understanding gender difference in this study. In quantitative social science studies, sex is often used interchangeably with gender and, therefore, a sex effect is interpreted as a gender difference. The difference between the two would be that the former refers to the differences in patterns that are observed for men and women, while the latter would include a more nuanced context of how those patterns are brought about.

Gender scholars argue that ‘gender’ is not confined to a biological concept (West and Zimmerman, 1987); it is a representation that encompasses the biological as well as social perception of belonging to one sex because of the way individuals understand and perform cultural and social norms about being a woman (mother, sister, wife etc) and a man (father, brother, husband etc). Considering the key life events associated with the age group (30–49), ‘gender difference’ can also be then interpreted as differences in a pattern that may stem from the social functioning of gender (Budig and England, 2001). For instance, fulfilling the (normative) role(s) of ‘mother’ or ‘father’ differ (contextually and socially) and this difference may translate to attitudes or behaviours that are formed given their understanding of the role in the family and society.

In the absence of information on self-identification or normative beliefs held by individuals, this study is still limited in the sense that it utilises the biological marker of (self-reported) sex as a proxy for gender. However, the analytical approach taken in this study allows the differences in patterns by sex group to be contextualised beyond the partial sex effects, by using individuals’ socio-demographic and economic characteristics. Findings then can provide insights to how and to what extent gender differences may be meaningful.

### **3.4 Women's life course and its implications**

Gender issues in retirement saving have attracted much attention in recent years as many studies have argued the importance of investigating the gender aspects of retirement planning (Foster and Ginn, 2018; Foster and Heneghan, 2018; Ginn and Macintyre, 2013; Grady, 2015; Price, 2007). Women are expected to live longer compared to men in the same age group and compared to the women in the previous cohorts (ONS, 2015). However, past evidence shows that women tend to have less retirement funding available compared to men (PPI, 2016) and are more likely to rely on state pensions (Jefferson and Preston, 2005), both of which affect the standard of living negatively in later life (Vartanian and McNamara, 2002).

There are two different approaches to understanding the gender difference in retirement saving literature. The first strand of discussions concerns the gendered life course and the negative outcomes in women's retirement saving across the life course (see Foster and Heneghan, 2018, and the references therein). The second approach focuses on the bio-social aspects of gender difference, as to the differences in risk attitude and investment behaviours observed among men and women (e.g. Bajtelsmit, Bernasek and Jianakoplos, 1999). These two aspects of studies and how these are related to this study of gender difference in retirement saving are discussed in the following section.

#### **3.4.1 Employment patterns and the state and workplace pensions**

The first approach to understanding gender difference in pension entitlement concerns gender disparity in economic outcomes in the labour market. Scholars have argued that the pension and related welfare system is built based on the male breadwinner assumption (Grady, 2015; Lewis, 1997), which produces a 'motherhood penalty' (Budig and England, 2001; Möhring, 2018), and markedly so for highly skilled women (England, Bearak, Budig and Hodges, 2016). The gendered nature of life course and social norms implies that women's trajectories are more diverse than men's, with multiple interruptions and varying proportions of part-time employment due to reasons such as care duties (Ginn and Arber, 1996b; Ginn and Macintyre, 2013; Price, 2007). As the current pension system generates a better pension outcome

for those with continuous full-time employment, women's employment patterns produce considerable disadvantages over the life course (Grady, 2015). Among older individuals in England, the patterns of employment transitions are also found to be gendered in the way which that is consistent with the male breadwinner model (Fasang, 2010; van der Horst et al., 2017).

Women are also found to be less likely to organise retirement funding by means of financial products, such as a private pension. A study on the British population aged over 65 reported that while women who receive private pension income were relatively better off than other women, their income was considerably lower than men's largely owing to women's shorter and interrupted career trajectories (Bardasi and Jenkins, 2010). Despite a continuing effort to improving gender equality in the labour market outcomes, the younger generation's work trajectories still exhibit a gendered pattern in Britain. According to ONS, more men are in paid work than women at all ages above 22 (2013). The same report shows that women's employment rate improved only moderately from 67% in 1996 to 72% in 2013. Mothers are returning to work, but shared parental leave is still disproportionately taken by women as only 1% of eligible fathers used the scheme (Trade Union Congress (TUC), 2019). The gender pay gap remains to be a big issue as well. Gender composition of top 10% income by age group in 2012 shows that a small gender difference for age group under 29 but an increasingly male-dominant pattern for older groups; 38% of women were in top 10% income group for those aged 30–34, which reduces to 26% for those aged 45–49 (Office for National Statistics (ONS), 2013). These labour market statistics clearly indicate women are likely to accrue lower pension wealth over the working life.

The nSP has brought a few changes that improve women's pension entitlements, following on from the recommendations of the Pensions Commission (2005). Mechanisms were introduced to allow individuals, mostly women, to build their own pension entitlement independent of their partners' NIC record. The nSP also expanded the range of informal caring activities for which individuals could earn NI credit. However, there are remaining issues because the pension entitlement is still subject to the NIC record, which is inevitably linked to labour market outcomes.

With a minimum of 10-year NI contribution, individuals can obtain a state pension around £48.00 a week in 2019/20. The amount increases proportionally to £168.80 in 2019/20 for those with 35 or more years of NIC, where qualifying years are defined by the number of hours and earnings per week. Considering women's work trajectories in early stages of life discussed above, it is not unreasonable to assume women may continue to accumulate less pension entitlement compared to men if younger women's patterns in the labour market are similar to those of previous cohorts. The increase in the state pension age (SPA) for women (Holman, Foster and Hess, 2018) may also increase the NIC years for women who are able to work until the SPA. However, it is unclear whether the increase in the SPA will lengthen the working life for women in the younger generation. As with the women in the baby boomer generation, today's young women might also exit the labour market earlier than men due to family care responsibilities if the current trends continue.

Figures from the WAS dataset show a significant gender difference in average pension wealth among younger adults aged between 30 and 49, even within the same workplace pension types and age group (see Table 3.1). While a bigger proportion of women hold a DB pension, the average value held is less than half compared to that held by men of the same age group. The difference still exists for the younger age group among those who hold a DC scheme; while a marginally higher proportion of men have such scheme, the average value is about one third higher than that for women. The DC pension values are considerably smaller than the DB pensions because the pension values are measured differently. The DC values are also unlikely to include any saving made through automatic enrolment (AE), as it was introduced only in 2012 and implemented in stages with the minimum contribution rate of 3%. The difference in the pension values by type (DB or DC) may narrow as more save through AE over the years and the value of DC pensions grow. However, given the current structure of AE, the gender gap in the pension values is likely to increase.

In a European comparative study, Möhring (2018) finds that the motherhood penalty is smaller for countries with mandatory workplace pension schemes. However, women may benefit considerably less compared to men, as they take leave, reduce working hours or exit the labour market due to family duties. In an Australian study, Jefferson and Preston (2005)

Table 3.1 Proportions and mean values of DB and DC schemes by age and gender (2012/14)

	Men 30-39	Men 40-49	Women 30-39	Women 40-49
DB schemes	31%	39%	42%	50%
Average value, DB	£43,300	£130,600	£28,000	£66,800
DC schemes	27%	26%	21%	16%
Average value, DC	£9,300	£19,000	£6,500	£5,600

Note: Author's own calculation based on 5,755 individuals who are employed (excluding self-employed individuals). Estimates are weighted. The proportions include a minority of individuals who have both DB and DC schemes.

argue that the persistent gender disparity in employment patterns and earnings translates to a widening gender pension entitlement over time and that this pattern is expected to be more pronounced in countries with a heavy reliance on occupational pension schemes.

### Attitudes to risk and investment behaviours

The second strand of gender difference in retirement saving approaches it in the frame of market-based wealth accumulation, with the view that men and women have different risk preferences and investment behaviours. International evidence indicates that women are more risk-averse in asset allocation, which leads to a lower rate of return, despite the need for a higher return than men because women have a longer retirement to fund (e.g. Bajtelsmit et al., 1999; Speelman, Clark-Murphy and Gerrans, 2013). Both studies report gendered investment behaviours, although they do not offer explanations on the precise mechanisms involved. For instance, Bajtelsmit and colleagues (1999) report that the difference in socio-economic status in men and women explained the difference in investment returns only partially and attribute the remaining variability to the difference between men's and women's investment behaviours. Although age is found to be positively correlated with financial risk-taking in an Australian study, the differences in investment behaviours in DC fund allocation are only partially explained by the different compositions of socio-economic status among American men and women (Speelman et al., 2013).

Little evidence is available in terms of gender difference in attitudes towards and behaviours in retirement saving. Regarding the behavioural response to AE, a previous study shows that young females are less likely to opt-out compared to their male counterparts

(Bryan and Lloyd, 2014). However, women are more likely to mention low income as a reason when opting out (Prabhakar, 2017). James (2019) investigates how young British adults rationalise contribution to a workplace pension scheme and evaluated employers' matching contribution when employees increase their contribution rates. The author reports that women tend to rationalise retirement saving on moral grounds ('the right thing to do') while men are more likely to evaluate it from the market-oriented perspective ('good enough incentive for saving').

### **3.5 Gender difference in retirement saving decisions**

The two discussions above offer the different contexts of structural barriers and market-behaviours by gender. However, they do not provide evidence on whether men and women differ in the decision-making process, and if so, to what extent (Clark and Strauss, 2008). Furthermore, adults aged between 30 and 49 are in the stages of life which are predominantly associated with partnership formation and parenthood (Mortimer and Moen, 2016). Family responsibilities performed by men and women are inevitably gendered as individuals negotiate their social roles in newly formed or growing family. Then, would these different social norms and gender roles influence retirement saving decision making differently? Before developing the precise research questions and hypotheses, the relevant literature on retirement saving decision-making process is provided.

#### **3.5.1 A modified version of the model of financial planning**

Hershey and colleagues propose the model of financial planning, on the premise that individuals' saving behaviours are an outcome of a decision-making process (Hershey et al., 2007). The authors argue that psychological aspects, such as time perspective, are based on cultural values, and these interact with structural factors (Hershey et al., 2007). This model is further modified to include a behavioural indicator, financial resilience, which represents individuals' economic agency in everyday finance today, which is influenced by socio-economic factors such as household income and homeownership as discussed in Chapter 2. It was found that

financial resilience was the strongest predictor in identifying retirement savers among British adults in their 30s and 40s. The current study builds on the modified version of the model of financial planning (see Figure 3.1) and examines the gender difference in the multi-group analysis in the SEM framework. The gender-specific hypotheses (the paths in the diagram) paths are explained in the next section. Details of the modelling procedure are discussed in the Data and Analytical Strategy section.

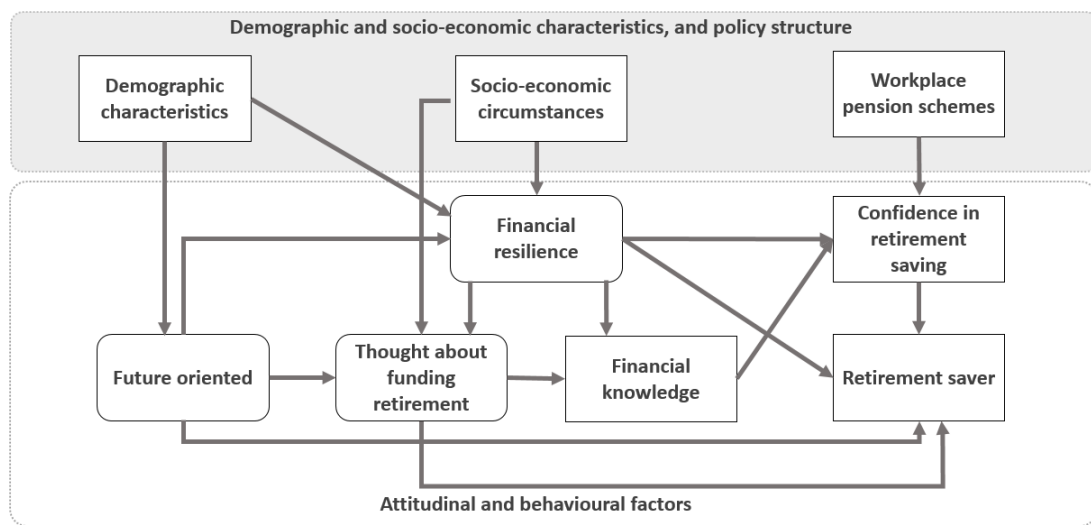
### 3.5.2 Financial Resilience

Financial resilience is a concept that closely mirrors the notion of financial capability (Atkinson et al., 2006), but with a stronger focus on the behavioural tendencies in everyday financial affairs. It indicates a higher level of ability to organise daily financial activities and a higher degree of self-regulation in terms of managing spontaneous purchases. It was found to play a crucial role in the retirement saving decision-making process in a previous study on British adults in their 30s and 40s (see Chapter 2). The bread-winner hypothesis suggests that the extent to which financial resilience is interlinked to broader socio-economic arrangements may differ by gender. That is, if the younger generation's behaviour is consistent with the traditional male-breadwinner model of organising family life, women's financial resilience may be more influenced by stability of family life while men's financial resilience may be more closely related to economic resources such as income. Also, women's lower lifetime earnings suggest that pooling income within a household may benefit women in marriage or cohabitation, although the extent to which it does may differ due to the perception of legality of marriage (Vogler, 2005).

On the other hand, it is unclear whether financial resilience is an equally strong predictor for men's as well for women's retirement saving activity. Studies find that women tended to manage day-to-day economic affairs better even among those on a low income (Collines, Morduch, Rutherford and Ruthven, 2011). Women are more risk-averse, which suggests they may save more; however, a recent study suggests that men may save more as they tended to exhibit a greater market-focused approach in justifying increasing saving contribution at work compared to women (James, 2019). A European study shows that British women exhibit a



Fig. 3.1 A modified version of the model of financial planning



lower level of retirement saving intention than men (Fernández-López, Vivel-Búa, Otero-González and Durán-Santomil, 2015). These findings suggest that there may be a gender difference in the extent to which financial resilience predicts retirement saving behaviour.

### 3.5.3 Pension Knowledge

Pension knowledge reflects the level of confidence in one's pension knowledge to be able to make a sound decision about retirement saving. Studies report that women have a lower level of financial literacy and are less inclined to utilise tools to accumulating pension assets, such as private pension subscription and investment activities (Lusardi and Mitchell, 2008; van Rooij, Lusardi and Alessie, 2011). In an international study of 19 countries, British women and men were found to possess a similarly high level of fundamental financial concepts, such as interest rate calculation, compound interest, inflation and risk diversification; however, British women are found to have a substantially lower than expected rate of retirement saving with financial institutions (Hasler and Lusardi, 2017).

In the previous chapter, it was found that on average females are less confident in making financial decisions regarding retirement. It was also reports that although financial knowledge is not directly associated with retirement saving activity indicated by a usage of bank accounts,

it is positively associated with confidence in the current saving progress, which is negatively associated with retirement saving. On the other hand, another study reports that American women are more willing to save additionally after attending a retirement-related educational seminar than men (Clark, D'Ambrosio, McDermed, Sawant, Ambrosio, McDermed and Kshama, 2006). If pension knowledge is mostly acquired through education at the workplace then women may be more likely to respond positively and save more for retirement.

### **3.5.4 Future orientation and retirement funding consideration**

Time perspective is a particularly important element of young adults' attitudes to retirement saving, as many argue that not having a long-term view is a reason why many young people fail to save (e.g. Foster, 2017). Time perspective is interpreted as two distinctive concepts; a more specific time perspective (retirement funding consideration) can be used as means to reduce the abstract notion involved in the general long-term view (future orientation) (See Section 2.6).

As women are widely believed to be more risk-averse, it is reasonable to expect them to have a higher level of future orientation. However, studies have reported that people tend to only think about pensions in their 30s and 40s (MacLeod et al., 2012) and that women appear to think about funding retirement later than men (Prabhakar, 2017). On the other hand, American men are found to have a higher retirement goal clarity, a concept similar to having thought about retirement, as American women describe it more in abstract terms contrary to men who used more specific words (Stawski et al., 2007).

### **3.5.5 Broader socio-demographic and economic arrangements**

Household income and homeownership are important aspects of young adult's economic lives, especially in the current low-growth economic environment in Britain. Security in income and affordable housing options are often considered as a precondition for adults aged 30 and 49, as a majority of them are in the stages of life associated with partnership formation and starting a family. Studies find that organisation of immediate socio-economic

environment often is the priority for those in their 30s and 40s before considering saving for retirement (PPI, 2018). In Chapter 2, these factors are found to increase financial resilience and indirectly increase chances of retirement saving. In the same paper, having a more favourable socio-economic condition (represented by income, homeownership as well as inheritance receipt) are likely to increase the chances of saving for retirement. This is largely consistent with an earlier industry report stating that often availability of extra resources, such as inheritance receipt, becomes a trigger even for them to consider retirement saving (Old Mutual, 2017).

What these factors collectively suggest is the circumstances in which individuals can place the next stage of their life course (Elder and George, 2016). Social norms and gender roles in early stages of adult life imply that some of these conditions may be more important for men or women, which may highlight different ways in which socio-economic characteristics should be understood in line with retirement saving behaviour. The employment rate difference between fathers and non-fathers is smaller than the difference between mothers and non-mothers for those aged 25 to 34 and 35 to 49 (Office for National Statistics (ONS), 2013) – a pattern that might be expected in a society with a male-breadwinner culture. In this case the effects of income and homeownership may vary by gender depending on what they view as their main role in the family; men are more likely to be concerned with the household income while women are more likely to be influenced by the view of stability of housing circumstances.

Marital status also provides important information about how individuals may engage in performing social roles. Studies have shown that retirement is often a joint decision for couples and that women may (be expected to) be more reliant on a partner's pension income (Foster, Heneghan, Olchawski and Trenow, 2016; The Pensions Commission (PC), 2005). However, there is no clear evidence on how couples plan retirement saving at earlier stages of life. That is, while couples may benefit from the socialisation inherent in making joint decisions (Noone et al., 2012), it is not clear whether that derives from exchanging knowledge or from the perception of derived entitlement from a partner's pension through

marriage (Vogler, 2005). In this sense gender roles may differ among couples and the effect of marital status may be a source of gender variance.

Legal marital status as well as de facto marital status are relevant in understanding young adults' partnership status. Socio-demographic behaviours have evolved in recent decades and more young people are now cohabiting in Britain (Pahl, 2005; Vogler, 2005). Using WAS data, Chapter 2 observed that a substantial proportion of 'single' (45%) and 'separated, divorced or widowed' individuals (25%) were found to be in cohabitation. Being able to pool economic resources together is a considerable advantage in the current low-growth economic environment for young British adults. However, as individuals' long-term decision making is influenced by the perception of the legality of marriage (Vogler, 2005), the effect of gender role in a union is expected to differ from those who are in a marriage.

Degree-level education was found to have a substantial effect on having a long-term view (Chapter 2). A study reports that women have responded more positively to behavioural change after attending an educational seminar on retirement saving. This may point to a potential gender difference in the education effect. Individuals' own as well as their partners' workplace pension scheme may influence the perception of the sufficiency of saving, which in turn influences the likelihood of making additional arrangements. The discussions thus far point out potential gender differences in the interaction between individuals' internal characteristics and environmental factors as to how and to what extent above-mentioned factors may interact differently for men and for women.

## **3.6 Research questions**

The above discussions point to the gendered social roles and the life course in the early stages of adult life, and how they may differently influence attitudes and behaviours that are closely tied to retirement saving decision-making in men and women. The natural question is, do women and men differ in their retirement saving decision-making processes, and if so, to what extent? And to what degree are their demographic and socio-economic characteristics associated with attitudinal and behavioural factors in the decision-making process?

To answer these questions, the aim of this study is to examine, first, whether the internal characteristics relevant to additional retirement saving are identical for men and women, in particular, the role of financial resilience. Also, it is hypothesised that financial resilience is likely to be related to different sets of demographic and socio-economic characteristics for men and women. If the male-breadwinner model is still valid for this study group, men's ability to conduct daily economic activities is expected to be more strongly linked to income, while women's ability may be influenced more by homeownership and having a child.

## **3.7 Data and Analysis**

### **3.7.1 Data and the outcome variable**

The fourth wave of WAS (ONS, 2018*d*) is used, which was carried out between July 2012 and June 2014. This period coincides with the staged rollout of AE that came into effect in October 2012. Leading up to its introduction, the DWP launched a campaign to increase public awareness of AE. WAS included a survey question directly relevant in the fourth wave – whether respondents were aware of the introduction of AE. This question was no longer asked in the fifth wave (2014/2016). As it is necessary to build a measure for pension knowledge, the fourth wave is used here.

The outcome variable identical to the one in the previous chapter. It is a binary variable that distinguishes retirement savers who 'have saved any of their income in the last two years, for example by putting something away in a bank, building society or Post Office account other than to meet regular bills'. Individuals may have multiple motivations for one saving activity (Wärneryd, 1999), such as saving for a deposit for a home which is widely considered as an avenue for retirement saving. Therefore, retirement savers are identified if one of their reported objectives of saving includes the motivation for saving is 'to provide income for retirement'.

### 3.7.2 The study sample

The study includes 2,564 men and 3,191 women who are employed and aged between 30 and 49, representing 74% and 70% of economically active individuals in the cross-sectional WAS sample in 2012/14.<sup>1</sup> Table 3.2 shows that the analytical sample, as it includes only those who are employed, is more likely to hold a degree-level education and to have a higher income than an average economically active 30- to 49-year-old interviewed in WAS during 2012/14. However, the marital status of the study sample differs marginally from the cross-sectional one. Married men are slightly over-represented, while single men are under-represented compared to other individuals between 39 and 49. WAS includes everyone in the household of a randomly chosen individual; on average, women are more likely to respond to surveys, and this may explain the over-representation of married men, who are included in the interview when their female partners agree to participate in the survey.

Comparing the characteristics between men and women in the sample also reveals differences in marital status; the proportion of women who are separated/divorced/widowed is substantially higher than that of men, both for the study and the cross-sectional population. There are a higher number of divorced or widowed women than men among those in their 30s and 40s (ONS, 2018*b*). Male partners in married couples tend to be older and divorced males are more likely to remarry. It is also possible that more women in this marital status category may be working, and more likely to do so as employees rather than as self-employed. These patterns are compared to the the British population in the same age group and the differences are taken into consideration when interpreting results.

## 3.8 Analytical strategy

The analysis is performed based on the modified version of financial planning, which was developed in the previous chapter, in the SEM framework using Mplus software version 8.4

---

<sup>1</sup>As the gender difference in employment patterns is relevant to the context of this study, the analytical sample is compared to the cross-sectional population of the same age group who are economically active (including currently those who are currently unemployed). See Table 3.2 for the number of observations. The study sample represents 85% of the male among those who are employed (including self-employed but excluding unemployed) and 91% of women in work.

Table 3.2 Characteristics of the study sample and the WAS sample by gender (2012/14)

		Males		Females	
		Study sample	WAS sample	Study sample	WAS sample
<b>Age group (2012/14)</b>	Aged 30–39	48.4%	48.9%	47.2%	48.3%
	Aged 40–49	51.6%	51.1%	52.8%	51.7%
<b>Marital Status</b>	Married	65.5%	59.5%	59.9%	60.8%
	Separated/Divorced/ Widowed	7.3%	8.0%	15.9%	14.3%
	Single	27.1%	32.5%	24.2%	24.9%
<b>Education level</b>	Degree holders	37.6%	31.8%	39.0%	35.7%
	Non-degree holders	62.4%	68.2%	61.0%	64.3%
<b>Household income</b>	Mean	£35,500	£31,400	£33,000	£28,900
	Median	£30,400	£27,000	£27,800	£23,600
<b>Inheritance, gift and informal loans</b>	Received	17.3%	15.4%	17.3%	15.0%
<b>Workplace pension schemes</b>	DB schemes	34.9%	25.8%	46.6%	32.4%
	DC schemes	26.1%	19.4%	18.7%	14.0%
<b>Number of observations</b>		2,564	3,436	3,191	4,582
<b>Proportion (of WAS population)</b>		(74%)		(70%)	

Note: WAS sample indicates economically active individuals who were interviewed in person and completed a full interview. All proportions are weighted using the cross-sectional weights provided in WAS. Income figures are rounded in nearest hundred pounds.

(Muthén and Muthén, 2017). The model consists of two parts – a measurement model and a structural model. The measurement model refers to the construction of latent variables that are not directly observable using a factor model based on a set of closely related survey questions. For example, financial resilience, which is a variable that indicates current money management tendencies, is not directly observable. However, individuals' behavioural patterns can be studied by examining information available on aspects of the behaviour. The measurement model is established for individuals' internal factors in the model – financial resilience, future orientation and pension knowledge.

Factor analysis is conducted for the measurement model identical to Table 2.3 in the previous chapter. The measurement part of the model follows the result of the factor analysis in the previous chapter (see Table 2.3). In addition to the MI testing with respect to income

(see 2.10.5), further testing is performed by gender in order to establish the consistency in factor interpretation for males and females (see Section 3.11.1 in Appendix). In order to compare the measurement model across multiple groups, it is necessary to test measurement invariance (Millsap, 2011; Millsap and Yun-Tein, 2004). The multi-group analysis framework is used in the measurement model to establish that the factors can be interpreted consistently across two gender groups. The procedure of MI testing is identical to the one explained in Section 2.10.5 in Appendix of the previous chapter).

The final model presented in Chapter 2 forms the basis for the modelling procedure in this study ('base model', see Figure 2.4). An interesting extension to the model is the multi-group analysis. Gender differences in the way in which (and to what extent) attitudinal and behavioural factors interact with socio-economic characteristics are tested by the structural model in the multi-group analysis. The structural part of the model concerns the relationship between the latent constructs and covariates in the model, which is further explained below. For example, the effect of education on future orientation may present both for men and women but the extent to which it does may vary between them. Such a difference would be indicated by different sizes of coefficients between two variables in each gender group. The multi-group analysis allows direct testing of whether the coefficient for men is statistically significantly different from that for women. It is also possible that a path is not statistically significantly different from zero for one group. These would lead to a gender-specific structural model.

The modelling procedure is as follows. In the multi-group analysis, the final model consists of two group-specific models that fit the data well. The base model is applied to both gender groups; the structural coefficients are estimated separately but for two groups concurrently, allowing gender-specific structures to be modelled stepwise. Initially, all estimates of the base model are restricted so as to be equal between men and women; see Table 2.10 in Appendix for the models tested. This restricted model is updated as non-significant paths are removed in the group-specific model. For example, a path may become non-significant for males but remain significant for females, leading to the removal of the path in the male group only.



Once the group-specific model is established, all estimates are freely estimated. Some path coefficients can be constrained to be equal if they do not statistically significantly differ between men and women. To identify paths that are meaningfully different, the unrestricted model is compared with an alternative model with one path constrained to be the same for males and females at a time, using Chi-square statistics with the degrees of freedom. However, in Mplus, the Satorra-Bentler Scaled Chi-square statistic is provided when estimating the model with the mean- and variance-adjusted weighted least squares (WLSMV) estimator in Mplus (Muthén and Muthén, 2017). As these Chi-square statistics cannot be directly compared (Satorra and Bentler, 2010), the differential testing function is used to test nested models.

### 3.8.1 Covariates

Demographic and socio-economic characteristics are included in the model to reflect individuals' broader socio-demographic and economic arrangements. Household income is equivalised using the modified OECD equivalisation factor and log transformed.<sup>2</sup> Homeownership distinguishes those who own their own home versus who do not. The inheritance variable identifies those who have received an inheritance, cash gifts and informal loans greater than £10,000 in the past two years. The age variable distinguishes those in their 30s versus 40s. Marital status variables for single, cohabiting, married and separated/divorced/widowed are included in the model together with a binary variable indicating having one or more children. Degree-level education, as well as holding a DB or a DC scheme, are included as dummy variables.

## 3.9 Results

The final model is well fitted as the following set of the goodness of fit statistics shows: RMSEA 0.020 (P-value RMSEA  $\leq$  0.05: 1.000), CFI: 0.974, TLI: 0.971 and SRMR 0.065. The measurement part of the model is presented in Table 3.3 and the structural models for

---

<sup>2</sup>Its representativeness has been assessed in the previous chapter. See Figure 2.5 in the previous chapter.

men and women are presented in path diagrams in Figure 3.2 and Figure 3.3 respectively. The measurement and structural parts of the model are discussed more in details in the following section.

### **3.9.1 The measurement model and measurement invariance testing**

The measurement part of the final model is reported in Table 3.3. Unstandardised loadings are provided for easier comparison of factor loadings, while standardised coefficients were reported for the direct effects of income on three observed items. The loadings are not anchored so that all items can be tested for measurement invariance (Byrne, 2012). The direct effects of income on observed items as examined in the previous chapter are retained. These effects for men and women appear to be different in Table 3.3; however, this is due to the standardisation of coefficients by gender rather than genuine differences in the effect sizes.

Results of MI testing with respect to gender show that all ten factor loadings but seven item thresholds are found to be equivalent across groups using multi-group analysis. It indicates that the latent factors can be interpreted consistently for men and women. However, the response patterns for items for average women and men, differ by gender for three items –‘Money-left’, ‘Tomorrow’ and ‘Wp-pension’ (see Table 3.3), according to the chi-square difference testing.

Table 3.3 Results from the final three-factor measurement model with direct income effects

Survey Questions (Shorthand names)	Scales	Financial resilience	Future orientation	Pension knowledge	Direct income effect* M	F
<b>Run-out</b> Frequency of running out of money at the end of week or month needing to use a credit card or an overdraft facility	1. Always – 5. Never	1.180			-0.240	-0.220
<b>Bills</b> Difficulty keeping up with bills and financial commitments	1. Having a serious problem, falling behind –6. No commitment	0.816				
<b>Sustain</b> Duration for which you can sustain yourself if the primary source of income is lost	1. Less than a week – 6. Twelve months or more	0.890				
<b>Money-left</b> Tendency to make sure money is left at the end of each period	1. Disagree strongly – 4. Agree strongly	0.730	0.477		-0.144	-0.129
<b>Credit</b> Tendency to buy on credit than to wait and save	1. Agree strongly – 4. Disagree strongly	0.197	0.312		-0.135	-0.157
<b>Tomorrow</b> Tendency to live today and let tomorrow take care of itself	1. Agree strongly – 4. Disagree strongly		1.143			
<b>Long-term</b> Getting more satisfaction in spending rather than saving it for the long-term	1. Agree strongly – 4. Disagree strongly		0.993			
<b>Retirement</b> Tendency to choose today's good living standard versus saving for retirement	1. Agree strongly – 4. Disagree strongly		0.960			
<b>Understand</b> Feeling that I understand enough to make decisions about saving for retirement	1. Disagree strongly – 4. Agree strongly			1.110		
<b>WP-pension</b> Knew about the workplace pension (auto-enrolment)	1. Haven't heard – 5. Know a great deal			0.463		

Note: n=5,755. \*Standardised direct effects are reported. Unstandardised loadings are reported to facilitate the interpretation of factors without anchored items as anchoring would lead to the item not contributing to the model estimation in the multi-group analysis setting models (Byrne, 2012). Survey weight is used, and the household structure is accounted for in the analysis. Fit statistics: RMSEA = 0.020 (P RMSEA  $\leq$  0.05, 1.000); CFI: 0.974; TLI: 0.971; SRMR 0.065).

The extent of non-invariance for these three items was evaluated visually based on the discussion provided in a study by Kuha and Moustaki (2015). Based on the examination of how men and women have responded to these survey questions (see Figure 3.5 in Appendix), these differences were considered marginal and therefore assumed to be equivalent across the two groups. More detailed explanation is provided in Section 3.11.1 in Appendix.

Interpretations of the factors are as follows: *financial resilience* indicates a responsible approach to managing one's everyday finances and a greater degree of self-regulation with respects to economic resources. A higher level is correlated with an increased ability to deal with short-term unforeseen income loss, to manage financial commitments (bills etc), to make sure some money is left at the end of each period and not likely to run out of money. Future orientation refers to having a long-term view and being less likely to favour pleasure of consumption today over saving for later. Future-oriented individuals are also more likely to consider future events and reserve economic resources and restrict unaffordable purchases. Pension knowledge refers to the perceived level of ability to make sound decisions on retirement saving. It also reflects the level of knowledge on workplace pension scheme around the time AE was coming into effect. Employers were required to provide information, and there were a series of national campaigns from which individuals may have obtained a varying level of exposure to pension knowledge.

There are also two other variables that are attitudinal characteristics. *Thought about funding retirement* is built based on a proxy that shows individuals have thought about the length of retirement, therefore, prompting the size of funding required for retirement. *Confidence in retirement saving* indicates whether respondents are confident that they are saving sufficiently at the present time.

### 3.9.2 Structural model and gender differences

The structural model is built based on men and women together based on the final model in Chapter 2 and extended to the multi-group setting. In order to build final group-specific structural models, three variants of structural models were tested. A restricted model refers to having a structural model identically for men and for women, with the structural equivalence

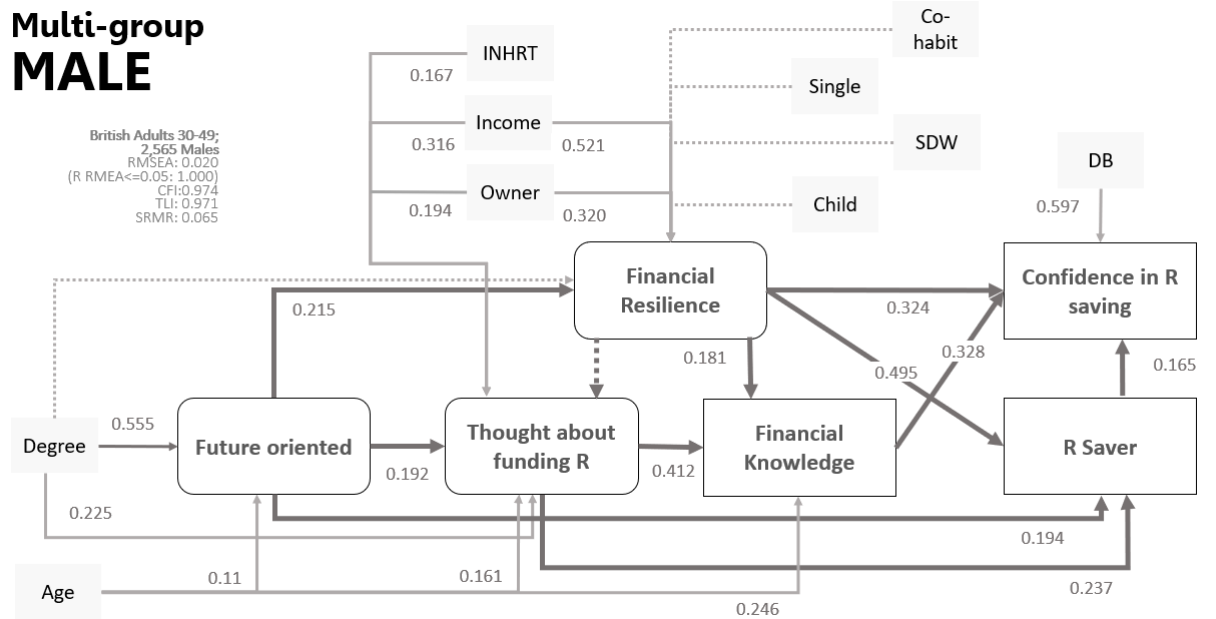
imposed onto the model (see Table 3.5 in Appendix). Any path that is found not to be statistically significant at 5% level is subsequently removed for the particular gender group. The updated model is tested again, with all the path being freed ('unrestricted model'). However, the unrestricted model shows a worse model fit compared to the restricted model, which suggests some paths can be restricted, resulting in a partially restricted model. The procedure for locating the paths that need to be freely estimated is described and summarised in Table 3.7 in Appendix to this chapter.

It is more convenient to discuss results using path diagrams. Figure 3.2 and Figure 3.3 show the final structural model for males and females respectively. From the presence of the structural paths (thick straight lines), it appears that relationships between the attitudinal and behavioural factors to retirement saving are similar between the two gender groups. The paths that are highlighted in solid lines and the correlation coefficients can be compared, although differences in coefficients do not necessarily mean statistically significant differences between men and women.

Figure 3.4 summarises to what extent the similarities and differences between the two groups are meaningful in terms of statistical significance. The paths with the equal sign ('=') indicate that the relationship between factors (that are connected by the paths) can be assumed to be equal between men and women. For example, the paths (relationships) among the internal factors are largely consistent across the gender groups, indicating that the internal qualities relevant to understanding retirement saving decision-making process are broadly consistent between men and women. However, minor differences exist. The effect of having thought about funding retirement on financial knowledge and that on retirement saving are, marginally but statistically significantly, higher for men (0.412) than for women (0.310).

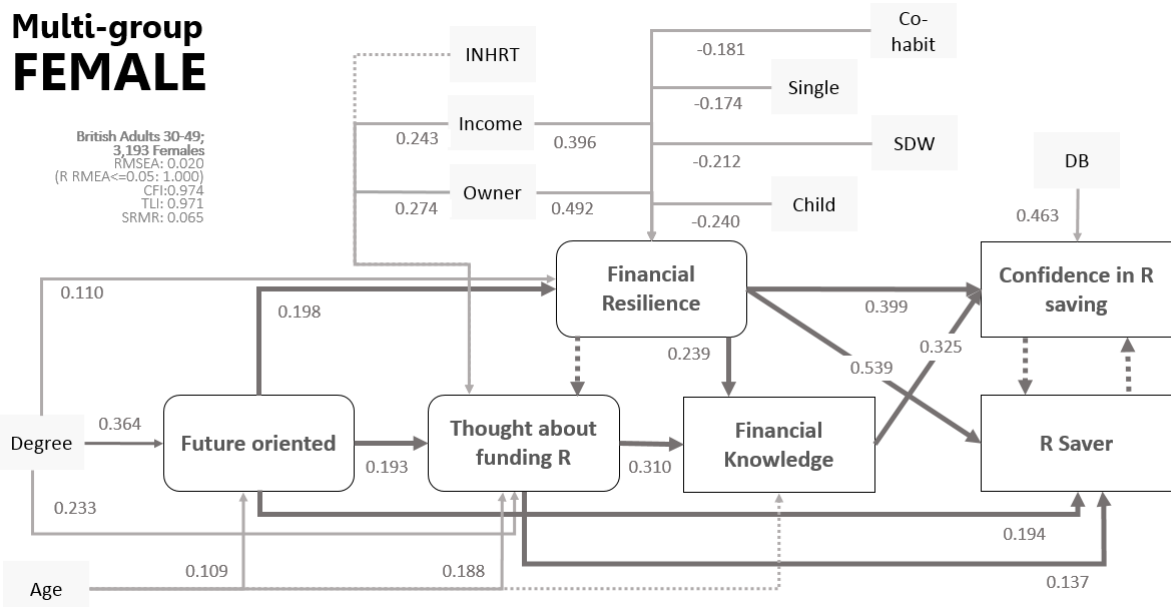
Differences in the structural paths are mostly noticed in how the demographic and socio-economic characteristics interact with the behavioural measure, financial resilience. First of all, demographic characteristics indicating family life, marital status and having children, are found not to be significantly associated with men's financial resilience. For women, cohabiting, being single, separated/divorced/widowed (S/D/W) or having a child is negatively associated. On the other hand, economic resources are related to both men and women,

Fig. 3.2 The structural part of the model for men (2012/14)



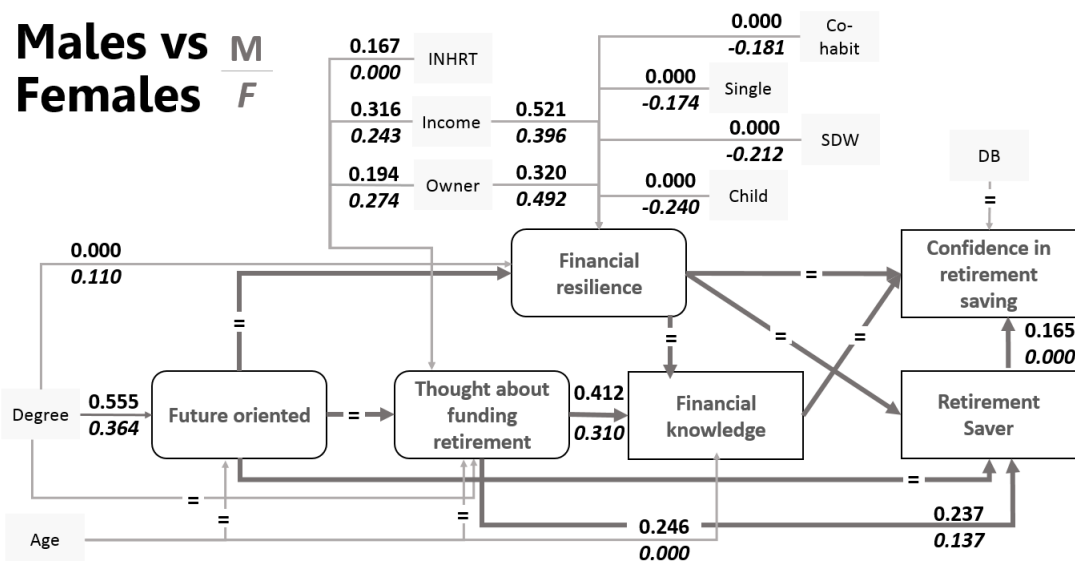
Note: n (males) = 2,656. The dotted line indicates the path that are hypothesised but found not to be statistically significant at the 5% level. Partial effects on household income not reported in this path diagram are: Degree (0.727), Single (-0.441), Child (-0.646), SDW (-0.235), Owners (0.516) and DB (0.133).

Fig. 3.3 The structural part of the model for women (2012/14)



Note: n (females) = 3,193. The dotted line indicates the path that are hypothesised but found not to be statistically significant at the 5% level. Partial associations with the equivalised household income that are not reported in the graph are: Degree (0.607), Single (-0.442), Child (-0.404), SDW (-0.548), Owners (0.363), and DB (0.129).

Fig. 3.4 Structural equivalence testing between men and women (2012/14)



Note: The dotted line indicates the path that became statistically not significant at the 5% level compared to the structural model without covariates (but with household income for measurement invariance structure). Partial effects on household income that are not reported in the graph are: Degree (0.635), Female (-0.131), Owner (0.487), having a DB pension (0.103) and having a DC (0.196).

but in different ways. The inflow of resources, income and inheritance, is more strongly correlated with men's everyday financial behaviour, while homeownership is found to be a more meaningful factor for women's current economic autonomy.

The effect of marital status, however, should be considered alongside the characteristics of the sample population. A higher proportion of women are in the status indicating marital dissolution (S/D/W) than men for various reasons. For example, women tend to be younger than their male partner and are less likely to remarry, staying longer in the S/D/W status. These women are also more likely to be in paid work, suggesting a potential selection bias. However, this pattern is observed also at the population level and not particular to this sample.

The negative effect of the partnership status indicating marital dissolution should be considered the sample characteristics into account. A higher proportion of women were in the S/D/W status than men, which is marginally higher than the population average. Possible explanations discussed earlier include women being younger than their married male partners, a higher remarriage rate among men, and a higher employment rate among divorced women compared to married women. Also, an average woman with the S/D/W status is less likely to be in a higher socio-economic status than her male counterpart. These lead to consider

whether the magnitude of the negative effect might be overestimated (i.e. biased upwards). However, what is important to consider here is that these demographic patterns are also found in the general population and not particular to this study sample.

A possible explanation for the pattern described above is that men's and women's social roles follow the male breadwinner model (Ginn and Arber, 1996*a,b*; Ginn and Macintyre, 2013; Lewis, 1997). The male-breadwinner hypothesis suggests that males may be more concerned with the size and flow of financial resources, while women may relate more to having stability in housing and growing a family. The results show that the association between financial resource variables, income and inheritance receipt, are more strongly correlated with financial resilience for men while homeownership and having a child are more strongly for women.

### **3.10 Discussions and conclusion**

This study has assessed the gender difference in retirement saving decision-making process among men and women in their 30s and 40s. The gender difference is examined two different aspects. Firstly, it assessed whether men's and women's decision-making process differs in retirement saving. Second, it also examined whether the male-breadwinner hypothesis plays a role in gender difference in attitudes to and behavioural patterns of retirement saving activities. Using an individual-initiated additional retirement saving measure, the study utilised the modified version of Hershey and colleagues' model of financial planning (2007) and investigated the gender difference using the multi-group analysis in the SEM framework.

This study highlights that the role of economic autonomy in retirement savers are broadly similar between men and women. For instance, financial resilience, which represents responsible everyday financial behaviours, is found to be the best predictor for both groups. Attitudinal factors such as having a long-term view and considering the length of retirement are also found to play a role in identifying an additional retirement saving for men and women.



There are small but meaningful differences in how gender groups go about the decision-making process. For example, considering the length of retirement is more strongly correlated with men's financial knowledge and retirement saving activity than that for women. This could be understood in the line of connecting attitudes and behaviours; that is, men are more likely to gather information about retirement saving (financial knowledge) and save accordingly (retirement saver). This may be further investigated using a clear intermediating element of 'behaviour intention' based on the theory of planned behaviour (Ajzen and Fishbein, 2005).

Direct comparison of each effect between the two groups, however, also exhibits substantial and substantively important differences. The patterns of associations between demographic/socio-economic characteristics and financial resilience indicate that the younger generation may organise their daily economic activities consistently with the male-breadwinner model (Lewis, 1997). It is somewhat surprising as the study sample – individuals in their 30s and 40s – is of the generation for whom more equal gender roles are expected (as societies are working on improving gender disparity). It also indicates that the effect of economic resource size should be considered in a broader context. That is, should the context not matter for one's financial resilience, income should have a larger effect for females as increased income should make more difference for women's financial resilience (as women have a lower income on average).

Policy implications may arise from this study as it points to the existence of gendered life course. Jefferson and Preston (2005) argue that as the pension system relies more on the workplace pension scheme, the gender gap in workplace pension saving is expected to widen because it relies largely on the labour market outcomes. Many of the issues that women currently face are related to the male breadwinner model. Based on the findings of this study, it appears that it may be unreasonable to rely on cultural and social change to close the gender saving gap. For pension systems to protect women's future pension entitlement and financial well-being, and to improve economic autonomy, policymakers need to target the structural factors in the labour market as well as the aspects of family life.

