

Consumer
Research

79

Financial Services Authority

*The impact of life
events on financial
capability: Evidence
from the BHPS*

Prepared for the
Financial Services Authority by

Mark Taylor
Institute for Social and Economic Research
University of Essex
Wivenhoe Park
Colchester
Essex C04 3SQ

September 2009



Foreword



One of the Financial Services Authority's (FSA's) four statutory objectives, set by FSMA 2000¹, is to improve public understanding of the financial system. Under this remit, and our strategic aim of achieving a fair deal for consumers, the FSA leads the UK's National Strategy for Financial Capability, which brings together industry, government and the third sector to deliver change in the population's financial capability.

The FSA's Baseline Survey (Atkinson et al. 2006)² found that many people are poor at keeping track, planning ahead, choosing products, staying informed and making ends meet. The survey acts as the foundation to our work. However, further research helps to build a more comprehensive picture of financial capability in the UK. This is especially important in the current economic climate, as more people than ever are facing difficult financial situations and finding their financial capability skills

to be insufficient. Moreover, our recent Occasional Paper 34³ showed that financial capability improves psychological wellbeing, reinforcing the wider benefits of financial capability to public policy.

The Institute of Social and Economic Research was commissioned by the FSA to use the British Household Panel Survey, a longitudinal dataset, to examine how life events such as unemployment, bereavement and household status affect levels of financial capability. The research findings support those of the Baseline Survey in showing that the young, the unemployed, those on low incomes and those in rented accommodation have the lowest levels of financial capability.

This research confirms that financial capability is complex and variable. It shows that there are life points at which people's financial capability level changes, indicating that they are particularly in need of preventative intervention at these points to help them adjust to new, perhaps unexpected, challenges. Although these life events only explain 20% of variances in financial capability, it seems their impact is particularly large, leading to significant fluctuations; consequently, it is crucial to understand their impact. There is a need for further research, however, into other factors contributing to financial capability, in order to better understand how to improve people's financial management skills.

Some key findings supporting our work focused on life stages:

- Having a baby is associated with a reduction in financial capability and a 19% increase in financial problems for an average individual, even when income is accounted for. Our Parent's Guide to Money, distributed to all expectant parents, is targeted at a crucial point of need.
- Becoming unemployed decreases financial capability and increases financial problems by 63%, controlling for income changes. If an individual receives Jobseeker's Allowance, financial problems are increased by 88%.
- Divorcing or separating increases financial problems by 17% on average and causes a decrease in financial capability, even when controlling for income. This impact is stronger for women.
- Retirement increases financial problems by 31%, accounting for income changes.

Some life events have a positive impact on financial capability:

- Those entering work experience a 27% decrease in financial problems and an increase in financial capability, even accounting for the extra income.
- Having an employed partner leads to a 15% decrease in financial problems and an increase in financial capability, with income controlled for.

1. Financial Services and Markets Act 2000, http://www.opsi.gov.uk/acts/acts2000/ukpga_20000008_en_1

2. Atkinson et al., 2006, http://www.fsa.gov.uk/pubs/other/fincap_baseline.pdf

3. <http://www.fsa.gov.uk/pubs/occpapers/op34.pdf>

- Getting married leads to double the improvement in financial capability to that which is experienced annually in the sample as a whole, accounting for the possible increase in income.
- Those above 55 tend to have higher than average financial capability.

The FSA provides generic financial information through Moneymadeclear, and information targeted at life events and situations through products such as the Parent's Guide to Money. The research confirms that it is essential to ensure people can access the right information in the right way for their needs, at all life points. Although life events have a very significant impact, the research also points to avenues of further research into the causes and contributing factors which may affect the 80% of changes in financial capability which are not explained by such events. This study adds to our growing research base, to inform and support our workstreams, and assist us in delivering change in the nation's financial capability.

A handwritten signature in cursive script that reads "Chris Pond".

Chris Pond

Director, Financial Capability

Table of Contents

1.	Summary	2
1.1	Introduction	2
1.2	The data	2
1.3	Summarising BHPS variables relevant to financial capability	2
1.4	Constructing an index of financial capability	3
1.5	Relationships between financial capability and other characteristics	4
1.6	Determinants of financial capability	4
1.7	Summary and conclusions	5
2.	Introduction	6
3.	The data	7
4.	Summarising BHPS variables relevant to the concept of financial capability	10
4.1	Measures of perceived financial wellbeing	10
4.2	Savings behaviour	13
4.3	Housing payment problems	14
4.4	Material wellbeing	15
4.5	Summary	16
5.	Constructing an index of financial capability	17
5.1	Correlations between measures	17
5.2	Constructing indices of financial capability	18
5.3	Validity checks	23
5.4	Adjusting for income	29
5.5	Changes in individual financial capability from one year to the next	33
6.	Relationships between financial capability and other characteristics	37
6.1	Income	38
6.2	Gender	40
6.3	Age	40
6.4	Migration status	42
6.5	Marital status	42
6.6	Number of children	45
6.7	Household type and size	46
6.8	Health status	49
6.9	Education levels	51
6.10	Housing	52
6.11	Labour market variables	55
6.12	Job type	61
6.13	Summary	62
7	Estimating the determinants of financial capability	63
7.1	Estimation procedures	63
7.2	Estimation results	64
7.3	Do determinants differ for men and women?	76
8	Summary and conclusions	87
9	References	89
10.	Appendix	90

1. Summary

1.1 Introduction

This report summarises analysis of the impact of life events on financial capability. The project focuses on the characteristics of individuals and the households in which they live that determine their ability to manage and take control of their finances (their ‘financial capability’).

In this work we use data from the British Household Panel Survey (BHPS) to construct indices of financial capability based on the hypothesis that there is some underlying factor (financial capability) which is better captured by reviewing a range of indicators of a person’s current financial situation than by any of the specific items of information. We describe how financial capability varies according to individual and household characteristics, and then examine in detail which factors determine financial capability using multivariate statistical models.

1.2 The data

This project uses data from the first 16 waves of the BHPS, covering the period 1991–2006. To assess financial capability, we focus on financial variables available in all 16 waves of the BHPS. These are: the respondent’s current financial situation; change in financial situation in the last year; expected change in financial situation in the coming year; whether respondent saves; the amount saved per month; whether the household has problems keeping up with housing payments; whether such problems have required borrowing; whether such problems have required cutbacks; whether the household has been more than two months in housing arrears in the last 12 months; and the number of consumer durables to which the household has access.

1.3 Summarising BHPS variables relevant to financial capability

We introduce and describe the variables available at all waves of the BHPS that are relevant to the concept of financial capability. Some of these are hard measures of financial wellbeing (such as the ability to keep up with housing payments) while others are perceptions of the individual respondent (such as perceived current financial situation). In all cases, the source of information is the respondent.

We distinguish between four main groups of variables related to financial capability: measures of perceived financial wellbeing; saving behaviour; housing payment problems; and material wellbeing. On average, the proportion of individuals reporting living comfortably or doing alright has been increasing since 1991, while the fraction reporting financial difficulties has fallen significantly (the data period ends pre-credit crunch). The proportion of respondents reporting being worse off financially than one year ago and less optimistic about the future has been falling since 1991. These perceptions are reflected in other measures of financial wellbeing, with respondents on average saving more and having access to more consumer durables over time, and fewer respondents living in households with housing payment problems over time.

1.4 Constructing an index of financial capability

We examine the degrees of association between the various indicators of financial capability that are available at all BHPS waves. Analysis of average inter-item and item-rest correlations indicate that a reliable and consistent index can be constructed from the following variables:

- perceived current financial situation;
- reporting that financial situation has worsened since last year;
- whether saves;
- has housing payment problems;
- problems required borrowing;
- problems required cutbacks; and
- been at least two months in housing arrears in last 12 months.

We call the resulting index the index of financial incapability. As an alternative approach, and to check the validity of the index, we add together the number of financial problems individuals currently face, using information on whether the respondent:

- is finding their financial situation quite or very difficult;
- reporting that financial situation has worsened since last year;
- is not currently saving;
- has housing payment problems;
- has had to borrow to meet payments;
- has had to cut back to meet payments; and
- has been at least two months in housing arrears in the last 12 months.

The number of financial problems takes a value between 0 (none of the listed problems) to 7 (all of the listed problems).

We find that the two summary measures of financial capability are very highly correlated. Furthermore, we find that the two summary measures are relatively highly correlated with other financial variables available at intermittent waves of the BHPS. This suggests that the summary measures are valid and consistent indicators of financial capability. We also construct a version of the index of financial incapability that is adjusted for income and examine how individuals' financial capability varies over the BHPS sample period. On average people's financial capability improved but at a declining rate between 1991 and 2006. However, at the individual level, financial capability fluctuates considerably between one year and the next, presumably in response to other events in people's lives.

1.5 Relationships between financial capability and other characteristics

We introduce the individual and household variables with which we describe patterns of financial capability. Our indices of financial incapability are significantly associated with gender, age, migrant status, marital status, number of children, household size and structure, health, employment status of the individual and other household members, job type, housing tenure, house value and housing costs, and income, and also with changes in marital status, the number of children, household structure, health, employment status of the individual and other household members, housing tenure, housing costs and income. In particular we find that people with the highest financial incapability tend to be young (aged less than 35), divorced or separated, have more than one or two dependent children, are single non-elderly, lone parents, in fair or poor health, live in rented accommodation and are unemployed or economically inactive but would like a job.

In contrast, people with the lowest financial incapability are, on average, older (aged 55 or above), married or widowed with no dependent children, in good health, home owners and working in a full-time permanent job.

Taking advantage of the panel nature of the data reveals that getting married, improvements in health, becoming a home owner and entering work are associated with an increase in financial capability, while death of a spouse, marital dissolution, an additional child, deterioration in health and unemployment are associated with a decrease in financial capability. These findings are consistent with the Financial Capability Baseline Survey.

1.6 Determinants of financial capability

Estimates from panel data models indicate that financial capability is determined by many observable characteristics of individuals and the households in which they live. The key determinants include age, marital status, household size and structure, income, housing tenure, house value and housing costs, and the employment status of the individual and other household members. Although many of these characteristics have significant impacts on financial capability, our results show that age, household income, housing costs and employment status have the largest impacts. In particular the lowest financial capability is found for young adults, those with low household incomes, with relatively high housing costs, in unemployment without an employed spouse. In contrast, older people with relatively high household income, low housing costs, in full-time work with an employed spouse have the most financial capability.

The effect on financial capability of halving an individual's income, while large, is smaller than the effects of age, divorce or separation, being a local authority tenant and being unemployed. Furthermore, it is important to note that even controlling for income levels, other factors still have large and statistically significant impacts on an individual's financial capability.

Estimating gender-specific models show that being young and in unemployment have a larger negative impact on the financial capability of men than of women. In contrast,

being in poor health, divorced or separated, and having a spouse that is not in employment have larger negative effects on the financial capability of women than of men.

1.7 Summary and conclusions

We have found that a person's financial capability varies considerably between one year and the next. If financial capability at the individual level is highly variable from one year to the next in an unpredictable way, then this makes it harder to design policies to improve it. Although our statistical models explain only a small proportion of the variance in financial capability across individuals, the results lead us to conclude that people do have particular observable characteristics that impact significantly on their financial capability, and which would allow the appropriate policies and programmes to be targeted to those most in need. This will be particularly beneficial for the FSA's financial capability programmes and policy. Examples would be low income households and young people in general, and particularly those that experience unemployment or marital dissolution, and households which experience an increase in their housing costs.