As women, in particular those in a socio-economically disadvantaged group, are more likely to have a lower level of life-time earnings, it may be difficult to encourage them further to save additionally for retirement. There are two possible directions for policy. The first is to protect and support women's future pension rights and saving capabilities by not only looking at pension policies but also connecting other social support systems with it as a whole. It is particularly important as retirement saving for the younger half of the working-age group is unavoidably tied to their current and near-future life course, which for many of them involve caring for a family. Possible solutions to ameliorate gender disparity in the labour market include strong policies for a shared parental leave between partners as well as widening (and improving) childcare service systems and the care network.

The current pension system can also be strengthened for improved equity. For instance, for those whose employment outcomes are affected by family-caring duties, the NI credit may be extended substantially. Employers could continue to contribute to the pension schemes at (nearly) the full time-rate in exchange for tax deduction from the government, while parents are on maternity/paternity leave or working part-time to care for a family.

This chapter examined the cross-sectional gender difference more in-depth, attempting to contextualise 'gender' in the early stages of life using a set of variables that provide information on different socio-economic arrangements associated with different stages of life. There are dissimilarities that cannot be directly interpreted without further studies to disentangle what 'gender differences' represent. Put it another way, this study does not answer why some of the differences exist and to what extent they are socially (or biologically) driven. Possible future research may explore the potential effects of demographic behaviours, such as divorce, that influence perspective to retirement saving differently for men and women.

Despite the limitations, this study assesses gender differences in economic decision-making processes. Through the lens of life course approach and theories on gender norms that are associated in the particular life stages, the differences are contextualised. Therefore, the findings from this study contribute to understanding how and to what extent the differences occur during critical stages of adulthood. Gender disparities observed in the early stages

are likely to widen across the life course. Due to the negative effect of earlier life outcomes, policies become more effective and target the structure that produces systematic differences.

## **3.11 Appendix to Chapter 3**

### **3.11.1 Measurement invariance testing by gender**

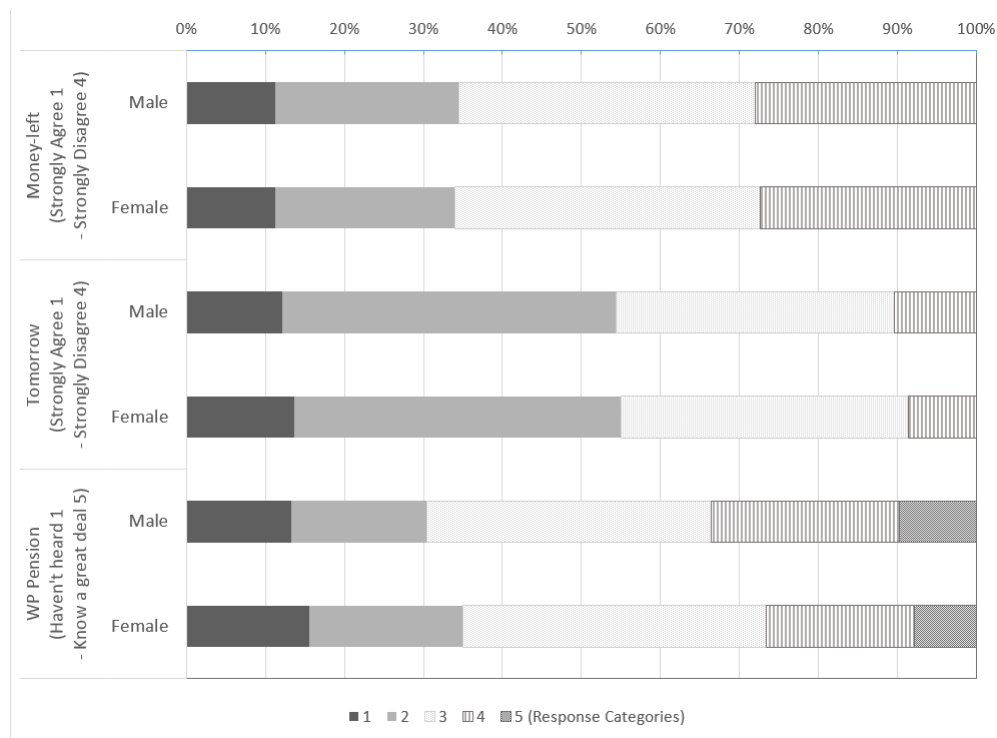
The three levels of measurement invariance tested here follow the models provided in Table 2.10 in Appendix to Chapter 2). The results are shown in Table 3.4. The results show that three out of ten observed items had the thresholds freely estimated in males and females, requiring a decision on how to proceed with the partial equivalence.

Discussions on whether a ‘partial invariance’ model can be taken forward as a basis model are found in the studies by Byrne and colleagues (1989). The authors argue that despite a slight deviation from the classical approach, partial invariance model can form a basis of the model. However, in a recent study by Kuha and Moustaki (2015), the authors discuss implications of two choices available for partial measurement invariance – to ‘accept’ and allow partial invariance, or to ‘ignore’ it and opt for a more invariant model. The authors canvass the strengths and weaknesses of the two approaches. In summary, ignoring it may result in model misspecification, therefore, produce biased estimates, while accepting it makes it difficult to achieve comparability across groups which becomes problematic for the consistent interpretation across groups (Kuha and Moustaki, 2015).

More importantly, Kuha and Moustaki (2015) argue that partial invariance is problematic for estimating structural parameters as they are largely driven by the items that are invariant across groups. In other words, if a large proportion of items are variant across groups, these items do not contribute to examining relationships among the latent variables and covariates, resulting in biased estimates not only in the measurement part but also in the structural part of the model.

In order to decide whether to ‘ignore’ or to ‘accept’ the partial invariance, the thresholds of the three items are examined in detail. The difference in threshold structure indicates that males and females have rated their (dis)agreements with these survey questions slightly differently (see Figure 3.5). The gender difference in the response patterns is marginal for item ‘Money-left’ and ‘Tomorrow’. It is more pronounced for the survey question ‘WP Pension’, which refers to the self-reported level of knowledge on the workplace pension

Fig. 3.5 Response pattern differences between men and women (2012/14)



reforms (of which implementation coincided with the fourth wave of the WAS), but to a lesser extent. This indicates that the partial invariance problem resides with the latter two observed items. In this case, ignoring the measurement invariance is not expected to be too costly as it accounts for a small proportion of the total number of observed items (Kuha and Moustaki, 2015). In addition, in the sensitivity analysis, there was no substantial difference observed in the structural estimates whether these were free or restrained to be equal across groups. Therefore, the partial invariance is ignored and the strong invariance model is chosen.

Table 3.4 Measurement invariance testing for the measurement model by gender

Invariance level	Model	Model ref	Model compared	Diff (Chi sq)	Diff (P-value)	Re-tained?	RMSEA (Prob RMSEA $\leq 0.05$ )	CFI	TLI	WRMR
Configural invariance	All loadings, thresholds, means and variance are free to be estimated per group	Confi					0.043 (0.996)	0.979	0.970	0.028
Metric invariance	Loadings are restricted to be same, but thresholds, means and variances are free to be estimated per group	Metric	Configural	12.596 (9)	0.182	Y	0.039 (1.000)	0.981	0.976	0.028
Strong invariance	Means and variances of the factors are free to be estimated per group	Strong	Metric	48.526 (25)	0.003	N	0.034 (1.000)	0.980	0.981	0.029
Partial strong variance	Money-left & Tomorrow & WP-pen thresholds are free to be estimated	Partial Metric	Metric	12.294 (18)	0.832	Y	0.034 (1.000)	0.981	0.981	0.028
Looking for the right level of metric invariance										
	Thresholds of Sustain free, rest the same with Metric 1	Metric 1	Strong	2.133 (3)	0.545	Y	0.034 (1.000)	0.980	0.981	0.029
	Thresholds of Run-out free, rest the same with Metric 1	Metric 2	Strong	1.107 (3)	0.775	Y	0.034 (1.000)	0.980	0.981	0.029
	Thresholds of Bills free, rest the same with Metric 1	Metric 3	Strong	2.664 (3)	0.616	Y	0.034 (1.000)	0.980	0.981	0.029
	Thresholds of Money-left free, rest the same with Metric 1	Metric 4	Strong	8.320 (2)	0.016	N	0.034 (1.000)	0.980	0.981	0.029
	Thresholds of Tomorrow free, rest the same with Metric 4	Metric 5	Metric 4	0.035 (1)	0.852	Y	0.034 (1.000)	0.980	0.981	0.029
	Thresholds of Long-term free, rest the same with Metric 4	Metric 6	Metric 4	5.110 (2)	0.078	Y	0.034 (1.000)	0.980	0.981	0.029
	Thresholds of Retirement free, rest the same with Metric 4	Metric 7	Metric 4	13.796 (2)	0.001	N	0.034 (1.000)	0.980	0.981	0.029
	Thresholds of Retirement free, rest the same with Metric 7	Metric 8	Metric 7	3.447 (3)	0.328	Y	0.034 (1.000)	0.980	0.981	0.029
	Thresholds of Understand free, rest the same with Metric 7	Metric 9	Metric 7	5.703 (3)	0.058	Y	0.034 (1.000)	0.980	0.981	0.029
	Thresholds of WP-pen free, rest the same with Metric 7	Metric 10	Metric 9	12.323 (3)	0.006	N	0.034 (1.000)	0.980	0.981	0.029

see Table 3.3 for short names used. The measurement model tested here do not contain the direct income effects.

### 3.11.2 Structural equivalence testing

Table 3.5 Models for testing structural invariance in the multi-group analysis framework

MI level	Model description	Equation
No structural invariance	None of the coefficients differs by group.	$\eta^{(g)} = B^{(g)}\eta^{(g)} + \Gamma^{(g)}x^{(g)} + \zeta^{(g)}$
Full structural invariance	All coefficients are consistent across groups.	$\eta = B\eta + \Gamma x + \zeta$

Table 3.6 Different levels of structural equivalence using the multi-group analysis (Structural model, Males/Females, 2012/14)

Ref	Model configuration/Compared with	RMSEA+	CFI	TLI	SRMR
<b>Restricted model</b>	Identical structural relationship between males and females (including the direct effects of income)	0.021 (1.000)	0.967	0.966	0.064
<b>Unrestricted model*</b>	All structural parts are freely estimated, paths that are not statistically significant at 5% are removed	0.023 (1.000)	0.968	0.964	0.066
<b>Final model**</b> (Partially restricted)	Restrict all structural parts to be equal except for those specified below in Table 3.7	0.020 (1.000)	0.975	0.973	0.072

Table 3.7 Equivalence testing on the structural model (Males/Females; 2012/14)

Equivalence testing	Chi (df), p-value	Result	RMSEA	CFI	TLI	SRMR
<b>Base model</b>						
Gender specific model with freely estimated parameters*			0.023 (1.000)	0.968	0.964	0.066
<b>Internal characteristics</b>						
Rsave on rainy	3.023 (1), 0.082	=	0.022 (1.000)	0.972	0.968	0.064
Rsave on thought	7.498 (1), 0.006	/	0.022 (1.000)	0.972	0.968	0.065
Rsave on tomorrow	3.019 (1), 0.082	=	0.022 (1.000)	0.972	0.968	0.069
Finknow on Rainy	1.145 (1), 0.285	=	0.021 (1.000)	0.972	0.969	0.064
Finknow on thought	6.929 (1), 0.009	/	0.022 (1.000)	0.972	0.968	0.063
Thought on tomorrow	0.800 (1), 0.371	=	0.021 (1.000)	0.972	0.969	0.064
Rainy on tomorrow	0.175 (1), 0.676	=	0.021 (1.000)	0.972	0.969	0.065
Confi on Rainy	0.362 (1), 0.548	=	0.021 (1.000)	0.972	0.969	0.058
Confi on Finknow	(NC)					
<b>Demographic characteristics</b>						
Thought on age	0.000 (1), 0.984	=	0.021 (1.000)	0.972	0.969	0.062
Rainy on H'hold income	11.765 (1), 0.001	/	0.022 (1.000)	0.971	0.968	0.067
Thought on H'hold income	6.112 (1), 0.013	/	0.022 (1.000)	0.972	0.968	0.065
Rainy on homeownership	5.649 (1), 0.018	/	0.022 (1.000)	0.972	0.968	0.065
Thought on homeownership	4.497 (1), 0.034	/	0.022 (1.000)	0.972	0.968	0.065
<b>Socio-economic characteristics</b>						
Tomorrow on degree	7.126 (1), 0.008	/	0.023 (1.000)	0.971	0.968	0.067
Confi on DB	0.115 (1), 0.734	=	0.021 (1.000)	0.972	0.968	0.054
<b>Control structure</b>						
H'hold income on degree	4.639 (1), 0.031	/	0.022 (1.000)	0.972	0.968	0.068
H'hold income on owners	8.952 (1), 0.003	/	0.022 (1.000)	0.972	0.968	0.067
H'hold income on child	14.638 (1), <0.001	/	0.022 (1.000)	0.972	0.968	0.067
H'hold income on single	0.198 (1), 0.656	=	0.022 (1.000)	0.972	0.968	0.063
H'hold income on sdw	5.517 (1), 0.019	/	0.022 (1.000)	0.972	0.968	0.062

Note: '=' denotes structural equivalence and '/' denotes structural non-equivalence for the path that is tested between males and females. (NC) denotes no convergence.



## **Chapter 4**

# **Young British adults' homeownership circumstances and the role of intergenerational transfers**

### **4.1 Abstract**

Homeownership has become less affordable for young adults in Britain due to unbalanced growth in house prices and real earnings during the last two decades. Financial regulations tightened after the financial crisis in 2007, resulting in more restricted access to capital than prior to the crisis. Previous studies point to the increasing role of parental help in filling this gap. Some young adults obtain financial help from family to become homeowners, either directly by receiving monetary help or indirectly by saving on living cost through co-residence. Using the Wealth and Assets Survey, this study quantifies the effects of direct and indirect family support on young adults' homeownership circumstances. The housing circumstances are analysed cross-sectionally to examine the characteristics of homeowners among young adults first, then, longitudinally to assess the chances of entering the housing market among non-owners. The results show that the effects of family background on the younger generation's homeownership outcomes are substantial, as direct (money) and indirect (space) family support are associated with higher chances of entering the housing market.

## 4.2 Introduction: the British context

Britain has transformed into a ‘nation of homeowners’ (Ronald, 2008*a*; Saunders, 1990). During the 1910s, only about one in ten is believed to have owned a home (House of Commons Library, 1999). After the Second World War, only one-third of the population was believed to be homeowners (Ministry of Housing Communities & Local Government (MHCLG), 2012).<sup>1</sup> In the following few decades, homeownership became central to the British political discourse as it was ‘reinvented as the most natural, normal and intrinsically superior way to live’ (Ronald, 2008*b*). Through the continuous cultural and political promotion, housing policies have developed in the direction of protecting private homeownership (Di Salvo and Ermisch, 1997; Hills and Glennerster, 2013*b*; Ronald, 2008*a*).

The Right to Buy scheme is a good example of the political promotion of homeownership. When it was introduced in 1980, nearly one-third of British households was in social renting (Lupton, 2016). Arguably, the scheme was successful in reducing inequality in homeownership by allowing people to acquire affordable social housing at a time where homeownership was dominated by individuals from upper classes who were more likely to have inherited a house (Hamnett, 1991). The scheme provided individuals with good quality housing stocks at an affordable price, offering a fairly balanced solution between supply and demand in the housing market initially. However, the quantity and the speed of the sell-off has resulted in a rapid commodification of housing as the housing stocks were not replenished adequately (Jones, 2008). Between 1980 and 2009, Right to Buy and similar schemes have sold over 2.5 million social housing units (about 40% of the increase in the owner-occupier dwelling stock) to existing tenants at a significant discount (up to 60% on houses and 70% on flats) (Hills and Glennerster, 2013*a*).

As a result homeownership rates increased from 57% in 1980 to nearly 70% in 1999 (Ministry of Housing Communities and Local Government (MHCLG), 2015). An increased interest in becoming homeowners which was unmatched by a corresponding increase in supply has raised house prices in the market. During the house price boom after 1995,

---

<sup>1</sup>During the same period, an increasing demand for the public housing led to an expansion of the social rental sector. MHCLG was formerly known as the Department for Communities and Local Government (DCLG).

homeowners experienced a considerable increase in housing wealth (Bastagli and Hills, 2013). In 2014/16, total housing wealth is estimated to be £4.6 trillion in 2014/6, which accounts for two-thirds of total personal wealth at the national level, excluding private pension wealth (Office for National Statistics (ONS), 2018).

Evaluating this historical background in the life course perspective (Elder, 1994; Elder and George, 2016) provides the context to understand how preferences for homeownership have developed in Britain. Today, owner-occupation remains the preferred tenure option in Britain for young people (Clapham, Mackie, Orford, Thomas and Buckley, 2014). Young adults' homeownership rates, however, continue to decrease due to the affordability issue (Office for National Statistics (ONS), 2016). Unable to own a home, they spend more years renting, as the term 'generation rent' encapsulates well. Some are able to enter the housing market with financial support from family, referred to as 'Bank of mum and dad (BOMAD)', while others move back to their parental home, which enables them to save on living costs and putting it towards a deposit for a home (West, Lewis, Roberts and Noden, 2017). In this chapter, these two types of support are referred to as direct and indirect financial support respectively; direct support includes inheritances, cash gifts and loans while indirect support is identified through parental co-residence.

The structure of this paper is as follows. The next section discusses the cultural and economic significance of homeownership from the young adults' viewpoint and describes the affordability issue and the role of parental supports based on existing studies as well as analysing available data. Then, the two research questions are introduced. The WAS dataset is described in detail, followed by analytical strategy and results for each research question. It concludes with a discussion on policy implications and future research opportunities.

### **4.3 Younger adults' perspectives on homeownership**

Home serves as a focal point for security and stability in one's life in countries with a strong culture of homeownership (Dupuis and Throne, 1998; Saunders and Williams, 1988). It provides a precise context of a temporal and spatial 'locale' (Giddens, 1984) where

individuals can 'place the life course' (Saunders and Williams, 1988). Therefore, home becomes a crucial aspect of organising young adults' lives as they form partnerships and start families (Mulder, 2006; Murphy and Sullivan, 1985). Previous studies have shown that most transitions to homeownership are observed among those aged under 45 (Clapham et al., 2014; Cole, Powell and Sanderson, 2016; Köppe, 2017). Moving to homeownership is a milestone life event for British adults, an important step towards 'settling down' (PPI, 2018).

Homeownership is also perceived to be economically advantageous as many expect housing wealth to increase as house prices appreciate over time. The rationale is that mortgage repayments contribute to building assets, while rent money is *wasted* on 'paying someone else's mortgage'. The house price boom of the 1990s and 2000s may have shaped this viewpoint, as many obtained substantial capital gains, realised or unrealised (Bastagli and Hills, 2013).<sup>2</sup>

The notion of 'going up the housing ladder' explains how homeownership functions as a means to save for retirement. One would expect that, as a housing asset increases, an existing home can be used to buy a bigger one for a growing family. In the long run, owning a home helps to hedge future housing costs and also presents other options to fund retirement (e.g. downsizing) (Adams and James, 2009; Armstrong, Ebell and Warren, 2017; Crawford, 2018b).<sup>3</sup> Regardless of housing tenure, nearly half of young adults aged 25–44 consider that investing in property is the best way to save for retirement, while around three out of ten consider it to be the safest way (see Table 4.1). As the most common form of property investment is homeownership, owning a home may be one of only a few ways that meet young people's needs for stability and security while providing an avenue to save for the future.

---

<sup>2</sup>Realised capital gain is the proceeds from a sale transaction and unrealised gain refers to the potential profit from a hypothetical sale.

<sup>3</sup>Crawford (2018a) reported that few individuals actually downsize and most of those who does (downsize or downvalue) do so due to a lack of financial resources. Studies have reported that homeowners are less likely to move after retirement (Crawford, 2018b) and increase their net income by saving on the housing costs (Frick and Grabka, 2003; Frick, Grabka, Smeeding and Tsakloglou, 2010; OECD, 2013)

Table 4.1 Perception of retirement saving options by tenure types (Age 25-44; 2014/16)

<b>Best value for money option for retirement saving</b>	<b>Owners (%)</b>	<b>Social renting (%)</b>	<b>Private renting (%)</b>	<b>Living with Parents (%)</b>	<b>All tenures (%)</b>
Investing in property	54	39	46	39	49
Paying into an employer pension scheme	23	22	17	28	22
Investing in the stock market by buying stocks or shares	9	5	7	5	8
Saving with an ISA* (or other tax-free savings accounts)	4	11	10	11	7
Paying into a personal pension scheme	4	6	7	6	5
Saving with a high rate savings account	3	10	8	6	6
Buying Premium Bonds	0	2	2	(-)	1
Other	1	6	3	5	3
Total	100	100	100	100	100
<b>The safest way to save for retirement</b>	<b>Owners (%)</b>	<b>Social renting (%)</b>	<b>Private renting (%)</b>	<b>Living with Parents (%)</b>	<b>All tenures (%)</b>
Paying into an employer pension scheme	41	34	32	41	38
Investing in property	34	25	30	23	31
Paying into a personal pension scheme	10	13	14	13	12
Saving into an ISA* (or other tax-free savings account)	7	12	10	10	9
Saving into a high rate savings account	7	12	10	10	9
Buying Premium Bonds	1	2	2	(-)	1
Investing in the stock market by buying stocks or shares	1	(-)	1	(-)	1
<b>Other</b>	2	5	4	5	3
Total	100	100	100	100	100

Note: Author's own calculation using Wealth and Assets Survey (5th wave). The best-value option and the safest option are drawn from survey questions based on 6,009 and 6,095 observations respectively. \*ISA refers to an Individual Savings Account, which is a tax-free savings account with a maximum fiscal-year threshold, introduced in April 1999. A fiscal year in the UK starts in April and ends in March in the following calendar year. Monies can be either saved (cash ISA) or invested (share ISA) within the scope of an ISA. Interest income or capital gains obtained within the scope of the ISA is not taxed. The initial yearly threshold was £7,000 since 1999/2000. There was a small increase in 2009/10 by £200. The subsequent increases were more significant; the yearly thresholds rose to £10,200 in 2010/11, to 15,000 in 2014/15 and £20,000 in 2017/18. (-) denotes cells with unweighted counts less than 10. All proportions are cross-sectionally weighted.

## 4.4 Homeownership for young British adults

### 4.4.1 The affordability issue

Young adults' tenure changes, which were previously characterised as flexible and mobile, have become stagnant recently. Table 4.2 shows housing tenure mobility between 2008/10 and 2014/16 by age group. At first, the younger group appears to be mobile in comparison to the older group; It showed that 56% of under-45s remained in the private renting sector (PRS) during the six-year period, less than 71% of the adult aged 45 or older. However, the proportion of young adults remaining in the PRS is substantially higher, compared to 30% between 1994 and 2004 (Hills, 2007a), even after considering the difference in the observation periods.

The homeownership rates among the younger generation have decreased substantially between 1981 and 2013/14 (ONS, 2016a). In England, 62% of adults aged 25–34 were in homeownership in 1981, while only 36% were in owner-occupation in 2013/14.<sup>4</sup> On the contrary, the homeownership for those aged between 45–64, for instance, have increased from 59% in 1981 to 80% in 2013/14.

Figure 4.1 shows the housing tenure composition by age groups in 2014/16. More proportions of older age groups are in homeownership compared to younger groups; less than 40% for 25–34 compared around 75% for 45–54. One might assume the difference in homeownership rates by age group may be due to income; however, the difference remains even after allowing for position in the income distribution. Older individuals are more likely to be in owner-occupation, regardless of their income quintile position (see Figure 4.11 in Appendix).

Young adults homeownership rates have decreased mainly due to the deteriorating affordability and the difficulties in accessing capital. Rapidly increased house prices are at the core of the affordability issue. As Figure 4.2 shows, house prices increased much faster than real earnings during the house price boom between 1995 and 2006 (Adams and

---

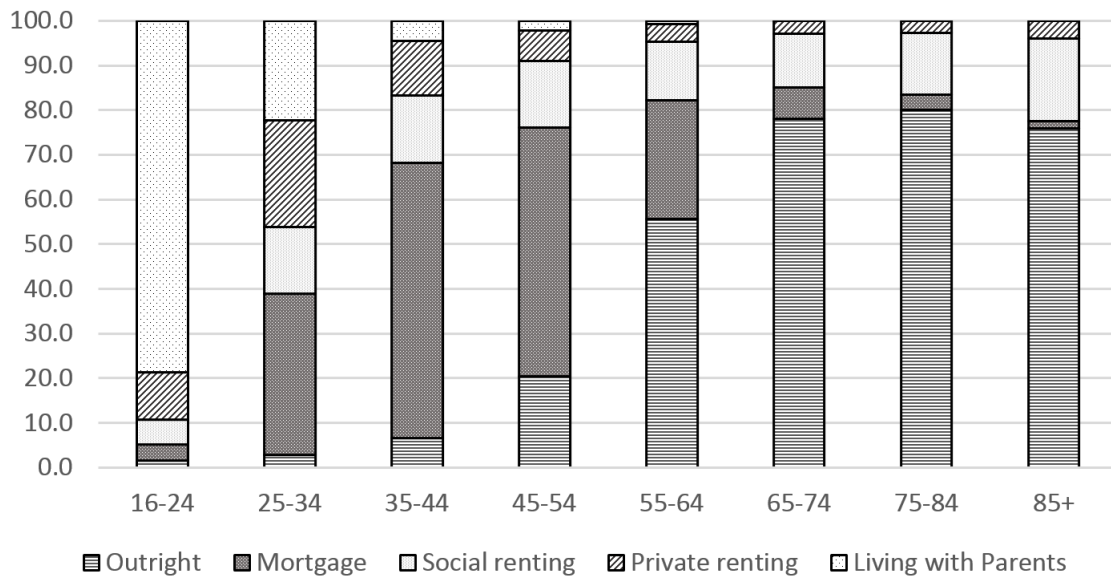
<sup>4</sup>Older cohorts in the younger generation have higher homeownership rates; 69% of adults aged 35–44 were homeowners in 1991 compared to 59% in 2013/14 (ONS, 2016a).

Table 4.2 Housing tenure changes between 2008/10 and 2014/16 by age group (GB)

Aged between 20 and 45		Housing tenure 2006/08				Total
	Homeowners	Social renting	Private renting	Living w/parents		
Housing tenure 2014/16	Owners	96	11	36	15	56
	Social renting	1	80	11	6	14
	Private renting	2	9	56	8	12
	Living with parents	(-)	(-)	(-)	66	16
	All tenure types	100	100	100	100	100
Aged 45 or over		Housing tenure 2006/08				Total
	Owners	Social renting	Private renting	Living w/parents		
Housing tenure 2014/16	Owners	98	3	13	21	77
	Social renting	1	93	16	13	17
	Private renting	1	3	71	(-)	5
	Living with parents	(-)	(-)	0.0	60	1
	All tenure types	100	100	100	100	100

Note: Author's own calculation using the Wealth and Assets Survey (2014/16) based on Table 5.1 in 'Ends and Means' by Hills (2007). Housing tenures were observed during the first and fifth waves of the WAS, which were carried out between 2006/2008 and 2014/2016 respectively. (-) denotes cells with unweighted counts less than 10. The age group corresponds to respondents' age during 2014/2016. The proportions are longitudinally weighted.

Fig. 4.1 Housing tenure by age group in 2014/16



Note: Author's own calculation based on all individuals ( $n = 33,560$ ) in WAS 2014/16. The proportions are cross-sectionally weighted.

James, 2009; Clark, 2016; Hills, 2007*b*). According to Cribb, Hood and Hoyle (2018), real net family income for 25–34-year-olds only grew around 22% between 1995/6 and 2015/6, while the mean house price (inflation-adjusted) increased by 152% during the same period; this difference in growth resulted in doubling the house-price-to-income ratio from 3.6 to 7.6.

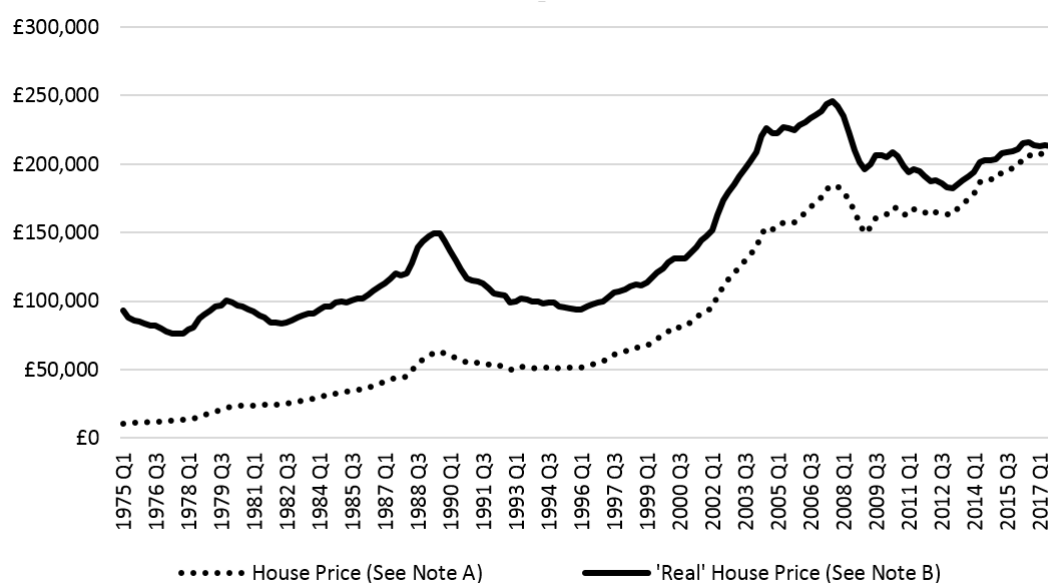
Furthermore, access to capital has been restricted as lending regulations have tightened since the financial crisis of 2007. A larger deposit now required to secure a mortgage due to tightened financial regulations. For instance, the deposit requirement for first-time buyers nearly doubled from 11% in 1997 to 21% in 2014 (ONS, 2016*a*).<sup>5</sup> The average deposit was reported to be £32,300 in 2016 (Halifax, 2017),<sup>6</sup> which was nearly 1.3 times the national median before-tax income for adults in their early 30s in 2015/16 (£25,200) (HM Revenue & Customs, 2018). The level of savings required to obtain a mortgage is

<sup>5</sup>Figures from the ONS show that the number of first-home buyer mortgage loans decreased to fewer than 200,000 in 2008, which was a 47% decrease from 2007; while the number of loans was not stable between 1980 and 2013, the level we have seen in recent years (2008–2012) is lower than in the 1980s.

<sup>6</sup>Halifax reported that the average deposit was estimated to be £100,000 in London. It also reported that the average house price for first-time buyers was £208,000 (£410,000 in London) in 2017 in 2014/15 prices. Halifax calculates the average as an arithmetic average, which differs from the 'representative' price presented in Figure 2.



Fig. 4.2 Nominal and real house price increase between 1975 and 2017 (in 2017 prices)



Note: A: Nominal House price is from UK All Properties series – not seasonally adjusted. B: House Prices adjusted for retail prices. This uses the Office for National Statistics Retail Price Index (RPI) to convert nominal prices to current prices. For example, a typical property in 2005 Q1 would, on average have cost £152,790 at the time. The buy this amount of 'retail goods' today would require £222,433. From the statistics produced by Nationwide (2017)

particularly problematic for younger people, who have also been affected by less favourable labour market conditions (Corlett, 2017; Turner, 2015).

The younger generation's outlook for homeownership are, however, unlikely to improve drastically in the near future. Using Holmans's methodology,<sup>7</sup> the Council of Mortgage Lenders (CML) has estimated that nearly 80% of people born in the 1960s would own a home by the age of 50, but only 75% and 57% respectively for those born in the 1970s and 1980s. A significant gap in homeownership is expected to persist if current market conditions continue (CML, 2015).

As a policy response, the Help to Buy scheme was introduced in March 2013 to assist individuals to get on the ladder and to revive the falling property sales after the recent financial crisis (National Audit Office (NAO), 2019).<sup>8</sup> With the Help to Buy equity loan

<sup>7</sup>Holmans (2005) developed a methodology to estimate the number of potential first-time buyers by cohort within the younger population. The past homeownership trend by cohort is used to estimate the potential size of the demand in the market (first-time buyers only), taking populations trend into account. The method also takes into consideration 'returning' first-time buyers, who have purchased a home in the past but stayed in the rental sector for a number of years before returning to buy again.

<sup>8</sup>Help to Buy in current form is not restricted to first-time buyers.

scheme, first-time buyers could obtain 75% of the value of the house as a mortgage with a 5% deposit, as the government loan of 20% was made available for free for five years. The loan was repayable upon the sale of the property. However, with the limited stocks being built, the policy heavily focused on the access to the capital alone without dealing with the root cause, the lack of supply of affordable housing. As the scheme applies to newly built properties, which tend to be more expensive, the scheme has benefited well-off individuals. A recent report by (NAO, 2019) states that only 37% reported that the scheme enabled the purchase, while 31% responded that the scheme was helpful but not necessary for the purchase. Critics suggest the policy may have inflated the prices of homes that are sought after by first-time buyers, negating the intended goal of increasing home ownership rates among the younger population, and instead helping those who are more likely to have purchased a home (Provan, 2017).

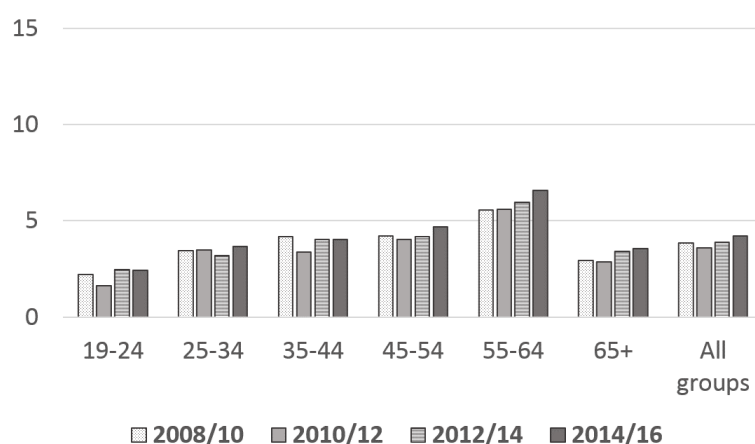
#### **4.4.2 Socio-economic background and homeownership outcomes**

Coulter (2018) states that young adults' homeownership outcomes are increasingly linked to parents' wealth and those from a higher socio-economic family backgrounds are 'insulated from the risks in the housing market'. Three mechanisms via which the intergenerational link manifest are: through socialisation towards homeownership; transmission of a high socio-economic status; and family financial assistance (e.g. Mulder et al., 2015).

First, according to the socialisation theory, adult children may have developed the preference for homeownership, by growing up with owner-occupier parents (Henretta, 1984; Lersch and Dewilde, 2015). This socialisation process is particularly important in the British context, as the parent generation of those under 45 would have entered homeownership during the period in which private homeownership was more intensely promoted than today.

Second, children of parents with a higher socio-economic status are likely to have better socio-economic outcomes (such as education and income) that provide advantages in the housing market. In Britain, children from home-owning and economically better-off families were found more likely to own a home (Coulter, 2018; Ermisch and Halpin, 2004), although

Fig. 4.3 Direct financial support- percentages of individuals who reported inheritance receipts valued over £1,000 (2008/10-2014/16)



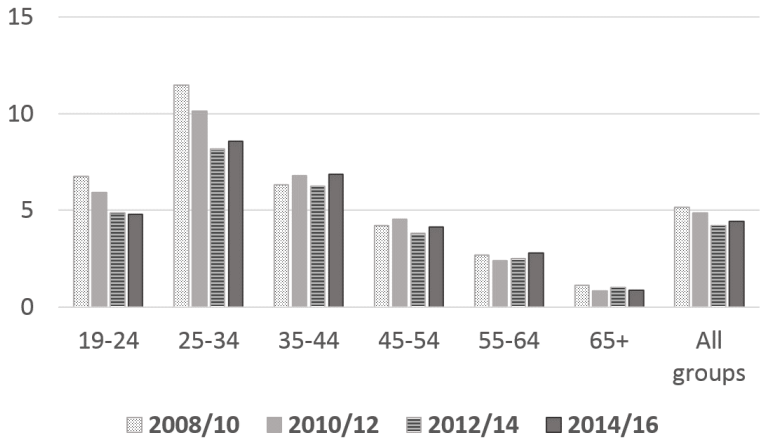
Note: The inheritance receipts recorded refer to the two years prior to survey interviews. For example, the proportions reported for 2008/10 refer to the two-year period before participants were interviewed in 2008/10. The proportions are weighted cross-sectionally, based on 1,483 observations for 2008/10, 1,541 for 2010/12, 1,587 for 2012/14 and 1,575 for 2014/16.

the extent of advantage varies by region (Coulter, 2017).<sup>9</sup> Evidence on this mechanism is also found in other advanced economies, such as the United States (US) (Aratani, 2011), Sweden (Öst, 2012) and in ten European Union (EU) states (Mulder et al., 2015).

Third, financial help from family enables the younger generation's homeownership (Druta and Ronald, 2016; Heath and Calvert, 2013; Helderman and Mulder, 2007). Parental financial assistance has been found to increase the chances of adult children's homeownership in Australia, the Netherlands and the US (Cigdem and Whelan, 2017; Helderman and Mulder, 2007; Lee, Myers, Painter, Thunell and Zissimopoulos, 2018). The findings in the British context, however, are mixed. The effect of inheritance on increasing chances of homeownership was found to be unclear in an earlier study (Di Salvo and Ermisch, 1997). In another study a few decades later, socio-economic factors were studied to be more important than inheritance receipts (Köppe, 2017). The ambiguity in the British context may come from the differences in the study sample age, the definitions of parental assistance (between inter-vivo and inheritance), as well as housing market conditions.

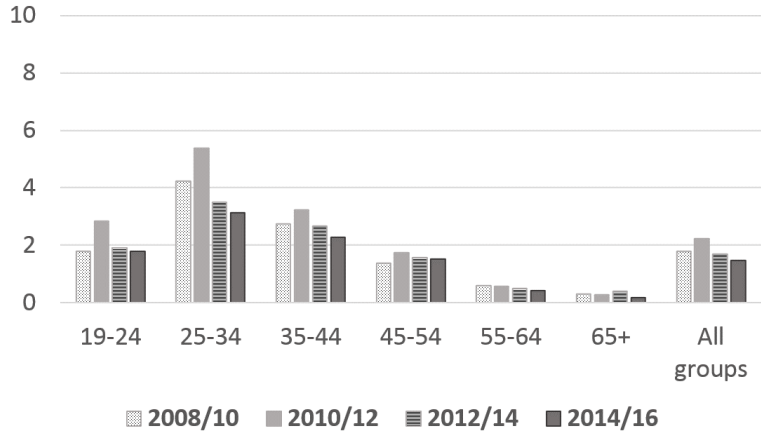
<sup>9</sup>The size of help received in London (£38,800) was twice that received in the North East of England (£19,000) between 2008 and 2011 (HSBC, 2012). Similarly, adults aged 36 or over received more than twice (£42,200) that of younger adults aged between 18 and 26 (£19,000) during the same period (HSBC, 2012).

Fig. 4.4 Direct financial support - percentages of individuals who reported cash gift receipts valued over £500 (2008/10-2014/16)



Note: The cash gifts reported refer to the two years prior to the interview. For example, the proportions reported for 2008/10 refer to the two-year period before participants were interviewed in 2008/10. The proportions are weighted cross-sectionally, based on 1,612 observations for 2008/10, 1,656 for 2010/12, 1,352 for 2012/14 and 1,267 for 2014/16.

Fig. 4.5 Direct financial support - percentages of individuals who reported a loan from family or friends valued over £500 (2008/10-2014/16)



Note: The loan amounts reported refer to the two years prior to the interview. For example, the proportions reported for 2008/10 refer to the two-year period before participants were interviewed in 2008/10. The proportions are weighted cross-sectionally, based on 556 observations for 2008/10, 721 for 2010/12, 500 for 2012/14 and 405 for 2014/16.

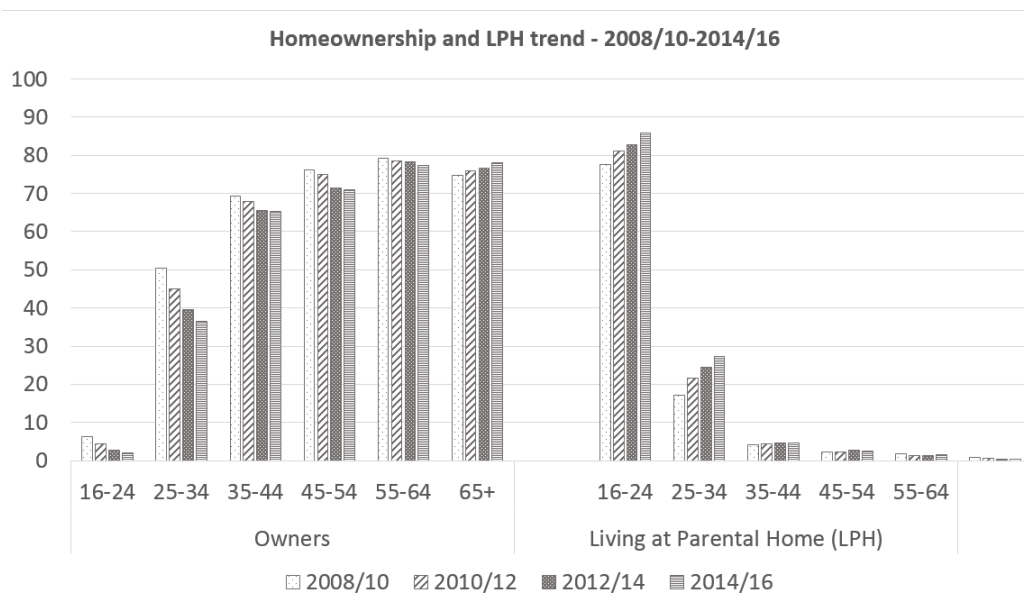
Financial help comes in various forms, such as inheritances, cash gifts or informal loans. The motivations, timing and characteristics of recipients of these transfers are also different. A higher proportion of older age groups receive inheritances (see Figure 4.3). Inter-vivo transfers, also called ‘living inheritances’ (HSBC, 2014) or ‘advance legacies’ (Heath and Calvert, 2013), such as gifts or loans, are more discretionary in nature and targeted to adult children’s financial needs (Schoeni, Bianchi, Hotz, Seltzer and Wiemers, 2015), especially in relation to homeownership (Mulder and Smits, 2013). In Britain, such support is perceived to be substantial by the financial services industry; according to Legal and General (2016), among those who were willing to provide such support to their adult children, the average value of financial help was estimated to be around £17,500.

While the nature and timing of inheritances, gifts or loans vary, all three types of familial support enhance recipients’ ability to access capital. Figure 4.4 and 4.5, however, show a marginally decreasing trend for the age groups for under-45s between 2008/10 and 2014/16. It is possible that the parent generation became less able or more risk-averse in transferring down financial resources, possibly due to perceived uncertainty in their future economic circumstances including pension entitlement and a lasting effect of financial crisis.

The increasing number of ‘boomerang children’ (Office for National Statistics (ONS), 2016) provides an insight into how an alternative form of family support may come into the picture. A recent qualitative study reports that reducing living costs was a recurring theme among boomerang children, as parents expected their adult children to save rather than to contribute to living costs (West et al., 2017). Indeed, cost saving via co-residence with parents increases adult children’s disposable income, thereby enhancing their capacity to save for deposits (Druta and Ronald, 2016).

Contrary to the decreasing trend of direct transfers, this type of indirect support increased substantially between 2008/10 and 2014/16 (see Figure 4.6). Parents may have chosen to support their children indirectly, rather than depleting their own financial resources. Then, the increasing trend of being dependent on the parents (co-residence) to become independent (entering homeownership), referred to as ‘dependence-independence’ (Forrest and Hirayama,

Fig. 4.6 The proportions of adults in owner-occupation (left) and indirect support via parental co-residence (right), by age group (WAS, 2008/10-2014/16)



Note: Note: Author's own calculation using wave 2 – 5 of Wealth and Assets Survey (WAS). All proportions are cross-sectionally weighted, based on 34,848 observations for 2008/10, 37,593 for 2010/12, 35,949 for 2012/14 and 33,560 for 2014/16. Homeownership rates exclude adult children living at the parental home.

2015), is a highly relevant factor for the younger generation's entry to homeownership in the post-crisis environment.

Family support for homeownership raises the issue of widening inequality among the younger generation because the availability and size of support is unequally distributed (Karagiannaki, 2017; Karagiannaki and Hills, 2013). The parent generation has considerable wealth inequality within it (Bastagli and Hills, 2013).<sup>10</sup> Inequality is likely to transfer down to the receiving generation as the extent of family support varies substantially. Recent studies have also shown that, while more young individuals receive inheritance than previous generations, large amounts are concentrated at the top of income distribution (Appleyard and Rowlingson, 2010; Hood and Joyce, 2013; Karagiannaki, 2011, 2017; Karagiannaki and Hills, 2013).

Living with parents is also relevant to inequality. In order for adult children to benefit from co-residence, the size and location of the parental home should meet adult children's

<sup>10</sup>The prevalence of inheritance receipts in relation to housing of this generation when they were 25-35 is documented by Murie and Forrest (1980).

needs (Isengard, König and Szydlik, 2018; West et al., 2017). Depending on the extent of cost saving, availability of indirect support may shorten the period of saving for a deposit. Thus, direct and indirect support from family provides unequally distributed advantages for individuals entering the housing market. Financial service providers have reported the substantial role of the ‘Bank of Mum and Dad’ in enabling their adult children to enter homeownership. However, those accounts provided by financial services cannot be generalised at the national level. The study samples are limited to the clients of the institutions, who may have a higher socio-economic status than the general public given their access to the financial institutions.

## 4.5 Research questions

So far it has been discussed that homeownership carries social and economical values for young adults and that not only individuals’ economic circumstances but also parental wealth are linked to homeownership circumstances. The central motivation of this paper is to test the role of direct and indirect family support. As it is not possible to have a complete history of housing tenure for the study population, this question can be broken down into two sub-questions, first concerning the households who are already home-owners (the ‘already-homeowners’) at a given time point and the second for the households who moved into owner-occupation (the newly-transitioned homeowners) among those who are not at the time point.

The first question focuses on the characteristics of the already-homeowners compared to the non-homeowners, and to test whether the difference is systematic. Parents’ homeownership and socio-economic characteristics are expected to be important, yet it is not too clear how and to what extent they interplay with the households’ economic characteristics, such as household income and wealth. The second question concerns the entry to homeownership among those non-homeowners at the given time point the first question is answered. Characteristics of the newly-transitioned homeowners may differ due to their initial non-homeowner

status. The effect of direct financial help from family is expected to be more significant in the financialised and highly saturated housing market.

## **4.6 Data and methodology**

The Wealth and Assets Survey (ONS, 2018*d*) is used in this study. As previously discussed, WAS is a longitudinal survey which has followed a nationally representative sample every two years since 2006/8 (ONS, 2018*c*). The very top and bottom of the wealth distribution are often not representative in national surveys, and WAS is not an exception to this. It is, however, unlikely to affect the outcome of this study substantially as the study concerns the wealth holding of general population. WAS provides a nationally representative sample as it uses a purposeful oversampling of wealthy postcodes, using Her Majesty's Revenue and Customs (HMRC) tax records (ONS, 2018*c*).

The survey provides in-depth information on the economic circumstances and wealth holding of British households (aged 16+), including three types of direct intergenerational transfers. All household members of a randomly chosen individuals are interviewed. Their relationships to the primary survey respondent are also available, which allows identifying those who are living at their parental homes although it is only available from 2008/10. In addition, it collects information about parental housing tenure (during respondents' teenage years). For this reason, the WAS is one of the best sources available for this study even though it is not a specialist survey for housing.

## **4.7 Who were the 'already-homeowners' in 2010/12?**

### **4.7.1 Analytical strategy**

The first part of the study examines systematic socio-economic status differences in homeownership status among households headed by a Household Reference Person (HRP) aged between 25 and 45 or later. Those under 25 years of age were excluded as their parental characteristics were not asked. The outcome variable distinguishes homeowners and non-owners



in 2010/12, which was the earliest wave with a nationally representative income variable. Adult children living with homeowner parents and adults renting a room from unrelated home-owning co-residents are identified as a separate household and therefore classified as non-homeowners. The unit of analysis is a household, and individual characteristics refer to those of the HRPs in this part of the analysis.

Covariates were organised into three groups. The first reflects the parents’ socio-economic status and direct intergenerational transfers. Parental socio-economic status was measured using the homeownership and employment status, as well as the educational qualifications of the HRPs’ parents during the HRPs’ teenage years.<sup>11</sup> The direct financial transfer measures were constructed as a categorical variable for each household, adding any inheritance, cash gift or loans from family or friends in the prior four years (see Section 4.10.2 in Appendix to this chapter for more details). The transfer values are not price adjusted (nominal). The number of siblings was also controlled for to account for allocations of parental wealth. Indirect support was not tested in this part of the study as information was only available for the two years before the survey interview. Therefore, it was not relevant to a large proportion of homeowners who had been in owner-occupation prior to that.

The second set of explanatory variables represents households’ demographic characteristics, such as age (centred at the mean age of 35), gender and the marital status of the HRP. The gender variable controls for an HRP being a female household head as compared to a male one. Marital status and the number of dependent children are also included. The last set of variables is households’ socio-economic characteristics. These include occupational groups of three NS-SEC (National Statistics Socio-Economic Status) and a residual group, equivalised household income and net financial wealth. .

Table 4.9 in Appendix to this chapter provides a descriptive summary of homeowners and non-owners. The row profile clearly shows that certain characteristics are more likely to be found among homeowners, such as being in a professional occupational group, parental homeownership and having received a substantial intergenerational transfer.

---

<sup>11</sup>The survey question refers to the type of accommodation when the respondent was a ‘young teenager’. The interviewers were instructed to provide 14 years of age as a reference point, only when asked by respondent to specify ‘young teenage’ years (ONS, 2018c).

### 4.7.2 Results

The modelling results in Table 4.3 show that homeownership status is predicted not only by households’ own socio-economic characteristics but also by those of their parents. Homeownership status is strongly associated with intergenerational transfer; the odds increase by 100% if the household has received financial help between £10,000 and £30,000 and by 250% for a transfer valued greater than £30,000. There is no information on the temporal order between these two events, and the family finance support may have taken place before or after respondents had entered homeownership. The mechanism behind the ‘before’ scenario, the transfer enhancing the chances of homeownership, is plausible. The ‘after’ scenario can be that entering homeownership precedes receiving the transfer. That is, those from a socio-economically advantageous background are more likely to become homeowners and to receive further support, suggesting a strong intergenerational link for wealth accumulation.

HRPs who grew up in an owner-occupier household were twice as likely to be homeowners themselves in 2010/12 compared to HRPs who grew up in rented accommodation. Having three or more siblings is associated with decreased odds of homeownership, possibly due to the competition for parental resources (Heath, 2017). But it should also be noted that parents of HRPs with one or two siblings are likely to be wealthier because homeownership status and the number of children among the parental generation is negatively correlated. Parental education levels and occupational groups were tested but not retained as they were no longer meaningful after households’ own socio-economic characteristics were added to the model. Household income and household heads’ occupational group were positively correlated with homeownership. The partial effect of employment status on owner-occupation was substantial, as odds for being in homeownership decreased by nearly 75%-85% for economically inactive and unemployed HRPs respectively.

Financial asset levels were found highly related, although the magnitude decreases as the asset level increases. The odds for homeownership for households with financial assets valued £5,000 - £9,999 and £10,000 - £49,999 are higher by about 150% and 70% respectively than those with less than £5,000. However, holding £50,000 or more in liquid assets did not make a statistically significant difference. A decreasing strength of association would be expected

Table 4.3 Odds ratio of a logistic regression of owner-occupier versus non-owner households (HRP age 25-44, n= 2,999)

Variables (Ref category)	Odds Ratio	Std. Err.
<b>HRP age, centred at 35</b>	1.071***	(0.013)
<b>HRP gender (Male)</b>		
Female	0.639***	(0.078)
<b>Marital Status (Married)</b>		
Cohabiting	0.612**	(0.099)
Single	0.395***	(0.065)
Widowed/Divorced/Separated	0.398***	(0.077)
<b>Household income - log, centred at £33,600</b>	1.136**	(0.050)
<b>Socio-Economic status (Professional occupations)</b>		
Intermediate occupations	0.707*	(0.115)
Routine & manual occupations	0.358***	(0.050)
Never worked, long-term unemployed and other	0.344*	(0.149)
<b>Employment Status (Employed)</b>		
Unemployed	0.156***	(0.062)
Economically inactive	0.233***	(0.051)
<b>Net financial wealth in 2010/12 (£0 - £4,999)</b>		
Between £5,000 - £9,999	2.531***	(0.660)
Between £10,000 - £49,999	1.664**	(0.300)
Greater than £50,000	1.217	(0.271)
<b>Parents’ housing tenure (Renting)</b>		
Owned or mortgaged	1.994***	(0.260)
<b>Number of siblings (0-2 siblings)</b>		
3+ sibling	0.578***	(0.077)
<b>Direct Financial support (£0 - £9,999)</b>		
Between £10,000 - £29,999	2.071*	(0.723)
Above £30,000	3.472**	(1.381)

Note: \* p<0.05, \*\* p<0.01 and \*\*\* p<0.001. Weighted using an appropriate longitudinal weight. Direct financial support refers to the period of four years leading up to 2012/14.

for recent-homeowners who used their savings for a deposit. Also, mortgage holders may prefer to reduce their mortgage debt rather than to save. Alternatively, households may divert their saving to pensions, or save at a lower rate after buying a home (Lersch, 2014).

The demographic characteristics of the households were also found to be relevant. The age of an HRP, which is centred at 35, was positively associated with homeownership. The odds for female household heads for being homeowners were lower by one third as compared to males, even after controlling for other characteristics. Compared to married couples, all other marital status categories are negatively associated with homeownership. Cohabiting couples have about one third lower odds of being homeowners; they are younger than married couples in the study sample, but as age is controlled for, the difference may come from the perception of the legality of their relationship status (Mulder and Wagner, 2001). As cohabitation is often considered as a step towards marriage, their desire to own a home may be weaker than married couples’ due to the long-term commitment involved with purchasing a home. The lower chances for single, separated, divorced or widowed individuals may be because of the inability to pool savings or income together with a partner. The partial effect of having two or more children were no longer statistically significant once the financial wealth was controlled for and therefore removed from the model.

Table 4.4 summarises characteristics for four hypothetical HRPs to assess their predicted probabilities of being homeowners in 2010/12. Figure 4.7 shows these predicted probabilities for the HRPs at different ages between 25 and 45 in 2010/12. Each marker represents the predicted probability given their age at different points.

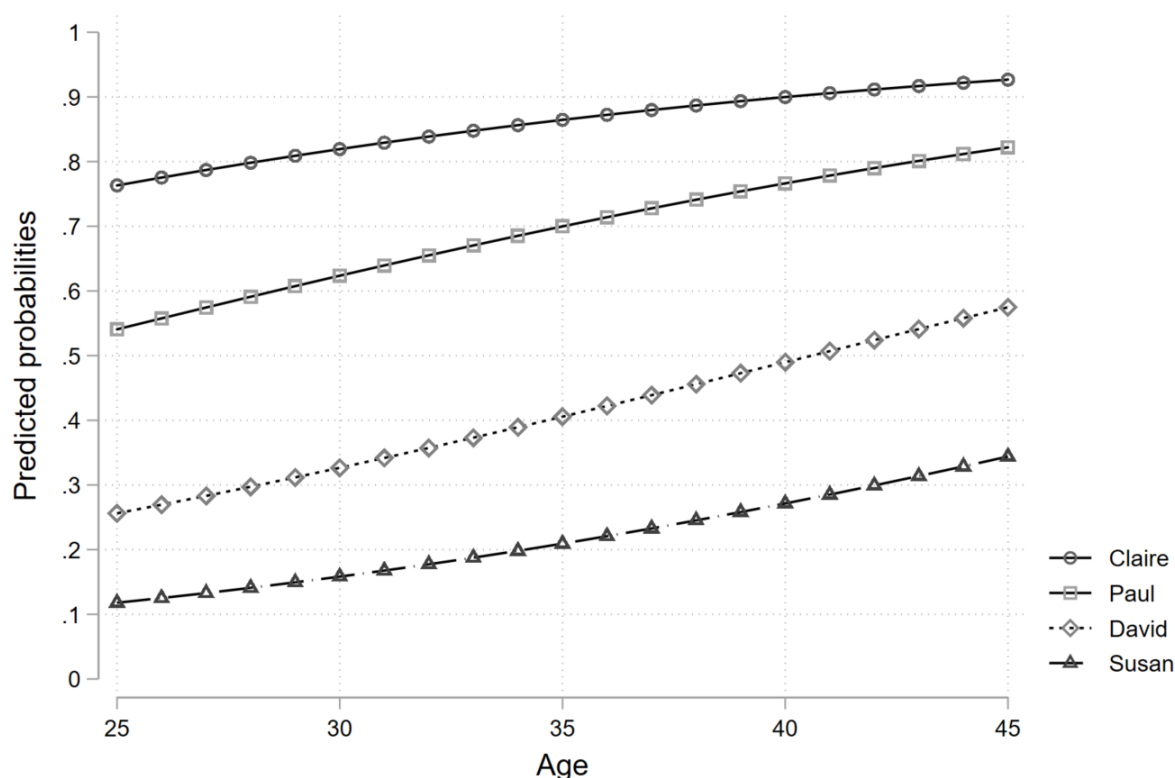
For example, 25-year old Paul’s predicted probability of being a homeowner in 2010/12 is just over 0.5 while it would be around just under 0.7 if he were 35 years old. The four individuals have substantially different chances of being in homeownership. With a slightly higher level of household income, David would still be more likely than Susan to be a homeowner mainly due to the availability of additional financial resources, if they were of the same age. Paul’s chances of being a homeowner are better than David’s largely owing to his employment status and family circumstances, even though they have the same level of household income. Claire’s chances are highest as she has a high socio-economic status

Table 4.4 Homeownership status in 2010/12: four scenarios

Individuals	Characteristics
<b>Claire</b>	Living with her partner. She works full-time as a manager. Her household income is equivalent to £40,000. Her partner received a £15,000 inheritance and they have saved around £7,000. Her parents were not homeowners, and she has two brothers.
<b>Paul</b>	Single male. He has a professional occupation on a full-time contract. His yearly income is around £27,000. He has received no inheritance but has around £2,000 saved. He has one brother and grew up in an owner-occupation household.
<b>David</b>	Married. He is a manual worker but currently unemployed, but his wife is employed and household income is around £27,000 and they have savings of just under £5,000. He received around £20,000 from his grandparents a few years ago and his parents were homeowners. He has no siblings.
<b>Susan</b>	Divorced. She has a full-time job in retail. She has an income of around £23,600 and has around £3,000 in her savings account. She has not received any inheritance so far. Her parents were not homeowners, and she has one sister.

Note: Individuals’ names were chosen from the most common baby names during the 1970s and 80s in the UK (ONS). All household income figures represent equivalised.

Fig. 4.7 Homeownership status: predicted probabilities of the four scenarios



and her partner has received an inheritance, although she grew up in a non-owner occupation household with two siblings.

The results show that the effects of intergenerational transfers should be understood in conjunction with other socio-economic circumstances. Yet, the socio-economic factors—households’ as well as of their parents’—systematically distinguish the ‘already homeowners’ from non-homeowners in the study population.

## **4.8 Who became homeowners between 2008/10 and 2014/16?**

### **4.8.1 Analytical strategy**

The second analysis in this chapter examines the probabilities of transitioning to homeownership among those who were not homeowners in 2008/10. A transition was recorded if a non-homeowner in the base year (2008/10) had moved into owner-occupation by 2014/16. If homeownership is preferred tenure, the length of this duration translates to the degree of difficulties experienced in the housing market. Family help can shorten the duration in non-homeownership by lowering the barriers to accessing capital. To account for duration as a factor, the analysis was conducted in the event history analysis (EHA) framework using logistic regression (see Table 4.8 in Appendix). It models the probability of an event occurring at a time point, not having happened to that stage. In this analysis, the event is the change in the housing tenure from non-homeownership to homeownership. Transition probabilities are the chance of the change in homeownership status at a given time, having stayed in non-owner-occupation until then. As respondents are observed biennially, time is treated as discrete rather than continuous.

Age at homeownership is the average age between the two consecutive waves during which a transition to homeownership is marked. 19 years of age is the base age as a starting point of an adult life, from when purchasing a home is theoretically possible.<sup>12</sup>

---

<sup>12</sup>Age 19 is chosen instead of 18 because the parental homeownership information is asked in each wave but only for those aged 25 or over. Those who were 19 in 2008/10 turn 25 in 2014/16, which is the first wave they are asked to provide parental homeownership information.

An exit is marked when the event occurs (entering homeownership), or at the last (fifth) interview (2014/16) for those who did not become homeowners. The duration spent in non-homeownership is the difference between 19 and the age at homeownership or at exit.

Respondents aged 19-44 in 2008/10 are included. The period between when they turned 19 and their ages in 2008/10 is referred to as the pre-observation period. Complete housing tenure information during this pre-observation period is not available for those aged 20-44, giving rise to the 'left-truncation' issue. While it is problematic in a field such as demography, it is less so in other domains of social science and an alternative approach is available.

Guo (1993) and Jenkins (1995) discuss the use of conditional likelihood approach in a discrete-time EHA model with the left-truncation issue. The idea is to incorporate the length of the pre-observation period as the number of years spent in non-homeownership (such as renting) since turning 19 can be worked out based on their age in 2008/10.

The assumption here is that respondents' housing tenures during the pre-observation period have not changed in such way that would alter their chances of moving to homeownership during the observation period Jenkins (1995). The assumption is met if non-homeowners in 2008/10 had not been in homeownership prior to that. Moving in and out of homeownership among the under 45s is rare (<2%); therefore, this assumption is deemed reasonable. Two more scenarios are considered. The first is individuals owning a property (other than their main residence) as an investment, for instance, owning a second home or a buy-to-let flat. While individuals are not homeowners, their asset accumulation pattern may be similar to homeowners, which may affect their motivation to enter homeownership. However, this is found not to be the case when checked using other property ownership in this sample.

A more complex case is when previous homeowners became non-owners prior to 2008/10. For instance, due to family dissolution, previously home-owning individuals may have moved into rented accommodation. These individuals, however, should be included in the study, as it is reasonable to assume that they may want to enter homeownership again at a later stage. Their previous homeownership status is not available, but their marital status can be controlled for.<sup>13</sup>

---

<sup>13</sup>Doing so does not resolve the issue of the unobserved heterogeneity in homeownership status among divorced men prior to divorce. It is, however, not possible to test it as the sample size for divorced men

Table 4.5 Number of events in each interval (n=691)

<b>Interval (duration in non-homeownership)</b>	<b>Number of events</b>
Number of years since turning 19 (corresponding to age)	
Interval 1: 1 - 12 years (19 - 30 years old)	31
Interval 2: 13 - 17 years (31 - 35 years old)	34
Interval 3: 18 - 22 years (36 - 40 years old)	28
Interval 4: 23 - 32 years (41 - 50 years old)	24
<b>Total</b>	<b>117</b>

The analysis is limited to the 691 individuals in the longitudinal sample who were not owner-occupiers in the base year 2008/10. The time variable is an interval of the number of years individuals spent in the non-homeownership state since turning 19. As the ages (in 2008/10) between 19 to and 44 are included, the duration ranges between 1 and 32 years and organised into four intervals of 1-12, 13-17, 18-22 and 23-32 years (see Table 4.5). The last interval is widened to secure a sufficient number of observations. The last year in each interval period corresponds to individuals turning 30, 35, 40 and 50, which allows a more intuitive interpretation of the intervals of duration. The data are organised by the individual-interval unit; where the number of intervals per individuals depends on the number of years spent in non-homeownership. Only those observations whose intervals correspond to respondents' ages between the second and fifth waves are used, excluding the intervals for the pre-observation years.

Some intervals are organised in 5-year units, which makes it difficult to include the time-varying variables that are observed every two years in the WAS. However, the loss of information here is minimal, as the observation window is relatively short. Instead, key time-varying variables are tested as binary variables that indicate the change. Also, due to the small sample size, no interaction effects could be tested. These specifications imply that the partial effects are assumed to be constant over time, which is reasonable given the length of the observation period.

---

distinguished by homeownership is too small for any statistical testing. For most individuals, the effect from unobserved heterogeneity is assumed to be small compared to the effect of divorce.



Similar to the first analysis in Section 4.7, the model is comprised of three sets of variables, including parental and individual socio-economic status and wealth characteristics. In terms of support from family, both direct and indirect support were included in the model in this analysis. Here, direct support refers to any form of monetary support received between 2008/10 and 2012/14, excluding the transfers made during the same two-year period or after the transition to homeownership. The effects of partnership formation (moving into cohabitation or getting married) and the birth of a child were also tested. A substantial increase in the household income (£10,000 or more in one of the subsequent waves) was also tested. A summarised version of the Government Office Region (GOR) information in 2014/16 was used. All covariates are individual-level measures except for the household income and direct transfer.

The study sample is longitudinal as some of the covariates are constructed using information from multiple waves. A longitudinal weight is applied, which adjusts for the initial selection probability as well as attrition. Cluster correction was applied to account for the similarities between individuals in the same household.

## 4.8.2 Results

The characteristics associated with those who became homeowners after 2008/10 are found to be qualitatively similar to those of the already-homeowners in that there is a substantial effect of socio-economic status and an intergenerational link (Table 4.6). However, there are appreciable differences because only non-homeowners are included in the analysis.

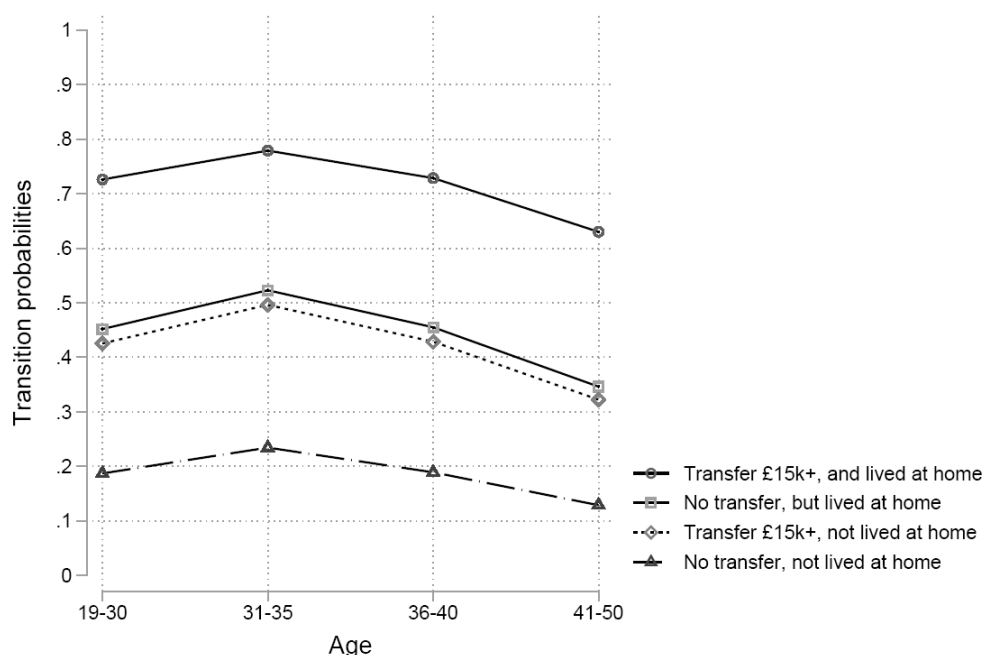
The duration variable can be understood as an increase in age. It was initially found to have a strong negative and statistically significant association, but as more controls were introduced the effects reduced and became no longer statistically significant. This variable indicates that the chances of moving to owner-occupation change as one becomes older. However, this may be due to the selection effect as well as the effects of changing social and economic characteristics as individuals become older, rather than the age per se. Nonetheless, the time variable is retained to control for the length of duration in non-homeownership. According to the model, the chances of entering homeownership initially increase around

Table 4.6 The odds ratio for homeownership transition among renters

Variables (Ref category, Wave)	Odds ratio	Robust SE
(Wave) indicates the survey wave characteristics were observed.		
<b>Age (19 years - 30 years old)</b>		
Age 31-35	1.080	(0.485)
Age 36-40	0.912	(0.381)
Age 41-50	0.660	(0.313)
<b>Household type (Married and has no children, W2)</b>		
Marital Status (Married, W2)		
Cohabiting	0.420	(0.204)
Single, Separate, Divorced or Widowed	0.202***	(0.0879)
<b>Number of Children (None, W2)</b>		
One	0.371*	(0.162)
Two or more	0.279**	(0.110)
<b>Partnership changes (No)</b>		
Got married or moved in together	2.835*	(1.195)
<b>Equivalised household income, log- centred at £26,500 (W3)</b>	2.451**	(0.719)
<b>Financial net wealth (&lt;£50,000) (W2)</b>		
£50,000 or over	5.221**	(3.130)
<b>Government Office Region (London, W5)</b>		
England (excl. London)	1.983	(1.042)
Wales & Scotland	2.241	(1.430)
<b>Direct financial support (£0-£14,999)</b>		
£15,000 or over	3.190**	(1.308)
<b>Indirect support (Co-residence with parents)</b>		
Yes	3.529*	(2.184)
<b>Parents' housing tenure (Renting)</b>		
Owned or mortgaged	2.905**	(1.138)
Pseudo-loglikelihood: final model (model with 'Age' only)	-2135940.4	(-3041116.4)
Pseudo -R2: final model (model with 'Age' only)	27.8%	(3%)
Number of observation (person-interval unit)	n=1,103	

Note: P-values reported: \*  $p < 0.05$ , \*\*  $p < 0.01$  and \*\*\*  $p < 0.001$ . Age here refers to the age corresponding to the duration in each interval period, see Table 6 for the intervals. The study sample is restricted to those who were renting in 2008/10. The sample size refers to the individual-interval observations. The net household income in 2010/12, which corresponds to the income between 2008/10 and 2010/12, is used. Direct financial support refers to the period of four years leading up to 2012/14. For government official region is only available for W4 and W5, and W5 is used in this model. Robust standard errors are estimated, accounting for the household structure at the final observation.

Fig. 4.8 The relative effects of direct (transfer) and indirect financial help (living at home)



Note: The predicted probabilities are for individuals who grew up with homeowner parents, who are now married without children, living in London. It is assumed that they have some level of savings but less than £50,000 worth of financial assets, on an average income with no income increase greater than £10,000 in subsequent waves.

age 31-35 before decreasing slightly at 36-40 and then decreasing more substantially around one third for those over 40 years of age.

Direct and indirect support as well as parental homeownership are found to be highly relevant, which implies that indicators of parental wealth play a significant role in young adults' entry to homeownership. An individual having received additional financial resources valued over £15,000 is expected to have nearly 220% increased odds of moving to owner-occupation, compared to similar individuals who received less than £15,000 or none at all. Similarly, adult children who have co-resided with their parents are found to have nearly 250% higher odds of moving to homeownership than those who have not. In addition, the odds for entering the housing market nearly doubled for individuals who grew up in an owner-occupier household compared to those who did not, even after controlling for direct and indirect support as well as other variables.

Figure 4.8 shows a comparison between direct and indirect support using the predicted transition probabilities across the intervals (with corresponding ages). It is reasonable to

expect a larger effect of direct support compared to indirect support as the former immediately relieves the pressure of saving for a deposit, while the latter requires additional time for help to materialise. However, the extent of these effects is found to be equally substantial. This may be partially due to the potential upwards bias from assuming consistent availability of indirect support for the interval period. It is also possible that direct support includes all financial transfer, some of which, such as inheritance, is not always aimed (or timed) for younger people's homeownership. Also, the contrasting trends of direct and indirect support after the financial crisis seen earlier (Figures 4.3– 4.6) may have contributed to the relative effect sizes of the two types of support.

Individuals' own socio-economic characteristics and wealth levels were found highly relevant. The odds for becoming homeowners for individuals with an initial net financial assets of £50,000 or more are five times higher compared to those who had less financial assets, controlling for other factors. Although the threshold of £50,000 is relatively high, it can produce a deposit for a median first-time home, even in London,<sup>14</sup> which clearly points to the importance of the economic resources available in entering the housing market.

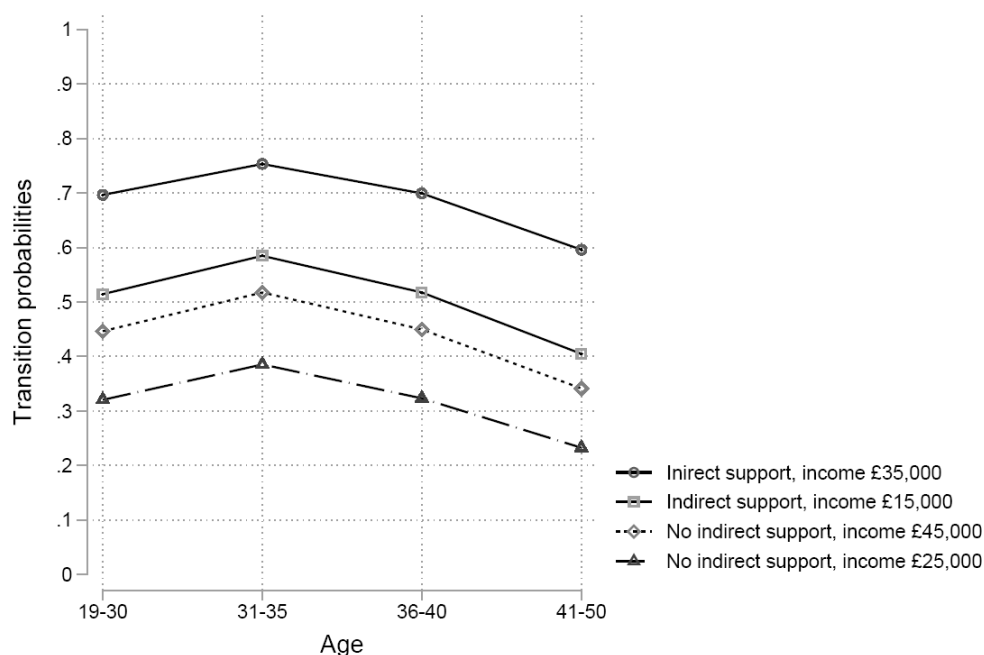
A positive association was found between household income and the chances of moving to homeownership. However, an increase in the household income of £10,000 or more (unequalised) was not associated with the higher odds for homeownership, accounting for other factors. This is not unrealistic because an increase in household income does not directly translate to having a sufficient level of savings for a home purchase.

Figure 4.9 compares the partial effects of indirect support and of income using predicted probabilities. Comparing two similar individuals but one with an income of £45,000 and the other with £15,000, it appears that the benefit of indirect support roughly equates to an additional household income of £30,000. This is a plausible figure as the average yearly household expenditure for families was estimated to be £27,500 in 2016.<sup>15</sup> While the living

<sup>14</sup>Recent figures show that an entry level property in London is around £320,000 (ONS, 2017). Assuming a 15% deposit, a deposit required is £48,000.

<sup>15</sup>This is the yearly equivalent figure of the weekly amount reported (£528.90) in *Family spending in the UK: financial year ending March 2016* published by the ONS. Individuals co-residing with parents tend to be single, and their costs are expected to be lower compared to the national average, which includes a high proportion of married couples with children. However, living costs for younger adults are generally higher for housing costs and other discretionary expenses. The report is available at

Fig. 4.9 Predicted probabilities by household income and indirect support



Note: It is assumed that individuals who have lived with parents did so for the entire duration until they enter the housing market or exited the observation. These predicted probabilities are for single individuals with no children, who have grown up in an owner-occupying household who currently live in London. It is also assumed that these individuals reported receiving monetary help from parents valued less than £15,000 in W3, had some savings (<£50,000) at the beginning of the observation, and no increase in the income.

costs may be lower for single individuals, the cost saving from co-residence with parents may be cumulative as such arrangement would last for multiple years in most cases.

Demographic characteristics, such as marital status and having children, also add to predicting the odds of becoming homeowners. As household income is equivalised, marital status and the number of children represent social arrangements. The disadvantage observed for the single individuals was more substantial, as their odds for moving to homeownership decrease nearly by 75% compared to married couples. Changes in marital status were correlated with entering homeownership; the odds for those who have either moved to cohabitation or got married since 2008/10 have 150% higher odds of moving to owner-occupation. Even if the timing information is not available, the strength of correlation indicates that stages of life for the study population, such as partnership formation, are closely related to moving to homeownership, controlling for socio-economic characteristics.

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/bulletins/nationallifetablesunitedkingdom/20132015>

An increased number of children during the observation period was tested but not statistically significant and removed from the model. However, being parents in 2008/10 is found to have a strong negative partial effect. It is possible that the equivalisation factor does not fully account for the high costs of raising children in Britain. Also, families with children may have different criteria when choosing a home to buy compare to families without children. It is also possible that households with children remain in social housing for longer therefore slower to move to homeownership.

The effects discussed above are easier to understand when plotting predicted probabilities using realistic characteristics. Four plausible circumstances of individuals are described in Table 4.7 and their trajectories are illustrated in Figure 4.10. Christopher's chances are better than Sarah's as he has a substantial savings (over £50,000) although they have a similar level of equivalised household income. Her relative disadvantage is compensated by additional family support, direct (£15,000+) as well as indirect financial help. Meanwhile, Rebecca's odds are projected to be higher than those for Thomas because of her higher household income and marital status. If Sarah and Rebecca were the same age, their chances would be different mainly due to different social and economic arrangements. However, in reality, only a small number of individuals will have arrangements such as Sarah's or Christopher's, and the circumstances of most young people in Britain resemble Rebecca's or Thomas's. With that in mind, it is alarming to see the larger effect of parental wealth, albeit indirectly, compared to those of individuals' own socio-economic characteristics.

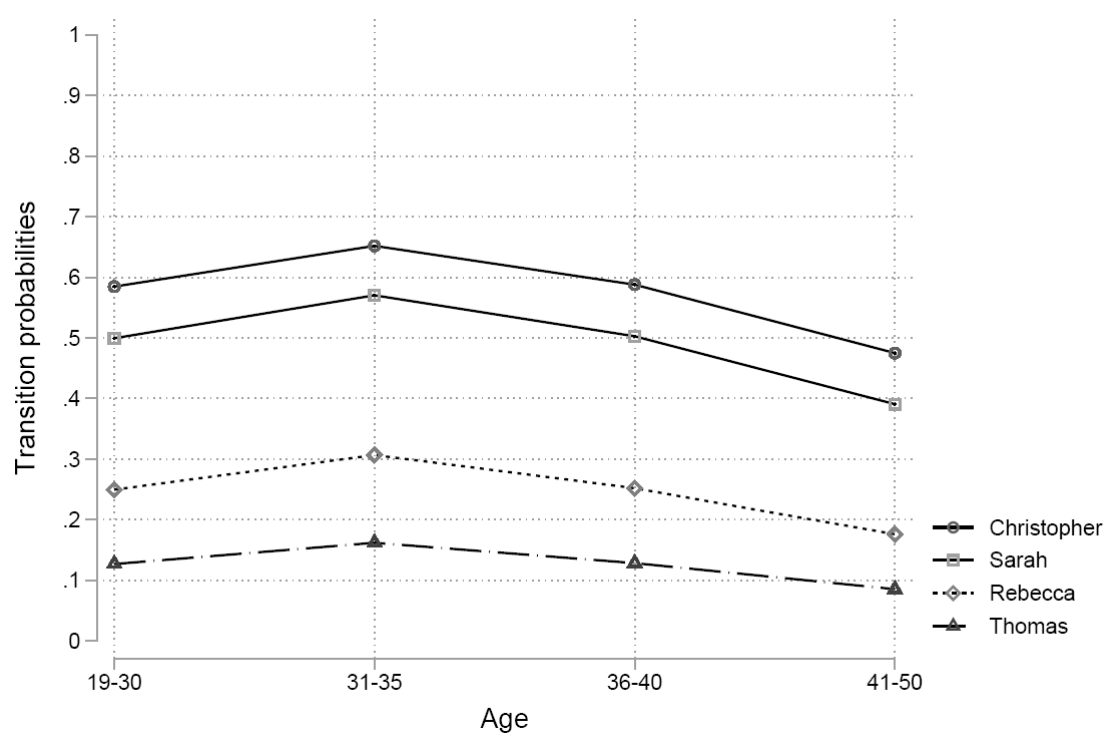
The effect sizes should be considered together with the reduction in variability obtained by including these variables. The direct and indirect transfer measures increase pseudo-R<sup>2</sup> by 4.3%. Together with the parental homeownership variable, the three indicators explain about 8.1% of the variability, comparable to the household income variable, 9.8% (not reported here). Income is an important criterion to access capital, the proportion of the variability explained is deemed reasonable. It is also worth noting that this study uses a narrower transfer period and a larger threshold (£15,000) compared to the previous studies (A\$5,000, €5,000 or U\$5,000, Cigdem & Whelan, 2017; Helderman & Mulder, 2007; Lee et al., 2018). Measurement errors cannot be ruled out for the intergenerational transfer variables as

Table 4.7 Four hypothetical scenarios

Individuals	Characteristics
<b>Christopher</b>	Married and has two children, living in the South East of England. He grew up in rented accommodation. He received a small inheritance of £5,000 from his partner's family but holds savings and investment valued over £50,000 together with his wife. The household income in 2010/12 was around £45,000.
<b>Sarah</b>	Single without children, living in London. Grew up in an owner-occupier household. She received £20,000 from family and had savings of £10,000 in 2008/10. Her initial income in 2010/12 was around £40,000. She has lived with parents until recently.
<b>Rebecca</b>	Was living with her partner and recently got married but has no children. Grew up in an owner-occupier household and is living in London. She received a small gift from her parents of £2,000. She had no savings but had a household income of £35,000 in 2010/12.
<b>Thomas</b>	Single without children, living in Scotland. His parents were homeowners. He has had no financial help from his family so far. His income in 2010/12 was £22,000 and he had small savings of £3,000 in 2008/10.

Note: Individuals' names are chosen from the most common baby names during 1980s in the UK (ONS).

Fig. 4.10 Predicted probabilities of the four scenarios



Note: Chronological age ranges that correspond to the four interval categories are used to facilitate interpretation of the predicted probabilities — see Table 6. Comparisons should be conditional on age (x-axis).

underreporting inheritance or inter-vivo amounts is possible. However, it is not possible to quantify the extent of it in this chapter given the data limitations.

## 4.9 Discussion

This study assessed how, and to what extent, indirect measures of parental wealth contribute to explaining the younger generation's housing circumstances in Britain. The two-part study found equally substantial effects of direct and indirect family support on young adults' entry to the housing market. In addition, these two measures coupled with parental homeownership status together contribute to explaining the chances of homeownership as much as individuals' household income does. Income is an important criterion for accessing capital and serves as a proxy for individuals' ability. In this sense, the role of income is somewhat weaker than expected.

The results suggest a substantial intergenerational link in homeownership circumstances: owning a home for young British adult is not only related to their own socio-economic status but also those of their parents. Why this may be the case can be found in the characteristics of the British housing market (Forrest and Hirayama, 2015; Murie, 2012). Financial products, such as mortgages, now systematically exclude less fortunate individuals. As the access to capital is based on a substantial front loading of financial resources and higher future income (Lowe, Searle and Smith, 2012), the additional economic resources from family serve as a springboard to get on the housing ladder. In turn, this can directly undermine policies that aim to improve the access to capital, such as Help to Buy, as policies heavily focus on the demand side without a plan for increasing the supply or providing alternative housing options (Forrest and Hirayama, 2015).

Unequally distributed parental wealth perpetuates a systematic disadvantage for those without additional monetary support, which is also expected to be costly in the long-run. Individuals are unlikely, or unable in many cases, to save for retirement, having focused all their efforts on homeownership. Even for those who become homeowners eventually, a large part of lifetime saving will be concentrated on housing wealth, making them more vulnerable



to an adverse economic situation. Moreover, delayed entry to the housing market implies that mortgage debt will be paid off at an older age, possibly after retirement. Therefore, within-generation inequality will increase under the current circumstances without timely and meaningful policy intervention.

Homeownership is often considered to be a precondition for the next stages of life. Difficulties experienced with homeownership are likely to delay or interrupt associated life-course events (Eliason et al., 2015). In other words, individuals may not be able to plan or make social and economic arrangements with autonomy according to their own 'life schedule'. In addition, the disadvantages associated with having children and homeownership (status or transition to) found in this chapter are concerning and somewhat counter-intuitive as for the greater need for stability and security required for a family in the immediate future.

On the other hand, the younger generation's growing reliance on their parents raises the question of whether parents are implicitly pressured to provide financial support. Parents may be compelled to help financially, as it could ease homeownership anxiety faced by their children. However, this would reduce resources for retirement or care for the parents (Rowlingson, 2006). Less wealthy parents may draw down on their savings or take on debt to help their children, introducing a new source of financial difficulty in the later life. This is a realistic concern, as the median household financial wealth among adults aged between 55 and 64 in 2014–15 was around £21,000 (Crawford, 2018a). Providing indirect support also can have an adverse effect on the parents; boomerang children's negative economic experience is found to be an additional source of concern for their parents, which decreases parents' well-being (Tosi and Grundy, 2018).

This study has limitations. The lack of information on the precise timing of intergenerational transfers and home purchase makes it difficult to make any causal claims. Issues regarding the short observation period and the relatively small sample size can be improved as more waves of data become available in the future, which would allow testing whether the importance of intergenerational support increases over time, as was suggested by one of the paper's reviewers. Also, it would make it possible to segregate different types of direct transfers by motivations and examine their associations with the reported value of purchased

homes. Macroeconomic factors could be used to examine region- or period-specific issues, as the sample size and the observation period increase.

Despite these limitations, this study makes several contributions. First of all, most existing studies examined financial support only in terms of direct monetary transfer, excluding indirect financial support which helps to reduce cost saving via co-residence that could increase deposit-saving capacity. Given the increasing size of the ‘boomerang generation’, it is a necessary aspect to consider in studying young adults’ homeownership today (Office for National Statistics (ONS), 2016; West et al., 2017). In addition, by controlling for children’s financial asset levels, it is possible to examine the partial effects of direct and indirect support mechanisms in more comprehensively manner. Moreover, this chapter uses discrete-time event history analysis, which enables taking duration in non-homeownership into consideration. By assessing direct and indirect support taking a robust methodological approach, it produces a more comprehensive picture of the changing aspect of parental support.

In addition, this study provides an up-to-date account of the current housing circumstances of young adults as the study period concentrate on during and immediately after post-crisis period (e.g. Lee et al., 2018), which is more relevant to today’s policy makers. As housing is a crucial element of wealth accumulation in Britain, this directly points to a widening within-generation inequality. In individuals’ point of view, if additional parental resources are not available, their chances of homeownership may appear untenable, which may intensify frustration in the housing market and aggravate economic insecurity (see Section 4.10.3 in the Appendix to this chapter).

In the long-term, policies such as stronger inheritance and capital taxation (Intergenerational Commission, 2018) might equalise the position to an extent, especially if a tax on inter-vivo transfers reduced their scale, and this brought down house prices. However, inter-generational financial support is perceived to be natural way to help the younger generation (Rowlingson, Joseph and Overton, 2017). The financial sector sees this as a new business opportunity as more mortgage products are introduced directly linked to parents’ assets (see Section 4.10.3 in Appendix). Different viewpoints on fairness of parental help require a

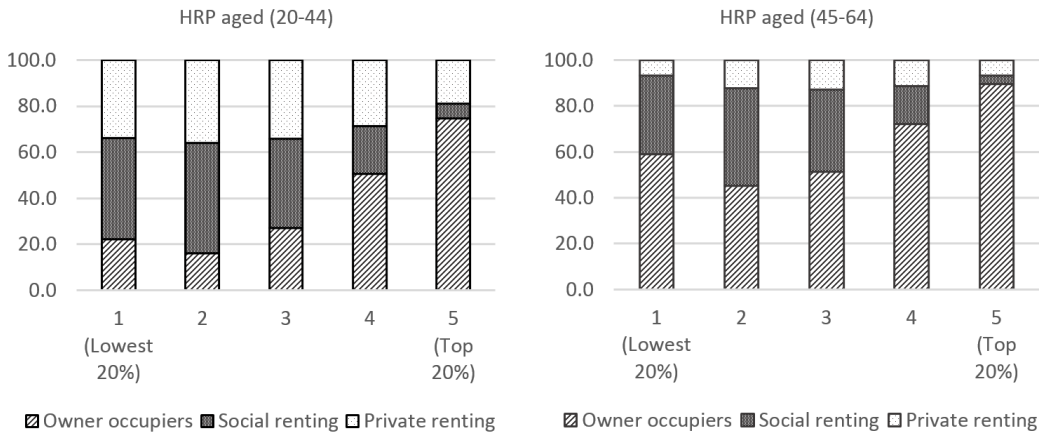
broader discussion on the policy direction, such as inheritance tax (Prabhakar, Rowlingson and White, 2008).

Furthermore, in the absence of measures that greatly increased supply or eased demand, the main implication is that the scale of differences in parental resources makes it very hard for governments to afford to compensate others. When only limited help is available, it is more likely to go to those who are already advantaged, as with the current Help to Buy scheme (NAO, 2019; Provan, 2017). Individuals without access to family help are likely to remain as tenants. Therefore, a comprehensive approach to tackling issues in the housing market, including improving the private rental market by enhancing tenants' rights and expanding the social housing sector, would be necessary to bring a meaningful improvement in the young adults' homeownership circumstances in Britain.

# 4.10 Appendix to Chapter 4

## 4.10.1 Additional charts and tables

Fig. 4.11 Housing tenure by household income quintile and age groups (2014/16)



Note: Housing tenure and age group refers to the Household Reference Person (HRP) using the 5th wave of the WAS. Household income is equivalised according to the size of the household. Proportions are weighted using the cross-sectional weight. As the housing tenure is measured at the household level, the homeownership rates reported in this table are expected to be higher than those measured at the individual level.

Table 4.8 The structure and usage of the WAS dataset

	Wave	W1	W2	W3	W4	W5
<b>WAS structure</b>	<b>Carried out between</b>	Jul 2006 - Jul 2008	Jul 2008 - Jul 2010	Jul 2010 - Jul 2012	Jul 2012 - Jul 2014	Jul 2014 - Jul 2016
<b>This study</b>	<b>Analysis 1</b>	Information on parental characteristics (housing tenure and socio-economic status) is used.		All applicable households included	-	-
	<b>Analysis 2</b>	Parental variables used	Tenure information used	Only the longitudinal cohorts (w2-w5) are included		
	<b>Treated as</b>	-	First observation	Second	Third	Fourth

Table 4.9 Homeowner and non-homeowner household characteristics (2010/12; GB)

Categories		Row profile(%)		Column profile (%)	
		Owners	Non-owners	Owners	Non-owners
Age group (HRP)	25-29	43	57	11	23
	30-34	61	39	25	25
	35-39	65	35	29	25
	40-44	68	32	36	27
Marital status	Married/(CV*)	77	23	63	30
	Cohabiting	57	43	16	20
	Single	40	60	15	36
	S/D/W	40	60	6	14
No. of children	No child	58	42	39	45
	1 child	66	34	54	44
	2+ children	54	46	8	11
Household income	Mean (£)			23,300	10,000
	Median (£)			24,200	14,200
	25th Pctile (£)			11,800	6,800
	75th Pctile (£)			50,000	29,700
Occupational groups	Professional	77	23	61	29
	Intermediate	65	35	18	15
	Routine & manual	40	60	19	46
	Never worked/LT unemployed or other	27	73	2	9
Parental Homeownership	Non-homeowner	46	54	15	34
	Homeowner	72	28	79	59
	DK/Other**	56	44	7	8
Net financial wealth	<£0	52	48	36	54
	<£15,000	61	39	34	36
	<£50,000	81	19	16	6
	£50,000+	82	18	14	5
Intergenerational transfer	£0 -£999	65	35	86	90
	£1,000-£4,999	65	35	5	5
	£5,000-£9,999	73	27	3	2
	£10,000-£49,999	82	18	4	2
	£50,000+	87	13	1	0

Note: \* CV denotes civil partnership. \*\* Other category includes those who have never worked, the long-term unemployed and those without NSSEC classification. The proportions are weighted. Amounts for wealth and intergenerational transfers are aggregated at the final household structure at the last observation (the 5th wave, 2014/46) for comparison purposes. Income figures are rounded to the closest hundred pounds.