Our research does not address what it is about being unemployed, divorced or widowed that causes people's financial capability to change (given that our models allow for the associated income shocks). Another question that remains unanswered is the extent to which people experience shocks or events that we do not observe that might affect their financial capability. Our estimation procedure allows for time invariant unobserved or unobservable characteristics of individuals, such as ability or motivation, which may affect both financial capability and other observable characteristics. However, if there are particular events that people experience, but that we are unable to capture in our data, that affect both their financial capability and other characteristics, then these may confound the effects we found using statistical models.

2. Introduction

In this report we summarise analysis of the impact of life events on financial capability. The project focuses on the characteristics of individuals and the households in which they live that determine their ability to manage and take control of their finances (their ‘financial capability’). A better understanding of such factors will help target appropriate policies and programmes to those most in need.

A key initial step in this process is to develop a suitable measure of financial capability. Financial capability may be defined in several ways. The Government define financial capability as:

“... a broad concept, encompassing the people’s knowledge and skills to understand their own financial circumstances, along with the motivation to take action. Financially capable consumers plan ahead, find and use information, know when to seek advice and can understand and act on this advice, leading to greater participation in the financial services market” (HM Treasury 2007).

From this it is clear that financial capability should capture a range of skills, behaviour and knowledge. Atkinson et al (2006) identify five separate strands that contribute to the concept: making ends meet, keeping track, planning ahead, choosing products and staying informed. The problem as researchers is how to operationalise this concept using available survey data. Melhuish et al (2008) created a measure of financial capability using survey responses to questions asking how well individuals are managing financially, how well they manage mortgage or rent payments, the number of unpaid bills, and the number of items which they cannot afford. NIACE (2007) stress the importance of defining financial capability in terms of relating the skills needed to earn income with those needed to manage savings and consumption. The starting point of this research is to extend existing knowledge about potential ways of measuring financial capability using responses to survey questions in the British Household Panel Survey (BHPS).

The analysis follows four distinct steps:

1. Identify variables available in BHPS data relevant to the concept of financial capability.
2. Test for the possibility that all, or some subset of, the identified variables might be combined into a single index measuring a single and common factor (financial capability).
3. Establish how this index is distributed across different groups in the population; and how this changes over the BHPS sample period.
4. Examine the impact of life events on financial capability using suitable multivariate analysis and panel data models.

This report summarises the results from each step. The first half of the report focuses on Steps 1 and 2 – identifying variables in the BHPS data that are relevant to the concept of financial capability, and then testing which of these might be combined

into a single index that measures financial capability. The latter provides an indication of the relative importance of relevant variables as contributors to the underlying concept of financial capability. We might conclude that some variables do not contribute to that concept at all, having failed the test of being ‘linked and mutually reinforcing’. We test for the possibility that some or all of the variables might be combined into a single index. At its simplest, this index might be a straightforward count across a number of variables, or instead an index created using inter-item correlations. The hypothesis is that there is some underlying factor (financial capability) which is better captured by reviewing a range of indicators of a person’s current financial situation than by any of the specific items of information. If so, we might expect financial capability to be more stable than any of the single indicators – people could make short-term moves in and out of housing payment problems (or saving, or being unable to afford certain items and so on) without having much effect on their overall level of financial capability.

The second half of the report focuses on Steps 3 and 4 – investigating the relationship between our measure of financial capability and a range of individual and household characteristics. We summarise how the index is distributed across different groups in the population, and over time. We provide summaries of the index by a range of individual and household characteristics including age, gender, marital status, number of children, health status, employment status and housing tenure. This highlights whether high financial capability is associated with particular subgroups in the population. We then examine the determinants of financial capability by estimating multivariate statistical models that help to control for potentially confounding and mediating factors.

Section 3 introduces the data set used in the project (the BHPS), and the variables that may be related to the concept of financial capability. Section 4 summarises variables related to the concept of financial capability, and describes patterns in responses over time. Section 5 examines how the measures of financial capability are associated with each other, and investigates the possibility of creating an overall index of financial capability. Section 6 summarises relationships between financial capability and a range of individual and household characteristics, while Section 7 investigates the strength of these relationships when controlling for potentially confounding and mediating factors through multivariate analysis. Section 8 summarises and draws some conclusions.

3. The data

In this section we introduce the data, the variables that may be relevant to the concept of financial capability. This project uses individual-level data from the first 16 waves of the BHPS, covering the years 1991–1996. Every year the BHPS follows and interviews the same adults (aged 16 and above), collecting information about their incomes, labour market status, housing tenure and conditions, household composition, education, health and many other aspects of people’s lives. The BHPS is unique among British surveys in having annual snapshots on the details of people’s lives over a relatively long time period. Changes in people’s lives can be identified over a 15-year period.

As with any panel survey, potential biases arising from non-random attrition are of concern. The BHPS uses a number of methods to minimise such problems. Firstly, it employs comprehensive respondent tracking techniques to maintain contact with respondents throughout the year, and any changes of address are entered on a database to ensure respondents are not lost to the sample. If a respondent no longer lives at an address when approached for an interview, interviewers are required to seek a forwarding address or phone number from other respondents, any new residents, or neighbours. Failing this they are asked to consult local phone directories, shops or the post office where appropriate. Secondly, thorough refusal conversion processes are employed to attempt to minimise attrition due to refusal to participate in the survey or other forms of non-response.

Response rates for the BHPS are high compared to other similar surveys around the world. Almost 90% of eligible individuals interviewed at wave one were again interviewed at wave two, and these year-on-year response rates have increased to 95%. Thirdly, the BHPS includes a complex and comprehensive set of weights that adjust for both the probability of selection into the sample and for non-random non-response. These weights are used throughout the analysis conducted for this report.

There is a range of variables within the BHPS that capture different dimensions of financial capability, and for each the source of information is the respondent. These variables, together with their availability in the BHPS, are described in Table 1 below.

Some of these measures relate specifically to individual adults (e.g. how well would you say you yourself are managing financially these days? Would you say you are living comfortably, doing alright, just about getting by, finding it quite difficult, or finding it very difficult?), while others refer to the household context (e.g. Many people these days are finding it difficult to keep up with their housing payments. In the last 12 months would you say you have had any difficulties paying for your accommodation?). In all of the following, the unit of analysis is the individual adult, though sometimes the personal measure refers to the household context – we have allocated the household level variable to each individual adult living within that household.

Also, a number of variables of interest are not available at every BHPS wave. This raises potential problems for constructing a consistent measure of financial capability that is available each year. Initially, therefore, we focus on variables that are available at all BHPS waves (the first 10 variables, in Panel A of Table 1), and then examine how any resulting index correlates with other relevant variables collected intermittently over the sample period (the following 10 variables, in Panel B of Table 1). The latter is carried out to help validate the reliability and robustness of the index.

Table 1: Financial capability: Relevant BHPS variables**Waves available
in BHPS**

PANEL A	
Many people these days are finding it difficult to keep up with their housing payments. In the last 12 months would you say you have had any difficulties paying for your accommodation?	All
Did you have to borrow in order to meet housing payments?	All
Did you have to make cutbacks in order to meet housing payments?	All
In the last 12 months have you ever found yourself more than two months behind with your rent/mortgage?	All
How well would you say you yourself are managing financially these days? Would you say you are living comfortably, doing alright, just about getting by, finding it quite difficult, or finding it very difficult?	All
Would you say that you yourself are better off, worse off or about the same financially than you were a year ago?	All
Looking ahead, how do you think you yourself will be financially a year from now, will you be better than now, worse than now, or about the same?	All
Do you save any amount of your income, for example by putting something away now and then in a bank, building society, or Post Office account other than to meet regular bills?	All
About how much on average do you manage to save a month?	All
Do you have access to consumer durables (colour TV, VCR, washing machine, dishwasher, microwave, home computer, compact disc player)?	All
PANEL B	
Do you or anyone in your household have to make repayments on hire purchases or loans? Please do not include mortgage loans but do include DSS social fund loans.	5 onwards
To what extent is the repayment of such debts and the interest a financial burden on your household? Would you say it is a heavy burden, somewhat of a burden or not a problem?	5 onwards
Townsend/Breadline Britain-type indicators (keep home adequately warm; pay for annual holiday; replace furniture; buy new clothes; eat meat on alternate days; feed visitors once a month; would like to keep home warm; would like to pay for annual holiday; would like to replace furniture; would like to buy new clothes; would like meat on alternate days; can't afford visitors once a month).	6 onwards
I would like to ask you now about any other financial commitments you may have apart from mortgages and housing related loans. Do you currently owe any money on the things listed on this card: hire purchase agreements, personal loans, credit cards, mail order purchase, DSS social fund loan, loans from an individual,	5, 10, 15
About how much in total do you owe?	5, 10, 15
Do you currently have any money in any of the investments shown on this card: National Savings Certificates, Premium bonds, Unit trusts, Personal Equity Plans, Shares, National Savings/Building Society/Insurance bonds?	5, 10, 15
Thinking of all your investments, about how much do you have invested in total?	5, 10, 15
Would you say your savings are mainly long-term savings for the future or mainly short-term savings for things you need now and for unexpected events?	10 onwards
Do you save on a regular basis or just from time to time when you can?	10 onwards
Thinking first about your savings accounts, TESSA or ISA, about you much do you currently have in total in these accounts?	10, 15

4. Summarising BHPS variables relevant to the concept of financial capability

In this section we introduce, describe and summarise the variables available at every wave of the BHPS that are relevant to the concept of financial capability. Some of these are hard measures (such as the ability to keep up with housing payments) while others relate to the perceptions of the individual adults (such as perceived current financial situation). Here we treat the BHPS data as a series of cross-sections and do not make use of the panel nature of the data – we do that in later stages of the analysis.

We distinguish between four main groups of variables related to financial capability – measures of perceived financial wellbeing; saving behaviour; housing payment problems; and material wellbeing. We describe responses to such questions in detail, and examine how patterns in responses have changed over the sample period. We use the Pearson chi-squared statistic to test the null hypothesis that the responses to each survey question are independent over time.¹ The value of the chi-squared statistics cannot be compared across tables, although the reported level of statistical significance indicates whether the null hypothesis of no association can be rejected. In all tables the data has been weighted to take account of potential non-random attrition and non-random response (using weighting variable *wXRWGHT*). In the analysis we include all adult (aged 16 and above) respondents, irrespective of age, and focus on adults who provide non-missing responses to the variables of interest. This yields a sample size of 16,598 adults contributing 124,940 person-year observations. We provide sample sizes by wave and gender in the Appendix and do not show them in each table for brevity.

Measures of perceived financial wellbeing

At each date of interview, respondents are asked ‘How well would you say you yourself are managing financially these days? Would you say you are living comfortably, doing alright, just about getting by, finding it quite difficult, or finding it very difficult?’ This relates to what Atkinson et al (2006) identify as the ‘keeping track’ and ‘making ends meet’ strands of the concept of financial capability. Table 2 summarises responses to this question over the 16 available waves.