### 4.10.2 More information on the variables

The direct financial transfer measures were constructed as a categorical variable (nominal values). It includes any inheritance greater than £1,000 and cash gifts or loans greater than £500 in the prior four years in the household. The information is derived from a combination of continuous and categorical variables as respondents are first asked to provide a figure before being asked to select an appropriate category. For banded figures, the median value is used to sum all recorded transfers within a household, which is then banded into a categorical variable. The amount reported for the first wave was not used due to a large number of missing values.

The financial wealth variable is constructed by adding all the values of current and savings accounts, investments, such as shares and bonds, and an endowment, less any non-mortgage debt or loans. Only the amount received from family or friends reported in the second and third waves (2010/12) is included due to incomplete information in the first wave.

In terms of the base age, 19 is used instead of 18 years of age. As previously mentioned this is due to the parental homeownership information being collected only for those aged 25 or over. The oldest person in the sample in 2008/10 was 44 years old, who would be 50 years old in 2014/16, which makes the total duration 32 years ( $50-19+1$ ). 40-44 and 45-50 were combined to secure a sufficient number of observations in this category. The interval width does not need to be evenly spaced. Each observation is considered as an independent observation with a binary outcome (Guo, 1993; Jenkins, 1995).

### 4.10.3 'Bank of Mum and Dad'

The term Bank of mum and dad (BOMAD) is frequently used by British mortgage lenders, which indicates the increase prevalence of such transactions (e.g. HSBC, 2014; Legal & General, 2016; Old Mutual, 2017). Some of the major lenders now offer mortgages that are secured by parents' cash savings or home equity that is equivalent to the deposit amount. This industry trend highlights the fact that parental wealth has become one of the important determinants in accessing capital in Britain.

As of April 2019, Lloyds Banking Group, Nationwide Building Society and Barclays offer mortgage products to first-time buyers by securing the loan against their parents' assets. These products are called 'Lend a Hand Mortgage', 'Family Deposit Mortgage' and 'Family Springboard Mortgage', respectively. Lend a Hand Mortgage and Family Springboard Mortgage offer interest-bearing accounts for the parents to deposit cash savings equivalent to 10% of their adult children's mortgage loan for three years, with no access to the savings account. Mortgages can be obtained up 100% Loan-to-Value (LTV) ratio, which is the proportion of the remaining sum of the mortgage compared to the value of a home.

Nationwide Building Society provides an additional mortgage to parents who are its existing clients, a proportion of which can be transferred as a deposit for a family member, although the LTV is subject to the type of the building (houseflat and newly built/ previously lived). A smaller lender, Metro Bank, does not offer these products does offer joint borrower/sole proprietor mortgage products that allows adult children to borrow based on parents' borrowing power but be listed as the sole owner of the property.

While the rise of BOMAD may present a new business opportunity for the financial sector, it has a substantial social cost of inequality. A columnist at the Guardian, Rhianonn Lucy Cosslett, reflects on the rising importance of BOMAD and inequality and describes the essence of the problem well:

"But this source of funds is available to only a fortunate few. My own parents, for example, don't have £21,600 to give me, not that I would ask. My mum is on a low wage and in rented accommodation, and my dad and stepmum work part-time due to ill

health. I'm 30, newly married and live in a shared house. For the last couple of years, my husband and I have been saving hard, and I'm proud of how much we've put aside, but the price of rent, coupled with unstable employment, means that owning – even outside London – still seems a long way off." - Rhiannon Lucy Cosslett, an excerpt from her column on 11th Nov 2017, *the Guardian*.



## **Chapter 5**

# **Wealth accumulation patterns among the younger adults**

### **5.1 Abstract**

This chapter examines how Britain's younger generation accumulates wealth by developing a typology of savers. It proposes a Balance Sheet approach, which enables reorganising wealth data into more nuanced categories of wealth-building vehicles. Factor Mixture Modelling is performed to establish the saver types, based on the reorganised individual balance sheet data using the Wealth and Assets Survey. Four distinct saver types are established: undersavers, property saver-dissavers, traditional savers and investor savers. Transitions between saver types are studied using Latent Transition Analysis. These saver types provide insight into perceptions and utilisation of wealth accumulation channels. While the transition probabilities are mostly stable, the patterns of upwards and downwards transitions vary by parental homeownership. People with a higher individual and parental socio-economic characteristics are more likely to be allocated to saver types with more wealth. The chapter's findings have important long-term policy implications for the younger generation's future economic well-being.

## 5.2 Introduction

In Britain, the baby boomer generation has accumulated substantial wealth over its life course due to the favourable economic conditions and policy structure (Banks et al., 2005; Bastagli and Hills, 2013; Crawford, 2018*a,b*; Hood and Joyce, 2013). This generation accumulated housing wealth as more became homeowners since the early 1980s, who benefited substantially from the housing price boom in the mid-1990 (Bastagli and Hills, 2013). Many earned considerable Defined Benefit (DB) pension entitlements, which facilitated an early retirement for some (Crawford and O’Dea, 2012).

The prospect of wealth accumulation for Britain’s younger generation, however, is less optimistic. The younger generation, aged between 25 and 49, live in different economic, political and policy conditions from those experienced by previous cohorts at the time of their early adulthood (Corlett, 2017; Hood and Joyce, 2013). Earnings have stalled while living costs have increased. This combination of which undermines their ability to save (Clarke et al., 2016; Corlett et al., 2016). It has become far more challenging to own a home (Corlett, 2017) and the ability to do so appear to be highly related to socio-economic background (Coulter, 2018) and family financial support (See Chapter 4). Changes in pension policy also paint a less favourable picture. Recent developments in the pension policy imply that the younger generation is saving with a higher level of risk as the vehicles that helped the previous generation build substantial private pension wealth can no longer be relied upon (Cribb and Emmerson, 2016; PC, 2004). Due to greater uncertainty, the role of wealth in supporting retirement for this generation is expected to increase.

Despite its importance, studies on young adults’ approaches to wealth building are scarce. Wealth building involves saving and investment decision-making, and individuals perceive risk and return structures differently. Also, the cumulative nature of wealth means that the outcomes during the early stages of adulthood can have long-term consequences. Moreover, the early stages of adulthood are a time of increased involvement in organising one’s finances. Therefore, understanding the wealth-building patterns of younger adults today can also inform our understanding of their future saving tendencies. Therefore, this study raises the question: how does the younger generation in Britain approach wealth building?

To answer this question, this study establishes saver types among individuals aged between 25 and 49 as of 2010/12. It utilises three waves of the WAS from 2010/12 to 2014/16 (ONS, 2018*d*). It develops a balance sheet approach; it reorganises wealth data according to type (financial, housing or pension), ownership status (asset or debt), ease of access (liquidity and restrictions) and amount. This reorganisation enables information about perceptions and utilisation of wealth-building channels to be distilled. Saver types are established cross-sectionally first using factor mixture modelling (FMM). Gross figures are used for assets and debt, which give rise to the issue of having many zero values. As zeros in this study are meaningful, a two-part approach is taken in this study. This approach dissects the data into the binary and the continuous parts in modelling so that the no information loss occurs (Kim and Muthén, 2009). The movement between saver types over time is studied using latent transition analysis (LTA). The transition probabilities are examined with respect to individual as well as parental socio-economic status.

Four saver types are established: undersavers, property saver-dissaver, traditional savers and investor savers. The results show that the younger generation's wealth-building pattern follows that of the previous generation, utilising low-risk investment vehicles, such as cash savings and homeownership (Hills, 1995; Keister and Moller, 2000). Housing wealth in particular accounts for a large proportion of wealth. In the long run, there are two implications for this: a) wealth outcomes are mainly subject to the macroeconomic conditions and b) issues related to housing asset accumulation (homeownership) and decumulation (funding retirement and care) may continue to be politically sensitive. The changes in saver type membership over time are found to be mostly stable. However, individuals with high socio-economic status and those from better-off family backgrounds are more likely to be in saver types with a higher level of wealth when first observed in 2010/12. Furthermore, individuals who grew up in an owner-occupation household are more likely to transition upwards than those who did not. This difference points to intensifying within-generation inequality due to the intergenerational links in economic outcomes.

This chapter is structured as follows. It first argues the importance of studying wealth accumulation from the individuals' perspective. The following section explains the motivation

for establishing ‘saver types’ and then, introduces the research questions. Next the balance sheet approach is introduced. In the data and analytical strategy section, details on the reorganisation of wealth data, characteristics of the study population and the analytical approaches are presented. The results on the saver types are introduced and interpreted before the longitudinal results are reported. The implications of the saver types are considered with the nature of perceived uncertainty in three wealth accumulation stages of wealth-forming, wealth-organising and wealth-building. The study concludes with a discussion on policy implications.

### **5.3 Patterns of wealth accumulation**

Wealth has become an important policy agenda in Britain (Hills and Glennerster, 2013*a*; Rowlingson and McKay, 2011*c*). Studies have examined wealth distribution (Appleyard and Rowlingson, 2010; Crossley and O’Dea, 2016; Finney, 2015; Hills, 2010; Hills, Bastagli, Cowell, Glennerster and Karagiannaki, 2013) and growing wealth inequality (Cowell, Karagiannaki and McKnight, 2018; Hills, 2010; Rowlingson and Connor, 2011), urging policy responses (Glennerster, 2012; Hills and Glennerster, 2013*a,b*; Orton and Rowlingson, 2007; Piachaud, 2014; Rowlingson and McKay, 2011*a*). These works have contributed to understanding wealth at the population level, placing it as a critical item on the policy agenda.

By contrast, fewer studies have investigated wealth from the individuals’ viewpoint. Most prior work on individual wealth draw on the life cycle model (Modigliani and Brumberg, 1954) and assesses accumulation and decumulation focusing on the monetary value of wealth. A central tenet of the life-cycle model is that the economic activities of saving and consumption are organised to meet difference needs for resources over the life cycle; young adults borrow against future income and save for retirement during their middle-age years when earnings peak. A number of studies have used this model to examine resource allocation over a life span, such as retirement saving and wealth accumulation (Banks, Blundell and Tanner, 1998; Blundell, Crawford, French and Tetlow, 2016; Browning and Crossley, 2001; Browning and Lusardi, 1996; Wise, Banks, Blundell and Smith, 2013).

Conversely, this study takes a life course approach to focus on human agency (individuals) in the phenomenon under investigation (wealth accumulation) (Elder, 1994). Therefore, the primary concern is how individuals accumulate wealth, rather than the mechanisms of wealth creation. Economic agency here is interpreted as a socially constructed notion that is influenced by past experiences as well as the current environment (Kristiansen, 2014). The sociological approach to studying wealth is useful in explaining the individuals' viewpoint; wealth building entails multiple layers of interaction with the market system, which include the utilisation of different channels (e.g., buying a home) and engagement with financial actors and products (e.g., banks and mortgage loans) (Keister, 2002 and the references therein). Then, a portfolio of wealth holding, which shows the composition of different types of assets, can provide insights into how individuals interact with the structural environment to build wealth.

Sociologists view these financial interactions as 'social relations' (Keister, 2002). Financial behaviours are influenced by family (Brown and Taylor, 2016; Webley and Nyhus, 2006), social relationships and social capital in a broader societal context (Guiso, Paola and Luigi, 2004; Hong, Kubik and Stein, 2004; Kaustia and Knüpfer, 2012). In particular, the role of parents in long-term financial decisions, such as purchasing a home and saving pensions, is influential for young adults, whether the influence takes the form of knowledge and advice (James, 2019; Robertson-Rose, 2018) or, as studied in Chapter 4, financial support (Coulter, 2017, 2018; Karagiannaki, 2011).

Understanding attitudes and perceptions, albeit indirectly, can provide useful information on future saving tendencies. For example, the Thatcher government's privatisation agenda included an expansion of share ownership since the 1980s in Britain. Some research claims that the initial aim was to make share ownership as common as 'car ownership' (Mayo and Millstone, 2015). Given the extensive privatisation process during the 1980s, one might have expected that share ownership would become more prevalent in individuals' wealth holding. In 1995, Hills observed that while wealthier households held a higher proportion of wealth in financial investments, the low and middle wealth group mainly used interest-bearing accounts. This observation hints that reinventing share ownership as an accessible

asset-building channel did not gain much momentum. In 2010/12, share ownership remains highly concentrated on the top of the distribution (see Figure 5.9 in Appendix to this chapter). Keister and Moller document a similar observation in the United States in 2000; although mutual funds were becoming more common, Americans saved predominantly using housing and cash savings and few people owned financial investments.

Share ownership may have been costly, which partially explains the lack of popularity among the mid- and low-wealth groups. There are, however, two additional factors to consider: risk attitude and perceived priorities. Share ownership is often considered riskier and costlier than other financial saving options (such as cash saving), and therefore less appealing to average savers. On the other hand, as Keister and Moller (2000) suggest, individuals utilise vehicles that also meet current priorities. For example, cash saving and purchasing a home may be prioritised over shareholding because they fulfil multiple purposes that are directly relevant to economic well-being today. Risk attitudes and perceived priorities are not directly measured in this thesis; however, these factors are studied indirectly through examining wealth accumulation patterns.

### 5.3.1 Policy relevance of wealth building

Understanding individuals' approach to wealth building is also important from a policy perspective as it reflects the principles of asset-based welfare. In his book *Assets and the poor*, Sherraden (1991) proposed an asset-based approach to welfare.<sup>1</sup> He postulates that having assets enhances the economic autonomy of low-income earners in two ways: it provides both a security net against uncertainty and capital to improve future income prospect. The role of asset ownership here is analogous to the 'buffer-stock' hypothesis by Carroll (1997). He argues that it is not that the asset *causes* behaviour changes, but it attenuates the negative impact of future uncertainty; this reduction in (perceived) future uncertainty enhances economic agency (Carroll, 1994). Similarly, difficulties in building assets are

---

<sup>1</sup>The proposal has been widely adapted in the United Kingdom and the United States since the late 1990s and policies such as Child Trust Fund and Saving Gateway (UK), and Individual Development Account (US) were introduced to promote asset accumulation of the low-income group.

not only due to a lack of resources but also to exposure to uncertainty and vulnerability (Emmerson and Wakefield, 2001; Rowlingson, 2000).

The aforementioned nature of asset ownership, however, is difficult to locate in the current British asset-based welfare policies as these policies have developed in separation from the initial proposition by Sherraden (Ronald and Lennartz, 2018). Doling and Ronald (2010) also argue that the asset-based welfare policies seek to improve individuals' abilities and responsibilities by enabling asset ownership so that they, not the state, meet their welfare needs. Prabhakar (2008) posits that asset-based policies are primarily concerned with 'changing' individuals behaviours to become more socially responsible and welfare-independent (see also Rowlingson and McKay, 2011a). According to him, mainly two approaches are taken: the use of incentives and character building. Incentives are used to promote a socially ideal option; for example, favourable tax treatment aiming to incentivise additional pension savings. Character development is a longer-term approach; policies aim to reduce social issues such as poverty and unemployment by developing capabilities (such as through education).

The current British asset-based welfare agenda, according to Doling and Ronald (2010), is problematic due to the following reasons: a neoliberal approach that resulted in an overly market-focused system (Doling and Ronald, 2010; Finlayson, 2009); a general lack of infrastructure and regulations for turning an asset into an income stream (Crawford, 2018b; Izuhara, 2016); and a failure to recognise assets' social values (Fox O'Mahony and Overton, 2015; Toussaint and Elsinga, 2009).<sup>2</sup> All three issues point to one fundamental problem: the main actor – the individuals – is missing in policy discussions concerning the accumulation and decumulation of wealth.

---

<sup>2</sup>These problems are particularly acute in relation to housing asset. The recent discussions on asset-based policies in Britain evolved around housing as an source for funding retirement and care (Malpass, 2008), which has become even more crucial after the financial crisis (Ronald, Lennartz and Kadi, 2017). Many have benefited from the Right to Buy scheme since the early 1980, which facilitated housing wealth accumulation. The May's government attempt to use housing for funding social care in later life, however, was hugely unpopular as a discouraging nickname, 'the dementia tax' (Ham, 2018).

### **5.3.2 The younger generation**

This chapter focuses on adults aged between 25 and 49. As discussed in Chapter 1, there are several reasons for focusing on the younger generation. First, wealth has become more important for the younger half of the working-age population due to the increased uncertainty involved in saving for retirement. Second, as individuals start organising their lives financially more actively during this stage of life, evidence on the patterns of such organisation can shed light on their long-term saving behaviours. Third, wealth-building patterns of the younger generation can provide insight into how within-generation inequality takes shape. Relative disadvantages at the early stages of adulthood may translate to a considerable difference in wealth outcomes in the long run. Understanding their approach to wealth accumulation can inform policies that concern economic well-being today and in the future.

## **5.4 Research questions**

Based on the discussions above, this chapter raises two questions: Are there distinct wealth accumulation patterns among the younger generation? Do these profiles change over time, and if so, what can explain such change? While these questions are descriptive in nature, answering them provides useful information for learning individuals' approach to wealth accumulation.

## **5.5 The Balance Sheet approach**

This chapter proposes the Balance Sheet approach to describe individuals' wealth holding systematically. A balance sheet is a statement that contains information on an entity's financial standing widely used in the accounting discipline. It provides a useful framework to reorganise wealth information by type, nature of ownership, ease of access and value so that the quantitative analysis can distil information about individuals' approaches to and capabilities of wealth building.



### 5.5.1 Wealth, assets and debt – definitions and characteristics

Before discussing wealth accumulation, it is useful to define ‘wealth’ for this chapter. According to the Oxford dictionaries, wealth is defined as ‘an abundance of valuable possessions and money’. Possessions and money include not only tangible articles, such as houses and goods but also intangible items, such as human capital. The word ‘abundance’ indicates wealth connotes a positive quantity. Through ‘ownership’ of possessions and money from which ‘value’ can be derived, individuals or households have wealth, and its value is expressed in quantities of currencies that can be accumulated and decumulated. The definition of wealth in this sense is qualitative and socially constructed.

As the focus of this paper is the attitudinal and behavioural aspect of wealth accumulation, it is more useful to disaggregate ‘wealth’ into categories with distinctive characteristics. First, based on what is owned, wealth can be categorised into financial, property, pension and physical wealth as per the classification by ONS (2018). Financial wealth refers to the monetary values of financial products such as bank accounts, shares and bonds and insurances. Property wealth indicates ownership of a property, such as houses, buildings or land. Pension wealth is the value that is earned or accumulated through pension saving vehicles such as state, occupational and/or private pension schemes. Physical wealth refers to the monetary values of possessions that take physical forms, such as cars and personal belongings (Hills and Bastagli, 2013).

Assets (‘owning’) and debt (‘owing’) are distinguished in this chapter. Wealth is often referred to as a net of assets less debt (Killewald, Pfeffer and Schachner, 2017), or used interchangeably with ‘assets’ (e.g. Collines et al., 2011). In this chapter, assets refer to the resources owned by an entity, while the term debt is indicative of the amounts owed to another entity. This distinction is important for two reasons. First, it identifies with whom the ownership lies. Perceptions and understanding of assets and debt vary by individual, and these perceptions shape economic activities differently. An increase in assets is considered positively as it improves autonomy and future economic security (e.g. Sherraden, 1991), while incurring debt is associated with the negative sentiment of a burden and the deterioration of

one's economic well-being (Richardson, Elliott and Roberts, 2013; Rona-Tas and Guseva, 2018; Turunen and Hiilamo, 2014).

Second, the division enables separate quantification which not only specifies gross assets and debt amounts, but also reveals the relative size of an asset to debt. The gross figures are useful because debt is used to support consumption as well as to build assets (Appleyard, 2011; Hood, Joyce and Sturrock, 2018; Turner, 2015). This dual characteristic – problematic as well as useful – is lost if wealth is summarised into a net figure. The relative size is useful for differentiating individuals with different gross amounts albeit the same net wealth.

Some wealth building channels are easier to acquire or liquidate. For instance, a housing asset is harder to own than cash savings for a large sum of money required initially. It is also not easy to liquidate quickly, which may be problematic if it is the only safety-net asset. For debt, the accessibility refers to the repayment duration.

By differentiating assets and debt, all wealth categories are non-negative. Zero values are as meaningful as non-zero values; the difference indicates ownership (asset) or usage (debt). On the other hand, the non-zero positive values show the worth or intensity held in each category. The characteristics of wealth by type, ownership, liquidity and valuation methods are summarised in Table 5.1.

### **5.5.2 Hypothesised saver types and movements over time**

Saver types are hypothesised (see Table 5.2) based on the reorganised wealth data. Individuals who just started to save or prefer low risk saving with immediate access may prefer cash savings. Given the strong preference for homeownership in Britain and the perception of property investment as the best-value way to save for retirement (see Table 2.1 in Chapter 2, page 28), some may focus more on building housing wealth than other types of wealth. Some older individuals in the study sample may have accumulated more pension savings and be categorised as pension savers, while others may invest more actively in financial markets. In addition, a small number of individuals is also expected not engaged in any substantive wealth accumulation activity.

Table 5.1 Categories of asset and debt using the balance sheet approach

Component and types of wealth	Categories of assets and debts	Details
Financial Assets	Cash savings	Cash saved in a bank account or Individual Savings Account (ISA).
	Investments (Shares and bonds etc.)	Shares or bonds including those held in ISA accounts
Property Assets	Housing wealth (main residence)	Value if sold today
Pension Assets	Defined Benefit (DB) schemes	Estimated*
	Defined Contribution (DC) Schemes	Reported
	Private pension wealth	Reported
Financial Debts	Consumer debt	Credit card, purchase card, store card and outstanding mail order amount
	Loans (non-mortgage)	Personal and car loans
Property Debt	Mortgages (main residence)	Reported

\* See the user guide to the fifth wave of WAS (ONS, 2018c)

Table 5.2 Five hypothesised saver types

Hypothesised types of WAP	Principle mode of wealth accumulation	Perceived risk	Ease of access for assets ('liquidity')
Cash savers	Cash savings	Low	High
Property savers	Homeownership	Low – Medium	Low – Medium
Pension savers	Workplace pension schemes, private pension schemes	Low	Low
Market savers	Shares and other financial instruments	High	Medium – high
Non-savers	Utilisation of debt facilities, such as credit card and loans (excl. mortgage)	Medium – High	NA

## 5.6 Data

The analysis is based on the WAS dataset. As discussed previously, WAS is a biennial nationally representative study that focuses on documenting the wealth holding and economic well-being of British households. It was first carried out in July 2006 and June 2008 (ONS, 2018c), with five waves available to date (September 2019). However, only the most recent three waves, corresponding to the period between 2010/12 and 2014/16, are used for analysis here due to the issues of systematic patterns of missing responses and concerns regarding the representativeness of income variables in the first two waves.<sup>3</sup>

### 5.6.1 The study sample

The study uses a longitudinal subsample of adults aged between 25 and 49 ( $n=2,456$ ). To test for the potential effect of attrition, characteristics of the study sample are compared to those of the cross-sectional one. Table 5.3 shows that the characteristics are largely similar with minor differences, but the study sample is slightly older and more likely to be in owner-occupation. This may be due to issues regarding residential mobility as homeowners are less likely to be lost to a panel study. However, the extent of the difference is not severe and unlikely to change the outcome of this chapter substantially.

### 5.6.2 Individual balance sheet

Data are reorganised according to the categories listed in Table 5.1. The non-main residence property ownership is excluded. While it is an important aspect of wealth inequality (Rowlingson and McKay, 2011b), the proportion of non-main residence property owners is not sufficiently substantial to be useful for the purpose of this study given that a majority of them are also homeowners.<sup>4</sup>

---

<sup>3</sup>The missing response patterns for the variable that capture inheritance amounts received in the previous five years prior to the first wave (2006/8) cannot be assumed to be random. The income variables for the first and second waves (2006/8 and 2008/10) are considered not representative, as benefit receipt amounts were omitted for some individuals.

<sup>4</sup>Around 11% of individuals owned any form of other property, around 70% of whom were homeowners.

Table 5.3 Descriptive statistics of the longitudinal and the cross-sectional WAS population

Aged between 25-49 in 2010/12		Study sample	Survey population
Characteristics	Categories	(2010/12)	(2010/12)
Age group	25-29	11%	15%
	30-34	19%	20%
	35-39	21%	20%
	40-44	25%	22%
	45-49	24%	23%
Gender	Males	44%	46%
	Females	56%	54%
Marital status	Married	59%	56%
	Cohabiting	15%	17%
	Single	17%	19%
	W/D/S	9%	8%
Number of children	None	43%	46%
	1 child	25%	24%
	2 children	25%	22%
	3 children +	7%	8%
Equiv. household income	(Mean)	£35,500	£37,700
	(Median)	£29,300	£30,700
	(IQR)	£23,800	£25,300
Socio-economic status	Managerial	43%	43%
	Intermediate	20%	20%
	Routine and manual	33%	33%
	NA / Other	3%	5%
Educational level	Secondary or lower	70%	69%
	Degree-educated	30%	31%
Current account	Yes	97%	97%
Savings account	Yes	55%	53%
Amount held	(Mean)	£4,900	£5,000
	(Median)	£800	£600
	(IQR)	£2,900	£2,900
ISA account	Yes	38%	34%
Bonds	Yes	4%	3%
Shares	Yes	14%	97%
National Savings account	Yes	13%	11%
Financial assets (Gross)	(Mean)	£16,368	£17,315
	(Median)	£1,950	£1,450
	(IQR)	£10,740	£9,868
Housing tenure	Owner occupation	68%	62%
	Social renting	17%	17%
	Private renting	12%	15%
	Other (living with parents/children)	3%	6%

The wealth variables are specified as follows. The cash savings variable represents the value of any savings account, including the Individual Savings Account (ISA). Bank account ownership for this age group in Britain is readily available and widely used. Many individuals will have a small balance; therefore, one might consider applying a threshold of, for example, £1,000.<sup>5</sup> Doing so, however, is problematic as any savings amount contributes to building a safety net. The financial investment variable is a sum of all other financial asset held in non-cash forms such as shares, stocks and bonds, as reported by the respondents.

Housing wealth for married couples is allocated equally between the partners. While it is more natural to understand housing wealth at the household level, doing so would lead to either double-counting housing assets for married individuals or to the exclusion of non-HRPs.<sup>6</sup> This introduces a bias as HRPs are predominantly male, whose individual wealth structure (such as pension wealth) differ greatly from their female partners'. The equal share assumption is applied as a starting point for asset allocation. Dividing wealth using an arbitrary rule between couples (married or unmarried) is problematic, as couples often view that they share assets (Joseph and Rowlingson, 2012). There is, however, no consensus on how to equalise household wealth to date. In reality, marriage dissolution (i.e. divorce) results in various asset division rules, and assuming that one rule represents all cases would be wrong.

Three types of pension variables are included: two occupational pension schemes (DB or DC) and private pension. DB and DC pension assets are distinguished on the basis of their difference in risk-structure and valuation methods. This distinction is necessary in the British context as the shift in occupational pension schemes (from DB to DC schemes) mostly affects the younger generation. Moreover, respondents would have been enrolled into DC schemes by the time the fifth wave of WAS was conducted (July 2014 – June 2016), which increases the proportion of those who hold DC as opposed to DB schemes. Information on pension entitlements in WAS is collected at the individual level and excludes

---

<sup>5</sup>Money Advice Service (MAS) recommends earmarking it for an emergency. See <https://www.moneyadviceservice.org.uk/en/articles/emergency-savings-how-much-is-enough>

<sup>6</sup>Criteria for identifying HRP in WAS is as follows: 1) Whose name the current residence is provided under, 2) Higher income level and 3) older age. If the accommodation is held in two or more names, then the second and third criteria are applied until one person is identified.

the state pension entitlement. Private pensions are included in the analysis because private pension schemes are alternative to occupational pension schemes due to employment type (i.e. self-employment). This characteristic is different from the ownership of other properties, which is additional to the main-residence ownership.

Debt is categorised into consumption-related debt, personal loans and mortgage loans (main-residence). Consumption debt includes any overdraft, outstanding balance in credit card, store card or in mail-order accounts. A personal loan includes non-mortgage loans, such as personal or car loans. For the analytical sample, student loans were not substantial (see Table 5.9 in Appendix to this chapter). Mortgage debt is included in a form mortgage-to-equity ratio. Descriptive analysis of these nine balance sheet items for three waves is provided in Table 5.4.

### 5.6.3 Covariates

Covariates include age, sex, marital status, education level, household income, parental homeownership and intergenerational transfer receipt. Age is centred at 35 and sex distinguishes males and females. Marital status is a binary variable indicating married couples and non-married individuals, and degree-level education is a dummy variable. Household income includes regular earnings in a household, which is equivalised using the modified OECD scale. Adult children living with parents and flatmate households are treated as a separate economic unit. Parental homeownership refers to the housing tenure during the teenage years and is a dummy variable. The intergenerational transfer variable indicates the receipt of financial resources from family of greater than £15,000. The amount is a sum of inheritance, cash gift ( $\geq$  £500) and informal loans ( $\geq$  £500) at the household level.

Table 5.4 Proportions ownership and mean values of asset and debt holding (2010/12-2014/16, n=2,456)

	Proportion of individuals			Median saving values			Mean saving values		
	2014/16	2012/14	2010/12	2014/16	2012/14	2010/12	2014/16	2012/14	2010/12
Cash Saving	94.2%	92.8%	91.6%	£1,700	£1,400	£1,400	£8,600	£8,300	£7,600
Cash saving (>£1,000)	59.0%	55.7%	55.5%	£5,800	£5,500	£5,100	£13,600	£13,200	£13,000
Financial investments	24.6%	27.4%	28.6%	£0	£0	£0	£8,000	£6,100	£5,900
Property (main residence)	70.3%	69.1%	69.9%	£90,000	£80,000	£80,000	£111,000	£94,000	£89,800
DB pension schemes	37.9%	34.6%	36.8%	£0	£0	£0	£54,000	£31,200	£20,800
DC pension schemes	25.5%	18.4%	16.5%	£0	£0	£0	£26,000	£30,500	£31,100
Private pension schemes	12.4%	13.8%	14.1%	£0	£0	£0	£6,000	£4,400	£3,500
Consumption related debts	44.3%	42.7%	44.7%	£0	£0	£0	£2,000	£1,500	£1,500
Non-mortgage loans	20.4%	19.9%	23.5%	£0	£0	£0	£2,000	£2,000	£2,300
Mortgage loans	63.0%	62.5%	64.1%	£28,300	£28,300	£30,000	£43,000	£41,400	£42,200

Note: All proportions are weighted. Property asset and mortgage loan values are individualised for married couples.



### 5.6.4 Descriptive analysis

Assets and debts are expressed in gross terms. All wealth components in Table 1 carry non-negative values. For example, cash savings is equal to or greater than zero and any overdraft amount, also non-negative, is classified as debt. Table 5.4 presents the proportions of asset ownership and the median and mean values (nominal) of the balance-sheet items. It shows that homeownership and cash savings are the two most commonly held asset among British adults aged between 25 and 49 in 2014/16. It also shows that the distributions of other asset and debt types are positively skewed as mean values are greater than the median, suggesting that a small proportion of individuals hold high values. Cash saving is also concentrated on modest values; while nine out of ten individuals have savings account (greater than zero), only about three out of five individuals hold savings account with a balance equal to or greater than £1,000. One out of four individuals has financial investment. In terms of pension assets, DB pension schemes are still the most widely held, although the proportion of individuals with a DC scheme increased from 16.5% in 2010/12 to 25.5% in 2014/16 as per the introduction of AE during this period. Only one in eight individuals holds a private pension, and their average value is less than DB or DC schemes.

Table 5.4 also shows that the proportions across waves for most categories do not show considerable change. This indicates that the portfolio in the previous period may be a good predictor for the current one. The nominal values increased between 2010/12 and 2014/16 for most asset and debt types, except for DC pensions and non-mortgage loans. The decrease in the average value of DC schemes is due to the new DC scheme joiners who have small initial saving amounts that reduce the overall average. A significant increase is observed for the main residence property asset<sup>7</sup> and the DB pension asset, which both represent a large proportion of total assets.

<sup>7</sup>For example, the mean (self-reported) value of main residence is 24% higher than that reported in 2010/12, which is similar to the house price increase of 16% according to the data provided by Nationwide between 2010 and 2016 (from £192,000 to £223,000), compared to the low interest rates during the same period.

## 5.7 Analytical strategy

The modelling strategy involves two separate procedures. First, saver types are developed cross-sectionally for three waves separately. The objective here is to establish a model that fits the three waves equally well and that offers a consistent interpretation of saver types across waves. This interpretation forms the basis for examining the change over time. Second, the longitudinal analysis involves examining the transitions in the saver type membership over time. The model then is expanded to include covariates to predict the initial saver type membership as well as transition probabilities. The first part of the analysis is performed using FMM. The longitudinal analysis is conducted using LTA in Mplus version 8.4 with mixture add-on (Muthén and Muthén, 2017). Notations used in this chapter follow those used by Collins and Lanza (2010).

The four saver types are established based on the asset and debt categories and their values. The longitudinal wealth accumulation pattern is analysed based on movements in the membership rather than changes in the amounts. There are several reasons for modelling changes in patterns, rather than patterns of changes. First, the study focuses on the individuals' perspective of wealth accumulation which is better explained by studying changes in approaches to wealth accumulation are more relevant. Hence, saver types offer more information for studying wealth accumulation approaches and capabilities. Second, wealth is studied as a portfolio of distinctive balance sheet elements. Therefore, the changes in combinations (and compositions) of assets are more relevant here than increases or decreases in a summarised net wealth figure. Lastly, examining wealth dynamics would be useful if it were possible to untangle active (individual-initiated saving/dissaving) and passive (macro-economic conditions) accumulation. However, doing so would focus on the economic value of wealth rather than how individuals organise their economic lives.

### 5.7.1 The two-part approach: a factor mixture model

The observed variables take non-negative values and show a strong floor effect with a high number of zero values, referred to as 'zero-inflation'. Zero values in this study carry

information about non-ownership, which is essential for understanding the composition of a wealth portfolio. In this case, treating zero as ‘proxies for negative or missing values’ ignores the meaning of these zeros (Olsen and Schafer, 2001) and leads to misrepresentation of the data or to failure to identify unobserved heterogeneity (Kim and Muthén, 2009; McLachlan and Peel, 2000). A sensible analytical approach is a two-part approach in which the model consists of the binary and the continuous parts. This approach is analogous to the Hurdle model, which is found to outperform other approaches such as the zero-inflated Poisson (ZIP) model (Miller, 2007).

Several studies have implemented the two-part approach using FMM (Kim and Muthén, 2009; Muthén, 2006, 2008) with an estimation strategy developed by Olsen and Schafer (2001). In the study of school children’s aggressive behaviours, Kim and Muthén (2009) use a latent class model to represent the binary part of the data and a class-specific factor structure to represent the continuous part; this resulted in a 2-factor and 2-class model. They conclude that it provides new insight into children’s aggressive behaviour; the class model distinguishes groups of children with different likelihoods of engaging in aggressive behaviour, while the class-specific factor model measures the level of behavioural aggressiveness (Kim and Muthén, 2009).

The notions of ‘ownership’ and ‘intensity’ of each of the balance sheet items discussed in Section 5.5.1 can be studied similarly to those outlined by Kim and Muthén (2009). Construction of the two-part data is as follows. The wealth indicators for individual  $i$  ( $y_i$ ) are decomposed into two parts – (a) a dichotomous part denoted by  $u_i$ , for ownership of asset or debt categories, and (b) a continuous part denoted by  $v_i$ , representing the value of holding (‘intensity’) given the ownership. The continuous part is log-transformed to follow an approximately normal distribution. The dichotomous part is

$$u_i = \begin{cases} 1, & \text{if } y_i > 0 \\ 0, & \text{if } y_i = 0 \end{cases}, \quad (5.1)$$

while the continuous part is,

$$v_i = \begin{cases} \log(y_i), & \text{if } y_i \neq 0 \\ (\text{irrelevant}), & \text{if } y_i = 0 \end{cases} . \quad (5.2)$$

The FMM is estimated in three stages, as outlined by (Kim and Muthén, 2009). The first step concerns only the dichotomised part of the data ( $u_i$ ) using LCA. The second stage contains only the continuous part ( $v_i$ ) which is conditioned on the binary part; only individuals with positive values in each of the balance sheet items contribute to this part of the model. The last step combines the binary and continuous parts.

### Latent class analysis for the binary part of the data

LCA is used when the latent construct of interest is assumed to be categorical, such as saver types. LCA is a model-based technique to identify and describe multiple subpopulations that share characteristics within a population. The modelling exercise focuses on assigning individuals to specific groups. It is assumed that individuals who are randomly selected from the population would belong to only one group (Collins and Lanza, 2010). The idea behind the LCA method is that, if a group of individuals share attitudes towards an object/issue, their responses to survey questions about the object/issue would share a pattern. These similarities in the response patterns help identifying subgroups of individuals who share characteristics unique to the subgroups (Bartholomew et al., 2008). Following notations from Collins and Lanza (2010), an LCA model can be written as

$$P(\mathbf{U} = \mathbf{u}) = \sum_{c=1}^C \gamma_c \prod_{j=1}^J \prod_{r_j=1}^{R_j} \rho_{j,r_j|c}^{I(u_j=r_j)} \quad (5.3)$$

where  $u_j$  is the response pattern for an item  $j$ ,  $r_j$  represents the response category of item  $j$ . The response for item  $j$  is  $u_j$ .  $\gamma_c$  represents the probability of belonging to class  $c$ , which is termed posterior probability, while  $\rho_{j,r_j|c}$  represents the probability of observing response  $r_j$  given the class membership  $c$  for item  $j$ , which is referred to as conditional item probability. The sum of  $r_c$  for the  $C$  number of classes is 1, and the sum of  $\rho_{j,r_j|c}$  for all categories of item

$j$  is 1. That is, the classes are independent and mutually exclusive. It is important to note that LCA assumes all individuals in the same class have the same conditional item probability and that their similarities are sufficiently accounted for by belonging to the same class (i.e. local independence assumption) (Bartholomew, Knott and Moustaki, 2011; Bartholomew et al., 2008; Skrondal and Rabe-Hesketh, 2004). Logistic regression is used as a link function. Putting the conditional item probabilities for all items together by saver type and comparing them across classes are key to distilling information unique to each class. Lower (higher) probabilities indicate that the characteristic of the item is less (more) likely to occur in the particular group membership.

As the analysis aims to identify distinctive subgroups in a population, the choice of a number of classes is important for model selection. Unless the additional group significantly improves the model fit, a smaller number of groups is preferred in mixture models. This is because the classes become less distinctive as the number of classes increases (Collins and Lanza, 2010; McLachlan and Peel, 2000). The ‘right’ number of classes is determined by comparing the goodness of fit statistics and interpretability of classes for models with different number of classes, for example,  $C - 1$ ,  $C$ , and  $C + 1$ , where  $C$  may be determined initially based on the hypothesis. Goodness of fit statistics used include information criteria that penalise increases in the number of parameters such as Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) (Byrne, 2012; Collins and Lanza, 2010; McLachlan and Peel, 2000). When these criteria point to different models for better fit, more weight is given to the BIC, which is found to be the most stable information criterion for LCA (Nylund, Asparouhov and Muthén, 2007). As there are five hypothesised profiles as shown in Table 5.2, models with 3, 4, 5 and 6 classes are tested to determine the most appropriate number of classes.

### **Factor analysis for the continuous part of the data**

The second step concerns the continuous part of the model and focuses on FA. The motivation behind FA is that the latent quality, which is assumed to be on a continuous scale, can be modelled based on the observed items that are conceptually relevant to the underlying quality

(Bartholomew et al., 2008). The factor model in FMM with one-factor is

$$v_{jc} = \tau_{jc} + \lambda_{jc}\eta_c + e_{jc}, \quad (5.4)$$

where  $v_{jc}$  are the continuous outcome variables for an item  $j$  ( $j = 1, 2, \dots, p$ ) in a latent class  $c$  ( $c = 1, 2, \dots, C$ ). The intercept term  $\tau_{jc}$  and the factor loading  $\lambda_{jc}$  can be specified for each item  $j$  depending on class  $c$ . As seen in the equation above, Factor ( $\eta_c$ ) is a latent factor which is conditioned on class  $c$  and predicts the continuous part of the outcome variable  $v$ . Interpretations of these parameters are analogous to standard regression analysis.

### FMM for the binary and the continuous parts

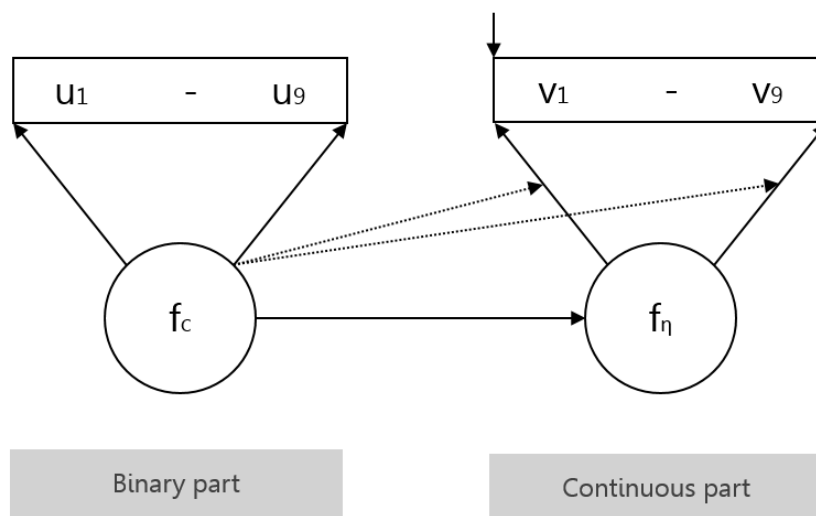
A model in the FMM framework consists of two interlinked models: on the left-hand side of Figure 5.1, the binary variables ( $u_1 - u_9$ ) are represented by a latent class  $f_c$ , and the continuous indicators ( $v_1 - v_9$ ) by a continuous latent factor  $f_\eta$ . The arrows from  $f_c$  to  $f_\eta$  (straight) and factor loadings (dotted) denote that the factor ( $f_\eta$ ) is conditioned on the latent class ( $f_c$ ).

The parameters of the factor model (factor loadings and item intercepts) can be fixed to be equal for all latent classes or estimated freely by class membership (see Figure 5.1). It produces four possible parameterisations for the combinations of the factor loadings (restricted or freely estimated) and the item intercepts (restricted or freely estimated). Restricting these parameters to be consistent cross classes suggests that the factor interpretation applies to all classes. In contrast, freely estimating them lead to class-specific factor interpretations.

The hypothesis here is that a latent factor explaining levels of wealth accumulation is consistent regardless of saver type, while savers have different levels of wealth by saver type (conditioning on the class). This hypothesis is tested through comparing the model fit of the four possible model parameterisations. The final model is chosen based on the model goodness of fit criteria as well as the substantive interpretation of the model.

The goodness of fit criteria for model selection for FMM are similar to those of LCA. McLachlan and Peel (2000) suggest using the Bootstrapped Likelihood Ratio Test (BLRT), as

Fig. 5.1 A factor mixture model with binary and continuous observed indicators

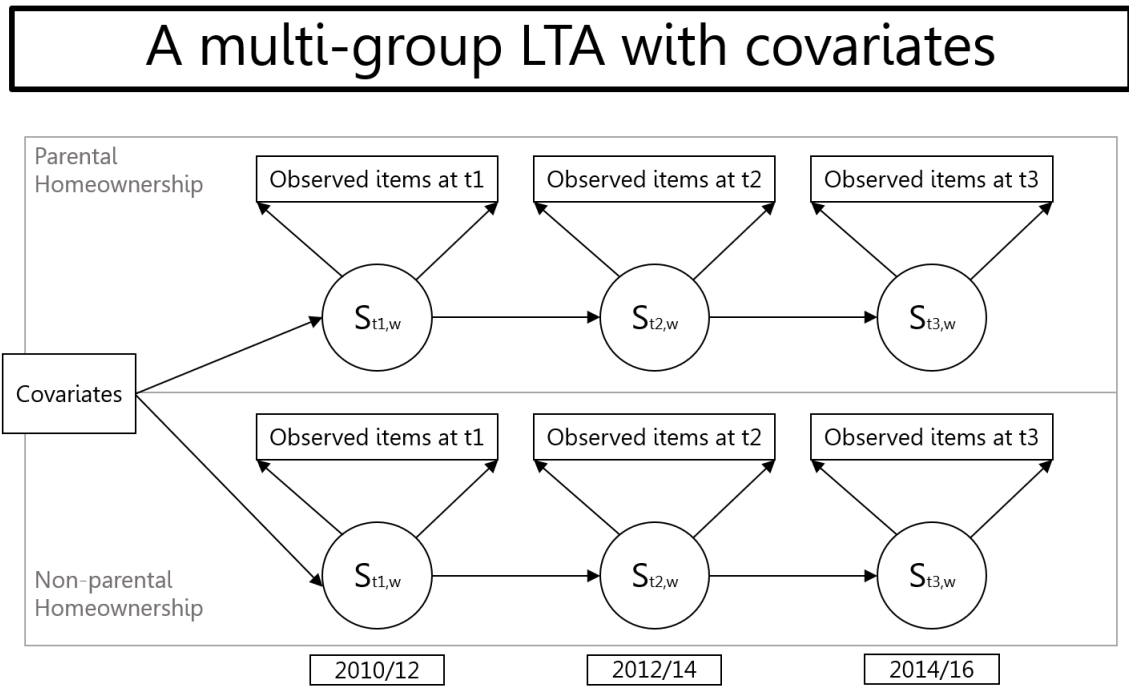


the LRT statistic obtained in the mixture model violates the regularity conditions assumption (boundary value issue in the null model), which makes it problematic to assume a chi-square distribution. The BLRT statistic, however, cannot be obtained when using a weight and cluster correction in Mplus. Instead, the model selection criteria used include AIC, BIC, adjusted BIC, entropy as well as a number of the parameters.