This table indicates that on average over the sample period, almost two thirds of BHPS respondents report either living comfortably or doing alright, and that this proportion has increased significantly. For example, in 1991, 54.2% of respondents reported either living comfortably or doing alright, while this had increased to 71.4% in 2006. The proportion reporting finding it quite or very difficult has fallen correspondingly from 13.5% in 1991 to 6.6% in 2006. Most of these changes occurred during the 1990s, with little systematic movement since 1999.

As well as being asked about their current financial situation, BHPS respondents are asked to evaluate the perceived change in their finances over the previous year. In

¹ These statistics take into account the clustering of individuals within households.

particular, they are asked ‘Would you say that you yourself are better off, worse off, or about the same financially than you were a year ago?’ Again, this relates to the ‘keeping track’ strand of financial capability. Table 3 summarises responses to this question.

Table 2: Perceived current financial situation by year: BHPS 1991–2006

Year	Living comfortably	Doing alright	Just getting by	Finding it quite difficult	Finding it very difficult
1991	0.265	0.277	0.323	0.087	0.048
1992	0.254	0.290	0.323	0.085	0.048
1993	0.256	0.303	0.321	0.084	0.036
1994	0.270	0.314	0.311	0.072	0.033
1995	0.265	0.329	0.308	0.070	0.029
1996	0.282	0.351	0.282	0.058	0.027
1997	0.313	0.351	0.258	0.053	0.026
1998	0.328	0.358	0.245	0.052	0.017
1999	0.315	0.368	0.248	0.049	0.020
2000	0.300	0.378	0.255	0.050	0.018
2001	0.327	0.391	0.222	0.044	0.017
2002	0.324	0.399	0.221	0.041	0.015
2003	0.337	0.399	0.216	0.035	0.013
2004	0.329	0.397	0.215	0.042	0.016
2005	0.304	0.408	0.229	0.042	0.018
2006	0.320	0.394	0.220	0.046	0.020
Total	0.298	0.355	0.264	0.058	0.026

Notes: Weighted using cross-sectional respondent weights. Table reads, for example, that in 1991 26.5% of respondents reported that they were living comfortably. Pearson $\chi^2 = 42.3$ P=0.0000. ‘Total’ shows data pooled from waves 1 to 16.

Table 3: Change in financial situation since one year ago: BHPS 1991–2006

Year	Better off	About the same	Worse off
1991	0.234	0.478	0.288
1992	0.214	0.480	0.306
1993	0.251	0.428	0.321
1994	0.248	0.440	0.312
1995	0.269	0.451	0.280
1996	0.286	0.472	0.242
1997	0.309	0.468	0.224
1998	0.300	0.479	0.221
1999	0.294	0.499	0.208
2000	0.305	0.482	0.213
2001	0.311	0.491	0.198
2002	0.285	0.509	0.207
2003	0.279	0.504	0.217
2004	0.272	0.520	0.208
2005	0.262	0.508	0.230
2006	0.262	0.517	0.222
Total	0.274	0.482	0.245

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 23.4% of respondents reported that they were better off financially than last year. Pearson $\chi^2 = 37.1$ P=0.0000. ‘Total’ shows data pooled from waves 1 to 16.

This table indicates that the proportion reporting being better off than one year ago increased consistently throughout the 1990s, from 23.4% in 1991 to 30.5% in 2000. However, this has since fallen to 26.2% in 2006. There was a corresponding fall (and subsequent increase) in the proportion reporting being worse off than one year ago, while approximately half of all respondents report their financial situation as being about the same.

The final question on respondents' perceived financial wellbeing relates to the expected change in their financial situation of the coming year. In particular, respondents are asked 'Looking ahead, how do you think you yourself will be financially a year from now, will you be better than now, worse than now, or about the same?' In contrast to the previous questions, this variable may relate to the 'planning ahead' strand of financial capability. Table 4 summarises responses to this question.

Table 4: Expected change in financial situation over coming year: BHPS 1991–2006

Year	Better off	About the same	Worse off
1991	0.287	0.552	0.161
1992	0.239	0.543	0.219
1993	0.255	0.536	0.209
1994	0.259	0.575	0.166
1995	0.273	0.589	0.138
1996	0.286	0.594	0.120
1997	0.285	0.615	0.099
1998	0.298	0.607	0.095
1999	0.295	0.609	0.096
2000	0.292	0.621	0.087
2001	0.272	0.638	0.090
2002	0.277	0.638	0.085
2003	0.278	0.635	0.088
2004	0.286	0.618	0.097
2005	0.285	0.603	0.112
2006	0.271	0.621	0.108
Total	0.277	0.599	0.124

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 28.7% of respondents reported that they expected to be better off financially in a year from now. Pearson $\chi^2=60.8$ P=0.0000. 'Total' shows data pooled from waves 1 to 16.

This table indicates that there has been little change in the proportion of respondents who expect to be better off financially (which has averaged 27.7% over the sample period). However, there has been an increase in the proportion reporting that their financial situation in one year's time will be about the same as now (from 55.2% in 1991 to 62.1% in 2006), and a fall in those reporting that their financial situation will be worse (from 16.1% in 1991 to 10.8% in 2006).

We construct three summary variables from the subjective measures of financial wellbeing in order to simplify the construction of an index.² The first is a variable ('financial situation') which takes the value 1 if the individual reports living comfortably, 2 if doing alright, through to 5 if the individual reports finding it very difficult. Therefore high values of this variable correspond to low financial capability. The second is a variable ('situation worsened') which takes the value 1 if the individual reports that he/she is worse off financially today than one year ago, and 0 otherwise. The third is a variable ('expect to worsen') which takes the value 1 if the individual expects his or her financial situation to worsen in the coming 12 months. These contribute to what Atkinson et al (2006) identifies as the 'keeping track', 'making ends meet' and 'planning ahead' strands of financial capability.

Savings behaviour

Two questions related to savings behaviour were asked at all available waves of the BHPS. The first is related to whether or not respondents are able to save some of their income, while the second relates to the average amount saved per month. In particular, respondents are asked 'Do you save any amount of your income, for example by putting something away now and then in a bank, building society, or Post Office account other than to meet regular bills?', and 'About how much on average do you manage to save a month?' Savings contribute to the 'planning ahead' strand of financial capability, in that individuals who save are income-smoothing or making contingencies for when demands on income are higher. They also contribute to the 'making ends meet' strands, as to be able to save suggests an income level that exceeds expenditure.

Table 5: Saving behaviour: BHPS 1991–2006

Year	Saves		Amount saved (per month)	Amount saved conditional on saving (per month)
	Yes	No		
1991	0.386	0.614	59.47	154.23
1992	0.369	0.631	57.92	157.04
1993	0.388	0.612	61.61	158.71
1994	0.384	0.616	63.15	164.40
1995	0.384	0.616	64.68	168.29
1996	0.390	0.610	65.66	168.46
1997	0.407	0.593	67.02	164.64
1998	0.417	0.583	77.92	187.03
1999	0.388	0.612	67.19	173.40
2000	0.403	0.597	68.60	170.29
2001	0.398	0.602	73.70	185.39
2002	0.396	0.604	72.29	182.58
2003	0.390	0.610	74.87	192.01
2004	0.387	0.613	76.75	198.10
2005	0.399	0.601	75.51	189.33
2006	0.381	0.619	75.12	197.33
Total	0.392	0.608	68.58	175.14

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 38.6% of respondents saved from their income; that on average respondents saved £59.47 per month,

² We have experimented with several different combinations and definitions of these subjective variables, but these proved to have the highest correlations with the other financial variables.

while those that were able to save on average saved £154.23 per month. Amounts saved in Jan 2006 prices. Pearson $\chi^2=4.4$ P=0.0000. 'Total' shows data pooled from waves 1 to 16.

Table 5 summarises responses to these questions, reporting whether or not respondents report saving, the amount saved averaged across the sample as a whole (where non-savers are given a value of 0) and the amount conditional on saving. The amount saved has been deflated to January 2006 prices to allow a more direct comparison over time.

Table 5 indicates little change in the proportion of respondents who report being able to save from their income. There is some evidence of an initial increase in the proportion saving, from 38.6% in 1991 to 41.7% in 1998, but this proportion has since declined (if not continuously) to 38.1% in 2006. In terms of amounts saved, there is evidence of a reasonably consistent increase over time, from £59 in 1991 to £75 in 2006. If we focus only on those that are saving at any particular year, this increase is more pronounced – increasing from £154 in 1991 to £197 in 2006.

Housing payment problems

There are four questions asked at each BHPS wave that relate to difficulties in meeting housing payments. These are asked of only one individual per household (normally the head of household – the individual mainly responsible for paying for housing), but for the purposes of this analysis we have allocated the response to all adult household members.

Table 6: Housing payment problems: BHPS 1991–2006

Year	Housing payment problems	Required borrowing	Required cutbacks	Been 2+ months in arrears
	Yes	Yes	Yes	Yes
1991	0.133	0.027	0.112	0.035
1992	0.123	0.023	0.103	0.028
1993	0.108	0.021	0.092	0.025
1994	0.090	0.013	0.071	0.020
1995	0.076	0.013	0.061	0.016
1996	0.064	0.011	0.052	0.011
1997	0.065	0.014	0.052	0.012
1998	0.059	0.012	0.048	0.009
1999	0.053	0.010	0.040	0.008
2000	0.060	0.013	0.045	0.008
2001	0.047	0.011	0.035	0.009
2002	0.046	0.012	0.037	0.008
2003	0.046	0.013	0.036	0.007
2004	0.040	0.013	0.029	0.011
2005	0.051	0.012	0.041	0.011
2006	0.041	0.016	0.040	0.009
Total	0.071	0.015	0.057	0.014
Pearson χ^2 (p-value)	51.67 (0.0000)	6.4 (0.0000)	47.5 (0.0000)	18.6 (0.0000)

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 13.3% reported having problems meeting housing payments, 2.7% had to borrow to meet payments, 11.2% had to make cutbacks to meet payments, while 3.5% were at least 2 months in arrears with their payments in the last 12 months. 'Total' shows data pooled from waves 1 to 16.

Households are asked ‘Many people these days are finding it difficult to keep up with their housing payments. In the last 12 months would you say you have had any difficulties paying for your accommodation?’ Households who say yes are subsequently asked ‘Did you have to borrow in order to meet housing payments?’, ‘Did you have to make cutbacks in order to meet housing payments?’ and ‘In the last 12 months have you ever found yourself more than two months behind with your rent/mortgage?’ These clearly relate to the ‘making ends meet’ strand of financial capability. Responses to these questions are summarised in Table 6.

The table shows that in general meeting housing payments became less of a problem over the sample period. For example, the proportion of respondents in households reporting having problems meeting their housing payments fell from 13.3% in 1991 to less than 5% in 2006 (although the minimum was 4% in 2004). There were similar falls in the proportions reporting having to borrow or make cutbacks in order to meet their housing payment problems, from 2.7% to 1.6% and from 11.2% to 4% respectively. The proportion of respondents living in households that were two or more months in housing arrears at anytime in the last 12 months fell from 3.5% in 1991 to less than 1% in 2006.