### 5.7.2 Longitudinal extension: changes in class membership over time

The longitudinal analysis focuses on the binary part of the model using LTA. The continuous part may not contribute substantially to the model at this stage as the changes are modelled based on the saver types. There are three hypothesis on transitions. First, it is hypothesised that the group membership is mostly predicted by the saver type in the previous wave. This implies that most individuals belong to the same saver type over three time points. Second, the extent of this stability, however, is expected to depend on parental socio-economic background, given the increasing intergenerational link in economic outcomes. Third, the initial saver types are hypothesised to differ by individual and parental characteristics. These hypotheses are tested in the LTA framework, with the assumption that current saver type is sufficiently predicted by the previous one.

Fig. 5.2 A multi-group LTA with covariates for the initial state



The model is examined further in the multi-group structure by parental homeownership. The transition probabilities are estimated simultaneously but separately for two subgroups in one model in the multi-group analysis framework as discussed in Chapter 3 (Section 3.8, page 86). This multi-group model is further extended to include covariates to predict the initial saver type membership. Transition probabilities between time  $t$  and time  $t+1$  are presented in Table 5.5. A graphical representation of the model, a multi-group LTA with covariates, is provided in Figure 5.2.

Table 5.5 Transition probabilities for four classes for time  $t$  and  $t+1$ 

Time $t$   Time $t+1$	Saver type 1	Saver type 2	Saver type 3	Saver type 4
Saver type 1	$P(s_{t+1}=1   s_t=1)$	$P(s_{t+1}=2   s_t=1)$	$P(s_{t+1}=3   s_t=1)$	$P(s_{t+1}=4   s_t=1)$
Saver type 2	$P(s_{t+1}=1   s_t=2)$	$P(s_{t+1}=2   s_t=2)$	$P(s_{t+1}=3   s_t=2)$	$P(s_{t+1}=4   s_t=2)$
Saver type 3	$P(s_{t+1}=1   s_t=3)$	$P(s_{t+1}=2   s_t=3)$	$P(s_{t+1}=3   s_t=3)$	$P(s_{t+1}=4   s_t=3)$
Saver type 4	$P(s_{t+1}=1   s_t=4)$	$P(s_{t+1}=2   s_t=4)$	$P(s_{t+1}=3   s_t=4)$	$P(s_{t+1}=4   s_t=4)$

Note: S denotes saver types. Adapted from Nylund (2007).



The meanings of the saver types are constrained to be consistent across three time points by imposing one structure that fits three waves equally well. While not necessary, doing so facilitates interpretation and stability of estimation (Collins and Lanza, 2010). It is examined by modelling the cross-sectional FMM structure for each wave separately and comparing them for consistency in terms of the results and interpretations of the models.

The model for LTA is as follows:  $t$  denotes time, and  $s$  denotes the saver types that are held consistent across waves with  $S$  number of types. The probability of being allocated to a saver type at the first time point are  $\delta_{s1}$ , the probability of transitioning from the first wave saver type to the second wave saver type is  $\tau_{s2|s1}$ . The particular set of response in LTA is

$$P(\mathbf{U} = \mathbf{u}) = \sum_{s_1=1}^S \cdots \sum_{s_T=1}^S \delta_{s_1} \tau_{s_2|s_1} \cdots \tau_{s_T|s_{T-1}} \prod_{t=1}^T \prod_{j=1}^J \prod_{r_{j,t}=1}^{R_j} \rho_{j,r_{j,t}|s_t}^{I(u_{j,t}=r_{j,t})} \quad (5.5)$$

By allowing the initial class membership and transition probabilities to vary by homeownership,  $W$  ( $w = 0, 1$ ), and covariates  $\mathbf{X}$  (in bold to indicate multiple covariates), the model is

$$P(\mathbf{U} = \mathbf{u} | W = w, \mathbf{X} = \mathbf{x}) = \sum_{s_1=1}^S \cdots \sum_{s_T=1}^S \delta_{s_1|w}(\mathbf{x}) \tau_{s_2|s_1,w} \cdots \tau_{s_T|s_{T-1},w} \prod_{t=1}^T \prod_{j=1}^J \prod_{r_{j,t}=1}^{R_j} \rho_{j,r_{j,t}|s_t,w}^{I(u_{j,t}=r_{j,t})} \quad (5.6)$$

Transition probabilities,  $\tau_{s_T|s_{T-1},w}$ , are hypothesised to vary by parental homeownership,  $w$ , but not by covariates  $\mathbf{X}$ . The probability of class membership for class  $s_1$  for  $t_1$ , which is predicted by group variable  $W$  and covariates  $\mathbf{X}$  ( $= x_1, x_2, \dots$ ),  $\delta_{s_1|w}(\mathbf{x})$ , can be expressed in multinomial logistic regression,

$$\delta_{s_1|w}(x_1, x_2, \dots) = \frac{\exp(\beta_{0s_1|w} + \beta_{1s_1}x_1 + \beta_{2s_1}x_2 \dots)}{1 + \sum_{s'=1}^{S-1} \exp(\beta_{0s_1|w} + \beta_{1s_1}x_1 + \beta_{2s_1}x_2 \dots)} \quad (5.7)$$

where there are  $S$  number of saver types  $s'$ .

## 5.8 Results

Four saver types are identified from the FMM analysis: undersavers, property saver-dissavers, traditional savers and investor savers. Followed longitudinally, most individuals remain in the same saver type over the three time points, which suggests that it is important to examine the class membership at the first time point. Demographic, socio-economic characteristics and parental homeownership contribute to determining the allocation to saver types at the first stage (2010/12). In the next section, cross-sectional results are discussed. The longitudinal results then follow in the subsequent subsection.

### 5.8.1 Cross-sectional results: saver types

The cross-sectional results from the model given in Section 5.7.1. A four-class one-factor model with class-specific item intercepts (Model 4C 1F (c) in Table 5.13 in Appendix to this chapter) is found to fit the data best, as indicated by the lowest BIC value. The results are interpreted based on the patterns of assets and debt holding (see Figure 5.3) and the average amount in each balance sheet item by saver type with zero factor score (see Table 5.6).

The results of the factor analysis for the continuous part of the model are summarised in Table 5.6. All loadings are statistically significant at the 5% level (shown in **bold**). Relative sizes of loadings show that financial investment, DC and private pension amounts contribute more information to interpreting the factor. Put differently, one unit increase in the factor score is associated with a greater increase in values in financial investments and DC pensions than in cash savings. Loan-to-value (LTV) ratio hardly contributes, while the two other debt types are positively correlated. These correlations with the consumer debt and with personal loans in contrast to the mortgage loan usage show that the factor represents the extent of use of such credit faculties. In Britain, most individuals who buy a home take a mortgage loan out of necessity. Unlike mortgages, the use of credit facilities for consumption (e.g. credit card) is discretionary. The factor captures this aspect of non-mortgage debt usage. Putting these together, the latent variable can be defined as ‘market-oriented wealth accumulation propensity’.

Fig. 5.3 Conditional item probabilities in the four-class solution in FMM (2014/16)

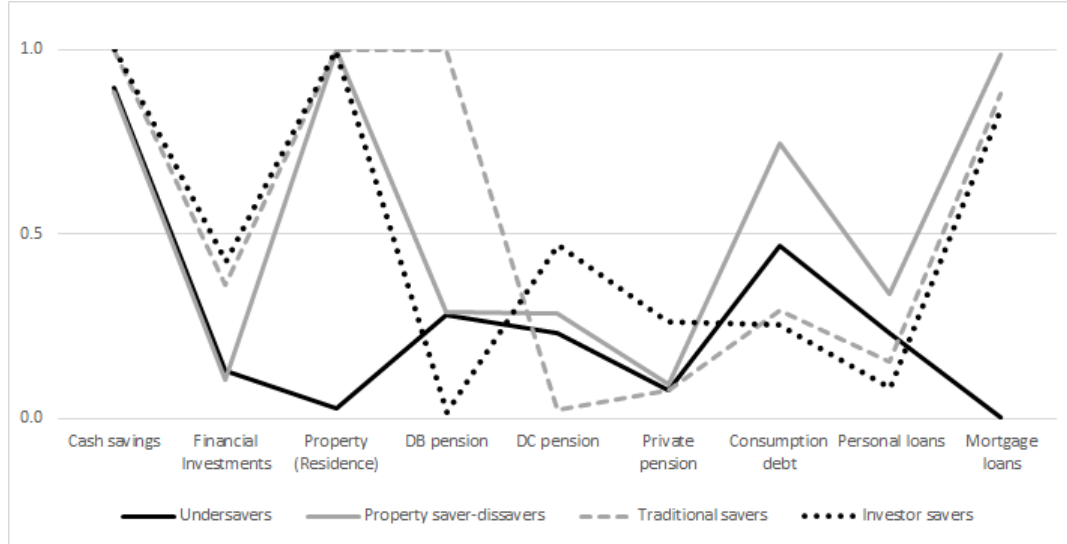


Table 5.6 Factor loadings and item intercepts by saver type (2012/14)

	Factor loadings (All savers)	Item intercepts			
		Under-savers	Property saver-dissavers	Traditional savers	Investor savers
Cash saving	1.000 <sup>+</sup>	£700	£600	£4,100	£5,500
Financial investments	<b>1.514</b>	£600	£200	£2,000	£3,300
Property	<b>0.388</b>	£106,100*	£101,500	£132,700	£148,000
DB pension schemes	<b>0.466</b>	£26,800	£79,100	£92,000	£100*
DC pension schemes	<b>1.153</b>	£1,500	£3,600	£3,400*	£8,300
Private pension schemes	<b>0.575</b>	£6,700	£6,900	£14,100	£18,800
Consumer debts	<b>0.319</b>	£1,200	£2,200	£1,300	£1,300
Personal loans	<b>0.311</b>	£3,400	£6,600	£5,900	£6,000
Mortgage loan-to-value ratio	<b>-0.055</b>	187%*	61%	43%	42%

Note: <sup>+</sup> indicates the anchored item. Factor loadings were freely estimated first with factor means fixed at zero; however, the loading of the first item was very close to -1; therefore, anchored. Factor means are fixed at zero to facilitate the comparison of the intercepts between saver types. Loadings in bold indicate statistical significance at the 5% level. \* indicate the values of asset and debt that were not likely (probability < 0.05) for the saver type to hold. Intercepts are saver-type specific and presented in the nearest £100 pounds, except for the LTV ratio.

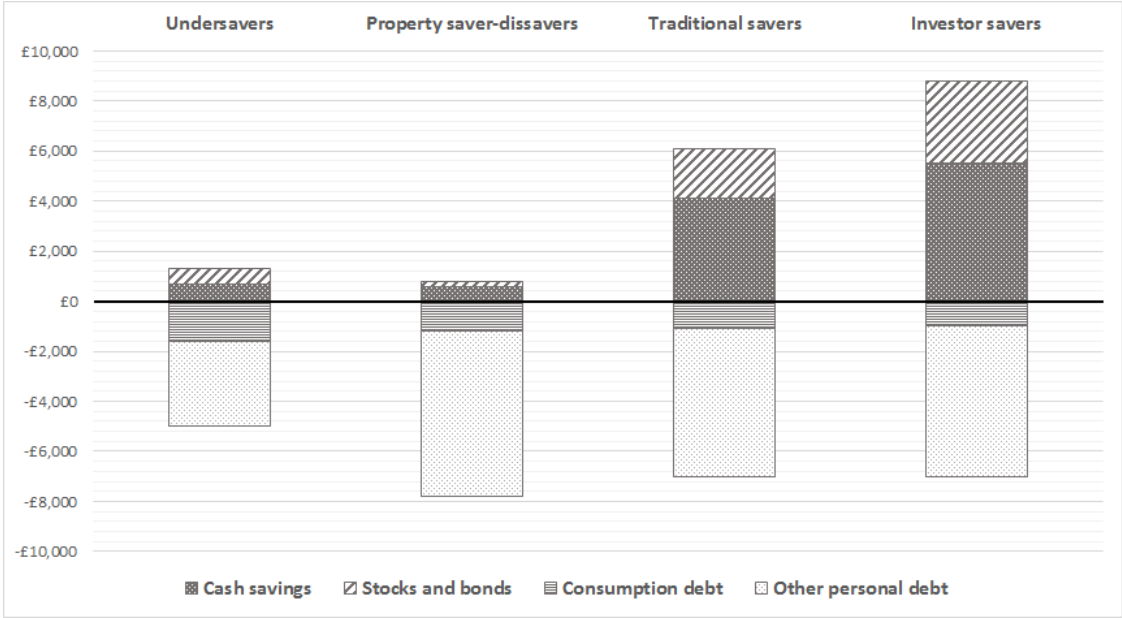
Average wealth amounts reported in Table 5.6 are the expected means for the balance sheet items when the factor score is zero. As the factor is interpreted as referring to market engagement propensity, the values represent the expected wealth held in the individual balance sheet of each saver type for savers with the average market-orientation. Undersavers hold less wealth compared to property saver-dissavers overall. Investor savers are estimated to hold the most assets in financial investment compared to other saver types, although the amount is about two-thirds of investor savers' cash savings. Property saver-dissavers are most likely to hold consumer debt and of the highest value, compared to other individuals who hold debt in different saver types. In addition, property saver-dissavers and undersavers hold disproportionately more debts than cash savings (see also Figure 5.4).

While undersavers were unlikely to own a home, the difference in the housing asset value is small between home-owning undersavers and property saver-dissavers (see Figure 5.5). On the other hand, despite having less housing assets, property saver-dissavers have a higher average loan-to-equity ratio compared to traditional or investor savers. It is potentially due to the difference in their the timing of becoming a homeowner or in the location of their main residence. For instance, those in the two wealthier saver types may have entered the housing market earlier or purchased a home in an area with a higher level of house price increase, therefore benefiting more from the favourable macro-economic conditions compared to the property saver-dissavers.

In terms of pension assets, property saver-dissavers and traditional savers are expected to hold a sizeable DB pension (for savers with the average level of market-orientation) while undersavers are much less likely to have such scheme (see Figure 5.6). In contrast, investor savers have the highest average DC scheme value, although to a very different scale in comparison to traditional savers' average DB pension. It is, however, difficult to compare DB and DC wealth directly as they are valued differently. Investor savers also hold more private pension, which indicates that this group may also contain self-employed individuals who do not accumulate pensions through the occupational pension schemes (DB or DC).

A summary of each saver type characteristics is as follows. Undersavers are unlikely to hold any asset or debt, but hold modest sums in cash savings. This group may include

Fig. 5.4 Expected means of financial assets and debts by saver types (2014/16)



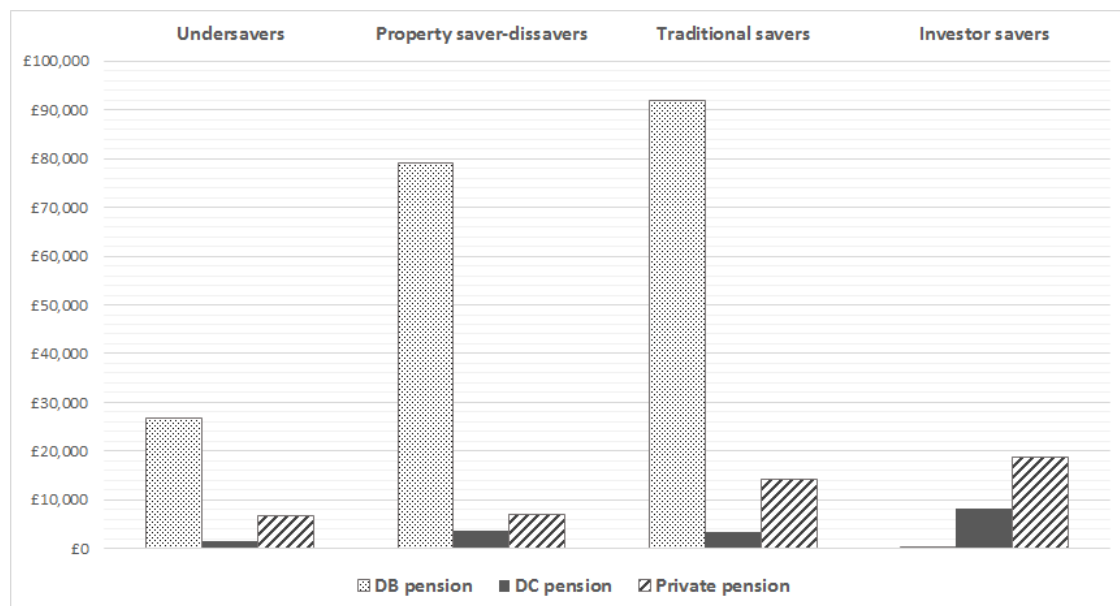
Note: Debt amounts are expressed in negative values.

Fig. 5.5 Expected means of housing assets and debts by saver types (2014/16)



Note:\*Undersavers are unlikely to own housing wealth; the figures reported here refer to among those who hold them which are likely to be based on a small number of observations.

Fig. 5.6 Expected means of pension assets by saver types (2014/16)



Note: The value of DB pension is estimated differently from that of DC; therefore, cannot be directly compared

those who are saving for homeownership and have not accumulated much pension wealth so far. Property saver-dissavers are likely to have cash savings, housing asset, consumer and mortgage debt; however, a large majority of assets are concentrated on housing, and the relative size of consumer debt to cash saving hints at a possible tendency towards dissaving. Traditional savers hold assets in the vehicles that are perceived to be low risk: cash savings, homeownership and DB pension. Investor savers' wealth portfolio is similar to traditional savers', but they are more likely to have a DC scheme instead of a DB pension. This saver group has the highest probabilities of having financial investments among all saver types, although it remains slightly under 0.5.

In terms of the level of wealth, undersavers appears to hold the least. Property saver-dissavers have higher housing asset and more considerable debt than undersavers. Traditional and investor savers hold more wealth than the previous two groups. This suggests that saver types can be ordered according to the expected level of wealth for savers with average market-orientation in each group. This is used to examine upwards (more wealth) or downwards (less wealth) movement over time in the following section.

### 5.8.2 Longitudinal results: initial conditions and transitions

The saver type structure is sufficiently stable over time to produce a consistent interpretation. There are, however, minor differences in the item probabilities for pension schemes (DB and DC) in 2012/14 compared to 2010/12 or 2014/16 (See Figure 5.17, 5.18 and 5.19 in Appendix for the item probabilities for 2010/12, 2012/14 and 2014/16 respectively). The difference is specific to 2012/14 period, as the models in 2010/12 and 2014/16 provide qualitatively identical interpretations. The deviation in 2012/14 may be driven by the increase in the DC scheme coverage following the introduction of AE (October 2012). A comparable pattern is also found in the factor loading across three time points in FMM; the loadings for DC pension increased between 2010/12 and 2014/16 (see Figure 5.22 in Appendix).

To further assess whether the saver type structure can be assumed to be consistent, the saver-type structure for the three waves, which are modelled independently, is compared to the class structure in the LTA, which assumes one consistent structure for all waves. Any material difference indicating inconsistency would lead to a poor model fit and unclear or unstable class membership structure. The results show that the structure can be assumed to be consistent as the LTA class structure (see Figure 5.20 in Appendix) is nearly identical to the models for 2010/12 and 2014/16. In addition, the composition of saver types (posterior probabilities) and their relative sizes in each time point are also found to be largely compatible (see Figure 5.21 in Appendix). Therefore, the class structure from LTA forms the base for the longitudinal analysis.

Transitions probabilities do not appear to differ substantially between those who grew up in an owner-occupier household and who did not (See Table 5.7); the likelihoods of remaining in a relatively better saver type (e.g. investor savers) were equally high. However, the proportions of individuals who remained in the same saver type over the two-year period were higher for undersavers in the non-parental homeownership group.

As mentioned earlier, the four saver types could be considered on an ordinal scale. In the ascending order of wealth holding, it is: undersavers, property savers-dissavers, and

Table 5.7 Transition probabilities between saver types by parental homeownership (2010/12-2012/14 and 2012/14-2014/16)

Parental homeownership				
Between 2010/12 (rows) -2012/14 (columns)	Undersavers	Property saver- dissavers	Traditional savers	Investor savers
Undersavers	<b>0.886</b>	0.034	0.002	0.003
Property saver-dissavers	0.091	<b>0.896</b>	0.093	0.005
Traditional savers	0.023	0.055	<b>0.889</b>	0.031
Investor savers	0.000	0.015	0.016	<b>0.961</b>
Between 2012/14 (rows) -2014/16 (columns)	Undersavers	Property saver- dissavers	Traditional savers	Investor savers
Undersavers	<b>0.867</b>	0.081	0.040	0.011
Property saver-dissavers	0.005	<b>0.905</b>	0.090	0.000
Traditional savers	0.005	0.087	<b>0.836</b>	0.072
Investor savers	0.005	0.000	0.083	<b>0.912</b>
Non-parental homeownership				
Between 2010/12 (rows) -2012/14 (columns)	Undersavers	Property saver- dissavers	Traditional savers	Investor savers
Undersavers	<b>0.962</b>	0.033	0.000	0.003
Property saver-dissavers	0.014	<b>0.887</b>	0.113	0.005
Traditional savers	0.024	0.074	<b>0.881</b>	0.031
Investor savers	0.000	0.006	0.005	<b>0.961</b>
Between 2012/14 (rows) -2014/16 (columns)	Undersavers	Property saver- dissavers	Traditional savers	Investor savers
Undersavers	<b>0.956</b>	0.044	0.000	0.000
Property saver-dissavers	0.009	<b>0.845</b>	0.140	0.006
Traditional savers	0.023	0.101	<b>0.876</b>	0.000
Investor savers	0.005	0.000	0.083	<b>0.912</b>



Table 5.8 Class membership probabilities in 2010/12 and transition probabilities by parental homeownership between 2010/12 and 2014/16.

	Class membership				Transition probabilities			
	US	PSD	TS	IS	Stable	Up	Down	All
Parental homeownership	21.6%	30.2%	30.2%	18.1%	80.3%	12.7%	7.0%	100.0%
Non-parental homeownership	36.2%	30.2%	23.7%	9.8%	85.7%	9.3%	5.0%	100.0%
All					84.3%	10.7%	4.9%	100.0%

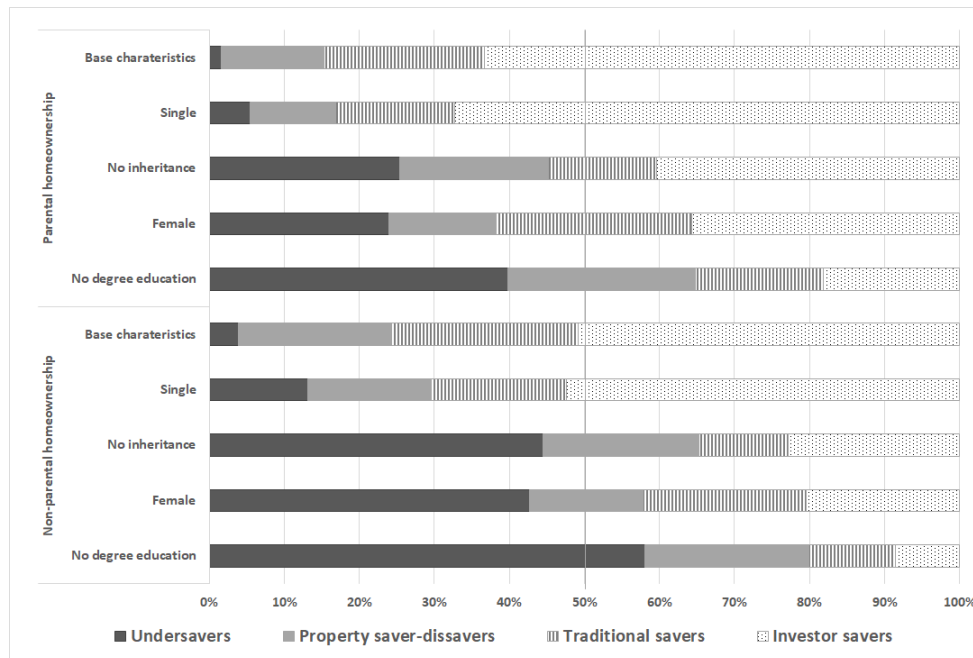
Note: TS - traditional savers, US - undersavers, IS - investor savers and PSD - property saver-dissavers.

traditional savers and investor savers.<sup>8</sup> The movements are categorised into two: upwards (e.g., undersaver to investor saver) and downwards (e.g. from investor savers to undersavers). Upward movement is slightly more frequently observed among those who grew up in an owner-occupier household, while those who did not are more likely to stay in the same saver type (see Table 5.8). This stability, however, is not entirely positive; 36.2% of individuals from non-owner occupier households are likely to be allocated in the undersavers group, compared to 21.6% of children of home-owning parents. This marked difference points to the importance of understanding the determinants of the initial saver type in 2010/12.

The characteristics that are found to be associated with the initial saver types show that the chances of belonging to the wealthier saver groups are consistently higher for individuals with a high socio-economic status and better-off family background, while the effects of demographic characteristics vary. Individuals who are younger, female or single are more likely to be in the undersaver category than in the investor saver group (the reference class), although the gender difference is not statistically significant ( $p\text{-value} > 0.05$ ). Tertiary education and a higher level of economic resources, family financial support and income are found to decrease the odds of membership of the undersaver group. On the other hand, age, tertiary education, income and intergenerational transfers are found to be negatively correlated with being in the property saver-dissaver group compared to the investor saver group. Females are also less likely to be allocated to this group, while married individuals

<sup>8</sup>While the order between traditional and investor savers are debatable; however, with the focus given on the propensity to accumulate, investor savers are deemed more active in wealth-building.

Fig. 5.7 Predicted probabilities of saver type membership by socio-economic status and social origin at the first observation (2010/12)



Note: HOP denotes Home-owning parents. The baseline probabilities are calculated for 35-year-old married men with an (equivalised) income of £36,000 per year, tertiary education, and financial transfer from family greater than £15,000 in the previous four years.

are more likely to be. However, these factors were not statistically significant. Marriage and female indicators were positively associated with higher odds for the traditional saver group compared to the reference saver type. Age, education, income and additional resources from family are expected to decrease the probabilities of being property saver-dissavers; however, these effects were marginal and not statistically significant.

It is easier to evaluate the partial effects of covariates and parental homeownership using predicted probabilities (see Figure 5.7). The profiles are organised in such a way that the base characteristics portray a group of relatively well-off individuals. The base profile represents 35-year-old married men, with a degree-level education and a household income of £36,000, with an intergenerational transfer(s) ( $\geq$  £15,000). These individuals are most likely to be investor savers according to the model. The profiles add one change in characteristics cumulatively each time. Therefore, the legends in the Figure 5.7 refer to the very change that differentiates the current profile from the immediately previous one.

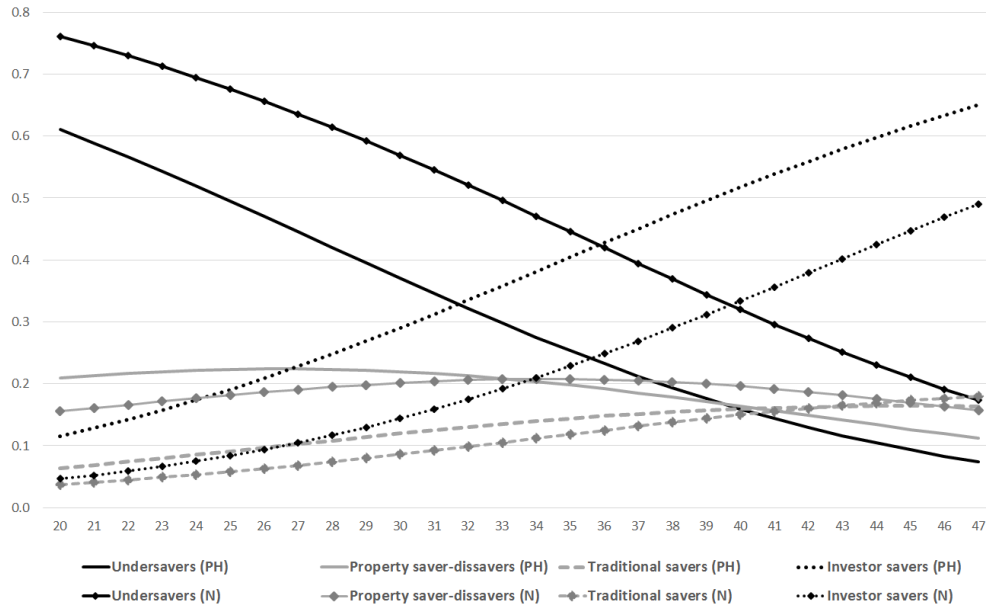
Single men, who otherwise have identical characteristics to the base profile, are slightly more likely to be investor savers as or undersavers. The extent of these increases, however, differs by parental homeownership; the increase in the chances of being investor savers is greater for those from home-owning families, while that of being undersaver are higher for children of non-home owning parents. The partial effect of the additional financial resources is greater for individuals with a lower parental socio-economic status. Without having received any transfer, the odds of being in the two lower wealth saver types increase. These patterns are found for both groups regardless of parental characteristics, but the extent of the decrease was greater for children from non-home-owning families as compared to those from owner-occupier households.

Being female is associated with a slightly different pattern; females are more likely to be traditional savers while less likely to be in other saver types than men with the same profile. This may be related to risk-averseness, as traditional savers are most likely to hold cash savings, housing assets and DB pensions. If these women are not university-educated, their chances of being investor savers and traditional savers decrease, while the chances of belonging to the undersaver or the property saver-dissaver group increase. The increase in the probability for the undersaver group is particularly sharp (even without any change in income). The most likely saver type for non-university educated females is undersavers.

Figure 5.8 depicts the partial effect of income using predicted probabilities for group membership in 2010/12 by parental homeownership. The probabilities are calculated for individuals who are 35-year-old university-educated single men without any additional financial resources from family. It shows that for those with low incomes are most likely to be in the undersaver group regardless of parental characteristics. The most probable group membership change is from undersaver to investor savers for higher income levels irrespective of parental homeownership. However, the change is estimated to occur at a considerably higher income level for individuals with a lower parental socio-economic status (around £60,000) compared to those with parental homeownership (around £25,000).

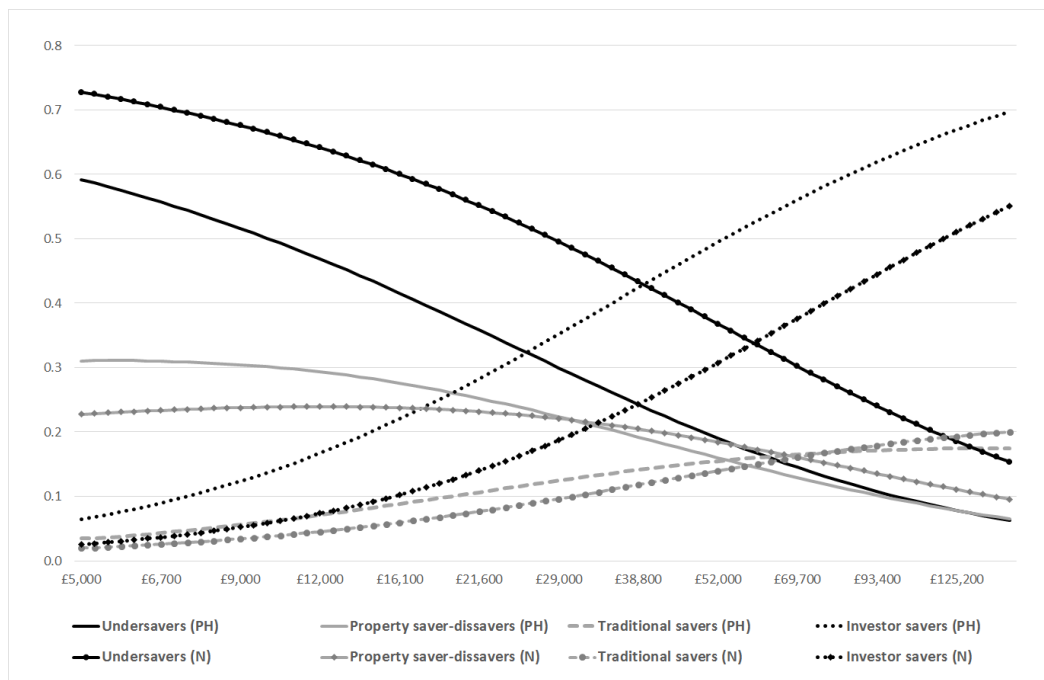
The effect of age is plotted in Figure 5.9 for university-educated single men without a record of intergenerational transfer, assuming an income of £36,000. The age effect here

Fig. 5.8 Predicted probabilities for the four saver types at the initial stage by age and parental homeownership (2010/12)



Note: Base profile: 35-year-old single male with degree-level education without intergenerational transfer. The income range on the X-axis is constructed with 5% increase from the previous income level to show the details of the lower income range more detail. Also the increase in income on the top of the distribution is multiplicative rather than additive.

Fig. 5.9 Predicted probabilities for the four saver types at the initial stage by household income and parental homeownership (2010/12)



Note: Base profile: Single male with degree-level education with an income of £36,000 but without intergenerational transfer.

refers to the difference in the probabilities across different ages (at a given time) rather than to the effects of growing older. A similar trend is observed with the partial effect of income. It is highly likely that younger individuals are classified as undersavers irrespective of parental housing tenure. The age at which the undersavers' probability line crosses with the investor savers' is about eight years higher for those who have grown up in rented accommodation than for children from owner-occupation households (39-40 compared to 30-31 respectively).

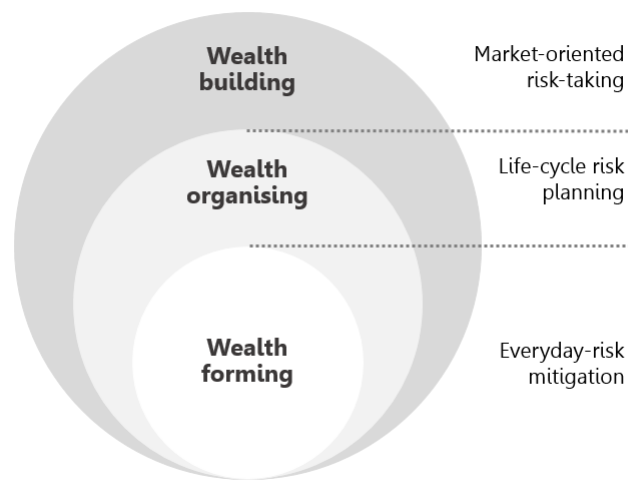
## 5.9 Discussion

The four saver types identified from the analysis and their characteristics are useful to consider how individuals may perceive uncertainty and organise their economic lives accordingly. Undersavers hold the least wealth but a modest sum in cash savings. Property saver-dissavers are homeowners who may be using credit facilities for consumption. Traditional savers hold assets that have performed well for the baby boomer generation – housing and DB pension schemes – in addition to cash savings. Investor savers, on the other hand, are viewed as market-oriented given that they are more likely to have DC pensions and financial investments than other saver types.

The above comparisons indicate that individuals' approaches to wealth accumulation change gradually, as additional assets are added to their portfolio. For instance, all savers hold some degree of cash savings. Although not surprising given its accessibility and liquidity, even wealthier individuals hold a sizeable sum in cash. This is partially due to cash ISAs being included in the savings category. Nevertheless, the role of cash savings as a safety net for regulating everyday uncertainty may be particularly important for individuals.

Housing assets are also widely held; all savers, except for undersavers, are homeowners. Homeownership may be motivated by cultural preference as well as by the potential future increase in house price. From the young generation's viewpoint, owning a home is a way to hedge uncertainty in the life cycle; homeownership not only eases short-term housing anxieties, but also reduces the uncertainty of future housing costs.

Fig. 5.10 Wealth accumulation stages and risk perspectives



With uncertainty about future well-being is reduced, individuals have capacity to think about improving future economic security, for instance, by having pension schemes for retirement saving as discussed in Chapter 2. Those who want to further reduce uncertainty in the later stages of life may pay more attention to building pension wealth. The choice between holding DB or DC schemes is not entirely determined by individuals in the private sector but may influence individuals' employment decisions. Therefore, this stage may be considered as a wealth-organising phase in which the focus extends to organising more long-term assets with a view to reducing the life-cycle related uncertainty.

Willingness to take risk may increase with confidence in economic security or desire for a higher return. Investor savers do not hold much DB pension wealth and, therefore, may want to increase wealth holding to complement DC pension wealth. This portrayal makes this wealth-building stage most appropriate for the current younger generation's retirement saving and wealth accumulation. It is characterised by the ownership of market-oriented assets, such as financial investment and DC schemes, which can be viewed as wealth building. These three stages of wealth accumulation are summarised in Figure 5.10.

The high degree of stability in saver type membership over time, however, shows that some individuals may remain in the same phase for long periods. The positive effects of socio-economic characteristics and social origin on belonging to wealthier saver types imply

that individuals with a low socio-economic status may stagnate in the initial wealth-forming stage and be unable to expand to a wider wealth accumulation bound.

This expansion of bounds points back to the notion of the ‘safety net’. Individuals are able to deal with everyday uncertainty with access to their safety net asset, which may be strengthened to include housing and pension. The urgency of building a safety net decreases as individuals accumulate more wealth. Some may consider market-oriented risk-taking for building wealth unnecessary. Equally, individuals may not be able to take the risk without having established a safety net to a reasonable degree. In this sense, individuals do not engage in the financial market not simply because it is perceived to be risky, but because their current economic capacity cannot tolerate the risk regardless of the return. As the importance of accumulation-based vehicles grow, the gap between individuals’ capacity to manage uncertainty and the expected level of engagement in market-oriented channels may widen.

## 5.10 Conclusion

This chapter examined the younger generation’s accumulated wealth, taking an individual-focused approach. To do so, it proposed the use of an individualised balance sheet, which provides a more comprehensive picture of the nature and extent of wealth holding. Four saver types established provide insights into how the younger generation approaches wealth accumulation. These saver types also help to conceptualise different approaches to managing the uncertainty associated with the stages of wealth building.

This chapter’s findings show that, despite the move towards accumulation-based retirement saving, the wealth accumulation pattern for most individuals is not different from the previous generation (Hills, 1995; Keister and Moller, 2000). Cash savings and housing are still the most widely held assets, while pension schemes and share ownership are relatively less widely held.

Homeownership accounts for a large proportion of wealth holding. This suggests that the younger generation continues to be sensitive to developments in the housing market. Some

may be overly reliant on housing assets, which increases the risk exposure. On the other hand, a degree of passiveness and risk-averseness is indicated by having a larger share in vehicles considered to be low-risk, such as housing and DB pensions.

Transitions between saver types exhibited stagnancy, suggesting the importance of the early stages of wealth accumulation. These are, however, closely linked to individual and parental socio-economic status. Therefore, it is unreasonable to assume that accumulating wealth is simply a matter of a choice. Rather, it points to inequality. The younger generation's wealth outcomes are closely interlinked with parental socio-economic status, producing not only an unequal starting point but also advantage during the accumulation process. This pattern suggests increasing within-generation inequality, which presents a serious challenge for policymakers in an asset-focused welfare society.

This study has several limitations. First, it used parental homeownership as a proxy for socio-economic background, which is a reasonable assumption in the British context. Nevertheless, it does not explain the precise nature of the parental characteristic. For example, parental socio-economic status may also indicate social capital transfer, such as better education which connects to better economic outcomes (McKnight and Karagiannaki, 2013). Another possible explanation is the socialisation process, which describes the transmission of perspective and viewpoint from parents to children. It may also be owing to attitudinal or behavioural characteristics shared by homeowners that distinguish them from non-homeowners. Furthermore, 77% of the study sample grew up in an owner-occupier household; variability within the parental homeownership group is not examined. Furthermore, differences within saver types are not investigated. Wealth is highly positively skewed, therefore, wealth holding within the same saver types is expected to differ. This aspect therefore is especially important for the two wealthier groups who hold assets such as DB pension schemes and financial investments.

There are also several future research opportunities. As more longitudinal wealth data are becoming available, the dynamics of wealth accumulation can be studied over a longer observation period. Moreover, the discussions on risk perception and motivation in the study can be cross-examined by including the attitudinal information provided by individuals. For



instance, financial resilience, the behavioural indicator for economic autonomy today, may be mapped across with the transition between saver types across time points to examine its relationship to wealth accumulation. Particular choices of channels, for instance, reservation to utilise financial investments or behavioural difference between DB and DC holders, may also be investigated.

Finally, there are policy challenges. Although the three stages of wealth accumulation were presented on a progressive scale (Figure 5.10 shown previously), they should also be considered together with the risk exposure faced by each saver type. Traditional savers may be considered to have the least risk exposure in the current environment. Investor savers are presented as those who are willing to bear more risk for more return; they may be considered ideal retirement savers for this generation. However, individual-level risk management is not adequately discussed by policymakers, despite the fact that it implies large within-group differences in outcomes. Also, as a larger proportion of the younger generation relies on the market-oriented wealth-building mechanism, issues regarding transparency and prudence in the financial sector raise concerns.

Property saver-dissavers are unlikely to wish to use their housing asset as a means of paying for their retirement and care, as it signifies the loss of their only security net. Some of these individuals may be saving through work, though savings may not be substantial if they are on a low income and have interrupted career trajectories due to illness. Also their lack of saving via other means can turn into anger towards the state near the time of retirement, as an Australian study shows (Kendig, Wells, O'Loughlin and Heese, 2013).

Undersavers account for slightly under one third of savers and are likely to be younger and/or on a low income. It is not necessarily a concern if young adults remain undersavers for a while before moving to a higher wealth group. However, those with low socio-economic status are likely to stagnate in the wealth-forming stage, constantly trying to manage uncertainty in everyday life. This also undermines individuals' economic autonomy and is unlikely to be conducive to accumulating wealth, despite the fact that this was the central motivation for the asset-based welfare in its original form (Sherraden, 1991).