Material wellbeing

At each date of interview, respondents are asked a series of questions relating to whether they, in their current accommodation, have access to a number of different consumer durables – a colour television, a video cassette recorder (VCR), washing machine, dishwasher, microwave oven, home personal computer (PC) and a compact disc (CD) player. Rather than examine the extent to which respondents had access to each consumer durable, we have combined these indicators into a summary measure that simply counts the number of consumer durables to which an individual has access. This variable therefore takes a value between 0 and 7. Responses to this set of questions provide an insight into the respondents’ standard of living, and may contribute to the ‘making ends meet’ strand of financial capability. Responses are summarised in Table 7.

Table 7 reflects the general increase in living standards over the sample period, with a significant increase in the number of consumer durables to which respondents had access. The proportion with access to fewer than three of the listed consumer durables has fallen from 18.8% in 1991 to just 2.2% in 2006, while that with access to all seven has increased from just 3.8% in 1991 to 36% in 2006.

Table 7: Number of consumable durables: BHPS 1991–2006

Year	<3	3	4	5	6	7
1991	0.188	0.165	0.262	0.220	0.127	0.038
1992	0.167	0.141	0.258	0.238	0.139	0.057
1993	0.142	0.127	0.244	0.248	0.167	0.072
1994	0.125	0.113	0.226	0.260	0.183	0.093
1995	0.114	0.096	0.211	0.273	0.200	0.106
1996	0.090	0.093	0.198	0.275	0.227	0.117
1997	0.080	0.077	0.186	0.279	0.242	0.136
1998	0.065	0.074	0.169	0.279	0.254	0.159
1999	0.063	0.059	0.155	0.264	0.276	0.183
2000	0.047	0.060	0.140	0.246	0.285	0.222
2001	0.040	0.052	0.131	0.236	0.300	0.241
2002	0.032	0.045	0.112	0.218	0.309	0.284
2003	0.028	0.037	0.101	0.203	0.316	0.315
2004	0.025	0.035	0.091	0.185	0.323	0.341
2005	0.025	0.029	0.078	0.174	0.341	0.353
2006	0.022	0.029	0.081	0.164	0.345	0.359
Total	0.080	0.079	0.168	0.237	0.249	0.187

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 18.8% of respondents lived in a household with access to less than 3 consumer durables. Pearson $\chi^2=121.8$ P=0.000. ‘Total’ shows data pooled from waves 1 to 16.

Summary

In this section we have summarised variables that are available at all BHPS waves and that may be related to the concept of financial capability. All contribute to the different strands of financial capability identified by Atkinson et al (2006). They include measures of perceived financial wellbeing, savings behaviour, problems meeting housing payments and material wellbeing. On average, the proportion of individuals reporting living comfortably or doing alright has been increasing since 1991, while the fraction reporting financial difficulties has fallen significantly. The proportion of respondents reporting being worse off financially than one year ago and less optimistic about the future has been falling since 1991. These perceptions are reflected in other measures of financial wellbeing, with respondents on average saving more and having access to more consumer durables, and fewer respondents living in households with housing payment problems. In subsequent sections, we use responses to these variables to construct an index of financial capability and then examine correlations between this index and other financial variables that are available at intermittent waves of the BHPS.

5. Constructing an index of financial capability

Having described variables available at every BHPS wave that may be related to financial capability, we now turn our attention to the degrees of association between these variables. The ultimate aim here is to examine the possibility of constructing an index of financial capability. This involves experimenting with a number of different ways of combining information collected in responses to the BHPS survey questions on financial wellbeing described in the previous section.

A necessary first stage in this process is to examine the degree of correlation between responses to each question. A simple way of constructing an index would then be to simply sum variables with a high degree of correlation to provide a straightforward measure of financial capability (e.g. Taylor et al 2004). Another popular way of constructing an index is to employ factor analysis (or principal component analysis) which uses correlations between variables to determine the underlying factor (in this case financial capability) represented by the variables (e.g. Taylor et al 2004; Capellari and Jenkins 2007). This method allows us to construct a factor score for each individual that measures the particular combination and weighting of variables used. In the following analysis we adopt both procedures.

Correlations between measures

As a first step in developing an index, we present a correlation matrix which illustrates the degree of association between the available variables, shown in Table 8 below. Here we have pooled all 16 waves of BHPS data, as our interest is in constructing an index of financial capability that can be applied across the whole sample period (rather than examining changes in associations over time). The statistic reported is the Spearman rank correlation coefficient, which is a measure of association taking a value between -1 (indicating perfect negative correlation) and $+1$ (indicating perfect positive correlation).³ A value of 0 indicates no correlation between the relevant variables. This table can be used to examine the degree of association between variables, allowing us to identify variables that are likely to be capturing a common underlying factor (financial capability). Variables that have the closest association (with rank correlation coefficients of 0.3 and above) are highlighted in bold. Those with correlation coefficients between 0.1 and 0.29 are in normal print, while those with the weakest association are in grey. By construction, the matrix is symmetrical around the lead diagonal.

This table shows that the strongest correlations (of above 0.3) are found between an individual's perceived current financial situation and their savings behaviour, and between an individual's perceived current financial situation and reporting that their situation has worsened over the previous 12 months. This suggests that people reporting finding it difficult to get by financially are also more likely to report a worsening financial situation, and are less likely to save. (We've standardised the correlations with the saving behaviour and consumer durables variables so that the positive correlations here indicate that individuals in a difficult financial situation are

³ We use the Spearman rank correlation coefficient rather than the more common Pearson's correlation coefficient because the former is non-parametric and less likely to be distorted when the normality assumption does not hold.

less likely to save and have access to fewer consumer durables.) Other strong correlations are found between the housing payment variables, which are to be expected given the structure of these questions.

The final row of the table shows the average correlation between each variable and the others. This indicates that the variables most highly correlated with the others are perceived current financial situation, having housing payment problems and housing payment problems required cutbacks. It is clear that expecting one's financial position to worsen over the coming year has little correlation with the other variables, and for this reason we discard it from the remainder of the analysis. This lack of correlation is explained by the fact that individuals' expectations about changes in their financial situation can be independent of their current financial situation. We now use the remaining variables to construct an index of financial capability.

Constructing indices of financial capability

We adopt two approaches to constructing an index of financial capability, based on the correlations presented in Table 8. The first approach uses factor analysis. The second approach sums the variables with a relatively high degree of correlation to provide a straightforward and easily interpretable measure of financial capability. The latter is a commonly used procedure in the deprivation and hardship literature, and often appears to work at least as well as much more complicated methodologies (Skrondal and Rabe-Hesketh 2004). We describe the procedure used in constructing each of the indices in detail below.

Table 8: Correlations between financial variables: BHPS 1991–2006

	Financial situation	Worsened	Expect to worsen	Saves (–)	Amount saved (–)	Housing payment problems	Required borrowing	Required cutbacks	Arrears	Durables (–)
Financial situation	<i>1.00</i>	0.35	0.10	0.29	0.33	0.26	0.13	0.24	0.13	0.16
Situation worsened		<i>1.00</i>	0.22	0.14	0.15	0.14	0.08	0.14	0.06	0.05
Expect to worsen			<i>1.00</i>	0.02	0.02	0.02	0.00	0.02	0.00	0.07
Saves (–)				<i>1.00</i>	–	0.12	0.07	0.11	0.07	0.14
Amount saved (–)					<i>1.00</i>	0.13	0.07	0.11	0.07	0.16
Housing payment problems						<i>1.00</i>	0.46	0.89	0.44	0.08
Required borrowing							<i>1.00</i>	0.42	0.27	0.04
Required cutbacks								<i>1.00</i>	0.41	0.08
Arrears									<i>1.00</i>	0.05
Number of durables (–)										<i>1.00</i>
Mean	0.22	0.15	0.05	0.12	0.13	0.28	0.17	0.27	0.17	0.09

Notes: Figures reported are Spearman rank correlation coefficients. See text for how variables are constructed and defined.

Identifying the common characteristic

Our aim is to construct an index of financial capability that can be traced over time. The individual variables can be interpreted as reflecting a common, underlying characteristic ('financial capability') if there is a consistent tendency for an individual who scores highly on one also to score highly on each of the other variables. We test the internal consistency of such summary measures using Cronbach's alpha which is calculated on the basis of the number of contributing variables and the correlations between them. Alpha takes a value between 0 and 1, with 1 indicating perfect internal consistency. The literature suggests that a good summary indicator should have a value of alpha of at least 0.7 (Nunnally and Bernstein 1994). Before constructing an index, we examine the inter-item correlations, which we present in Table 9 below. Because some of the variables have different scales (e.g. perceived current financial situation, amount saved, number of consumer durables), we have standardised all the variables to have mean 0 and variance 1.

Table 9: Standardised inter-item correlations: BHPS 1991–2006

Variable	Item-rest correlation	Average inter-item correlation if item removed	Alpha if item removed
Financial situation	0.451	0.180	0.638
Situation worsened	0.240	0.211	0.667
Saves (–)	0.309	0.200	0.683
Amount saved (–)	0.232	0.212	0.681
Housing payment problems	0.606	0.160	0.603
Required borrowing	0.351	0.194	0.659
Required cutbacks	0.570	0.164	0.611
Arrears	0.342	0.196	0.660
Number of durables (–)	0.151	0.224	0.698
Total		0.193	0.683

The item-rest correlation shows the correlation between each variable and the index that is formed by all the other items, while the average inter-item correlation shows the inter-item correlations excluding the relevant variable, and therefore indicates whether or not excluding the relevant variable would increase the average inter-item correlation. The last column of the table presents Cronbach's alpha for the index formed by excluding the relevant variable, and therefore indicates whether the internal consistency of the index would be improved by excluding the relevant variable.

The results presented in Table 9 indicate that both the amount saved and the number of durables appear to be least well correlated with the other variables. They have the lowest item-rest correlation (indicating they are least well correlated with an index formed by all other items), and the average inter-item correlation and alpha would both increase if they were removed. This may be because both these variables reflect income levels as much as financial capability. Therefore it appears that it is the act of saving itself that is a more important indicator of financial management than the amount saved.⁴ This makes sense, as those on lower incomes who save only small

⁴ We have also experimented with using savings as a proportion of income. However this too is less well correlated with the underlying factor of financial capability than the act of savings.

amounts may have greater financial management skills than individuals with higher incomes who are able to save larger amounts.

This leaves us with the following variables from which to construct an index:

- perceived current financial situation;
- reporting that the financial situation has worsened since last year;
- whether saves;
- has housing payment problems;⁵
- problems required borrowing;
- problems required cutbacks; and
- been at least two months in housing arrears in last 12 months.

The internal consistency of such a summary measure yields a Cronbach’s alpha of 0.71 and an average inter-item correlation of 0.26, which suggests it is a good summary indicator and that the individual variables all contribute to the underlying financial capability component in the same way. Wave-specific estimates show Cronbach’s alphas that vary between 0.68 and 0.74, and average inter-item correlations that vary between 0.23 and 0.29, suggesting that the index has internal consistency across time. The distribution of the underlying factor score is summarised in Table 10 and Figure 1. Because this factor is essentially measuring financial incapability, we call it an index of financial incapability. Higher values of this index are associated with higher financial difficulty (lower financial capability), and vice versa.

Figure 1 shows that although there is a long right hand tail to the distribution of the index, the majority of observations actually lie between -0.537 and zero. Therefore, consistent with the Financial Services Baseline Survey, most people are financially capable but those that are not can suffer extreme difficulties. Table 10 indicates that the index has a mean of zero and a standard deviation of 0.601 and varies between -0.537 (indicating no financial difficulty) and 4.1 (indicating high financial difficulty).

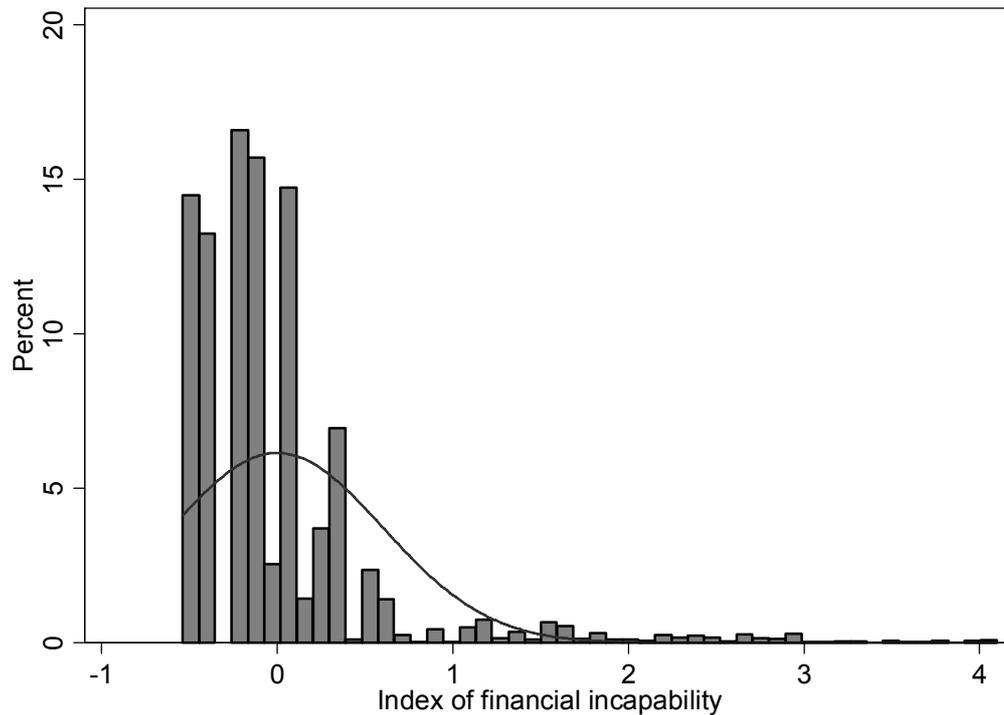
Table 10: Index of financial incapability: BHPS 1991–2006

	Mean	Std Dev	Min	Max
Financial difficulty index	0.000	0.601	-0.537	4.100

Notes: Index constructed using factor analysis from: Current financial situation; Financial situation worsened since last year; Whether saves; Has housing payment problems; Problems required borrowing; Problems required cutbacks; and Been at least 2 months in arrears in last 12 months.

⁵ We have experimented with a number of different combinations of the housing payment problems variables, including creating a single variable measuring the scale of the problems and including the separate variables independently of the others. The current specification appears to provide the most consistent index.

Figure 1: Distribution of the index of financial incapability: BHPS 1991–2006



An alternative approach

As an alternative approach, and to check the validity of the index constructed above, we have constructed a summary measure by simply adding together the indicators of financial incapability that individuals currently face. Such ‘sum-score’ indices are commonly used in the deprivation and hardship literature. To do this we have again focused on those variables with high average inter-item correlations: perceived current financial situation, reporting that the situation worsened, whether saves, housing payment problems, whether problems required borrowing, whether required cutbacks, and whether been in housing arrears.

First we have used perceived current financial situation to define as having low financial capability individuals who are finding it quite difficult or very difficult. We also define as having low financial capability those who are not currently saving. Then we construct an index by adding together whether the individual: is finding it quite or very difficult, reports a worsened financial situation, is not currently saving, has housing payment problems, has had to borrow to meet payments, has had to cutback to meet payments, and has been in two or more months’ arrears. This index takes a value between 0 (has none of the listed problems) to 7 (has all of the listed problems). Table 11 and Figure 2 summarise the distribution of this index which, for simplicity, we call the number of financial problems.

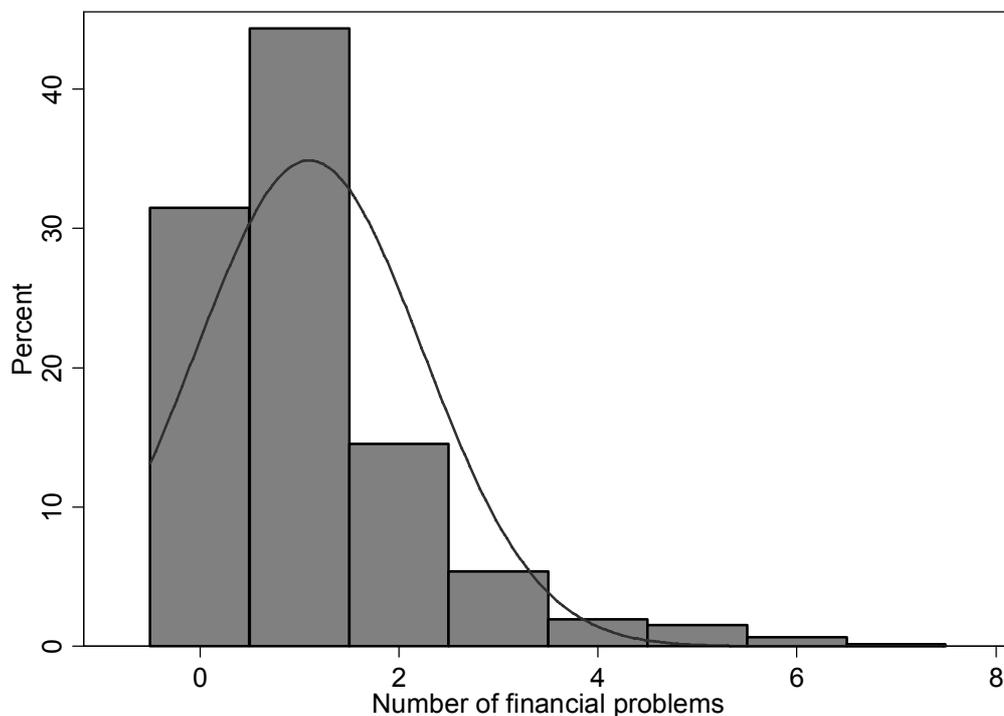
Table 11: Number of financial problems: BHPS 1991–2006

	0	1	2	3	4 or more	Mean
Number of financial problems	0.313	0.448	0.146	0.053	0.040	1.09

Notes: Table reads, for example, that 31.3% had no financial problems. Number of financial problems is sum of whether individual: is finding it quite or very difficult, has a worsened financial situation, is not currently saving, has housing payment problems, has had to borrow to meet payments, has had to cutback to meet payments, has been in two or months arrears, and has access to fewer than 3 consumer durables.

This table shows that on average over the sample period, individuals suffered from 1.09 financial problems each year. As with the index of financial incapability, the distribution of the number of financial problems has a long right hand tail (Figure 2). More than three quarters of observations had at most one financial problem, while 15% had two. Only 4% suffered from four or more financial problems.

Figure 2: Distribution of the number of financial problems: BHPS 1991–2006



Validity checks

Before taking these two measures onto the next stage of the analysis, we carry out some validity checks. These take two forms. Firstly we examine the degree of correlation between our index of financial incapability and the number of financial problems. Secondly, we examine how each of these measures is correlated with other measures of financial wellbeing collected intermittently over the BHPS sample period.

Correlations between measures

The first validity check is to ensure that the two measures exhibit high degrees of association. Table 12 indicates that the mean index of financial incapability increases monotonically with the number of financial problems. Individuals with no financial problems have an average index of financial incapability of -0.44 . This increases consistently, such that those with six or seven financial problems have a mean index of financial incapability exceeding 3. The two constructed measures have a Spearman rank correlation coefficient of 0.94. This indicates that there is a very high degree of association between these two indicators of financial capability.

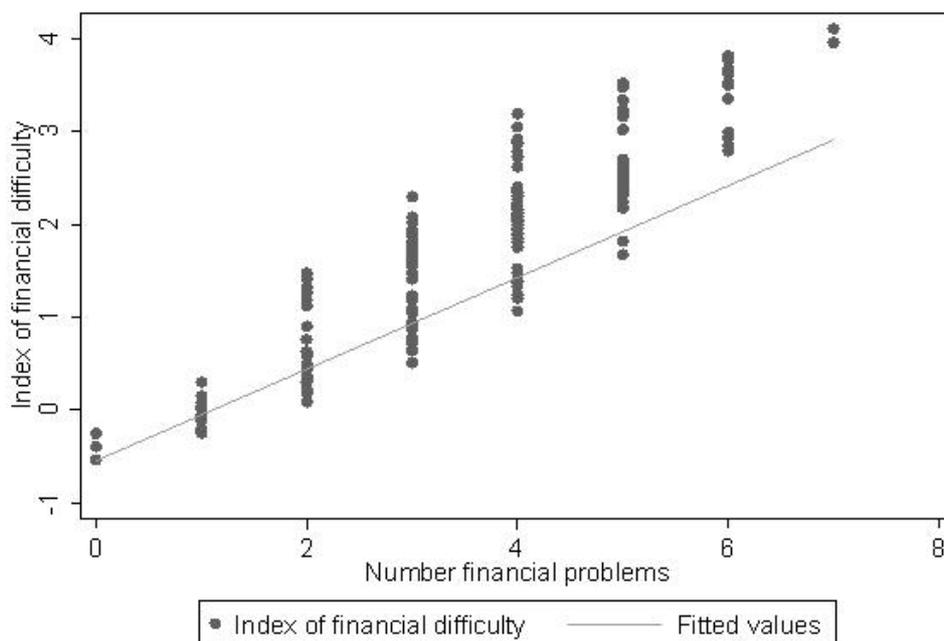
Table 12: Association between number of financial problems and index of financial incapability: BHPS 1991–2006

Number of financial problems	Mean financial incapability
0	-0.443
1	-0.095
2	0.307
3	0.792
4	1.746
5	2.160
6	3.033
7	4.044
Spearman's rank correlation coefficient	0.943

Notes: Index of financial difficulty constructed from: current financial situation; financial situation worsened since last year; whether saves; has housing payment problems; problems required borrowing; problems required cutbacks; and been at least two months in arrears in last 12 months. Number of financial problems is sum of whether individual: is finding it quite or very difficult, has a worsened financial situation, is not currently saving, has housing payment problems, has had to borrow to meet payments, has had to cutback to meet payments, has been in two or more months' arrears, and has access to fewer than three consumer durables.

As a further check, we have estimated Ordinary Least Squares regressions, with the number of financial problems as the dependent variable and the index of financial incapability as the explanatory variable. The estimates from such a regression (not shown) indicate that the index of financial incapability explains 88% of the total variance in the number of financial problems. This relationship is highlighted graphically in Figure 3, which plots the two measures together with a superimposed fitted regression line. The fitted line does not pass through the centre of the dots, indicating that the dots are denser at lower values of the index of financial incapability. Again therefore, there is evidence of a high degree of correlation between the two measures.