## 5.11 Appendix to Chapter 5

### 5.11.1 Descriptive analysis on financial wealth

Fig. 5.11 Median financial asset (cash, ISA and shares) by financial asset decile (2010/12)

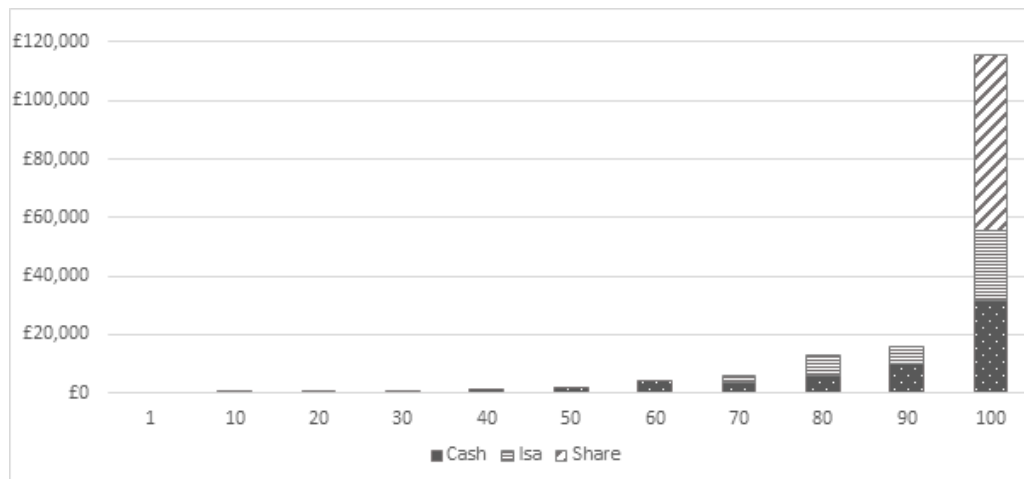
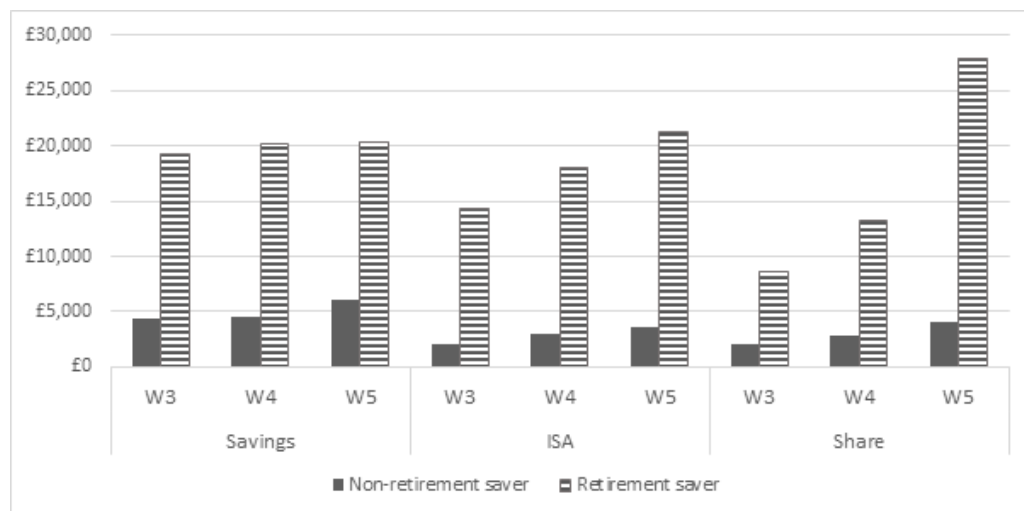
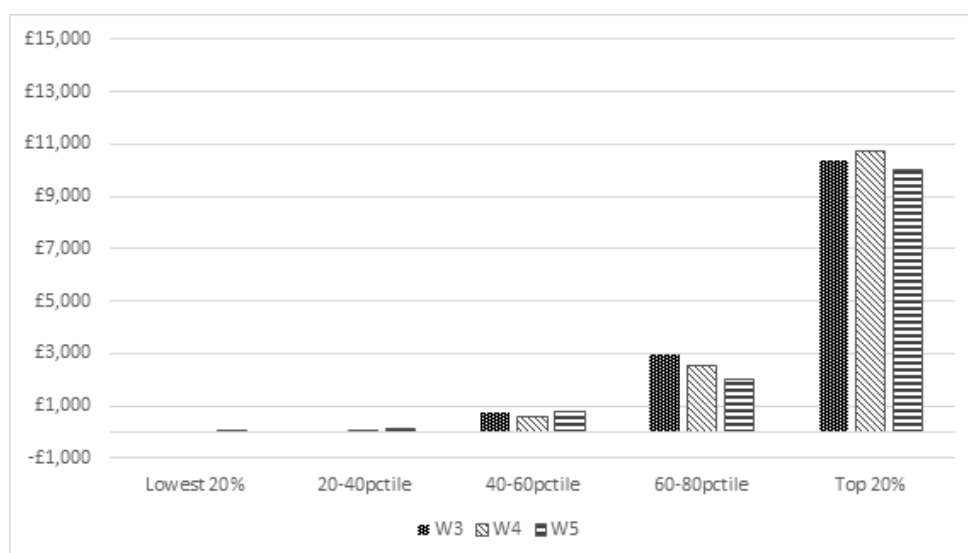


Fig. 5.12 Mean value per financial asset type for retirement savers and non-savers (CPIHY adjusted) (2010/12-2014/16)



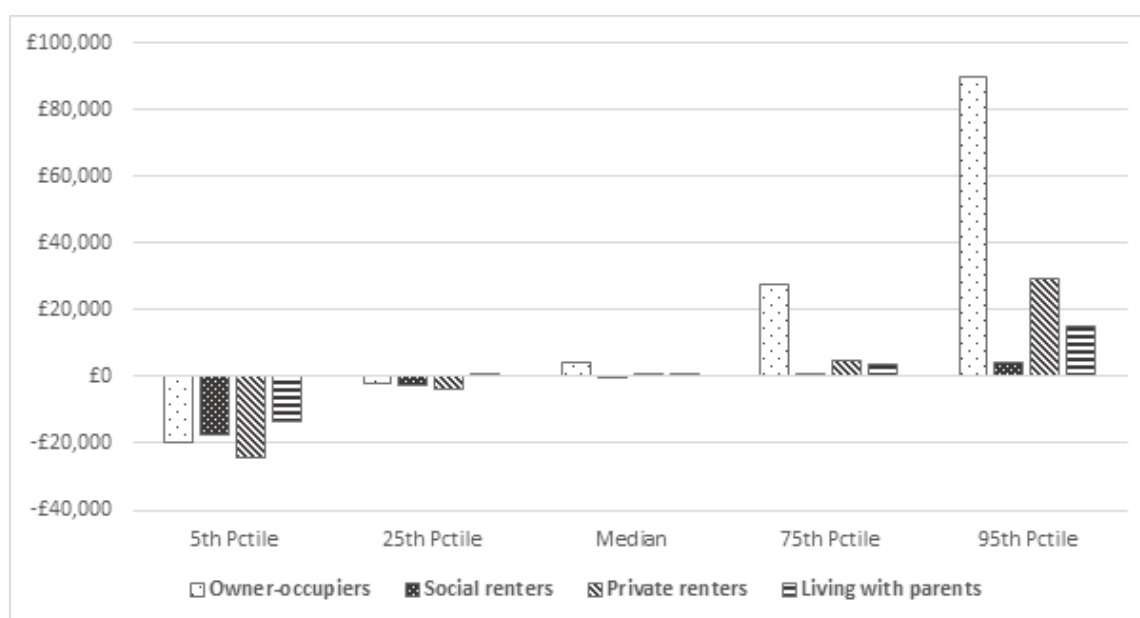
Note: The values are adjusted using Consumer Prices Index including owner occupiers' housing costs (and Council tax) but excluding indirect taxes (CPIHY) (Jan 2015 =100), which is the main index since March 2017 ONS (2018a). The CPIHY excludes VAT, duties, vehicle excise duty and television licence fees from CPIH (ONS, 2018a).

Fig. 5.13 Median net financial assets by income quintile between 2010/12-2014/16



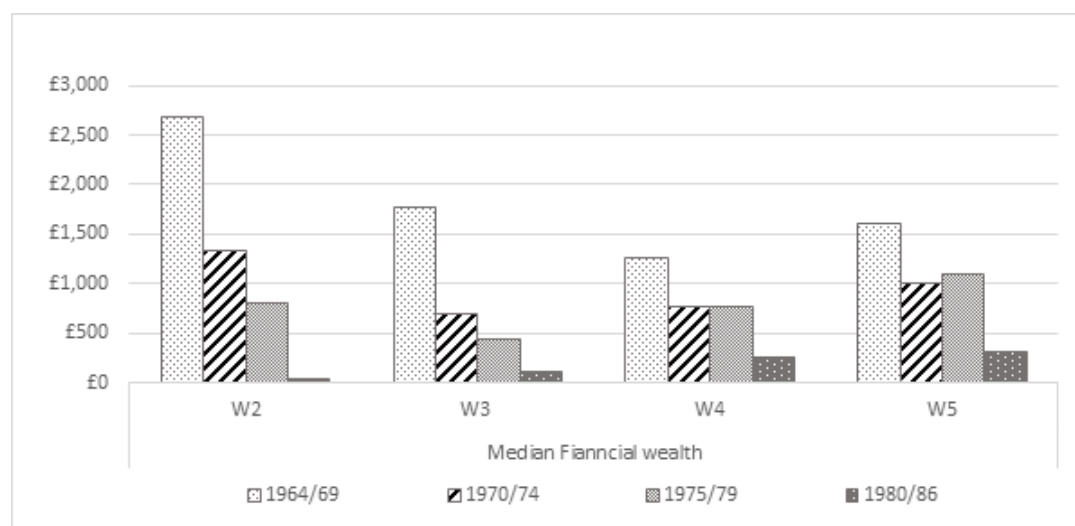
Note: The analytical sample includes individuals aged 25-49. The values are adjusted using Consumer Prices Index including owner occupiers' housing costs (and Council tax) but excluding indirect taxes (CPIHY) (Jan 2015 =100), which is the main index since March 2017 ONS (2018a). The CPIHY excludes VAT, duties, vehicle excise duty and television licence fees from CPIH (ONS, 2018a).

Fig. 5.14 Net financial wealth by birth cohort (2010/12-2014/16, price adjusted)



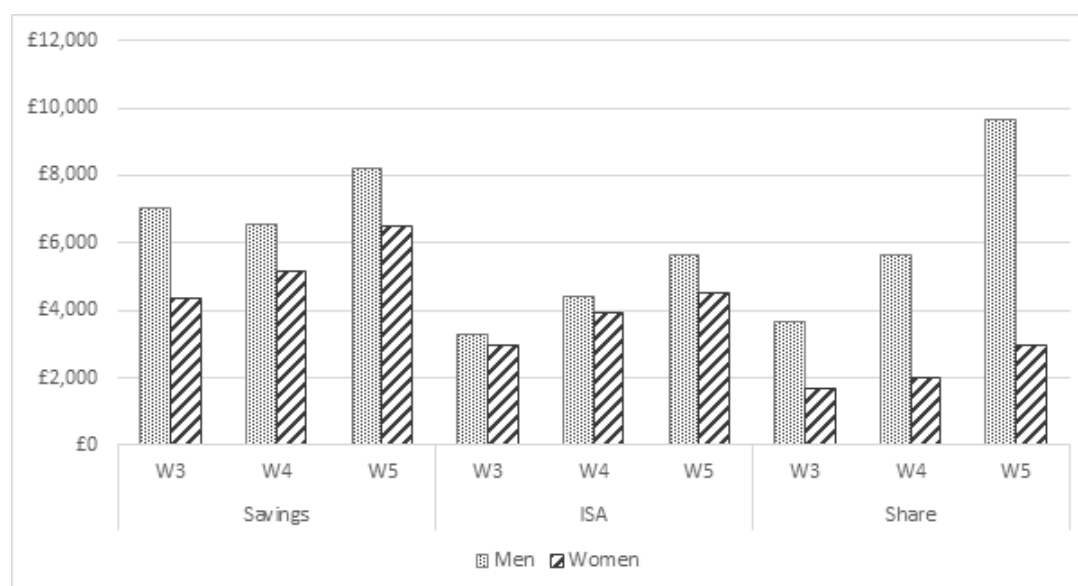
Note: The analytical sample includes individuals aged 25-49. The values are adjusted using Consumer Prices Index including owner occupiers' housing costs (and Council tax) but excluding indirect taxes (CPIHY) (Jan 2015 =100), which is the main index since March 2017 ONS (2018a). The CPIHY excludes VAT, duties, vehicle excise duty and television licence fees from CPIH (ONS, 2018a).

Fig. 5.15 Household Net financial wealth by housing tenure (2014/16, price adjusted)



Note: The analytical sample includes individuals aged 25-49. The values are adjusted using Consumer Prices Index including owner occupiers' housing costs (and Council tax) but excluding indirect taxes (CPIHY) (Jan 2015 =100), which is the main index since March 2017 ONS (2018a). The CPIHY excludes VAT, duties, vehicle excise duty and television licence fees from CPIH (ONS, 2018a).

Fig. 5.16 Mean value per financial asset for men and women (2014/16, price adjusted)



Note: The analytical sample includes individuals aged 25-49. The values are adjusted using Consumer Prices Index including owner occupiers' housing costs (and Council tax) but excluding indirect taxes (CPIHY) (Jan 2015 =100), which is the main index since March 2017 ONS (2018a). The CPIHY excludes VAT, duties, vehicle excise duty and television licence fees from CPIH (ONS, 2018a).

Table 5.9 Median and Mean amounts (nominal) by types of financial wealth (2008/10-2014/16)

Assets	Median					Mean				
	2008/10	2010/12	2012/14	2014/16	2008/10	2010/12	2012/14	2014/16	2010/12	2014/16
Cash savings	£1,000	£900	£900	£1,100	£6,200	£5,700	£5,500	£6,100	£5,700	£6,100
Stocks & Shares (UK / Ovs)	£0	£0	£0	£0	£4,200	£3,700	£3,300	£5,000	£3,700	£5,000
ISA	£0	£0	£0	£0	£3,300	£3,300	£3,700	£3,800	£3,300	£3,800
Insurance policies	£0	£0	£0	£0	£4,300	£2,100	£2,700	£1,400	£2,100	£1,400
Endowments	£0	£0	£0	£0	£2,900	£2,100	£1,300	£800	£2,100	£800
National Savings products	£0	£0	£0	£0	£600	£500	£600	£600	£500	£600
Bonds (UK / Ovs)	£0	£0	£0	£0	£1,400	£1,200	£1,000	£600	£1,200	£600
Other investments	£0	£0	£0	£0	£1,300	£1,000	£200	£100	£1,000	£100
Informal savings	£0	£0	£0	£0	£200	£200	£100	£100	£200	£100
Other	£0	£0	£0	£0	£100	£100	£100	£100	£100	£100
<b>Total financial assets</b>	<b>£3,100</b>	<b>£2,200</b>	<b>£2,100</b>	<b>£2,000</b>	<b>£24,400</b>	<b>£19,900</b>	<b>£18,400</b>	<b>£18,500</b>	<b>£19,900</b>	<b>£18,500</b>
<b>Debts</b>	<b>2008/10</b>	<b>2010/12</b>	<b>2012/14</b>	<b>2014/16</b>	<b>2008/10</b>	<b>2010/12</b>	<b>2012/14</b>	<b>2014/16</b>	<b>2010/12</b>	<b>2014/16</b>
Formal loans	£0	£0	£0	£0	£1,800	£1,800	£1,300	£1,300	£1,800	£1,300
Credit card	£0	£0	£0	£0	£900	£900	£800	£800	£900	£800
Mail order and store cards	£0	£0	£0	£0	£600	£600	£600	£700	£600	£700
Student loans	£0	£0	£0	£0	£400	£500	£600	£600	£500	£600
Overdraft	£0	£0	£0	£0	£200	£100	£100	£300	£100	£300
Informal loans	£0	£0	£0	£0	£100	£100	£100	£300	£100	£300
Bills (arrears)	£0	£0	£0	£0	£0	£0	£100	£100	£0	£100
<b>Total financial debts</b>	<b>£100</b>	<b>£100</b>	<b>£100</b>	<b>£0</b>	<b>£4,000</b>	<b>£4,100</b>	<b>£3,600</b>	<b>£4,000</b>	<b>£4,100</b>	<b>£3,600</b>

Based on the study sample of a longitudinal cohort aged 25-49 in 2010/12. Informal saving refers to the money lent to others.

Table 5.10 Characteristics of the British adults in 25-49 and 50-65 in 2010/12

Characteristics	Categories	Aged 25-49 Proportions	Aged 50-65 Proportions
Gender	Males	44%	49%
	Females	56%	51%
Marital status	Married	59%	67%
	Cohabiting	15%	5%
	Single	17%	7%
	W/D/S	9%	21%
Number of children	None	43%	93%
	1 child	25%	5%
	2 children	25%	2%
	3 children +	7%	0%
Equiv. household income	(Mean)	£35,500	£39,400
	(Median)	£29,300	£31,900
	(IQR*)	£23,800	£27,200
Socio-economic status	Managerial	43%	36%
	Intermediate	20%	22%
	Routine and Manual	33%	39%
	NA / Other	3%	3%
Educational level	Secondary or lower	70%	80%
	Degree-educated	30%	20%
Current account	Yes	97%	97%
Savings account Amount held	Yes	55%	56%
	(Mean)	£4,900	£13,000
	(Median)	£800	£1,800
	(IQR*)	£2,900	£7,700
ISA account	Yes	38%	50%
Bonds	Yes	4%	15%
Shares	Yes	14%	20%
National Savings account	Yes	13%	22%
Financial assets (Gross)	(Mean)	£16,400	£45,600
	(Median)	£2,000	£8,900
	(IQR*)	£10,700	£40,500
Housing tenure	Owner occupation	68%	78%
	Social Renting	17%	16%
	Private Renting	12%	5%
	Other (living with parents/children)	3%	1%

\* IQR stands for interquartile range.

### 5.11.2 Model selection procedure for three-stage FMM modelling

As explained in the Section 5.7.1, a three-stage approach is taken in FMM. The first concerns only the dichotomised part using LCA. As five saver types are initially hypothesised, 3-, 4-, 5- and 6-class models are compared. The number of models chosen at this stage functions as the basis for the FMM when the binary and the continuous parts are combined in the last stage. In this section, further information on the rationale for the model selection in the first and the third stages is provided.

The results for the LCA using the binary indicators are shown in Table 5.11 and the proportions of individuals allocated to each saver types are presented in Table 5.12 below. Based on the lowest value of BIC, the 6-class model for 2014/16 and the 5-class models for 2012/14 and 2010/12 represent the data best. The changes in BIC indicate the relative improvement in the model fit for these models compared to the models with one class fewer. This aspect has also been considered in model selection. For example, for 2010/12, the BIC indicates 5-class solution to fit the data the best, although the BIC only decreased by 56.88 compared to a 4-class model, while the number of parameters has increased by 10. For this reason, 4-class model is chosen for 2010/12 and 2012/14.

The reduction in BIC for the models for 2014/16 shows a less clear picture; 5-class solution shows a smaller BIC compared to 4-class solution as BIC is lower by 55.566 albeit with an increase of 10 more parameters. To assess whether this gain is meaningful, the proportions of individuals allocated to saver types are compared between these two models. Table 5.12 shows the proportions of individuals in the saver types according to the specification of the models at each wave. Here the classes are not ordered, which means that class 1 in third wave may not refer to the same saver type indicated by class 1 in the fourth wave. The difference between 4- and 5-class models is that Class 4 in the 4-class model (0.297) in 2014/16 is split into two classes (Class 2 and Class 3) one of which is 6.8%. A small proportion is not necessarily an issue in a study of wealth accumulation. However, the division of one saver type into two is not likely to add much information compared to the 4-class model. For this reason, 4-class solution is chosen for 2014/16.

Table 5.11 Model fit statistics for 3, 4, 5, and 6 class LCA solutions for binary indicators only

2014/16	Log likelihood	AIC	BIC	Adj.BIC	No. of pa- rameters	Entropy	Change in BIC	Chosen Model
3 Class model	-10521.583	21101.166	21269.548	21177.408	29	0.995		
4 Class model	-10445.248	20968.495	21194.941	21071.028	39	0.900	<b>-74.607</b>	Y
5 Class model	-10378.434	20854.867	21139.375	20983.691	49	0.910	-55.566	
6 Class model	<b>-10328.403</b>	<b>20774.806</b>	<b>21117.377</b>	<b>20929.920</b>	59	0.880	-21.998	
2012/14	Log likelihood	AIC	BIC	Adj.BIC	No. of pa- rameters	Entropy	Change in BIC	Chosen Model
3 Class model	-10471.804	21001.608	21169.990	21077.850	29	0.963		
4 Class model	-10380.685	20839.370	21065.816	20941.903	39	0.850	<b>-104.174</b>	Y
5 Class model	-10338.090	20774.179	<b>21058.688</b>	20903.003	49	0.864	-7.128	
6 Class model	<b>-10300.756</b>	<b>20719.513</b>	21062.084	<b>20874.627</b>	59	0.877	3.396	
2010/12	Log likelihood	AIC	BIC	Adj.BIC	No. of pa- rameters	Entropy	Change in BIC	Chosen Model
3 Class model	-10613.428	21284.855	21453.237	21361.098	29	0.839		
4 Class model	-10478.242	21034.484	21260.929	21137.017	39	0.872	<b>-192.308</b>	Y
5 Class model	-10410.770	20919.541	<b>21204.049</b>	21048.364	49	0.840	-56.88	
6 Class model	<b>-10376.767</b>	<b>20871.534</b>	21214.105	<b>21026.648</b>	59	0.771	10.056	

Note: Smaller values of log-likelihood, AIC, BIC and Adjusted BIC indicate a better fitting model, while a higher value of entropy indicates a clearer distinction between classes. These values are in **bold**



Table 5.12 Proportions of individuals allocate to each class by LCA models (2010/12-2014/16)

<b>2014/16</b>	<b>Class 1</b>	<b>Class 2</b>	<b>Class 3</b>	<b>Class 4</b>	<b>Class 5</b>	<b>Class 6</b>	<b>Total</b>	<b>Chosen model</b>
3 Class model	0.297	0.295	0.409	-	-	-	1.000	Y
4 Class model	0.204	0.186	0.314	0.297	-	-	1.000	
5 Class model	0.204	0.068	0.229	0.186	0.314	-	1.000	
6 Class model	0.166	0.203	0.083	0.252	0.229	0.068	1.000	
<b>2012/14</b>	<b>Class 1</b>	<b>Class 2</b>	<b>Class 3</b>	<b>Class 4</b>	<b>Class 5</b>	<b>Class 6</b>	<b>Total</b>	
3 Class model	0.309	0.412	0.279	-	-	-	1.000	Y
4 Class model	0.235	0.309	0.080	0.376	-	-	1.000	
5 Class model	0.235	0.080	0.032	0.374	0.280	-	1.000	
6 Class model	0.216	0.235	0.374	0.032	0.080	0.064	1.000	
<b>2010/12</b>	<b>Class 1</b>	<b>Class 2</b>	<b>Class 3</b>	<b>Class 4</b>	<b>Class 5</b>	<b>Class 6</b>	<b>Total</b>	
3 Class model	0.368	0.317	0.316	-	-	-	1.000	Y
4 Class model	0.304	0.239	0.156	0.301	-	-	1.000	
5 Class model	0.155	0.239	0.304	0.062	0.240	-	1.000	
6 Class model	0.108	0.168	0.136	0.242	0.062	0.284	1.000	

Once the number of classes are determined using LCA, factor analysis is performed to determine the number of factors. For all time points, a one-factor model is found to be most suitable (not reported). In the third stage, the binary and the continuous part of the model are analysed together using FMM. There are four possible parameterisations for the model depending on the restrictions imposed on the factor loadings and intercepts, as explained in Section 5.7.1.

The four model specifications are compared at each time point. The results presented in Table 5.13 show that the model with restricted factor loadings and class-specific item intercepts fit the data best in all three waves based on BIC. The reduction in BIC confirms that the model fit has improved in a small increase in parameters (from 89 to 92).

Table 5.13 Model fit statistics for four different specifications of FMM (2010/12-2014/16)

2014/16	Item intercepts	Factor loadings	No. parameters	Log-likelihood	AIC	BIC	aBIC	Entropy	Change in BIC
4C 1F (a)	equal	equal	65	-24826.312	49782.624	50160.033	49953.512	<b>0.902</b>	-
4C 1F (b)	equal	varies	89	-24706.944	49591.887	50108.647	49825.872	0.890	-51.386
4C 1F (c)	varies	equal	92	-24460.214	49104.427	<b>49638.606</b>	49346.300	0.837	-470.041
4C 1F (d)	varies	varies	120	<b>-24355.121</b>	<b>48950.242</b>	49646.997	<b>49265.728</b>	0.840	8.391
2012/14	Item intercepts	Factor loadings	No. parameters	Log-likelihood	AIC	BIC	aBIC	Entropy	Change in BIC
4C 1F (a)	equal	equal	65	-24128.228	48386.457	48763.866	48557.345	0.850	-
4C 1F (b)	equal	varies	89	-24053.118	48284.237	48800.996	48518.222	0.777	37.130
4C 1F (c)	varies	equal	92	<b>-23813.358</b>	<b>47810.715</b>	<b>48344.894</b>	<b>48052.588</b>	<b>0.878</b>	-456.102
4C 1F (d)	varies	varies	120	-24092.360	48424.719	49121.474	48740.205	0.870	8.391
2012/14	Item intercepts	Factor loadings	No. parameters	Log-likelihood	AIC	BIC	aBIC	Entropy	Change in BIC
4C 1F (a)	equal	equal	65	-24461.640	49053.280	49430.689	49224.168	<b>0.872</b>	-
4C 1F (b)	equal	varies	89	-24411.320	49000.640	49517.400	49234.625	0.858	86.711
4C 1F (c)	varies	equal	92	-24192.697	48569.393	<b>49103.572</b>	48811.266	0.838	-413.828
4C 1F (d)	varies	varies	120	<b>-24092.360</b>	<b>48424.719</b>	49121.474	<b>48740.205</b>	0.870	17.902

Note: Smaller values of log-likelihood, AIC, BIC and Adjusted BIC indicate a better fitting model, while a higher value of entropy indicates a clearer distinction between classes. These values are in **bold**

### 5.11.3 Consistency of FMM solutions over three time points

Fig. 5.17 Conditional item probabilities in the four-class solution in FMM (2010/12)

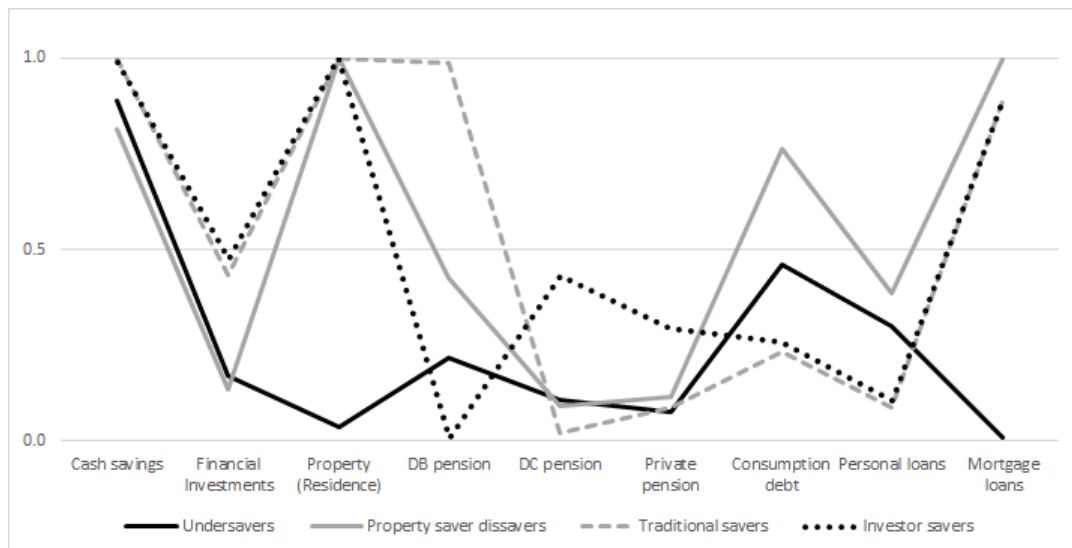


Fig. 5.18 Conditional item probabilities in the four-class solution in FMM (2012/14)

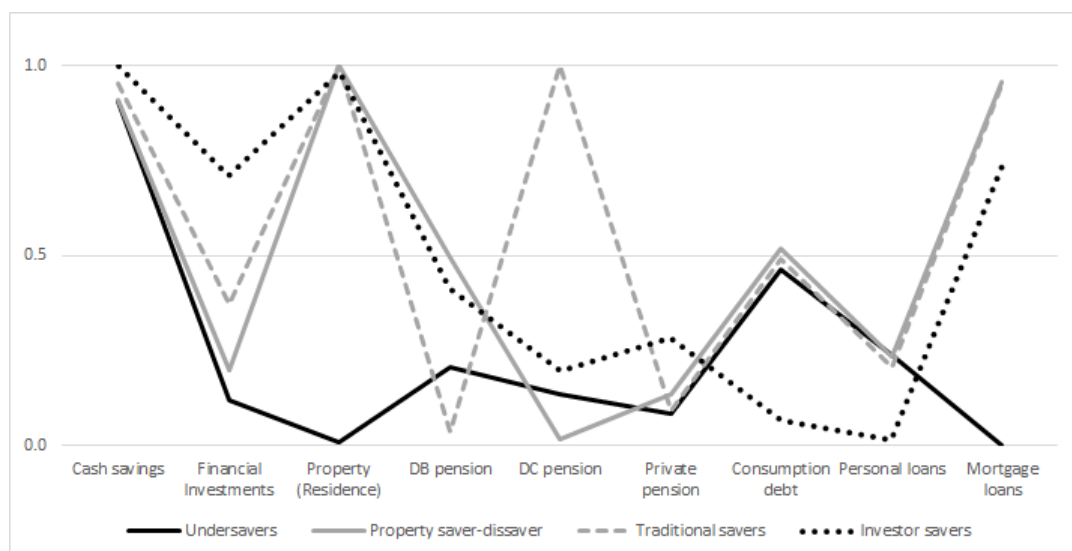


Fig. 5.19 Conditional item probabilities in the four-class solution in FMM (2014/16)

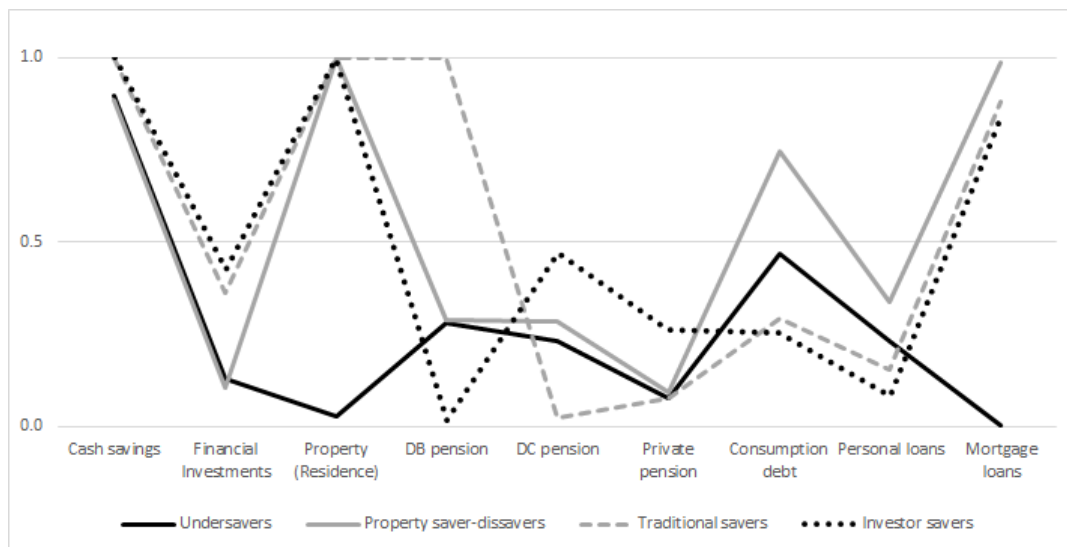


Fig. 5.20 Saver types assuming over time consistency in LTA (2010/12-2014/16)

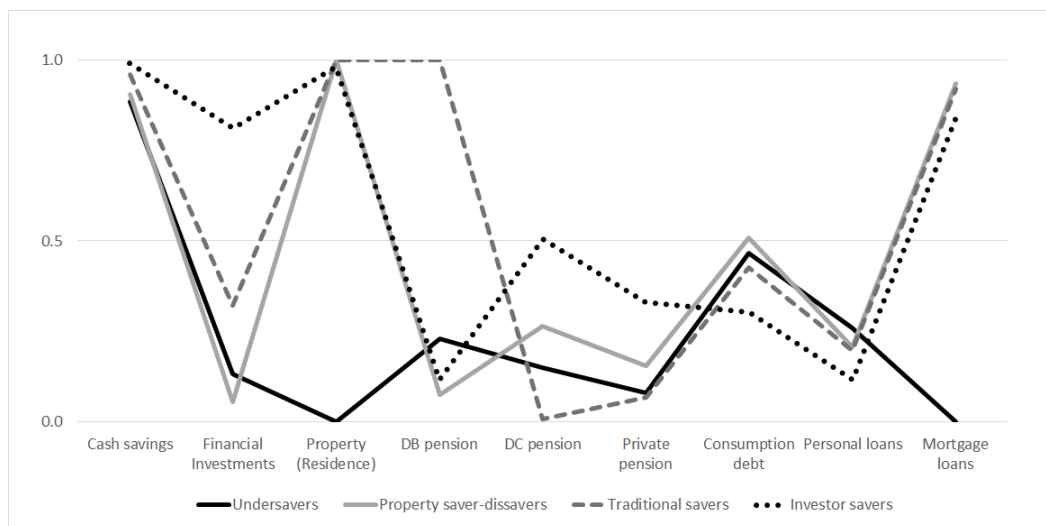


Fig. 5.21 Class proportions across three time points in LTA (2010/12-2014/16)

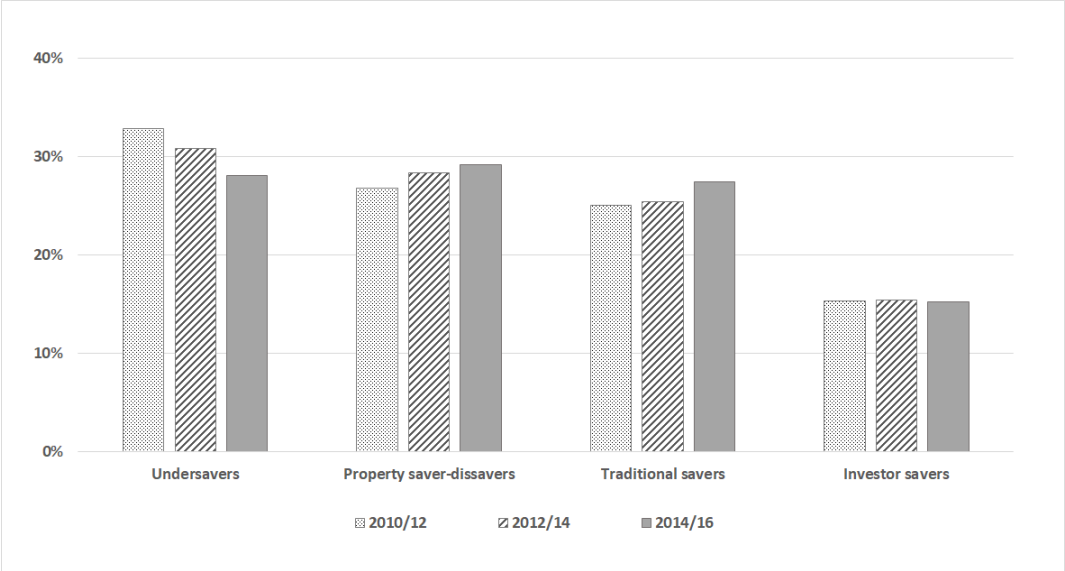
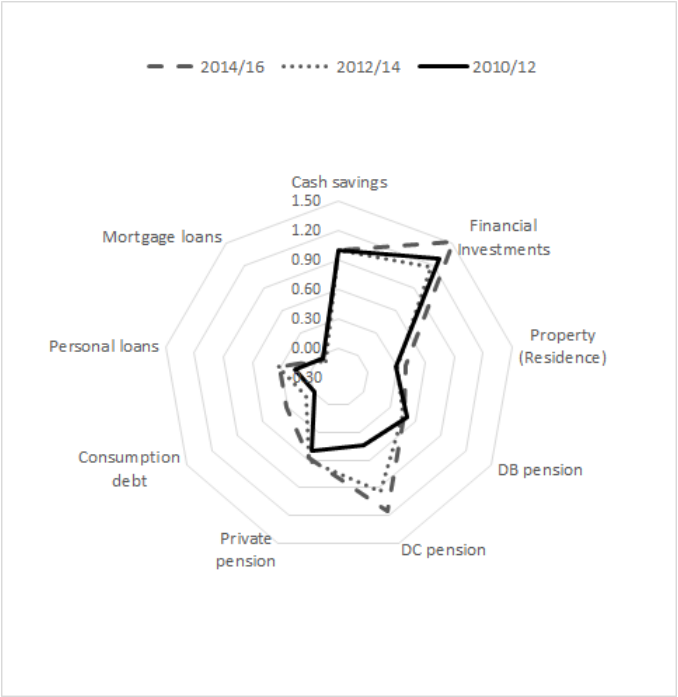


Fig. 5.22 Factor loadings in FMM (2010/12-2014/16)



## Chapter 6

### Conclusion

This thesis has investigated the current economic autonomy and its effect on the long-term financial well-being of Britain's younger generation. The central motivation for this thesis was to assess the current state of this generation's financial preparation for the future in the continuously evolving pension landscape which calls for a fundamental change in the long-term saving culture. Long-term saving behaviour was studied via two naturally linked but widely considered to be distinct aspects of long-term saving: discretionary retirement saving and wealth accumulation patterns. The thesis has studied how younger adults organise their economic lives today and for tomorrow, interacting with the immediate and broader socio-economic environment, from the individuals' viewpoint.

It is worthwhile reiterating that the findings in this thesis do not make any causal claim, as mentioned in the introduction (see Section 1.3). Although causality was not tested within the scope of this thesis, underlying mechanisms behind the associations reported may be of a causal nature. For instance, a large sum of cash gift from family for a deposit *causes* one's chances of homeownership to increase. Despite the findings limited to reporting a statistically significant and substantively substantial association between the two, it is useful to consider such underlying mechanisms when evaluating policy implications of such findings.

This chapter is organised as follows. First, the research questions in the previous four empirical chapters are summarised. A section summarising key findings follows, before the

policy implications and future directions are discussed. The limitations and contributions of this thesis are reviewed. It concludes with a final section on future research agenda.

Before discussing key findings, a summary of the research questions is provided here. Chapter 2 questioned the role of human agency in a decision-making process for discretionary retirement saving. Represented by attitudinal and behavioural characteristics, human agency in economic autonomy and individuals' immediate socio-economic circumstances was studied. Chapter 3 further examined the role of economic autonomy and its interaction with environmental factors by gender, the latter of which was tested with regards to the male-breadwinner model. Chapter 4 focused on the issues of younger adults' homeownership, and recognised the dual purposes of improving the economic security of today and the saving prospect for the future. It investigated how home owners and non-owners differ and to what extent family financial support elevated the chances of becoming a homeowner. Two channels of family support – direct (money) and indirect (space) – were analysed, controlling for parental homeownership. Chapter 5 included three types of wealth (financial, housing and pension wealth) to study the patterns of wealth accumulation among the younger generation. It proposed a balance sheet approach that enables the distinction between assets and debt by types of wealth. Based on this, the idea of different saver types was developed to indicate diverse approaches to and abilities in wealth accumulation. These four studies investigated the economic lives (money) today and for the future (time horizon) from the individuals' viewpoint (the main agency).

## 6.1 Summary findings

Findings of this study suggest that saving for the future for most younger adults is a continuous negotiation between improving today's economic security and provisioning for future financial well-being. How individuals organise to manage financial uncertainty in their lives – economic autonomy – is not entirely within individuals' control because their immediate socio-economic circumstances to a degree delimit the boundaries of economic autonomy. Therefore, the inequality in the socio-economic circumstances translates to the inequality in

economic autonomy to deal with short- and long-term uncertainty. This is explained further below in the discussions of the findings in each chapter.

The findings from Chapters 2 and 3 showed that the role of human agency is central to understanding long-term saving behaviour and that individuals' immediate environments influence how individuals employ economic autonomy. Here the notion of long-term saving was studied in the context of individual-initiated retirement saving. In Chapter 2, the measure for everyday financial behaviour – financial resilience – was found to be the most powerful predictor for identifying discretionary retirement savers. When financial resilience is controlled for, household income is not directly associated with increased chances of additional retirement saving. This finding is qualitatively consistent with the limited effect of increases in income on saving behaviour among British young adults (Robertson-Rose, 2018). Financial resilience provides useful insight into discerning different saving behaviours of individuals with similar socio-economic status. It is also meaningful as it places individuals at the centre of understanding how they organise their economic lives (Curchin, 2016; Le Grand and New, 2015).

The extent of economic autonomy, however, is highly related to stability in individuals' social and economic arrangements. Not only income but also homeownership is linked positively to a higher level of financial resilience. Furthermore, the chances of considering financial planning for retirement were associated with a higher level of income, homeownership and the availability of intergenerational transfers, which accounted for other attitudinal factors. This finding was particularly important for the younger generation, whose demographic behaviours require stability in economic and family life, the need for which shapes the perception of priorities over the time horizon.

In the studies of the younger adults' retirement saving, age is understood to be the main source of myopia. An increase in age, however, showed a marginal effect, perhaps due to the age group of the analytical sample (30–49). Instead, the stages of life, inferred by a set of demographic and socio-economic characteristics, are found to be more useful predictors in explaining retirement saving decision-making; James (2019) makes a similar observation in a recent qualitative study of young British adults. Contrary to the inconsequential effect of age,



the more meaningful effects of life stages suggest that ‘social ageing’ (stages of life) may be more relevant to long-term financial planning than chronological ageing (increase in age).

In Chapter 3, the role of economic autonomy and the importance of socio-economic circumstances were revisited with a gender perspective. It was found that current economic autonomy, such as financial resilience, plays an important role and to a similar extent for males’ and females’ discretionary retirement saving. In other words, for both gender groups, the internal workings of retirement saving decision-making are similar. How and to what extent their economic autonomy interacts with the environment, however, differ substantially. The patterns of those interactions show that the younger generation’s lives are organised in the manner which agrees to the male-breadwinner model (Lewis, 1997). For example, demographic characteristics, such as not being married or having a child(ren), are associated, and negatively, with females’ financial resilience but not with males’. Also, stability in family circumstances, such as homeownership, is found to increase females’ financial resilience, while availability of economic resources, such as income and intergenerational transfers is more relevant to males’ economic autonomy.

Homeownership, as mentioned above, is found to be a consistently important factor for the economic stability of British younger adults. In Chapter 4, it was found that the homeownership circumstances among the younger generation are not only associated with individual socio-economic status but also their parents’. Individuals with a higher socio-economic status are more likely to be in owner-occupation, indicating homeownership for the younger generation remains a social class issue, as it was for the previous generation. The unique characteristic of this generation, however, is the strong intergenerational link in homeownership outcomes, as Coulter (2018) also points out. Individuals who receive direct financial support greater than £15,000 are more likely to be in owner-occupation, and if they are not already homeowners, are also more likely to become so. Also, a form of support which was not widely discussed previously – parental co-residence – is also found to produce a substantial advantage in getting a head start in building housing assets. The extent of this effect is found to be as substantial as that of direct support. Moreover, even after accounting for the two types of intergenerational support, children from home-owning parents

are nearly twice as likely to become homeowners, which highlights the intergenerational link in homeownership outcomes.

In Chapter 5, wealth accumulation was studied more comprehensively, and this includes financial, pension and housing wealth. Four saver types are developed: undersavers, property saver-dissavers, traditional savers and investor savers. Undersavers are the least wealthy individuals who lack assets apart from cash savings, managing uncertainty involved in everyday life. Property saver-dissavers hold housing assets but are more likely to use credit facilities for consumption. Traditional savers accumulate wealth mostly through channels used by the previous generation, such as DB pensions, homeownership and cash savings. Investor savers are found to hold similar level of assets with traditional savers but held DC savings and financial investments instead of DB pensions. These four saver types show that individuals are predominantly using cash and housing wealth which shows that they may not be prepared to adapt and engage more actively in managing their wealth despite the changes brought to the pension landscape.

In addition, these saver types provide insights into how individuals may perceive uncertainty and seek to organise their economic lives accordingly. In the wealth-forming stage, which includes undersavers, individuals were mostly managing uncertainties in the immediate future. This group may include early savers (saving for a home) as well as individuals unable to build more wealth due to their effort being concentrated on improving current economic security. In the next wealth-organising stage, property saver-dissavers and traditional savers may look to manage life-cycle related uncertainty, primarily by homeownership then by an extension of DB pension ownership. The last wealth-building stage includes investor savers who may be more active in increasing the level of wealth by engaging with the financial market.

The saver type membership is found to be largely stable, as nearly nine out of ten remain in the same group between two time points. However, individuals who have a higher socio-economic status or are from such family background are found more likely to belong to a wealthier group initially and more likely to move upwards compared to those with lower socio-economic status or family background (indicated by parental homeownership).

The discussions above produce three important points concerning uncertainty, inequality and the role of policy. First, it highlights the importance of human agency in organising one's economic lives to reduce uncertainty. Current economic autonomy, indicated by the attitudinal and behavioural factors, is central to understanding discretionary retirement saving behaviour and also to explaining differences in human agency despite similar environmental factors. Also, the findings show that economic autonomy is influenced not only by social norms and immediate socio-economic circumstances (as discussed in Chapter 2 and 3) but also by individuals' perception of exposure to and control over uncertainties in one's time horizon (Chapter 5).

Second, the extent of these effects, however, varies by socio-economic characteristics. A strong intergenerational link in economic outcomes points to a widening within-generation inequality today's young adult. Socio-economic circumstances are found to be directly linked to individuals' ability to plan and save for the future. This implies that inequality in socio-economic circumstances introduces a new aspect of within-generation inequality: inequality in the abilities to manage uncertainty and to organise economic lives for tomorrow with autonomy.

Third, constantly working to improve today's economic security (which affects their ability to look beyond immediate economic circumstances), a substantial proportion of younger generation may not be able to make a meaningful provision for their long-term well-being. Moreover, wealth accumulation patterns show a degree of cultural inertia across the two generations. Many younger adults are following the wealth accumulation patterns of the baby boomer generation despite a vastly different pension policy structure. It directly points to the role of policy. Policy implications are discussed below.

## **6.2 Policy implications and future directions**

The discussion above points to two issues the younger generation faces in organising their economic lives with autonomy: uncertainty and inequality. Uncertainty implies that policies towards young adults' retirement saving need to take a holistic approach by coordinating with

a wide range of policies to improve economic security, as the capability to make provisions for future uncertainty extends from the abilities to manage contingencies in everyday lives. With regards to inequality, as individuals' economic security is likely to be influenced by employment, housing and family circumstances, the ability to manage uncertainty and future planning appears to be a new form of inequality, in addition to the intergenerational links in socio-economic circumstances for the younger generation. The low level of discretionary long-term saving and growing within-generation inequality poses a challenge to policymakers within the current pension policy structure, as individuals are increasingly encouraged to save more and from earlier.

Given the current circumstances of the younger generation, there is an increasing need for a clearly defined role of policies with a long-term perspective to offer continuity. This raises the question whether the current policy approach to retirement saving for this generation needs to be reconsidered. In the section below, the two aspects of the younger generation's economic autonomy – uncertainty and inequality – are discussed before assessing the implications specific to retirement saving policy.

### **6.2.1 Enhancing the economic autonomy of the younger adults**

The findings in Chapters 2 and 3 showed that the importance of understanding the economic autonomy of individuals, indicated by attitudinal and behavioural factors. For example, the large role played by financial resilience in identifying discretionary retirement saver points to the organic nature of discretionary retirement saving that extends from individuals' everyday economic lives. It suggests that individuals' perceptions of their economic security provide an important clue as to whether one is likely to be responsive to policies seeking changes in the retirement saving culture. It also points to the importance of taking an individual-oriented approach to policies, especially when seeking to promote more active retirement saving behaviours. That is, saving policies that are based on narrowly defined retirement saving mechanisms that rely solely on rational economic reasoning are unlikely to promote discretionary saving behaviour successfully.

At first, the relative importance of financial resilience relative to that of income on retirement saving (Chapters 2 and 3) seems to suggest that individuals can save, and it is a matter of self-efficacy. It would, however, be a misinterpretation of the study findings. While economic autonomy contains the notion of self-regulation, it is very closely interlinked with individuals' socio-economic arrangements. This interplay between economic autonomy and external factors is a challenge to policymakers as it implies that a wide range of policy domains needs to be coordinated to make a meaningful improvement. Three policy domains appear to be particularly relevant to the younger generation: employment; housing; and family policy. Besides, the findings from Chapter 3 show that policies need to consider social norms on gender, as the relative importance of these factors for perceptions of their economic security differ by gender. It echoes previous studies that call for a pension policy that recognises and compensates the existing gender gap in the labour market outcomes (Ginn and Macintyre, 2013; Grady, 2015; Price, 2007).