Figure 3: Plot of index of financial incapability and number of financial problems: BHPS 1991–2006



Source: BHPS 1991-2006

As a further validity and robustness check, we examine correlations between our summary measures of financial capability and the financial variables available intermittently across BHPS waves. Such variables were not considered in constructing the indices because they are not available at all survey waves, and therefore reduce both the time coverage of the index and the number of observations for which it can be calculated. Before presenting correlations, Table 13 describes the variables concerned.

These variables capture aspects of individuals' credit, savings and debt, ranging from the burdens of debt repayments and financial commitments, to lifestyle information, investments and savings behaviour. A priority, we would expect any measure of financial capability to be correlated with at least some of these variables, as they will also contribute to the different strands identified by Atkinson et al (2006).

As a precursor to examining correlations between these variables and our two summary measures, in Table 14 we present a correlation matrix which illustrates the degree of association between the variables (this is symmetrical about the lead diagonal). Again we have pooled all waves of relevant data (the number of which vary according to the availability of the variables).

Again, the statistic reported is the Spearman rank correlation coefficient, with variables having the closest association (with rank correlation coefficients of 0.3 and above) highlighted in bold. Those with correlation coefficients between 0.1 and 0.29 are in normal print, while those with the weakest association are in grey. (Again, we've standardised the correlations with lifestyle, investments and saving variables so that the positive correlations here indicate that individuals in a difficult financial situation are less likely to have investments and to save).

Table 13: Variables available at intermittent BHPS waves 1991–2006

Variable name	Description	BHPS Availability
Repayments	Individual or household has to make repayments on hire purchases or loans (excluding mortgages).	5 onwards
Repayments burden	Is the repayment of such debts and the interest a heavy burden, somewhat of a burden, not a problem?	5 onwards
Lifestyle	The number of the following which the household is able to do: keep home adequately warm; pay for annual holiday; replace furniture; buy new clothes; eat meat on alternate days; feed visitors once a month.	6 onwards
Financial commitments	Number of the following financial commitments: hire purchase agreements, personal loans, credit cards, mail order purchase, DSS social fund loan, loans from an individual, something else.	5, 10, 15
Amount of debt	The amount owed on the above.	5, 10, 15
Number of investments	Which of the following investments individuals have money in: National Savings Certificates, Premium bonds, Unit trusts, Personal Equity Plans, Shares, National Savings/Building Society/Insurance bonds, other.	5, 10, 15
Amount invested	How much money invested in the above.	5, 10, 15
Long-term saver	Are savings mainly long-term savings for the future?	10 onwards
Regular saver	Does respondent save on a regular basis?	10 onwards
Amount in savings accounts	How much respondent has in total in savings accounts, TESSAs or ISAs.	10, 15

Table 14: Correlations between financial variables intermittently available: BHPS 1991–2006

	Repayments	Repayments burden	Lifestyle (–)	Financial comms	Amount debt	N investments (–)	Amount invested (–)	LT saver (–)	Regular saver (–)	Amount savings (–)
Repayments	<i>1.00</i>	0.24	0.03	0.50	0.49	0.11	0.08	0.01	0.04	0.14
Repayments burden		<i>1.00</i>	0.13	0.16	0.14	0.07	0.06	0.03	0.06	0.12
Lifestyle (–)			<i>1.00</i>	0.03	0.02	0.04	0.04	0.08	0.16	0.20
Financial commitments				<i>1.00</i>	0.91	0.07	0.04	0.02	0.02	0.14
Amount of debt					<i>1.00</i>	0.06	0.02	0.01	0.05	0.12
Number of investments (–)						<i>1.00</i>	–	0.16	0.14	0.43
Amount invested (–)							<i>1.00</i>	0.17	0.14	0.43
Long-term saver (–)								<i>1.00</i>	0.47	0.28
Regular saver (–)									<i>1.00</i>	0.38
Amount in savings accounts (–)										<i>1.00</i>
Mean	0.18	0.11	0.08	0.21	0.20	0.14	0.12	0.14	0.16	0.25

Notes: Figures reported are Spearman rank correlation coefficients. See text for how variables are constructed and defined.

The table shows that the strongest correlations (of above 0.3) are found between repaying a loan and the number of financial commitments and amount of debt, between the number of investments, amount invested and amount in savings accounts, and between saving regularly, saving long-term and amount in savings accounts. These results accord with intuition – individuals repaying loans are likely to have more financial commitments and debt, while those with a larger number of investments are likely to have more invested. Similarly, individuals who save regularly and on a long-term basis are likely to have more money in savings accounts. The average correlations shown in the final row indicate that the amount of money in savings accounts is most highly correlated with the other variables (average correlation of 0.25). The lifestyle variable (capturing the number of things the household is able to do) has the weakest correlations with the other variables.

Given the relatively low correlations between many of these variables, we might expect our two summary measures of financial capability to also be relatively poorly correlated with these variables. We examine this in Table 15, again presenting Spearman rank correlation coefficients. These, however, indicate relatively strong correlations between our measures and the other variables. In particular, our index of financial incapability and the number of financial problems exhibit relatively high correlations with the lifestyle measure, being a long-term saver, being a regular saver and the amount held in savings accounts. Relatively weak correlations emerge with repaying loans, the number of financial commitments and the amount of debt.

The average Spearman rank correlation coefficients (of 0.237 with the index of financial incapability and 0.226 with the number of financial problems) are greater than all but one of the average inter-variable correlations. This indicates that our summary measures are more highly correlated with these variables than the variables are correlated between themselves, and gives us confidence that the summary measures are valid and consistent indicators of financial capability.

Table 15: Correlations between measures of financial capability and financial variables available intermittently: BHPS 1991–2006

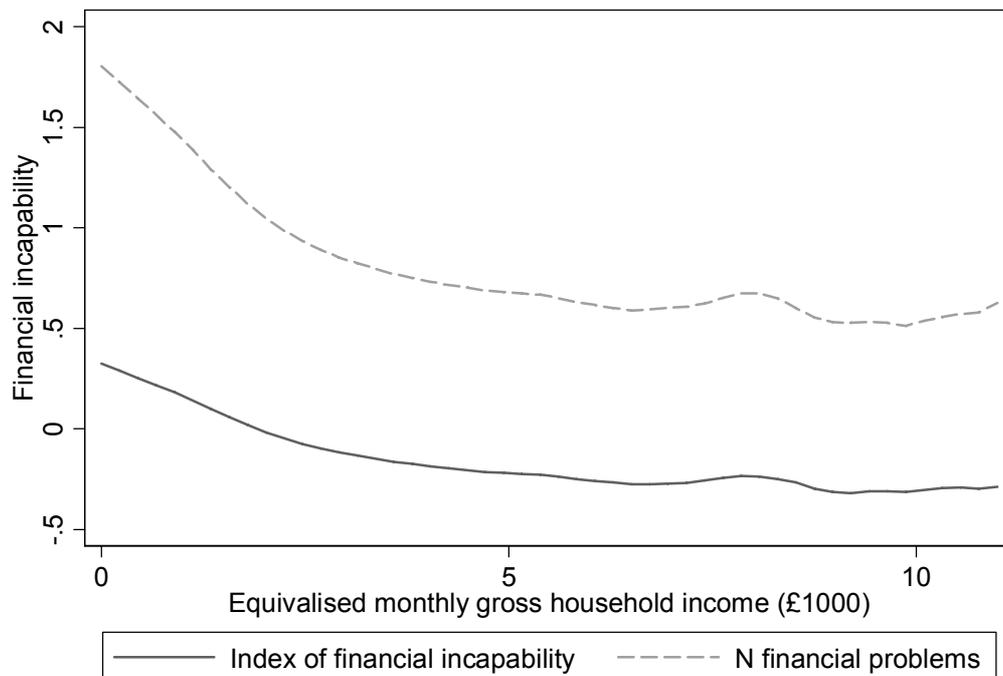
Variable	Correlation with	
	Index of financial incapability	Number of financial problems
Repayments	0.040	0.018
Repayments burden	0.161	0.155
Lifestyle (–)	0.276	0.237
Financial commitments	0.083	0.054
Amount of debt	0.069	0.044
Number of investments (–)	0.211	0.177
Amount invested (–)	0.194	0.167
Long-term saver (–)	0.353	0.385
Regular saver (–)	0.578	0.650
Amount in savings accounts (–)	0.401	0.374
Mean	0.237	0.226

Notes: Figures reported are Spearman rank correlation coefficients. See text for how variables are constructed and defined.

Adjusting for income

Of course, financial difficulty is strongly related to income and it can be argued that any measure of financial capability should be adjusted for income. Financial capability should capture how capable people are at managing their finances independent of their income levels. Here we investigate the relationship between our index of financial incapability and income, defined as real equivalised gross household income (in the month prior to interview), deflated to January 2006 prices. Our index of financial incapability yields a Spearman rank correlation coefficient with income of -0.34 , suggesting that financial incapability falls as income increases. Figure 4 provides smoothed plots to highlight the relationships between income and the index of financial incapability and the number of financial problems. This indicates that the relationship is stronger (the slopes are steeper) at lower income levels indicating that it is those with relatively low incomes that have the highest average financial incapability. The lines are relatively flat at higher income levels.

Figure 4: Relationship between financial incapability and income: BHPS 1991–2006



Source: BHPS 1991-2006

To create an income adjusted measure of financial incapability, we follow the procedure adopted in Melhuish et al (2008) and regress the index of financial incapability on real equivalised monthly household income (in January 2006 prices) and use the residuals as our income-adjusted index of financial incapability. The results from this Ordinary Least Squares (OLS) regression are shown in Table 16. The residuals from this regression can be interpreted as the part of financial incapability that is not explained by income – they measure people’s financial management skills once their income has been taken into account – which we call our income-adjusted index of financial incapability. The relatively small (if statistically significant) coefficients on the quadratic and cubic terms suggest that the non-linearities in the relationship between income and financial incapability are small. This is highlighted

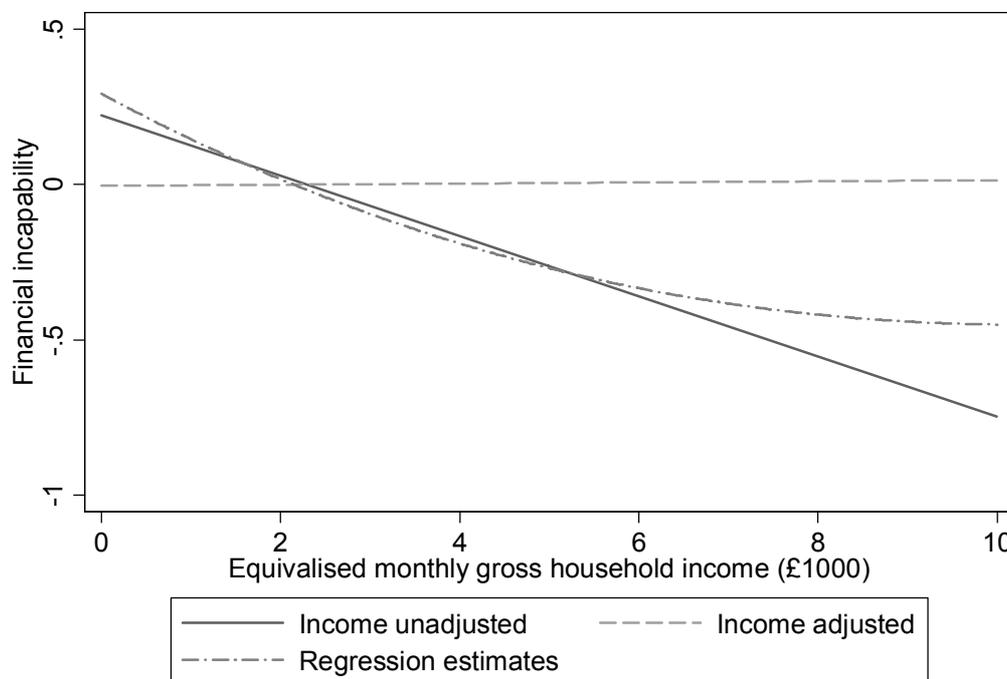
in Figure 5, which plots the index of financial incapability, the income-adjusted index, and the estimated regression line. The closeness of the estimated line to the income-unadjusted index indicates that the income-adjusted and income-unadjusted indices will only differ at low and very high equivalised household income (below £1000 and above £6000 per month). Given that over 80% of income observations lie within this range, we expect the income-adjusted and the income-unadjusted indices to provide very similar results. This figure also confirms that income-adjusted index is unrelated to income.