The interaction between individuals' economic autonomy and external factors is also found in the patterns of wealth accumulation among the younger adults, as discussed in Chapters 4 and 5. Homeownership circumstances of the younger generation are not only related to their socio-economic status but also parental homeownership and availability of intergenerational support. Direct financial support and indirect support through co-residence was found to boost adult children's chances of entering the housing market and therefore start building housing equity. Compared to the effects of individual socio-economic characteristics, such as household income, the two types of parental support are considerably more substantial. The relative scales of these effects hint that individuals' economic autonomy to own a home is reduced if they cannot compete with individuals with additional family resources in the market. The challenge for policy is to what extent this family support can be regulated and matched by policy interventions.

Policies such as the Help to Buy scheme were introduced to support for those who were priced out in the housing market. However, such demand-focused policies in fact benefited more individuals who are already more privileged (Provan, 2017). A recent report by the NAO (2019) states that £29 billion have been allocated between April 2013 and March 2023

for Help to Buy. In the same report, it estimates that only 37% of individuals using the scheme reported they could not have bought without its support, while 31% reported that they could have purchased without it.<sup>1</sup> It raises the question of whether policies such as Help to Buy are apposite for improving homeownership circumstances in a meaningful and equitable manner for the younger generation.

Many argue that demand-focused policies are unlikely to be effective without supplementary policies to increase housing supply. Building more houses may be a possible solution but more efforts can be taken to release more housing stock to the market. Additionally, alternative options to homeownership should be strengthened. Social housing can be expanded to offer long-term security. Tenants' right and affordability in the PRS can be improved via further regulation so that the flexibility in the PRS could be a viable alternative. Improvement in the housing policies would also ease the concentration on housing asset in securing future financial well-being.

### **6.2.2 Ameliorate growing within-generation inequality**

Another aspect of this thesis with policy implications is the growing within-generation inequality. The findings on the interplay between economic autonomy and its socio-economic context imply that perceptions of economic security may vary systemically, despite the notion of self-regulation in financial resilience. Chapter 2 and 3 showed that the characteristics linked to being a discretionary retirement saver indicate that those who are in better socio-economic standing and feel in control of their current economic circumstances can plan financially for the future, while others are less likely to do so. The findings in Chapter 5 point to the relationship between the wealth accumulation stages and the perceived uncertainty associated in each stage precisely points to this inequality in individuals' ability to manage uncertainty and organise their economic lives accordingly. As previously mentioned, stagnation in the initial stage of wealth accumulation is likely to be aggravated due to the inability to build

---

<sup>1</sup>The Guardian has reported that three-fifths of buyers could have bought a property without the subsidy on 13th Jun 2019. However, this figure is not found in the report (although it could have been estimated based on the 37% who reported requiring the support of the scheme to make the purchase happen). <https://www.theguardian.com/business/2019/jun/13/nao-says-60-of-help-to-buy-buyers-did-not-need-state-support>

wealth and use it as a safety net. It implies that the ability to work with uncertainty and plan individuals' future is becoming a new aspect of inequality for the younger generation.

This thesis provided evidence on intergenerational links in economic outcomes. The findings from Chapter 4 examined the aspect of intergenerational link in homeownership outcomes. In addition to the effect of the 'Bank of Mum and Dad', it highlighted the effect of cost-saving through living in the parental home. If not accompanied by direct financial help, this channel may be used by the parents who are less willing or capable to provide monetary support who are more likely to be concentrated in the middle-income group. The challenge for policymakers is to determine what extent policy could ameliorate the inequality stemming from intergenerational transfers as financial support for children is widely viewed as a natural course of action for parents who can do so (Rowlingson et al., 2017). The importance of homeownership in British life makes any policy that alters the chances of becoming a homeowner negatively would be politically costly. Also, inheritance tax is hugely unpopular (Rowlingson et al., 2017), and therefore imposing any form of taxation on intergenerational support may not win political support, which leads to a government attempt to match the size of parental support to those who are not able to obtain it, but doing so is extremely costly.

A more fundamental issue observed in this thesis is the inequality in economic autonomy; this inequality, unfortunately, stems from unequal opportunities. Chapter 4 showed that parental resources are influential in accessing capital. Chapter 5 showed that parental background partially explains the more favourable initial set-up for wealth building among the younger adults. As the younger generation's long-term saving relies more on the market system and becomes more accumulation-based, unequal access to the financial institutions and wealth accumulation channels is highly problematic.

The lack of transparency and high cost involved in engaging with financial markets may become impenetrable barriers for some. As more individuals' economic outcomes depend on it, policies should seriously consider improving accessibility in the financial markets in terms of transparency, information and cost. One way to increase competitiveness is to introduce new initiatives into the savings market, such as Fintech. Fundamentally robust regulatory

framework and monitoring may help to influence the increasing sophistication in the financial and technology sector to produce the better-quality choices and protection for the individuals.

### **6.2.3 Future direction of long-term saving policies**

The above discussions argue that issues analysed in this thesis require a well-coordinated policy response from a wide range of policy domains. Given the uncertainty and inequality in the younger generation's economic circumstances today, what should be the role of policy in promoting and securing individuals' long-term financial well-being? What does the ideal balance of responsibilities look like between the major actors in retirement saving? What is the role of individuals in saving for their future?

The answers to these questions depend on the direction of pension and related policies. It may be useful to revisit the discussion in the introduction regarding policy design and its potential impact on individuals' viewpoint on their roles. If the pension policy takes the Beveridgean principles, the state provides the security net and individuals make their own provisions additionally, the boundaries of individuals' roles may be more explicit in saving during their working-age years to provide for retirement. As the responsibility remains at the individual level, there may be less room for confusion about 'fairness' of retirement income relative to the contributions made.

This approach views retirement saving as an inter-temporal resource allocation exercise for individuals. In today's social and market systems, doing so would involve a series of complex decision-making processes; however, it is unreasonable to expect all individuals to be equally capable of doing so. Furthermore, it is ambiguous to what extent individuals should be responsible for accumulating and generating retirement income as the sufficiency of retirement saving is difficult to assess prospectively. If individuals have not been able to save due to difficult circumstances during their working-age years, which would be partially due to the current social and policy structure, should the individuals be ultimately responsible for their lack of saving? The critical role of policy that argues for individual responsibility may need to focus on providing sufficient tools for individuals to navigate complex social and financial systems. Engagement and utilisation of such systems differ by individuals'



resources, which may make it difficult for ordinary individuals to plan effectively for the long-term. Also, individuals bear increases and decreases of the asset values; therefore, the integrity and transparency of the market system become more critical issues in terms of ‘fairness’.

On the other hand, if pension policy considers the welfare-oriented viewpoint, the risk is pooled at the societal level, and it would be administered through the tax system as it is now. It is, then, easy for individuals to visualise ‘retirement saving’, which takes the form of paying NICs. The size of pension income in an ageing society may exacerbate issues concerning intergenerational fairness, mainly due to the lag between the contributions and benefits from the individuals’ perspective. The issues around intergenerational fairness – social sustainability, as Zaidi (2012) puts it – remain mostly unaddressed. An additional risk is that, as the size of the ageing population increases, the state pension may focus on poverty prevention rather than providing an income mirroring a lifetime income. Pensions, therefore, can become a highly politicised issue in an ageing society which may be given a priority than other long-term social investments that may further aggravate social sustainability.

The findings of this thesis suggest that a system that combines the strengths of these two approaches may be the solution for the younger generation’s long-term financial well-being. The challenges around funding issues make the unfunded system fiscally unsustainable; therefore, individuals’ pension pots should be built by multiple actors, which include the state, employers and individuals. As discretionary saving is likely to be difficult for some as findings of Chapter 2 suggest, AE should continue to be the platform for many to save via work. However, many of the younger generation studied in this thesis are also unlikely to build sufficient wealth to support themselves in retirement; this lack of ability should be compensated by increasing savings from the state and employers. For example, employers of low-income earners could contribute to their workplace pension schemes at a higher rate than the minimum AE contribution rate in exchange for a tax reduction. The opt-out option may be modified to allow a maximum number of years for opting out; for instance, individuals who opt out may do so for five years then be automatically re-enrolled.

Similarly, employers could continue to contribute, and do so at the rate applicable for full-time employment for individuals who take a career break or work part-time regardless of gender, for a preferential tax treatment. The state pension, on the other hand, can expand the NI credit for those with caring responsibilities. Ideally, as the Pensions Commission explored in 2006, a universal pension income may be provided to those over a specific age beyond the SPA, for example, 75 or 80. This age threshold for the universal pension may be adjusted in line with longevity.

Indeed, an increased level of state pension provision is always preferable if it is funded with no risk posed to the fiscal and social sustainability. However, these future welfare measures are unlikely to improve individuals' economic autonomy today. Therefore, policymakers should look to improve the economic insecurity experienced by the younger generation in the post-financial crisis austerity – for example, housing, employment and family responsibilities.

Some policy implications extend beyond this generation as some of the role is performed by family (Fasang, 2010). This, however, is expected to have adverse knock-on effects. For example, if intergenerational support makes a huge difference to offspring's life chances, parents may be pressured to divert part of their retirement and care funding to adult children's homeownership. Some, who are unable to provide support, may take on additional debt, which introduces new sources of concern for pensioners. On the other hand, that today's younger generation experiences a strong intergenerational link implies a potentially significant within-generation inequality for the next generation.

It appears that the real challenge for policymakers is that no one policy can solve issues and encourage individuals to plan for retirement. Instead, it appears that policy needs to be coordinated and planned on a long-term perspective (Walker 2018). For instance, it appears that housing, family and employment policies are central to improving today's economic autonomy. Employers could contribute more towards those with interrupted career trajectories, which would reduce the gender pension gap. However, without fundamental changes in how those who come back to work after family-caring duties are disadvantaged in career projection and salaries, the fundamental mechanism that creates gender pension gap

remains. It indicates that policies require a long-term view and some degree of coordination with continuity over time.

### 6.3 Study limitations

Study limitations were discussed in respective chapters; however, key limitations are summarised in this section to aide an overall evaluation of the empirical chapters as a whole. One of the key limitations of the first two empirical chapters (Chapters 2 and 3) is that the study sample only includes those who are employed, excluding self-employed individuals.

Self-employed individuals do not ordinarily hold workplace pension schemes, which is an important distinction in an investigation of discretionary saving behaviour which excludes the NI and workplace pension scheme contributions. Furthermore, the studies required information on the perceived knowledge of workplace pension during the period of AE implementation. These led to excluding self-employed individuals for whom additional retirement saving may be more important.

Another limitation of these two studies is that the lack of information on saving amounts as the research question concerned the decision-making process leading to action rather than the factors related to levels of saving commitment. Also, no data was available on saving amount, and constructing the amount was considered not feasible. However, this is an important aspect for understanding the sufficiency of saving as well as the resonance of action and the saving adequacy.

Chapter 3 provided an in-depth analysis of the gender differences in retirement saving decision-making; however, not all differences were explicable. Moreover, males and females showed different patterns in employment and demographic behaviours. These may be due to more fundamental differences associated with social functions not captured in the study. For instance, it is reasonable to be concerned about selection bias, considering heterogeneity the employment patterns of women in this age group. The negative association between all marital status other than being married and financial resilience for women may be due to the study sample containing a higher proportion of separated/divorced/widowed women than

men. However, the direction of the bias is difficult to assess conclusively due to multiple mechanisms linked to the demographic behaviours. The higher proportion of women who experienced marital dissolution is observed due to a combination of factors, including the younger age of female partners in married couples and women's lower rate of remarriage. In the case of the latter, the disadvantage for S/D/W women compared to married women may have been large, because men's estimate may be downwards biased as more S/D/W men are now remarried which makes it difficult to assess the effect of the S/D/W status among men. Other mechanisms may be the possible gender difference in attitudinal or behavioural change in the context of long-term saving as a result of marital dissolution. These points are, however, difficult to assess using the WAS dataset.

While the study was motivated by the gender studies in which gender is viewed as a social construction, not all differences were explainable. For example, it appeared that men showed a stronger link between thinking about the financial aspect of retirement and confidence to make a sound decision about saving. However, it is not clear whether the gender difference derives from women's tendency to feel less confident than men given the same knowledge level, social acceptability for women appearing less confident than men, or a mixture of both factors. The boundary of this social context of social acceptableness is also not clear whether it is situational (i.e. interviewer or other individuals present in the interview) or subject-related issue of 'talking about money' which is also gendered in our society.

There are also several limitations in the study of younger adults' homeownership in Chapter 4. Although the motivation for this study was the causal mechanisms of parental support 'enabling' homeownership, the data structure implies that it was not possible to establish a robust study design for causal inference. While the substantive mechanisms of the 'Bank of Mum and Dad' is widely perceived to be causal, the study refrained from making a causal claim due to this limitation. There is limited information on geography; although this was due to data limitations, intergenerational transfers as well as housing availability and accessibility differ substantially by geographies (Coulter, 2017).

In the same study, utilising four waves of WAS (2008/10–2014/16) resulted in several limitations. It effectively provides six calendar years, which is a relatively short time frame,

potentially affecting the estimates of family financial transfers to be upwards-biased. On the other hand, the direct family financial support variable does not include any transfers reported in the first wave (2006/8). This information was available for the study sample but not utilised as the pattern of missing response was considered not at random. Similarly, information on parental co-residence could not be deduced using the information in the first wave. The combination of the two factors could have, albeit marginally, biased the financial support estimate downwards.

Chapter 5 developed saver types to understand individuals' approaches to wealth accumulation. One of the limitations is the allocation of wealth between couples assuming an equal division. It is unlikely to be realistic, although alternative methods would have been subject to similar limitations. Changes over time are studied through variability in membership to the saver types and do not directly quantify the accumulation. Therefore, the progressive nature of the three stages of wealth building carries more substantive meaning rather than being grounded by robust financial quantification of wealth.

The issue of the intergenerational link in economic outcomes was discussed in Chapters 4 and 5, arguing that it exacerbates the within-generation inequality. However, the studies in this thesis are limited to offering explanations on precisely which mechanisms such advantages are transferred. For instance, children may have obtained better social capital, which enables them to advance economically. On the other hand, those from a higher socio-economic background may have more access to parents' network and resources, thus facilitating wealth building. It is also possible that children inherit their preferences for certain wealth-building mechanisms and follow their parents' footsteps in terms of saving for retirement.

## 6.4 Contributions

Despite such limitations, this thesis makes several contributions. First, it provides empirical evidence on the younger generation's economic circumstances from individuals' point of view. Many studies have documented British young adults' negative economic experience

since the financial crisis in 2007/8 (Corlett, 2017; Corlett et al., 2016; Hood and Joyce, 2013), but not many have provided evidence on how and to what extent young adult's economic autonomy was influenced by it and how it may shape their future saving behaviours. Chapter 2 showed how financial resilience – a measure that is constructed to reflect the notion of financial capability with a focus on behavioural patterns – enables the quantification of effects of the external environment on limiting or enabling human agency. In Chapter 3, the gender dimension was added to examine how economic autonomy between men and women may differ in the context of saving for retirement. Not many studies have examined this issue despite the gender pension gap. In Chapter 4, economic autonomy was assessed indirectly in contrast to the advantages of external support. As the role of intergenerational support on enabling homeownership is substantial, it also pointed to the reduced remit of individuals' human agency in organising their housing circumstances using their own means. In Chapter 5, it assessed how individuals approach wealth building, which provided insights into their attitudes, perceptions and abilities in organising economic lives on the time horizon. Above all, these studies provided evidence from the younger generation's perspective.

Second, the thesis also informed an understanding of the within-generation inequality at the early stages of adulthood and to what extent it may widen. There is a growing number of studies that document the increasing role of intergenerational transfer among the younger generation. This thesis, however, provided an analysis of how and to what extent this family financial support enables the younger generation's economic autonomy. In Chapter 2, it highlighted that intergenerational support increases the younger generation's propensity to consider saving for retirement albeit indirectly. In Chapter 3, the gender differences were documented in discretionary retirement saving among the younger generation. Men and women were found to differ in the ways their financial resilience is enhanced, despite its equal importance for retirement saving behaviours. This finding, combined with the evidence of a gender pay gap, pointed to the substantial future pension gap. In Chapter 4, financial support was studied in more detail; direct (money) and indirect support (space) were distinguished, and their effects were tested directly. The two types of support were found to give a significant boost to those who received them. It directly quantified the

effect of family support, therefore, providing the extent of inequality within the generation. Furthermore, it also implied that those with family support start to build housing assets earlier than those without such support. In Chapter 5, it was found that not only individual but also parental socio-economic characteristics play a role in the younger generation's wealth building. Individuals who have a higher socio-economic status or are from such family background are more likely to belong to the wealthier saver type from the start and to build wealth more progressively. These findings collectively point to the systematic (dis)advantage that widens the economic outcomes in the early stages of adulthood.

Third, this study used novel methodological approaches and applied them to new areas. In Chapter 3, the gender difference was examined in-depth, using the multi-group analysis framework in SEM. This approach was useful because it accommodated the gender-specific model (measurement or structural) and allowed direct testing of equivalence between groups. It contributed to examining the gender difference at a granular level. In Chapter 4, it utilised Guo's (1993) and Jenkin's (1995) conditional likelihood approach. The key feature of this method was useful in examining longitudinal data in the event history analysis framework without complete information due to left-censoring issue. In Chapter 5, a balance sheet approach was proposed to organise the data, which provided a fuller picture of wealth holding and a more detailed examination on individuals' attitudes or ability to build wealth.

## **6.5 Further research agenda**

For future study, this thesis presents several future research opportunities. First, aspects of economic autonomy – in particular, the role of financial resilience – can be investigated further. For instance, the level of financial resilience can be studied over time, concerning individuals' changes in demographic and socio-economic circumstances. The effect of parental characteristics can also be examined to assess whether family background has a bearing on individuals' trajectory of financial resilience. By consolidating the findings of Chapters 2 and 5, it may be possible to examine the role of financial resilience, focusing on the self-efficacy aspect, explains upward movements in wealth accumulation. This aspect

of inequality may also be examined further to what extent family background and parental support enhance the younger generation's economic well-being, controlling for financial resilience. Additionally, the relationship between thinking about the financial aspect of retirement planning and the saving activity (outcome variable) can be examined more in detail by employing the *theory of planned behaviour* (TPB) (Ajzen, 1991; Ajzen and Fishbein, 2005). Findings of such a study can provide insight into how one's consideration for saving may be connected to actions of saving by mapping the intentions, which may be of interest to policymakers. Regarding the gender difference, which was not fully unpacked in Chapter 3 may be examined within the frame of TPB. A possible extension to this would be to explore how the gender dimension may manifest differently among male and female siblings.

Second, the gender difference can be studied further. This thesis has shown the gender difference in the interaction with economic autonomy and external factors; however, have not fully explained via what mechanisms the differences may manifest. In terms of gender, there are two possible avenues to further the understanding of the social norm and gender roles of the younger adults. First, given the importance of family background, siblings of different gender may be studied in an attempt to partition the family background and gender effects. The second direction is to examine the intra-household dynamics of gender, focusing on married or cohabiting couples. Retirement saving is known to be a joint decision and couples tend to view their key assets as shared (Joseph and Rowlingson, 2012). However, the difference in how men and women organise their socio-economic environment and operate financially may vary, as the study in Chapter 3 showed. Also, the gender differential in the effects of partnership dissolution require further research; demographic behaviours and characteristics of men and women after the split may vary, and they may influence economic decisions differently (Lersch and Vidal, 2014).

Third, in terms of the relationship between intergenerational transfer and homeownership, housing value may be considered in a similar model to examine the different effects of inheritance on the younger generation's accumulation of housing wealth. Moreover, the effects of intergenerational transfer may differ by market conditions in a specific period and



geographies. Future studies may be able to examine the effect of policies, such as Help to Buy, although doing so may require a larger study sample.

The main contribution of this study is its comprehensive assessment of how Britain's younger generation save for the future and accumulate wealth. In doing so, the study also offers insight into how individuals organise their economic lives in an environment with a high level of uncertainty. Also, strong intergenerational links in economic outcomes are documented, which points to the growing within-generational inequality. This thesis argues that individuals' current economic autonomy and future-planning capacities are hindered or enhanced systematically by the current social and policy structures. Therefore, it concludes that the difference in abilities to manage uncertainty has become a new aspect of inequality for the younger generation. Several policy implications have been discussed with this in mind. This thesis provides answers as to how the younger generation save for the future and build wealth. It also raises many further questions, as discussed above, to be answered by future research.

# References

- Adams, J. and James, S. (2009), Retirement income and assets - how can housing support retirement?, Technical report, Pension Policy Institute (PPI), London.  
**URL:** <http://www.pensionspolicyinstitute.org.uk/publications/reports/retirement-income-and-assets-how-can-housing-support-retirement>
- Ajzen, I. (1991), 'The theory of planned behavior', *Organizational Behavior and Human Decision Processes* **50**, 179–211.
- Ajzen, I. and Fishbein, M. (2005), 'The influence of attitudes on behaviour.', *The Handbook of Attitudes* pp. 173–221.
- Angrist, J. D., Imbens, G. W. and Rubin, D. B. (1996), 'Identification of Causal Effects Using Instrumental Variables', *Journal of the American Statistical Association* **91**(434), 444–455.
- Angrist, J. D. and Pischke, J.-S. (2009), *Mostly harmless econometrics: an empiricist's companion*, Princeton University Press, Princeton.
- Appleyard, L. (2011), 'Review Article: Household Finances Under Pressure: What is the Role of Social Policy?', *Social Policy and Society* **11**(1), 131–140.
- Appleyard, L. and Rowlingson, K. (2010), Home-ownership and the distribution of personal wealth - A review of the evidence, Technical report, Joseph Rowntree Foundation, York.
- Aratani, Y. (2011), 'Socio-demographic variations of homeowners and differential effects of parental homeownership on offspring's housing tenure', *Housing Studies* **26**(5), 723–746.
- Armstrong, A., Ebell, M. and Warren, J. (2017), Is an Englishman's Home His Pension?, Technical Report November, National Institute of Economic and Social Research, London.  
**URL:** <https://www.niesr.ac.uk/publications/englishmans-home-his-pension>
- Association of British Insurers (ABI) (2015), Strengthening the incentive to save: a consultation on pensions tax relief, Technical Report September, Association of British Insurers (ABI), London.
- Atkinson, A. B., Marlier, E., Cantillon, B. and Nolan, B. (2009), *The EU and Social Inclusion: Facing the challenges*, 2nd edition, Policy Press, Bristol.
- Atkinson, A., McKay, S., Kempson, E. and Collard, S. (2006), *Levels of Financial Capability in the UK: Results of a baseline survey*, number 47 in 'Consumer Research', Financial Services Authority (FSA).

- Bajtelsmit, V., Bernasek, A. and Jianakoplos, N. (1999), 'Gender differences in defined contribution pension decisions', *Financial Services Review* **8**(1), 1–10.
- Bakk, Z. and Kuha, J. (2018), 'Two-Step Estimation of Models Between Latent', *Psychometrika* **83**(4), 871–892.  
**URL:** <http://doi.org/10.1007/s11336-017-9592-7>
- Banks, J., Blundell, R. and Tanner, S. (1998), 'Is There a Retirement-Savings Puzzle?', *The American Economic Review* **88**(4), 769–788.
- Banks, J., Emmerson, C., Oldfield, Z. and Tetlow, G. (2005), *Prepared for Retirement? The Adequacy and Distribution of Retirement Resources in England*, Patersons, Tunbridge Wells for The Institute for Fiscal Studies (IFS), London.
- Bardasi, E. and Jenkins, S. (2010), 'The gender gap in private pensions', *Bulletin of Economic Research* **62**(4), 343–363.
- Bardasi, E., Jenkins, S. P. and Rigg, J. A. (2002), 'Retirement and the income of older people: a British perspective', *Ageing & Society* **22**(2), 131–159.
- Bartholomew, D. J., Knott, M. and Moustaki, I. (2011), *Latent variable models and factor analysis: a unified approach*, John Wiley & Sons.
- Bartholomew, D. J., Steele, F., Galbraith, J. and Moustaki, I. (2008), *Analysis of multivariate social science data*, CRC Press.
- Bassett, W. F., Fleming, M. J. and Rodrigues, A. P. (1998), 'How workers use 401(k) plans: the participation, contribution, and withdrawal decisions', *National Tax Journal* **51**(2), 263–269.
- Bastagli, F. and Hills, J. (2013), Wealth Accumulation, Ageing, and House Prices, in J. Hills, F. Bastagli, F. Cowell, H. Glennerster, E. Karagiannaki and A. McKnight, eds, 'Wealth In the UK', 1st edn, Oxford University Press., Oxford, chapter 4, pp. 63–91.
- Benartzi, S. and Thaler, R. H. (1999), 'Risk Aversion or Myopia? Choices in Repeated Gambles and Retirement Investments', *Management Science* **45**(3), 364–381.  
**URL:** <http://mansci.journal.informs.org/content/45/3/364.short>
- Bernheim, B. D., Garrett, D. M. and Maki, D. M. (2001), 'Education and saving: The long-term effects of high school financial curriculum mandates', *Journal of Public Economics* **80**(3), 435–465.
- Blundell, R., Crawford, R., French, E. and Tetlow, G. (2016), 'Comparing Retirement Wealth Trajectories on Both Sides of the Pond', *Fiscal Studies* **37**(1), 105–130.
- Borden, L. M., Lee, S. A., Serido, J. and Collins, D. (2008), 'Changing college students' financial knowledge, attitudes, and behavior through seminar participation', *Journal of Family and Economic Issues* **29**(1), 23–40.
- Bozio, A., Crawford, R. and Tetlow, G. (2010), *The history of state pensions in the UK: 1948 to 2010*, IFS Briefing Note, Institute for Fiscal Studies (IFS), London.

- Browning, M. and Crossley, T. F. (2001), The Lifecycle Model of Consumption and Saving, Technical report, Institute for Fiscal Studies (IFS), London.
- Browning, M. and Lusardi, A. (1996), 'Household saving: Micro theories and macro facts', *Journal of Economic literature* **34**(4), 1797–1855.
- Bryan, M. and Lloyd, J. (2014), *Who Saves for Retirement? 2: Eligible non-savers*, Institute for Social and Economic Research (ISER), University of Essex & Strategic Society Centre London, Colchester; London.
- Bryan, M., Lloyd, J., Rabe, B. and Taylor, M. (2011), *Who Saves for Retirement?*, Working paper, Institute for Social and Economic Research (ISER), University of Essex & Strategic Society Centre London, Colchester; London.
- Bucher-Koenen, T., Lusardi, A., Alessie, R. J. M. and van Rooij, M. C. J. (2014), 'How financially literate are women? An overview and new insights', *MEA Discussion Paper*.
- Budig, M. and England, P. (2001), 'The Wage Penalty for Motherhood', *American Sociological Review* **66**(2), 204–225.
- Burgoyne, C. B., Reibstein, J., Edmunds, A. and Dolman, V. (2007), 'Money management systems in early marriage: Factors influencing change and stability', *Journal of Economic Psychology* **28**(2), 214–228.
- Byrne, B. (2012), *Structural Equation Modeling with Mplus*, Routledge, Taylor & Francis Group, New York; London.
- Byrne, B. M., Shavelson, R. J. and Muthén, B. O. (1989), 'Testing for the Equivalence of Factor Covariance and Mean Structures : The Issue of Partial Measurement Invariance', *Psychological Bulletin* **105**(3), 456–466.
- Cannon, E., Tonks, I. and Yuille, R. (2016), 'the Effect of the Reforms To Compulsion on Annuity Demand', *National Institute Economic Review* **237**(August 2016), 47–54.
- Canova, L., Rattazzi, A. M. M. and Webley, P. (2005), 'The hierarchical structure of saving motives', *Journal of Economic Psychology* **26**(1), 21–34.
- Carroll, C. D. (1994), 'How Does Future Income Affect Current Consumption ?', *The Quarterly Journal of Economics* **109**(1), 111–147.
- Carroll, C. D. (1997), 'Bufferstock saving and the life cycle/permanent income hypothesis', *Quarterly Journal of Economics* **CXII**(1).
- Choi, J. J., Laibson, D. I., Madrian, B. C. and Metrick, A. (2005), 'Saving for retirement on the path of least resistance', *Tax Policy and the Economy* **40**1, 1–65.  
**URL:** [http://faculty.som.yale.edu/andrewmetrick/documents/plr\\_bpf.pdf](http://faculty.som.yale.edu/andrewmetrick/documents/plr_bpf.pdf)
- Cigdem, M. and Whelan, S. (2017), 'Intergenerational transfers and housing tenure – Australian evidence', *International Journal of Housing Policy* **17**(2), 227–248.  
**URL:** <https://doi.org/10.1080/19491247.2017.1278580>
- Clapham, D., Mackie, P., Orford, S., Thomas, I. and Buckley, K. (2014), 'The housing pathways of young people in the UK', *Environment and Planning A* **46**(8), 2016–2031.

- Clark, G. G. L. and Strauss, K. (2008), 'Individual pension-related risk propensities: the effects of socio-demographic characteristics and a spousal pension entitlement on risk attitudes', *Ageing & Society* **28**(May 2017), 847–874.
- Clark, R., D'Ambrosio, M., McDermid, A., Sawant, K., Ambrosio, M., McDermid, A. A. and Kshama, S. (2006), 'Retirement plans and saving decisions: The role of information and education', *Journal of Pension Economics and Finance* **5**(1), 45–68.
- Clark, W. A. (2016), 'Life events and moves under duress: disruption in the life course and mobility outcomes', *Longitudinal and Life Course Studies* **7**(3), 218–239.  
**URL:** <http://www.llcsjournal.org/index.php/llcs/article/view/376>
- Clarke, S., Corlett, A. and Judge, L. (2016), *The housing headwind: the impact of rising housing costs on UK Living standards*, number June in 'Resolution Foundation Report', Resolution Foundation, London.
- CML (2015), 'The challenge facing first-time buyers'.  
**URL:** <https://www.cml.org.uk/news/news-and-views/723/>
- Cole, I., Powell, R. and Sanderson, E. (2016), 'Putting the squeeze on 'Generation Rent': Housing benefit claimants in the private rented sector - Transitions, marginality and stigmatisation', *Sociological Research Online* **21**(2), 1–14.
- Collins, D., Morduch, J., Rutherford, S. and Ruthven, O. (2011), The Portfolios of the Poor, in 'Portfolios of The Poor: How the World's Poor Live on \$2 a Day', Princeton University Press, Princeton; Oxford, chapter 1, pp. 1–27.
- Collins, L. and Lanza, S. T. (2010), *Latent Class and Latent Transition Analysis: With Applications in the Social, Behavioral, and Health Sciences*, John Wiley & Sons, Inc., Hoboken, New Jersey.
- Corlett, A. (2017), *As Time Goes By: Shifting incomes and inequality between and within generations*, Technical Report February, Intergenerational Commission; Resolution Foundation, London.
- Corlett, A., Finch, D. and Whittaker, M. (2016), *Living Standards 2016: The experiences of low to middle income households in downturn and recovery*, Technical report, Resolution Foundation, London.
- Corlett, A. and Judge, L. (2017), *Home affront: Housing across the generations*, Resolution Foundation, London.
- Cosslett, R. L. (2017), 'The bank of Mum and Dad: 'It's such a huge amount of money. And guilt''.  
**URL:** <https://www.theguardian.com/money/2017/nov/11/generation-rent-property-borrowing-from-mum-and-dad-guilt>
- Coulter, R. (2017), 'Local house prices, parental background and young adults' homeownership in England and Wales', *Urban Studies* **54**(14), 3360–3379.

- Coulter, R. (2018), 'Parental background and housing outcomes in young adulthood', *Housing Studies* **33**(2), 201–223.  
**URL:** <http://dx.doi.org/10.1080/02673037.2016.1208160>
- Cowell, F., Karagiannaki, E. and McKnight, A. (2018), 'The changing distribution of wealth in the pre-crisis US and UK: the role of socio-economic factors', *Oxford Economic Papers* **71**(1), 1–24.
- Crawford, R. (2018a), The use of financial wealth in retirement, Technical report, Institution for Fiscal Studies, London.
- Crawford, R. (2018b), The use of housing wealth at older ages, Technical report, Institution for Fiscal Studies, London.
- Crawford, R., Keynes, S. and Tetlow, G. (2013), *A single-tier pension : what does it really mean ?*, Institute for Fiscal Studies (IFS), London.
- Crawford, R. and O'Dea, C. (2012), The adequacy of wealth among those approaching retirement, Technical report, Institute for Fiscal Studies, London.  
**URL:** <http://www.econstor.eu/handle/10419/83512>
- Cribb, J. and Emmerson, C. (2016), 'Workplace pensions and remuneration in the public and private sectors in the UK', *National Institute Economic Review* **237**(August), 30–37.
- Cribb, J., Hood, A. and Hoyle, J. (2018), 'The decline of homeownership among young adults'.  
**URL:** <https://www.ifs.org.uk/publications/10505>
- Crossley, T. F. and O'Dea, C. (2016), 'Household Wealth Data and Public Policy', *Fiscal Studies* **37**(1), 5–11.
- Curchin, K. (2016), 'From the Moral Limits of Markets to the Moral Limits of Welfare', *Journal of Social Policy* **45**(01), 101–118.  
**URL:** [http://www.journals.cambridge.org/abstract\\_S0047279415000501](http://www.journals.cambridge.org/abstract_S0047279415000501)
- Danzer, A., Bondibene, C. R., Danzer, A. and Dolton, P. (2016), 'Who Wins ? Evaluating the Impact of UK Public Sector Pension Scheme Reforms', *IZA Discussion Paper* **237**, 38–46.
- Danzer, A. M., Disney, R., Dolton, P. and Bondibene, C. R. (2016), 'The Future of Pensions: Reforms and their Consequences - Introduction', *National Institute Economic Review* **237**(1), R1–R5.  
**URL:** <http://ner.sagepub.com/cgi/doi/10.1177/002795011623700110>
- Delfani, N., De Deken, J. and Dewilde, C. (2014), 'Home-Ownership and Pensions: Negative Correlation, but No Trade-off', *Housing Studies* **29**(5), 657–676.
- Department for Work and Pensions (DWP) (2012), *Estimates of the number of people facing inadequate retirement incomes*, Department for Work and Pensions (DWP), London.
- Dewilde, C. and Raemaekers, P. (2008), 'The trade-off between home-ownership and pensions: individual and institutional determinants of old-age poverty.', *Ageing & Society* **28**(6), 805–830.

- Di Salvo, P. and Ermisch, J. (1997), 'Analysis of the Dynamics of Housing Tenure Choice in Britain', *Journal of Urban Economics* **42**(1), 1–17.  
**URL:** <http://www.sciencedirect.com/science/article/pii/S0094119096920094>
- Diewald, M. and Mayer, K. U. (2009), 'The sociology of the life course and life span psychology: Integrated paradigm or complementing pathways?', *Advances in Life Course Research* **14**(1-2), 5–14.
- Dinga, P. and VanderWeele, T. J. (2016), 'Sensitivity analysis without assumptions', *Epidemiology* **27**(3), 368–377.
- Disney, R. (2016), 'PENSION REFORM IN THE UNITED KINGDOM: AN ECONOMIC PERSPECTIVE Background: the semantics of pensions', *National Institute Economic Review* **August**(237), 6–12.  
**URL:** <http://journals.sagepub.com/doi/pdf/10.1177/002795011623700111>
- Doling, J. and Ronald, R. (2010), 'Home ownership and asset-based welfare', *Journal of Housing and the Built Environment* **25**(2), 165–173.  
**URL:** <http://link.springer.com/10.1007/s10901-009-9177-6>
- Druta, O. and Ronald, R. (2016), 'Young Adults Pathways into Homeownership and the Negotiation of Intra-Family Support: A Home, the Ideal Gift', *Sociology* pp. 1–17.  
**URL:** <http://soc.sagepub.com/cgi/doi/10.1177/0038038516629900>
- Dupuis, A. and Throne, D. C. (1998), 'Home, home ownership and the search for ontological security', *The Sociological Review* **46**(1), 24–47.
- DWP (2014a), Scenario analysis of future pension incomes, Technical report, Department for Work and Pensions (DWP), London.
- DWP (2014b), *Social security spending in UK including Scotland [Data File]*, Gov.UK, London.  
**URL:** <https://www.gov.uk/government/publications/social-security-expenditure-in-the-united-kingdom-including-scotland>
- DWP (2017), *Automatic Enrolment Review 2017: Maintaining the Momentum*, Department for Work and Pensions (DWP), London.
- DWP (2019), Workplace pension participation and saving trends: 2008 to 2018, Technical Report June, Department for Work and Pensions (DWP), London.
- Dynan, K. E., Skinner, J. and Zeldes, S. P. (2016), 'The Importance of Bequests and Life-Cycle Saving in Capital Accumulation: A New Answer', *American Economic Association* **92**(2).
- Elder, G. (1994), 'Time, Human Agency, and Social Change: Perspectives on the Life Course', *Social Psychology Quarterly* **57**(1), 4–15.  
**URL:** <https://www.jstor.org/stable/2786971>
- Elder, G. and George, L. (2016), Age, Cohort, and the Life Course, in M. Shanahan, J. T. Mortimer and M. K. Johnson, eds, 'Handbook of the Life Course (Volume II)', Springer International Publishing, Switzerland, chapter Foundation.

- Elder, G., Johnson, M. K. and Crosnoe, R. (2003), 'The emergence and development of life course theory', in J. T. Mortimer and M. J. Shanahan, eds, 'Handbook of the Life Course', Kluwer Academic Publishers, New York; Boston; Dordrecht; London; Moscow, chapter 1, pp. 3–19.
- Eliason, S. R., Mortimer, J. T. and Vuolo, M. (2015), 'The Transition to Adulthood: Life Course Structures and Subjective Perceptions', *Social Psychology Quarterly* **78**(3), 205–227.
- Emmerson, C. and Wakefield, M. (2001), *The Saving Gateway and the Child Trust Fund: Is asset-based welfare 'well fair'?*, Institute for Fiscal Studies (IFS).
- England, P., Bearak, J., Budig, M. and Hodges, M. (2016), 'Do Highly Paid, Highly Skilled Women Experience the Largest Motherhood Penalty?', *American Sociological Review* **81**(6), 1161–1189.
- Ermisch, J. and Halpin, B. (2004), 'Home ownership and social inequality in Britain', in K. Kurz and H.-P. Blossfeld, eds, 'Home Ownership and Social Inequality In a Comparative Perspective', Stanford University Press, chapter 10.
- Fasang, A. (2010), 'Retirement: Institutional pathways and individual trajectories in Britain and Germany', *Sociological Research Online* **15**(2).
- Fernández-López, S., Vivel-Búa, M., Otero-González, L. and Durán-Santomil, P. (2015), 'Exploring The Gender Effect On Europeans' Retirement Savings', *Feminist Economics* **21**(4), 118–150.  
**URL:** <https://doi.org/10.1080/13545701.2015.1005653>
- Finlayson, A. (2009), 'Financialisation, financial literacy and asset-based welfare', *British Journal of Politics and International Relations* **11**(3), 400–421.
- Finney, A. (2015), *What makes the wealthy wealthy? The composition of wealth across the wealth distribution and its determinants: An analysis using the 2008-10 Wealth and Assets Survey*, Wealth and Asset Survey, Personal Finance Research Centre (PFRC), University of Bristol & Trade Union Congress (TUC), Bristol.
- Finney, A., Hayes, D. and Hartfree, Y. (2015), 'Hard times: Financial wellbeing among low & middle earners - An analysis using the 2008-10 Wealth and Assets Survey Acknowledgments and credits', pp. 1–112.
- Fisher, I. (1930), *The theory of interest, as determined by impatience to spend income and opportunity to invest it*, liberty fu edn, The Macmillan Company, New York.
- Forrest, R. and Hirayama, Y. (2015), 'The Financialisation of the Social Project: Embedded Liberalism, Neoliberalism and Home Ownership', *Urban Studies* **52**(2), 233–244.
- Foster, L. (2017), 'Young People and Attitudes towards Pension Planning', *Social Policy and Society* **16**(01), 65–80.  
**URL:** [http://www.journals.cambridge.org/abstract\\_S1474746415000627](http://www.journals.cambridge.org/abstract_S1474746415000627)
- Foster, L. and Ginn, J. (2018), 'Transmitting inequality: pensions policy and the gendered life course', *Handbook on Gender and Social Policy* pp. 179–196.



- Foster, L. and Heneghan, M. (2018), 'Pensions planning in the UK: A gendered challenge', *Critical Social Policy* **38**(2), 345–366.
- Foster, L., Heneghan, M., Olchawski, J. and Trenow, P. (2016), *Closing the Pension Gap*, Fawcett Society, London.  
**URL:** <http://www.fawcettsociety.org.uk/wp-content/uploads/2016/01/Pensions-full-V2.pdf>
- Fox O'Mahony, L. and Overton, L. (2015), 'Asset-based Welfare, Equity Release and the Meaning of the Owned Home', *Housing Studies* **30**(3), 392–412.
- Fraser, D. (2003), Liberal social policy, 1905–14, in D. Fraser, ed., 'The evolution of the British welfare system', 3 edn, Palgrave MacMillan, chapter 6, pp. 159–184.
- Frick, J. R. and Grabka, M. M. (2003), 'Imputed rent and income inequality: A decomposition analysis for Great Britain, West Germany and the U.S.', *Review of Income and Wealth* **49**(4), 513–537.
- Frick, J. R., Grabka, M. M., Smeeding, T. M. and Tsakloglou, P. (2010), 'Distributional effects of imputed rents in five European countries', *Journal of Housing Economics* **19**(3), 167–179.  
**URL:** <http://dx.doi.org/10.1016/j.jhe.2010.06.002>
- Giddens, A. (1984), Time, Space and Regionalization, in 'The Constitution of Society', University of California Press, Berkeley; Los Angeles, chapter 3, pp. 110–161.
- Ginn, J. and Arber, S. (1996a), 'Gender, Age and Attitudes to Retirement in Mid-Life', *Ageing & Society* **16**(01), 27.
- Ginn, J. and Arber, S. (1996b), 'Patterns of Employment, Gender and Pensions: The effect of Work History on Older Women's Non-State Pension', *Work, Employment & Society* **10**(3), 469–490.
- Ginn, J. and Macintyre, K. (2013), 'UK pension reforms: Is gender still an issue?', *Social Policy and Society* **12**(1), 91–103.
- Glennerster, H. (1992), Paying for Social Security, in 'Paying for Welfare: the 1990s', Harvester-Wheatsheaf, Hemel Hempstead, chapter 14, pp. 245–266.
- Glennerster, H. (2012), 'Why was a wealth tax for the UK abandoned? Lessons for the policy process and tackling wealth inequality', *Journal of Social Policy* **41**(2), 233–249.
- Gough, O. and Niza, C. (2011), 'Retirement Saving Choices: Review of the Literature and Policy Implications', *Journal of Population Ageing* **4**(1), 97–117.
- Grady, J. (2015), 'Gendering Pensions: Making Women Visible', *Gender, Work and Organization* **22**(5), 445–458.
- Grinstein-Weiss, M., Zhan, M. and Sherraden, M. (2006), 'Saving performance in individual development accounts: Does marital status matter?', *Journal of Marriage and Family* **68**(1), 192–204.

- Guiso, L., Paola, S. and Luigi, Z. (2004), 'The Role of Social Capital in Financial Development', *American Economic Review* **94**(3), 526–556.  
**URL:** <http://www.nber.org/papers/w7563.pdf>
- Guo, G. (1993), 'Event-History Analysis for Left-Truncated Data', *Sociological Methodology* **23**, 217–243.  
**URL:** <http://www.jstor.org/stable/271011>
- Halifax (2017), *Number of first-time buyers reaches 10-year high [Press release]*, Halifax, London.
- Ham, C. (2018), 'Cross party approach to NHS and social care', *BMJ (Online)* **361**(May), 1–2.  
**URL:** <http://dx.doi.org/doi:10.1136/bmj.k1888>
- Hamnett, C. (1991), 'A Nation of Inheritors? Housing Inheritance, Wealth and Inequality in Britain', *Journal of Social Policy* **20**(1991), 509–536.
- Hancock, R. (1998), 'Housing wealth, income and financial wealth of older people in Britain.', *Ageing and Society* **18**(1), 5–33.
- Harris, J. (1994), Beveridge's Social and Political Thought, in J. Hills, J. Ditch and H. Glennester, eds, 'Beveridge and Social Security', Clarendon Press, Oxford, chapter 3.
- Hasler, A. and Lusardi, A. (2017), The Gender Gap in Financial Literacy: A Global Perspective, Technical Report July, Global Financial Literacy Excellence Center.
- Hayes, D., Collard, S. and Kempson, E. (2014), Understanding the profile of those most at risk of detriment as a result of low financial capability: Analysis of the Money Advice Service Financial Capability Survey, Technical Report October, Personal Finance Research Centre, University of Bristol.  
**URL:** <http://www.bristol.ac.uk/media-library/sites/geography/pfrc/pfrc1502-understanding-profile-of-those-at-risk-of-detriment-as-a-result-of-low-fincap.pdf>
- Heath, S. (2017), 'Siblings, fairness and parental support for housing in the UK', *Housing Studies* **30**37(2), 1–15.  
**URL:** <http://dx.doi.org/10.1080/02673037.2017.1291914>
- Heath, S. and Calvert, E. (2013), 'Gifts, Loans and Intergenerational Support for Young Adults', *Sociology* **47**(February), 1 – 16.
- Heckman, J. J. (1981), Heterogeneity and State Dependence, in S. Rosen, ed., 'Studies in Labor Markets', University of Chicago Press, Chicago, chapter 3, pp. 91–140.
- Helderman, A. and Mulder, C. (2007), 'Intergenerational transmission of homeownership: The roles of gifts and continuities in housing market characteristics', *Urban Studies* **44**(2), 231–247.
- Helman, R., Copeland, C. and Vanderhei, J. (2015), 'The 2015 Retirement Confidence Survey: Having a Retirement Savings Plan a Key Factor in Americans' Retirement Confidence', *Employee Benefit Research Institute* **10**(413), 1–36.

- Henretta, J. (1984), 'Parental Status and Child's Home Ownership', *American Sociological Review* **49**(1), 131–140.
- Hershey, D. A., Jacobs-Lawson, J. M., McArdle, J. J. and Hamagami, F. (2007), 'Psychological foundations of financial planning for retirement', *Journal of Adult Development* **14**(1-2), 26–36.
- Hershey, D. A., Mowen, J. C. and Jacobs-Lawson, J. M. (2003), 'an Experimental Comparison of Retirement Planning Intervention Seminars', *Educational Gerontology* **29**(4), 339–359.  
**URL:** <http://www.tandfonline.com/doi/abs/10.1080/713844333>
- Hershfield, H. E. (2011), 'Future self-continuity: How conceptions of the future self transform intertemporal choice', *Annals of the New York Academy of Sciences* **1235**(1), 30–43.
- Hills (1997), *The future of welfare: a guide to the debate*, Joseph Rowntree Foundation, York, UK.
- Hills, J. (1995), *Income and Wealth Volume 2: a summary of the evidence*, Joseph Rowntree Foundation, York.
- Hills, J. (2004), 'Heading for Retirement? National Insurance, State Pensions, and the Future of the Contributory Principle in the UK', *Journal of Social Policy* **33**(3), 347–371.
- Hills, J. (2006a), 'A new pension settlement for the twenty-first century? The UK pensions commission's analysis and proposals', *Oxford Review of Economic Policy* **22**(1), 113–132.
- Hills, J. (2006b), 'From beveridge to turner: Demography, distribution and the future of pensions in the UK', *Journal of the Royal Statistical Society. Series A: Statistics in Society* **169**(4), 663–679.
- Hills, J. (2007a), 'Demographic trends and the future of pensions in the UK', *Journal of the Statistical and Social Inquiry Society of Ireland* **XXXVI**(APRIL 2007), ISSN: 0081–4776.
- Hills, J. (2007b), *Ends and Means: The Future Roles of Social Housing in England*, Technical report, Centre for Analysis of Social Exclusion (CASE), London School of Economics and Political Science (LSE), London.  
**URL:** <http://sticerd.lse.ac.uk/case>
- Hills, J. (2010), 'Following or Leading Public Opinion? Social Security Policy and Public Attitudes Since 1997', *Fiscal Studies* **23**(4), 539–558.
- Hills, J. and Bastagli, F. (2013), Trends in the Distribution of Wealth in Britain, in J. Hills, F. Bastagli, F. Cowell, G. Glennester, E. Karagiannaki and A. McKnight, eds, 'Wealth In the UK', 1st edn, Oxford University Press., Oxford, chapter 2, pp. 10–34.
- Hills, J., Bastagli, F., Cowell, F., Glennerster, H. and Karagiannaki, E. (2013), 'Wealth distribution, accumulation, and policy', **44**(May).
- Hills, J. and Glennerster, H. (2013a), Public Policy, Wealth, and Assets: A complex and Inconsistent Story, in J. Hills, F. Bastagli, F. Cowell, H. Glennerster, E. Karagiannaki and A. McKnight, eds, 'Wealth In the UK', 1st edn, Oxford University Press., Oxford, chapter 8, pp. 165–193.

- Hills, J. and Glennerster, H. (2013b), 'Why the left needs to take wealth seriously, again', *Juncture* **20**(1), 71–79.
- HM Revenue & Customs (2018), Distribution of median and mean income and tax by age range and gender: 2013 to 2014, Technical report, HM Revenue & Customs, London.
- Holland, P. (1986), 'Statistics and Causal Inference', *Journal of American Statistical Association* **81**(396), 945–960.
- Holland, P. (1988), *Causal Inference, Path Analysis and Recursive Structural Equations Models*, Program Statistics Research Technical Report No.88-81, Educational Testing Service, Princeton, New Jersey.
- Holman, D., Foster, L. and Hess, M. (2018), 'Inequalities in women's awareness of changes to the State Pension Age in England and the role of cognitive ability', *Ageing & Society* **2037**, 1–18.
- Holmans, A. (2005), *Recent trends in numbers of first-time buyers : A review of recent evidence [Technical Report]*, Council of Mortgage Lenders (CML).
- Hong, H., Kubik, J. D. and Stein, J. C. (2004), 'Social Interaction and Stock-Market Participation', *Journal of Finance* **59**(1), 137–163.  
**URL:** <http://www.jstor.org/stable/3694892>
- Hood, A. and Joyce, R. (2013), The Economic Circumstances of Cohorts Born between the 1940s and the 1970s, Technical Report R89, Institute for Fiscal Studies (IFS), London.
- Hood, A. and Joyce, R. (2017), *Inheritances and inequality across and within generations*, IFS Briefing Note, Institute for Fiscal Studies (IFS).  
**URL:** <https://www.ifs.org.uk/publications/8831>
- Hood, A., Joyce, R. and Sturrock, D. (2018), *Problem debt and low-income households*, The Institute for Fiscal Studies (IFS), London.
- House of Commons Library (1999), Century of Change: Trends in UK statistics since 1900, Technical report, House of Commons Library, London.  
**URL:** <http://researchbriefings.parliament.uk/ResearchBriefing/Summary/RP99-111#fullreport> [Accessed 23 February 2017]
- HSBC (2012), '100,000 FTBS have turned to 'bank of mum and dad' since financial crisis', *HSBC News Release*.  
**URL:** <http://www.about.hsbc.co.uk/-/media/uk/en/news-and-media/rbwm/120924-family-finance>
- HSBC (2014), *Property haves and have-nots – the outlook for today's 25-36 year olds*, News release, Hongkong Shanghai Banking Corporation (HSBC), 6th February, London.  
**URL:** <http://www.about.hsbc.co.uk/-/media/uk/en/news-and-media/rbwm/new-property-path.pdf?la=en-gb>
- Hu, L. and Bentler, P. M. (1999), 'Cutoff criteria for fit indexes in covariance structure analysis : Conventional criteria versus new alternatives Cutoff Criteria for Fit Indexes in Covariance Structure Analysis : Conventional Criteria Versus New Alternatives', *Structural Equation Modeling: A Multidisciplinary Journal* **6**(June), 1–55.

- Imai, K., Keele, L., Tingley, D. and Yamamoto, T. (2011), 'Unpacking the Black Box of Causality: Learning about Causal Mechanisms from Experimental and Observational Studies', *American Political Science Review* **105**(4), 765–789.
- Institute and Faculty of Actuaries (2016), 'Government needs to ensure automatic enrolment provides adequate savings in retirement'.  
**URL:** <https://www.actuaries.org.uk/news-and-insights/news/government-needs-ensure-automatic-enrolment-provides-adequate-savings>
- Intergenerational Commission (2018), *A New Generational Contract*, Resolution Foundation, London.  
**URL:** <https://www.resolutionfoundation.org/advanced/a-new-generational-contract/>
- Isengard, B., König, R. and Szydlik, M. (2018), 'Money or space? Intergenerational transfers in a comparative perspective', *Housing Studies* **33**(2), 178–200.  
**URL:** <http://doi.org/10.1080/02673037.2017.1365823>
- Izuhara, M. (2016), 'Reconsidering the housing asset-based welfare approach: Reflection from East Asian experiences', *Social Policy and Society* **15**(2), 177–188.
- Jacobs-Lawson, J. and Hershey, D. A. (2005), 'Influence of future time perspective, financial knowledge, and financial risk tolerance on retirement saving behaviors', *Financial Services Review* **14**(August), 331–344.
- James, H. (2019), Connecting policy with the personal : UK pension reforms and individual financial decision making, PhD thesis, University of Manchester.  
**URL:** [https://www.research.manchester.ac.uk/portal/files/102587068/FULL\\_TEXT.PDF](https://www.research.manchester.ac.uk/portal/files/102587068/FULL_TEXT.PDF)
- Jefferson, T. and Preston, A. (2005), 'Australia's "other" gender wage gap: Baby boomers and compulsory superannuation accounts', *Feminist Economics* **11**(2), 79–101.
- Jenkins, S. P. (1995), 'Easy Estimation Methods for Discrete-Time Duration Models', *Oxford Bulletin of Economics and Statistics* **57**(1), 129–138.
- Jones, C. (2008), The right to buy, in P. Malpass and R. Rowland, eds, 'Housing, Markets and Policy', Routledge, London; New York, chapter 4, pp. 59–75.
- Joseph, R. and Rowlingson, K. (2012), 'Her House, His Pension? The Division of Assets Among (Ex-) Couples and the Role of Policy', *Social Policy and Society* **11**(01), 69–80.  
**URL:** <http://dx.doi.org/10.1017/S147474641100042X>
- Karagiannaki, E. (2011), *The Magnitude and Correlates of Inter-vivos Transfers in the UK*, number 151 in 'CASE Papers', Centre for Analysis of Social Exclusion (CASE), London School of Economics, London.
- Karagiannaki, E. (2012), 'The effect of parental wealth on children's outcomes in early adulthood', *Journal of Economic Inequality* **15**(3), 217–243.
- Karagiannaki, E. (2015), 'Recent Trends in the Size and the Distribution of Inherited Wealth in the UK', *Fiscal Studies* **36**(2), 181–213.

- Karagiannaki, E. (2017), 'The Impact of Inheritance on the Distribution of Wealth: Evidence from Great Britain', *Review of Income and Wealth* **63**(2), 394–408.
- Karagiannaki, E. and Hills, J. (2013), Inheritance, Transfers, and the Distribution of Wealth, in J. Hills, F. Bastagli, F. Cowell, H. Glennerster, E. Karagiannaki and A. Mcknight, eds, 'Wealth In the UK', 1st edn, Oxford University Press., Oxford, chapter 5, pp. 92–118.
- Katz, S. (2017), 'Generation X: A critical sociological perspective', *Generations* **41**(3), 12–19.
- Kaustia, M. and Knüpfer, S. (2012), 'Peer performance and stock market entry', *Journal of Financial Economics* **104**(2), 321–338.
- Keister, L. A. (2002), 'Financial Markets, Money, and Banking', *Annual Review of Sociology* **28**(1), 39–61.  
**URL:** <http://www.annualreviews.org/doi/10.1146/annurev.soc.28.110601.140836>
- Keister, L. A. and Moller, S. (2000), 'Wealth Inequality in the United States', *Annual Review of Sociology* **26**, 63–81.
- Kempson, E., Collard, S. and Moore, N. (2005), *Measuring financial capability: an exploratory study*, Financial Services Authority (FSA) Consumer Research 37. Personal Finance Research Centre (PFRC), University of Bristol., London.
- Kempson, E., McKay, S. and Collard, S. (2005), Incentives to save: Encouraging saving among low-income households, Technical Report March, Personal Finance Research Centre, University of Bristol, Bristol.  
**URL:** [http://www.ggy.bris.ac.uk/pfrc/publications/Reports/SG\\_Incentives\\_to\\_save\\_final.pdf](http://www.ggy.bris.ac.uk/pfrc/publications/Reports/SG_Incentives_to_save_final.pdf)
- Kendig, H., Wells, Y., O'Loughlin, K. and Heese, K. (2013), 'Australian baby boomers face retirement during the global financial crisis.', *Journal of Aging & Social policy* **25**(3), 264–280.
- Killewald, A., Pfeffer, F. T. and Schachner, J. N. (2017), 'Wealth Inequality and Accumulation', *Annual Review of Sociology* **43**, 379–404.
- Kim, E. S., Yoon, M. and Lee, T. (2012), 'Testing measurement invariance using MIMIC', *Educational and Psychological Measurement* **72**(3), 469–492.  
**URL:** <http://epm.sagepub.com/content/72/3/469.full.pdf>
- Kim, Y. K. and Muthén, B. O. (2009), 'Two-Part Factor Mixture Modeling: Application to an Aggressive Behavior Measurement Instrument', *Structural Equation Modeling: A Multidisciplinary Journal* **16**(4), 602–624.  
**URL:** <https://www.tandfonline.com/doi/abs/10.1080/10705510903203516>
- Kline, R. B. (2011), *Principles and Practice of Structural Equation Modeling*, The Guilford Press, New York: London.
- Knoll, M. A. Z., Tamborini, C. R., Whitman, K. and Security, U. S. S. (2012), 'I do ... want to save: Marriage and retirement savings in young households', *Journal of Marriage and Family* **74**(1), 86–100.

- Komp, K. and Johansson, S. (2016), 'Population ageing in a lifecourse perspective: developing a conceptual framework', *Ageing & Society* **36**, 1937–1960.
- Köppe, S. (2017), 'Passing it on: inheritance, coresidence and the influence of parental support on homeownership and housing pathways', *Housing Studies* **3037**, 1–23.  
**URL:** <http://doi.org/10.1080/02673037.2017.1408778>
- Kristiansen, M. H. (2014), *Agency as an empirical concept. an assessment of theory and operationalization*, NiDi Working paper, Netherlands Interdisciplinary Demographic Institute (NIDI), The Hague.
- Kuh, D. and Ben-Shlomo, Y. (2004), *A Life Course Approach to Chronic Disease Epidemiology*, 2nd edn, Oxford University Press., Oxford.
- Kuh, D., Ben-Shlomo, Y., Lynch, J., Hallqvist, H. and Power, C. (2003), 'Life course epidemiology', *Journal of Epidemiology & Community Health* **57**, 778–783.
- Kuha, J. and Moustaki, I. (2015), 'Nonequivalence of measurement in latent variable modeling of multigroup data: A sensitivity analysis.', *Psychological Methods* **20**(4), 1–39.  
**URL:** <http://doi.apa.org/getdoi.cfm?doi=10.1037/met0000031>
- Lawlor, D. A., Tilling, K. and Smith, G. D. (2016), 'Triangulation in aetiological epidemiology', *International Journal of Epidemiology* **45**(6), 1866–1886.
- Le Grand, J. (2006), Agency and Public Services, in 'Motivation, Agency, and Public Policy of Knights & Knaves, Pawns & Queens', paperback edn, Oxford University Press., Oxford, chapter 5, pp. 73–84.
- Le Grand, J. and New, B. (2015), *Government Paternalism: Nanny State Or Helpful Friend?*, Princeton University Press.
- Lee, H., Myers, D., Painter, G., Thunell, J. and Zissimopoulos, J. (2018), 'The role of parental financial assistance in the transition to homeownership by young adults', *Journal of Housing Economics* **2015**(July 2013), 1–8.  
**URL:** <https://doi.org/10.1016/j.jhe.2018.08.002>
- Legal & General (2016), The Bank of Mum and Dad, Technical report, Legal & General.  
**URL:** [https://www.legalandgeneralgroup.com/assets/portal/files/pdf\\_216.pdf](https://www.legalandgeneralgroup.com/assets/portal/files/pdf_216.pdf)
- Lersch, P. (2014), *Do Homeowners Save More? A Longitudinal Analysis for the UK and Germany*, number 6 in 'HOWCOME Working Paper Series', Tilburg University, Cologne.  
**URL:** [https://www.tilburguniversity.edu/upload/02c55f3c-eb81-4614-b921-b616d676ceb7\\_HOWCOME\\_WP6\\_Do Homeowners Save More.pdf](https://www.tilburguniversity.edu/upload/02c55f3c-eb81-4614-b921-b616d676ceb7_HOWCOME_WP6_Do Homeowners Save More.pdf)
- Lersch, P. M. and Dewilde, C. (2015), 'Employment insecurity and first-time homeownership: Evidence from twenty-two European countries', *Environment and Planning A* **47**(3), 607–624.
- Lersch, P. M. and Luijkx, R. (2015), 'Intergenerational transmission of homeownership in Europe: Revisiting the socialisation hypothesis', *Social Science Research* **49**, 327–342.  
**URL:** <http://dx.doi.org/10.1016/j.ssresearch.2014.08.010>

- Lersch, P. M. and Vidal, S. (2014), 'Falling out of love and down the housing ladder: A longitudinal analysis of marital separation and home ownership', *European Sociological Review* **30**(4), 512–524.
- Lewis, J. (1997), 'Gender and Welfare Regimes: Further Thoughts', *Social Politics: International Studies in Gender, State & Society* **4**(2), 160–177.
- Loewenstein, G. (1996), 'Out of control: Visceral influences on behavior', *Organizational Behavior and Human Decision Processes* **65**(3), 272–292.  
**URL:** <http://www.sciencedirect.com/science/article/pii/S074959789690028X>
- Lowe, S. G., Searle, B. A. and Smith, S. J. (2012), 'From Housing Wealth to Mortgage Debt: The Emergence of Britain's Asset-Shaped Welfare State', *Social Policy and Society* **11**(01), 105–116.  
**URL:** [http://www.journals.cambridge.org/abstract\\_S1474746411000455](http://www.journals.cambridge.org/abstract_S1474746411000455)
- Lupton, R. (2016), 'The Influence (s) of housing policies on the residential moves of families with young children', *Longitudinal and Life Course Studies* **7**(3), 288–301.
- Lusardi, A. (1997), 'Precautionary saving and subjective earnings variance', *Economics Letters* **57**(3), 319–326.  
**URL:** <http://www.sciencedirect.com/science/article/pii/S0165176597002395>
- Lusardi, A. (2008), 'Household saving behavior: the role financial literacy, information and financial education programs', *Working paper*.  
**URL:** <http://www.nber.org/papers/w13824>
- Lusardi, A. and Mitchell, O. S. (2007), 'Baby Boomer retirement security: The roles of planning, financial literacy, and housing wealth', *Journal of Monetary Economics* **54**(1), 205–224.
- Lusardi, A. and Mitchell, O. S. (2008), *Planning and Financial Literacy: How do women fare?*, NBER Working Paper Series No. 13750, National Bureau of Economic Research.  
**URL:** <http://www.nber.org/papers/w13750>
- MacLeod, P., Fitzpatrick, A., Hamlyn, B., Jones, A., Kinver, A. and Page, L. (2012), *Attitudes to Pensions : The 2012 survey*, DWP Research Report, Department for Work and Pensions, London.
- Macmillan, R. and Hannan, C. (2019), 'Causality in life course research: the potential use of 'natural experiments' for causal inference', *Longitudinal and Life Course Studies* **11**(1), 7–25.
- Malpass, P. (2008), 'Housing and the new welfare state: Wobbly pillar or cornerstone?', *Housing Studies* **23**(1), 1–19.
- Marshall, V. W. (2005), 'Agency, Events, and Structure at the End of the Life Course', *Advances in Life Course Research* **10**(05), 57–91.
- Mayo, E. and Millstone, C. (2015), *Unfinished Business The ownership agenda , thirty years on*, ResPublica and Cooperatives UK, London.  
**URL:** <https://www.respublica.org.uk/our-work/publications/unfinished-business-the-ownership-agenda-thirty-years-on/>



- Mccormick, M. H. (2009), 'The Effectiveness of Youth Financial Education : A Review of the Literature', *Journal of Financial Counseling and Planning* **20**, 70–84.
- Mckenzie, C. R. and Liersch, M. J. (2011), 'Misunderstanding Savings Growth: Implications for Retirement Savings Behavior', *Journal of Marketing Research* **48**(SPL), S1–S13.  
**URL:** <http://journals.ama.org/doi/abs/10.1509/jmkr.48.SPL.S1>
- McKnight, A. and Karagiannaki, E. (2013), The Wealth Effect: How Parental Wealth and Own Asset-Holdings Predict Future Advantage, in J. Hills, F. Bastagli, F. Cowell, H. Glennerster, E. Karagiannaki and A. Mcknight, eds, 'Wealth In the UK', 1st edn, Oxford University Press., Oxford, chapter 6, pp. 119–145.
- McLachlan, G. and Peel, D. (2000), *Finite Mixture Models*, John Wiley & Sons, Inc., New York.
- Metcalf, J. and Mischel, W. (1999), 'A Hot/Cool-System Analysis of Delay of Gratification: Dynamics of Willpower', *Psychological Review* **106**(1), 3–19.
- Meyer, R. D. and Dalal, R. S. (2009), 'Situational Strength as a Means of Conceptualizing Context', *Industrial and Organizational Psychology* **2**(1), 99–102.
- Meyer, T. (2015), 'Beveridge not Bismarck! European lessons for men's and women's pensions in Germany', *Chinese Public Policy Review* .  
**URL:** <http://library.fes.de/pdf-files/id/ipa/10540.pdf>
- Meyer, T., Bridgen, P. and Riedmueller, B. (2007), *Private pensions versus social inclusion? : Non-state provision for citizens at risk in Europe*, Edward Elgar Publishing, Cheltenham, UK; Northampton, MA.
- Miller, J. M. (2007), Comparing Poisson, Hurdle, and ZIP Model Fit Under Varying Degrees of Ske and Zero-Inflation, PhD thesis, University of Florida.
- Millsap, R. (2011), *Statistical Approaches to Measurement Invariance*, Routledge, New York, NY.
- Millsap, R. and Yun-Tein, J. (2004), 'Assessing Factorial Invariance in Ordered- Categorical Measures', *Multivariate Behavioral Research* **39**(3), 479–515.
- Ministry of Housing Communities & Local Government (MHCLG) (2012), Trends in tenure (Table FT1101), Technical report, Ministry of Housing, Communities & Local Government (MHCLG), London.  
**URL:** <https://www.gov.uk/government/statistical-data-sets/tenure-trends-and-cross-tenure-analysis>
- Ministry of Housing Communities and Local Government (MHCLG) (2015), *English Housing Survey: Headline report*, Ministry of Housing, Communities & Local Government (MHCLG), London.  
**URL:** <https://www.gov.uk/government/statistics/english-housing-survey-2017-to-2018-headline-report>

- Mitchell, O. S. and Moore, J. F. (1998), 'Can Americans Afford to Retire? New Evidence on Retirement Saving Adequacy', *The Journal of Risk and Insurance* **65**(3), 371–400.
- Modigliani, F. and Brumberg, R. (1954), Utility Analysis and the Consumption Function: An interpretation of Cross-Section Data, in K. F. M. Kurihara, ed., 'Post Keynesian Economics (The collected papers of Franco Modigliani Volume 6)', Rutgers University Press (1954) and the MIT Press (2005), New Jersey (Cambridge, MA), pp. Modigliani, F., & Brumberg, R. (1954). Utility Ana.
- Moen, P. (2013), Constrained Choices: The Shifting Institutional Contexts of Aging and the Life Course, in L. J. Waite and T. J. Plewes, eds, 'New Directions in the Sociology of Aging', National Research Council of the National Academies, Washington, D.C, chapter 9.
- Möhring, K. (2018), 'Is there a motherhood penalty in retirement income in Europe? the role of lifecourse and institutional characteristics', *Ageing & Society* **38**(12), 2560–2589.
- Mortimer, J. T. and Moen, P. (2016), The Changing Social Construction of Age and the Life Course: Precarious Identity and Enactment of "Early" and "Encore" Stages of Adulthood, in M. J. Shanahan, J. T. Mortimer and M. K. Johnson, eds, 'Handbook of the Life Course (Volume Ii)', Springer International Publishing, Switzerland, chapter Foundation, pp. 111–129.
- Mulder, C. H. (2006), 'Home-ownership and family formation', *Journal of Housing and the Built Environment* **21**(3), 281–298.
- Mulder, C. H., Dewilde, C., van Duijn, M. and Smits, A. (2015), 'The Association Between Parents' and Adult Children's Homeownership: A Comparative Analysis', *European Journal of Population* **31**(5), 495–527.
- Mulder, C. and Smits, A. (2013), 'Inter-generational ties, financial transfers and home-ownership support', *Journal of Housing and the Built Environment* **28**(1), 95–112.
- Mulder, C. and Wagner, M. (2001), 'The connections between family formation and first-time home ownership in the context of West Germany and the Netherlands', *European Journal of Population* **17**(2), 137–164.
- Murie, A. (2012), 'The Next Blueprint for Housing Policy in England', *Housing Studies* **27**(7), 1031–1047.
- Murie, A. and Forrest, R. (1980), 'Wealth, inheritance and housing policy.', *Policy and Politics* **8**(1), 1–19.
- Murphy, M. and Sullivan, O. (1985), 'Housing tenure and family formation in contemporary Britain', *European Sociological Review* **1**(3), 230–243.  
**URL:** <http://esr.oxfordjournals.org/content/1/3/230.extract>
- Muthén, B. O. (2006), 'The Potential of Growth Mixture Modelling', *Infant and child Development* **15**, 623–625.

- Muthén, B. O. (2008), Latent Variable Hybrids: Overview of Old and New Models, in G. R. Hancock and K. M. Samuelsen, eds, 'Gregory R. Hancock, Karen M. Samuelsen', Information Age Publishing (IAP), Charlotte, NC, chapter 1, pp. 1–24.
- Muthén, L. K. and Muthén, B. O. (2017), Mplus - Statistical Analysis With Latent Variables: User's Guide. Eighth Edition., Technical report, Muthén & Muthén, Los Angeles, CA.
- NAO (2019), *Help to Buy: Equity Loan scheme - progress review*, National Audit Office (NAO).  
**URL:** <https://www.nao.org.uk/wp-content/uploads/2019/06/Help-to-Buy-Equity-Loan-scheme-progress-review.pdf>
- Nationwide (2017), Nationwide First Time Buyer Affordability Indices, Technical report, Nationwide.
- NEST Corporation (2019), The auto enrolment experience over time, in 'Money and Later Life - Symposia at the British Society of Gerontology (BSG) Conference', National Employment Savings Trust (NEST), London.  
**URL:** [nestinsight.org.uk](http://nestinsight.org.uk)
- Noone, J., O'Loughlin, K., Kendig, H., Loughlin, K. O. and Kendig, H. (2012), 'Socioeconomic, psychological and demographic determinants of Australian baby boomers' financial planning for retirement', *Australasian Journal on Ageing* **31**(3), 194–197.
- Nylund, K. L. (2007), Latent Transition Analysis: Modeling Extensions and an Application to Peer Victimization, PhD thesis, University of California, Los Angeles.  
**URL:** <http://joi.jlc.jst.go.jp/JST.Journalarchive/materia1994/46.171?from=CrossRef>
- Nylund, K. L., Asparouhov, T. and Muthén, B. O. (2007), 'Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study', *Structural Equation Modeling* **14**(4), 535–569.
- OECD (2013), Framework for integrated analysis, in 'OECD Framework for Statistics on the Distribution of Household Income, Consumption and Wealth', OECD Publishing, Paris, chapter 8, pp. 171–192.  
**URL:** <http://www.oecd.org/statistics/OECD-ICW-Framework-Chapter8.pdf>
- Office for National Statistics (ONS) (2013), 'Women in the labour market - Office for National Statistics'.  
**URL:** <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/>
- Office for National Statistics (ONS) (2016), 'Why are more young people living with their parents?'.  
**URL:** <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/>
- Office for National Statistics (ONS) (2018), Wealth in Great Britain Wave 5: 2014 to 2016., Technical Report June 2016, Office for National Statistics (ONS), London.  
**URL:** <https://www.ons.gov.uk/releases/wealthingreatbritainwave52014to2016>

- Old Mutual (2017), *The In-Betweeners: A generation between pension regimes*, Technical report, Old Mutual Wealth, London.  
**URL:** <https://www.oldmutualwealth.co.uk/globalassets/documents/retirement1/13469-in-betweeners-report.pdf>
- Olsen, M. K. and Schafer, J. L. (2001), 'A two-part random-effects model for semicontinuous longitudinal data', *Journal of the American Statistical Association* **96**(454), 730–745.
- ONS (2005), *Pensions legislation: an overview*, Office for National Statistics (ONS), London.  
**URL:** <http://www.ons.gov.uk/ons/rel/pensions/pension-trends/chapter-1-pensions-legislation—archived/chapter-1-pensions-legislation—archived-.pdf?format=print>
- ONS (2015), *National life tables, UK : 2011 to 2013*, Technical report, Office for National Statistics (ONS), London.  
**URL:** <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/>
- ONS (2016a), *UK Perspectives 2016: Housing and home ownership in the UK*, Technical report, Office for National Statistics (ONS), London.  
**URL:** <https://www.ons.gov.uk/peoplepopulationandcommunity/housing/articles/>
- ONS (2016b), *Wealth and Assets Survey Questionnaire Wave 4*, Technical Report 7215, UK Data Service (UKDS), Colchester, Essex.
- ONS (2016c), *Wealth and Assets Survey User Guide Wave 4*, Technical report, Office for National Statistics (ONS), London.
- ONS (2017), *House Price Index, UK: September 2017*, Technical report, Office for National Statistics (ONS), London.  
**URL:** <https://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/housepriceindex/>
- ONS (2018a), *ONS Consumer Price Inflation Detailed Reference Tables [Data Files]*, Office for National Statistics (ONS).  
**URL:** <https://www.ons.gov.uk/economy/inflationandpriceindices>
- ONS (2018b), *Population estimates by marital status and living arrangements, England and Wales: 2002 to 2017*, Technical report, Office for National Statistics (ONS), London.  
**URL:** <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/>
- ONS (2018c), *Wealth and Assets Survey User Guide (Wave 5)*, Technical report, Office for National Statistics, London.
- ONS (2018d), *Wealth and Assets Survey, Waves 1-5, 2006-2016. [data collection]. SN: 7215*, 8th edition edn, ONS Social Division. UK Data Service.  
**URL:** <https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=7215>
- Orton, M. and Rowlingson, K. (2007), 'A problem of riches: Towards a new social policy research agenda on the distribution of economic resources', *Journal of Social Policy* **36**(1), 59–77.

- Öst, C. E. (2012), 'Parental Wealth and First-time Homeownership: A Cohort Study of Family Background and Young Adults' Housing Situation in Sweden', *Urban Studies* **49**(10), 2137–2152.
- Overton, L. and Mahony, L. F. O. (2015), Consumer Demand for Retirement Borrowing for Council of Mortgage Lenders., Technical Report November, University of Essex; University of Birmingham.
- Pahl, J. (2005), 'Individualisation in Couple Finances: Who Pays for the Children?', *Social Policy and Society* **4**(04), 381.  
**URL:** [http://www.journals.cambridge.org/abstract\\_S1474746405002575](http://www.journals.cambridge.org/abstract_S1474746405002575)
- Payne, S. H., Yorgason, J. B. and Dew, J. P. (2014), 'Spending Today or Saving for Tomorrow: The Influence of Family Financial Socialization on Financial Preparation for Retirement', *Journal of Family and Economic Issues* **35**(1), 106–118.
- PC (2004), Pensions: Challenges and choices. The first report of the pension commission, Technical report, The Pensions Commission, London.
- PC (2005), *A New Pension Settlement for the Twenty-First Century The Second Report of the Pensions Commission*, number November 2005 in 'The Second Report of the Pensions Commission nsions', The Pensions Commission: The Stationary Office (TSO), London.
- PC (2006), *Commission Implementing an integrated package of pension reforms: The Final Report of the Pensions Commission*, The Pensions Commission: The Stationary Office (TSO), London.
- Perry, V. G. and Morris, M. D. (2005), 'Who is in control? the role of self-perception, knowledge, and income in explaining consumer financial behavior', *Journal of Consumer Affairs* **39**(2), 299–313.
- Pettigrew, N., Taylor, J., Simpson, C., Lancaster, J. and Madden, R. (2007), *Live now, save later? Young people, saving and pensions*, number 438 in 'DWP Research Report No 438', Department for Work and Pensions, London.
- Pfeffer, F. T. and Killewald, A. (2018), 'Generations of advantage. Multigenerational correlations in family wealth', *Social Forces* **96**(4), 1411–1442.
- Piachaud, D. (2014), 'Piketty's capital and social policy', *British Journal of Sociology* **65**(4), 696–707.
- Pósch, K. (2019), 'Testing Complex Social Theories With Causal Mediation Analysis and G-Computation: Toward a Better Way to Do Causal Structural Equation Modeling', *Sociological Methods and Research* .
- PPI (2015a), *Automatic Enrolment Contribution Scenarios post 2017*, Pensions Policy Institution (PPI), London.  
**URL:** <https://www.pensionspolicyinstitute.org.uk/research/research-reports/>
- PPI (2015b), Comparison of pension outcomes under EET and TEE tax treatment, Technical report, Pensions Policy Institution (PPI), London.

- PPI (2016), How do female lifecourses affect income in retirement?, Technical Report 84, Pensions Policy Institution (PPI), London.
- PPI (2017a), Dependency on the State Pension through retirement, Technical Report 104, Pensions Policy Institution (PPI), London.
- PPI (2017b), The Pensions Primer: A guide to the UK pensions system. Updated as at June 2016, Technical Report June, Pensions Policy Institute (PPI), London.  
**URL:** <http://www.pensionspolicyinstitute.org.uk/pension-facts/pensions-primer-a-guide-to-the-uk-pensions-system>
- PPI (2018), *What limits workplace pension participation amongst threshold adults (aged 25-39)?*, Pensions Policy Institution (PPI), London.
- Prabhakar, R. (2008), *The Assets Agenda: Principles and Policy*, Palgrave MacMillan, New York, NY.
- Prabhakar, R. (2017), 'Why do people opt-out or not opt-out of automatic enrolment? A focus group study of automatic enrolment into a workplace pension in the United Kingdom', *Journal of European Social Policy* **27**(5), 447–457.
- Prabhakar, R., Rowlingson, K. and White, S. (2008), *How to Defend Inheritance Tax*, Fabian Society.
- Price, D. (2007), 'Closing the gender gap in retirement income: What difference will recent UK pension reforms make?', *Journal of Social Policy* **36**(4), 561–583.
- Provan, B. (2017), 'How 'Help to Buy' helps mainly the privileged'.  
**URL:** <http://blogs.lse.ac.uk/politicsandpolicy/how-help-to-buy-helps-the-privileged/>
- Richardson, T., Elliott, P. and Roberts, R. (2013), 'The relationship between personal unsecured debt and mental and physical health: A systematic review and meta-analysis', *Clinical Psychology Review* **33**(8), 1148–1162.  
**URL:** <http://dx.doi.org/10.1016/j.cpr.2013.08.009>
- Robertson-Rose, L. (2018), 'Good job, good pension? The influence of the workplace on saving for retirement', *Ageing & Society* pp. 1–19.
- Rona-Tas, A. and Guseva, A. (2018), 'Consumer Credit in Comparative Perspective', *Annual Review of Sociology* **44**(1), 55–75.  
**URL:** <https://www.annualreviews.org/doi/10.1146/annurev-soc-060116-053653>
- Ronald, R. (2008a), Anglo-Saxon Homeowner Societies, in 'The Ideology of Homeownership', Palgrave MacMillan, New York, chapter 5, pp. 118–161.
- Ronald, R. (2008b), Unravelling Home Ownership Ideology, in 'The Ideology of Homeownership', Palgrave MacMillan, New York, chapter 2, pp. 16–46.
- Ronald, R. and Lennartz, C. (2018), 'Housing careers, intergenerational support and family relations', *Housing Studies* **33**(2), 147–159.  
**URL:** <http://doi.org/10.1080/02673037.2017.1416070>

- Ronald, R., Lennartz, C. and Kadi, J. (2017), 'What ever happened to asset-based welfare? Shifting approaches to housing wealth and welfare security', *Policy and politics* **45**(2), 173–193.
- Rosenbaum, P. (2010), *Design of Observational Studies*, Springer, New York; Dordrecht; Heidelberg; London.
- Rowlingson, K. (2000), Planning for the future: the difficulties people face, in 'Fate, Hope and Insecurity: Future Orientation and Forward Planning', Joseph Rowntree Foundation, York.
- Rowlingson, K. (2002), 'Private Pension Planning: The Rhetoric of Responsibility, The Reality of Insecurity', *Journal of Social Policy* **31**(04), 623–642.  
**URL:** [http://www.journals.cambridge.org/abstract\\_S0047279402006773](http://www.journals.cambridge.org/abstract_S0047279402006773)
- Rowlingson, K. (2006), 'Living Poor to Die Rich'? Or 'Spending the Kids' Inheritance'? Attitudes to Assets and Inheritance in Later Life', *Journal of Social Policy* **35**(02), 175–192.
- Rowlingson, K. and Connor, S. (2011), 'The 'Deserving' Rich? Inequality, Morality and Social Policy', *Journal of Social Policy* **40**(03), 437–452.
- Rowlingson, K., Joseph, R. and Overton, L. (2017), *Inter-generational Financial Giving and Inequality: Give and Take in 21st Century Families*, Palgrave Macmillan UK, Birmingham.
- Rowlingson, K. and McKay, S. (2011a), Towards A Comprehensive Policy on Assets, in 'Wealth and the wealthy: Exploring and tackling inequalities between rich and poor', Policy Press, Bristol, chapter 6, pp. 145–185.
- Rowlingson, K. and McKay, S. (2011b), What Is Wealth And Who Are The Wealthy?, in 'Wealth and the wealthy: Exploring and tackling inequalities between rich and poor', Policy Press, Bristol, pp. 53–79.
- Rowlingson, K. and McKay, S. (2011c), Why Wealth Matters, in 'Wealth and the wealthy: Exploring and tackling inequalities between rich and poor', Policy Press, Bristol, chapter 1, pp. 1–16.
- Salignac, F., Marjolin, A., Reeve, R. and Muir, K. (2019), 'Conceptualizing and Measuring Financial Resilience: A Multidimensional Framework', *Social Indicators Research* **145**(1), 17–38.  
**URL:** <https://doi.org/10.1007/s11205-019-02100-4>
- Sampson, R. J. (2008), 'Moving to Inequality: Neighborhood Effects and Experiments Meet Social Structure', *American Journal of Sociology* **114**(1), 189–231.
- Satorra, A. and Bentler, P. M. (2010), 'Ensuring Positiveness of the Scaled Difference Chi-Square Test Statistic', *Psychometrika* **75**(2), 243–248.
- Saunders, P. (1990), *A nation of homeowners*, Unwin Hyman Inc., London; Winchester; Sydney; Wellington.

- Saunders, P. and Williams, P. (1988), 'The Constitution of the Home: Towards a Research Agenda', *Housing Studies* **3**(2), 81–93.
- Schoeni, R. F., Bianchi, S. M., Hotz, V. J., Seltzer, J. A. and Wiemers, E. E. (2015), 'Intergenerational transfers and rosters of the extended family: a new substudy of the Panel Study of Income Dynamics', *Longitudinal and Life Course Studies* **6**(3), 319–330.
- Scottish Widows (2016), Retirement Report 2016, Technical report, Scottish Widows, London.
- Serido, J., Shim, S. and Tang, C. (2013), 'A developmental model of financial capability: A framework for promoting a successful transition to adulthood', *International Journal of Behavioral Development* **37**(4), 287–297.  
**URL:** <http://jbd.sagepub.com/cgi/doi/10.1177/0165025413479476>
- Shaviro, D. (2015), 'Multiple Myopias, Multiple Selves, and the Under-Saving Problem', *Connecticut Law Review* **47**(5), 1215–1279.
- Sherraden, M. (1991), *Assets and the Poor*, M.E. Sharpe, Armonk, New York.
- Shim, S., Barber, B. L., Card, N. A., Xiao, J. J. and Serido, J. (2010), 'Financial Socialization of First-year College Students: The Roles of Parents, Work, and Education', *Journal of Youth and Adolescence* **39**(12), 1457–1470.
- Skrondal, A. and Rabe-Hesketh, S. (2004), Classic Latent Variable Modelling, in 'Generalized Latent Variable Modeling: Multilevel, Longitudinal and Structural Equation Modeling', Chapman and Hall/CRC, Boca Raton, Florida, chapter 3, pp. 49–93.
- Soaita, A. M., Searle, B. A., McKee, K. and Moore, T. (2017), 'Becoming a landlord: strategies of property-based welfare in the private rental sector in Great Britain', *Housing Studies* **32**(5), 613–637.  
**URL:** <http://dx.doi.org/10.1080/02673037.2016.1228855>
- Speelman, C., Clark-Murphy, M. and Gerrans, P. (2013), 'Decision Making Clusters in Retirement Savings: Gender Differences Dominate', *Journal of Family and Economic Issues* **34**(3), 329–339.
- Stavola, B. L. D., Daniel, R. M., Ploubidis, G. B. and Micali, N. (2015), 'Practice of Epidemiology Mediation Analysis With Intermediate Confounding: Structural Equation Modeling Viewed Through the Causal Inference Lens', *American Journal of Epidemiology* **181**(1), 64–80.
- Stawski, R., Hershey, D. and Jacobs-Lawson, J. (2007), 'Goal clarity and financial planning activities as determinants of retirement savings contributions.', *International journal of aging & human development* **64**(1), 13–32.  
**URL:** <http://ahd.sagepub.com/content/64/1/13.abstract>
- Tang, F. and Burr, J. (2015), 'Revisiting the pathways to retirement: a latent structure model of the dynamics of transition from work to retirement', *Ageing & Society* **35**(08), 1739–1770.
- Thaler, R. H. and Benartzi, S. (2004), 'Save More Tomorrow™: Using Behavioral Economics to Increase Employee Saving', *Journal of Political Economy* **112**(S1), 164–187.



- Thaler, R. H. and Shefrin, H. M. (1981), 'An Economic Theory of Self-Control', *Journal of Political Economy* **89**(2), 392.
- Thane, P. (2000), 'The first piece of socialism Britain has entered upon?': The introduction of old age pensions, in P. Thane, ed., 'Old age in English history - Past Experiences, Present Issues', Oxford University Press., Oxford, chapter 11, pp. 216–235.
- The Pensions Commission (PC) (2005), A New Pension Settlement for the Twenty-First Century. The Second Report of the Pensions Commission [Appendices], Technical Report November 2005, The Pensions Commission.
- Tosi, M. and Grundy, E. (2018), 'Intergenerational contacts and depressive symptoms among older parents in Eastern Europe', *Aging and Mental Health* pp. 1–7.
- Toussaint, J. and Elsinga, M. (2009), 'Exploring 'Housing asset-based welfare'. Can the UK be held up as an example for Europe?', *Housing Studies* **24**(5), 669–692.
- Trade Union Congress (TUC) (2019), 'TUC calls for overhaul of shared parental leave TUC calls for overhaul of shared parental leave'.  
**URL:** <https://www.tuc.org.uk/news/tuc-calls-overhaul-shared-parental-leave>
- Turner, A. (2015), Too Much of the Wrong Sort of Debt, in 'Between debt and the Devil', 1st edn, Princeton University Press, Princeton; Oxford, chapter 4, pp. 1–302.
- Turunen, E. and Hiilamo, H. (2014), 'Health effects of indebtedness: A systematic review', *BMC Public Health* **14**(1).
- Van Dalen, H. P., Henkens, K. and Hershey, D. A. (2010), 'Perceptions and expectations of pension savings adequacy: a comparative study of Dutch and American workers', *Ageing & Society* **30**(05), 731–754.  
**URL:** <http://www.scopus.com/inward/record.url?eid=2-s2.0-77957287975&partnerID=tZOtx3y1>
- van der Horst, M., Lain, D., Vickerstaff, S., Clark, C. and Baumberg Geiger, B. (2017), 'Gender Roles and Employment Pathways of Older Women and Men in England', *SAGE Open* **7**(4).
- Van Der Weele, T. J. and Knol, M. J. (2014), 'A tutorial on interaction', *Epidemiologic Methods* **3**(1), 33–72.
- van Rooij, M., Lusardi, A. and Alessie, R. (2011), 'Financial literacy and stock market participation', *Journal of Financial Economics* **101**(2), 449–472.  
**URL:** <http://dx.doi.org/10.1016/j.jfneco.2011.03.006>
- van Rooij, M., Lusardi, A., Alessie, R. J. M., Rooij, M. C. J. V., Lusardi, A. and Alessie, R. J. M. (2011), 'Financial literacy and retirement planning in the Netherlands', *Journal of Economic Psychology* **32**(4), 593–608.  
**URL:** <http://dx.doi.org/10.1016/j.joep.2011.02.004>
- Vartanian, T. and McNamara, J. (2002), 'Older Women in Poverty : The Impact of Midlife Factors', *Journal of Marriage and Family* **64**(2), 532–548.

- Vogler, C. (2005), 'Cohabiting couples: Rethinking money in the household at the beginning of the twenty first century', *Sociological Review* **53**(1), 1–29.
- von Bonsdorff, M. E. . (2009), *Intentions of early retirement and continuing to work among middle-aged and older employees*, Jyväskylä Studies in Business and Economics, Jyväskylä.
- Walker, A. (2018), 'Why the UK Needs a Social Policy on Ageing', *Journal of Social Policy* **47**(2), 253–273.
- Wang, W. C., Worsley, A., Cunningham, E. and Hunter, W. (2014), 'The heterogeneity of middle-age Australians' retirement plans', *Social Work Research* **38**(1), 36–46.
- Wärneryd, K.-E. (1999), *The Psychology of Saving*, 1st edn, Edward Elgar Publishing, Cheltenham (UK), Northampton (USA).
- Watson, J. and McNaughton, M. (2007), 'Gender Differences in Risk Aversion and Expected Retirement Benefits', *Financial Analysts Journal* **63**(4).
- West, A., Lewis, J., Roberts, J. and Noden, P. (2017), 'Young Adult Graduates Living in the Parental Home: Expectations, Negotiations, and Parental Financial Support', *Journal of Family Issues* **38**(17), 2449–2473.
- West, C. and Zimmerman, D. (1987), 'Doing Gender', *Gender and Society* **1**(2), 125–151.
- Wise, D. A., Banks, J., Blundell, R. and Smith, J. P. (2013), *Wealth Portfolios in the United Kingdom and the United States*, National Bureau of Economic Research.
- World Bank (1994), *Averting the Old Age Crisis: Policies to Protect the Old and Promote Growth*, Oxford University Press., New York; Oxford.
- Zaidi, A. (2012), Population ageing and financial and social sustainability challenges of pension income systems in Europe: A cross-national perspective, in L. Bovenberg, C. van Ewijk and E. Westerhout, eds, 'The Future of Multi-pillar Pensions', CPB Netherlands Bureau for Economic Policy Analysis, Cambridge, chapter 2.