Table 16: OLS Regression of household income on index of financial incapability: BHPS 1991–2006

Variable	Coefficient	t-statistic
Real equiv. month household income (£1000s)	-0.1553	33.32
Real equiv. month household income ² (£1000s)	0.0091	15.24
Real equiv. month household income ³ (£1000s)	-0.0001	10.91
Constant	0.2923	34.87
R ²	0.0647	
N individuals	16598	
N observations	124940	

Notes: Estimates from ordinary least squares regression where dependent variable is index of financial incapability. Standard errors adjusted for clustering on individuals.

Figure 5: Relationships between financial incapability and income: BHPS 1991–2006



Source: BHPS 1991-2006

Table 17 and Figure 6 below describe the distribution of the income-adjusted index of financial incapability. Table 17 shows that the income-adjusted index has a mean of 0 and a standard deviation of 0.582 and varies between -1.978 (indicating no financial

incapability) and 4.4 (indicating high financial incapability). Figure 6 indicates that the income-adjusted index has a long right hand tail (although this is less pronounced than with the income-unadjusted index) and that the majority of observations have values between -1 and 0 . The clustering of observations at low financial incapability indicate that most people manage their finances relatively well, and the long right hand tail indicates that those that have problems can suffer from extreme difficulty. Our income-adjusted index of financial incapability has a Spearman rank correlation coefficient of 0.88 with the unadjusted index, and exhibits an almost identical relationship with the number of financial problems (not shown).

Table 17: Income-adjusted index of financial incapability: BHPS 1991–2006

	Mean	Std Dev	Min	Max
Income-adjusted financial incapability index	0.000	0.582	-1.978	4.400

Notes: Index constructed using factor analysis from: current financial situation; financial situation worsened since last year; whether saves; has housing payment problems; problems required borrowing; problems required cutbacks; and been at least two months in arrears in last 12 months.

Figure 6: Distribution of the income-adjusted index of financial incapability: BHPS 1991–2006

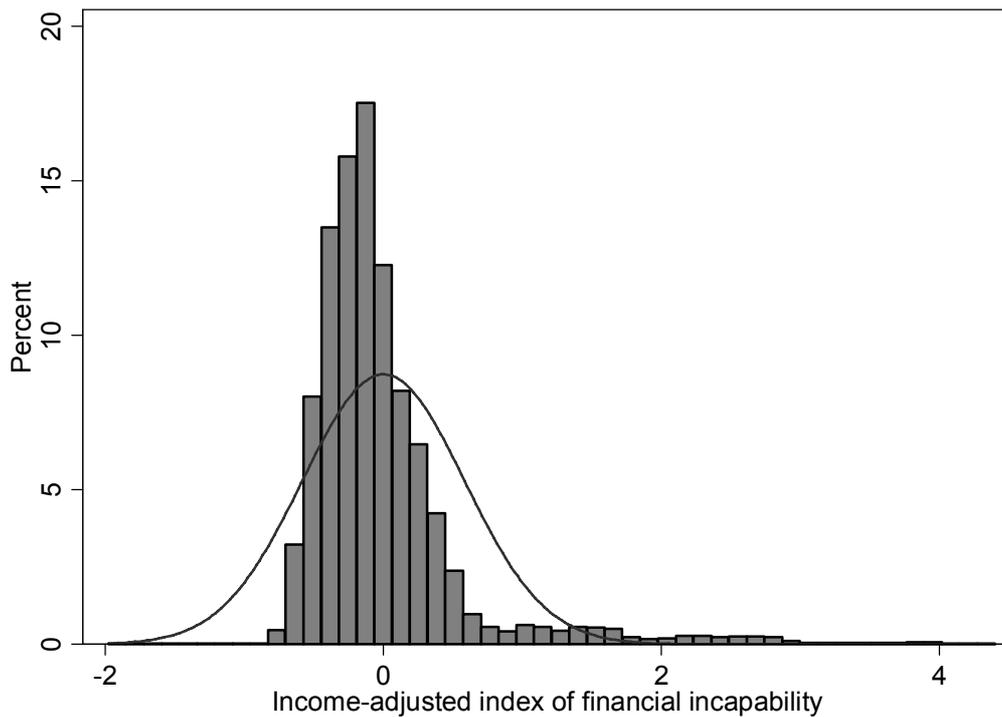
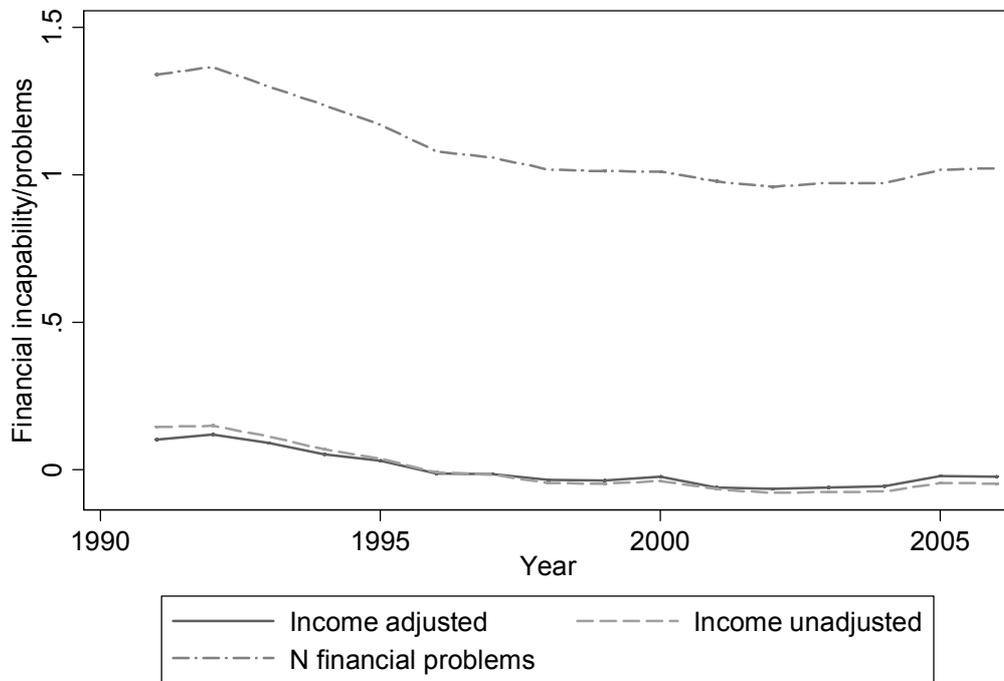


Figure 7 below plots the evolution over the 16 years of available BHPS data of the means of both the income-adjusted and income-unadjusted index of financial incapability, and the number of financial problems.

This shows, first, that all three measures indicate a decline in average financial incapability from the early 1990s until 2004, after which there is some evidence of an increase. Second, as expected given the relationships plotted in Figure 5, the averages in the income-adjusted and income-unadjusted index are almost identical over time.

As we would expect, the income-adjusted index shows less variation over time, but the differences are small.

**Figure 7: Plot of index of financial difficulty and number of financial problems:
BHPS 1991–2006**



Source: BHPS 1991-2006

Changes in individual financial capability from one year to the next

Until now, we have analysed the indices of financial incapability from a cross-sectional perspective. We have not taken advantage of the panel nature of the data to examine how financial capability changes from one year to the next for each individual. Table 18 presents our first look at this. In this table we summarise individuals' mean financial incapability over two consecutive years, as well as the average change.

The table indicates that on average over the sample period, people's financial incapability fell between one year ($t-1$) and the next (t). The mean changes in the indices were negative, showing that financial capability was improving. For example, the mean income-adjusted index fell from -0.020 in year $t-1$ to -0.032 in year t , while the mean number of financial problems fell from 1.077 to 1.053 . This is consistent with Figure 7 which shows a downward trend in financial incapability over time. The table also presents average within-individual variances in the indices, which are very large relative to the means. This indicates a great deal of change in the indices at the individual level – financial incapability changes considerably between one year and the next. The implication of this is that financial capability is not a relatively stable characteristic but instead fluctuates considerably at the individual level presumably in response to other (possibly expected and unexpected) events that individuals experience. We examine the factors that contribute to this longitudinal flux later in the report.

Table 18: Within-individual year-on-year changes in financial incapability: BHPS 1991–2006

Financial incapability index	Means		Change	Within-individual variance
	$t-1$	t		
Income-adjusted	-0.020	-0.032	-0.012	0.365
Income-unadjusted	-0.013	-0.028	-0.015	0.365
Number financial problems	1.077	1.053	-0.024	0.776
N	95935			

Notes: Weighted using cross-sectional weights. Table reads, for example, that on average individuals had an income-adjusted index of financial incapability of -0.02 in year $t-1$ and of -0.032 in year t , indicating an average improvement in financial capability of 0.012 .

Figure 8 plots the distribution of within-individual year-on-year changes in the income-unadjusted index of financial incapability. This shows that over 30% had no change in financial incapability from one year to the next. While this is clearly the modal value, the figure suggests that in almost 70% of cases, individuals' financial capability changed from one year to the next. Figures 9 and 10 reveal a similar pattern when looking at year-on-year changes at the individual level in the income-adjusted index and in the number of financial problems.

Figure 8: Within-individual year-on-year changes in income-unadjusted index of financial incapability: BHPS 1991–2006

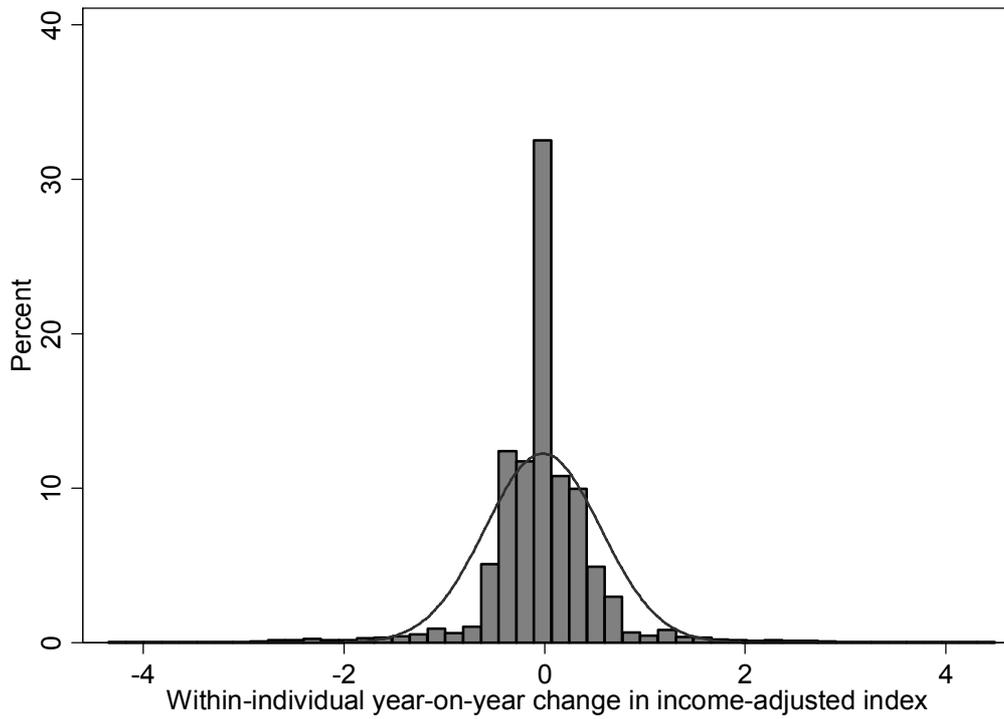


Figure 9: Within-individual year-on-year changes in income-unadjusted index of financial incapability: BHPS 1991–2006

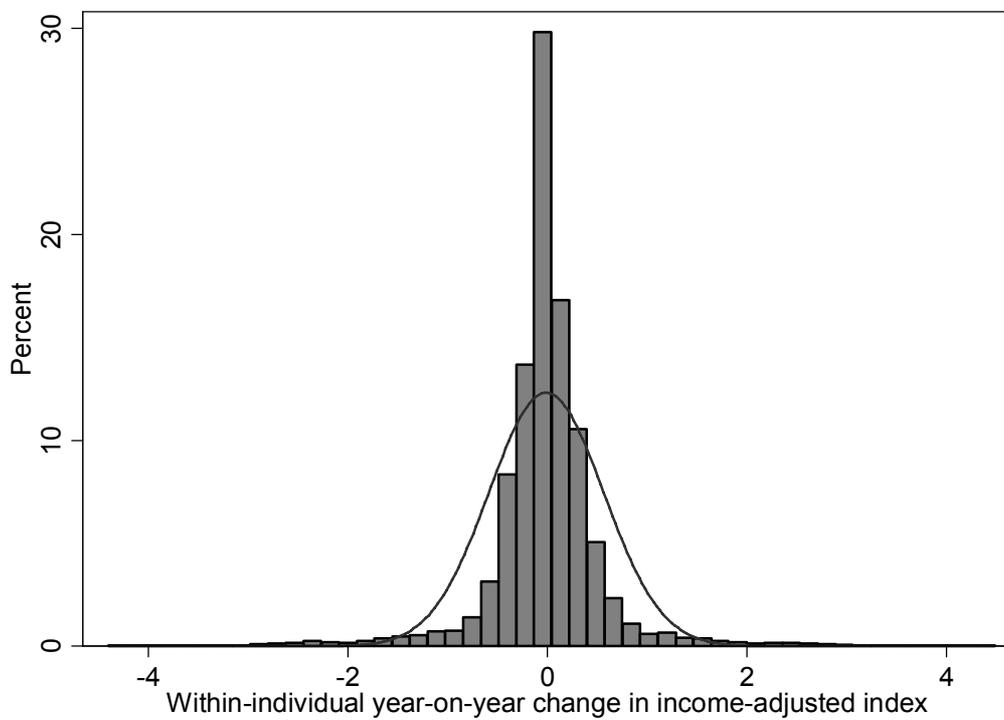
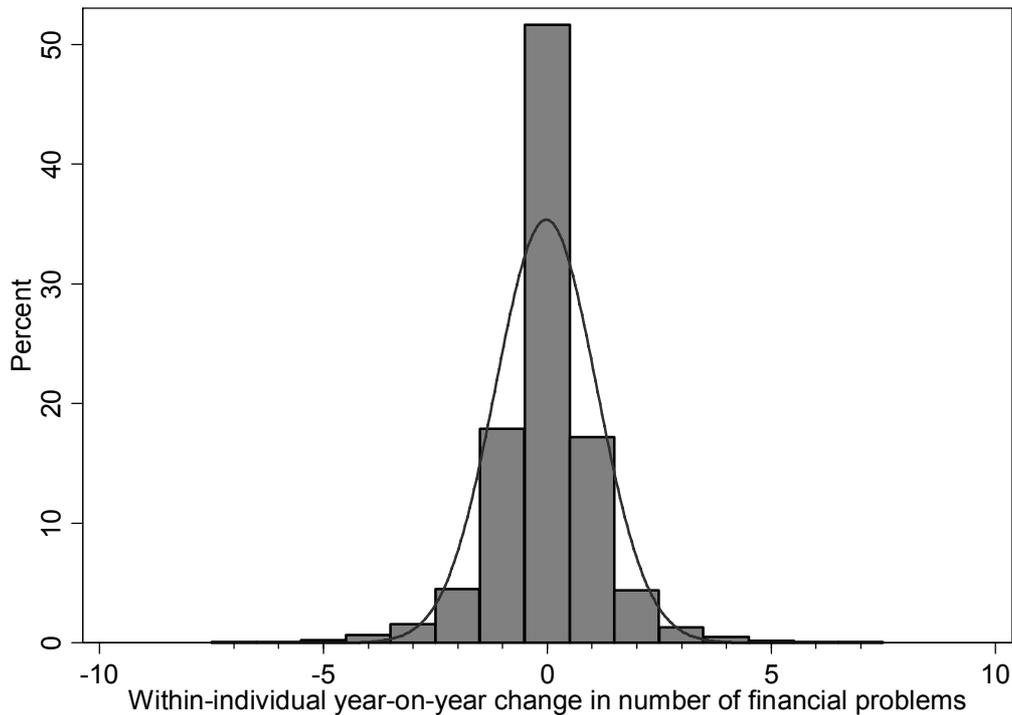


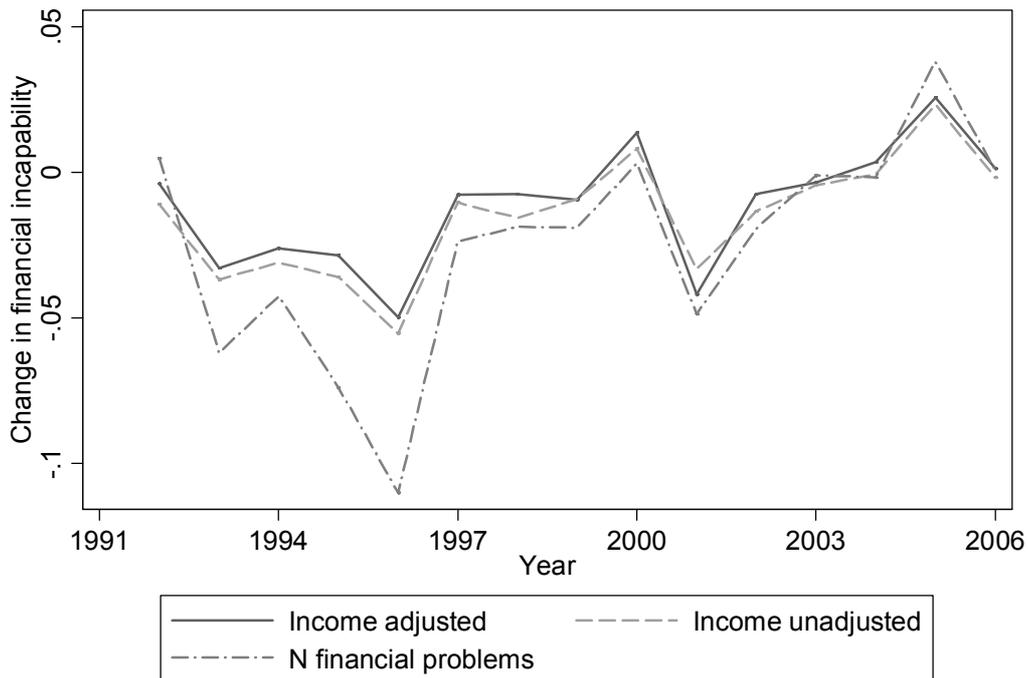
Figure 10: Within-individual year-on-year changes in the number of financial problems: BHPS 1991–2006



These plots are consistent with the Financial Services Baseline Survey, which finds that almost one-third of people experience large unexpected falls in income over a three-year period while one in five experiences a large unexpected expense. Such shocks will place demands on people's financial capability.

Figure 11 plots how these within-individual average changes in financial incapability changed between 1991 and 2006. There are large average within-individual changes in these indices over time, relative to the average values of the means of the indices, and the average rate of improvement in financial capability has, on average, declined over the period. In the early 1990s, the average year-on-year change was more negative (indicating larger improvements in financial capability) than in more recent years. In fact, since 2004 there is evidence that the improvement has reversed, and financial incapability has started to increase (with average within-individual changes above zero).

Figure 11: Mean within-individual year-on-year changes in financial incapability: BHPS 1991–2006



Source: BHPS 1991-2006

The advantage of using a categorical (rather than continuous) measure of financial incapability is that it allows a more direct assessment of year-on-year change. We take advantage of this in Table 19, and summarise individual-level changes in the number of financial problems faced in two consecutive years. If there was no change in financial incapability, then all individuals would lie on the leading diagonal – they would have the same number of financial problems each year. Therefore the degree of change can be assessed by the proportion of individuals that lie off the leading diagonal – those that experience either an improvement or deterioration in the number of financial problems they face.

This table indicates that there is much year-on-year fluctuation in financial incapability. Although 60% of those with zero or one financial problem in one year also have zero or one financial problem in the subsequent year, the vast majority of those with two or more financial problems experience a change in the number they have in the following year.

For example, of those with two financial problems in one year, only 29.8% have two financial problems in the subsequent year. The majority (58%) have fewer than two, while 13% have more than two. Even more change is evident among those with more financial problems. Of course, such downward mobility is good, indicating that individuals are improving their position on average.

Table 19: Year-on-year changes in number of financial problems: BHPS 1991–2006

N problems at $t-1$	N financial problems at t								N
	0	1	2	3	4	5	6	7	
0	61.5	29.5	6.9	1.5	0.3	0.2	0	0	31224
1	21.7	60.0	13.3	3.2	0.9	0.6	0.2	0	42505
2	13.4	44.5	29.8	7.9	2.2	1.7	0.4	0.1	13803
3	10.2	35.0	22.4	21.1	4.9	4.7	1.5	0.3	4991
4	8.2	31.8	17.0	15.3	13.7	9.3	4.1	0.6	1812
5	5.7	22.0	17.5	17.4	12.3	15.9	7.2	2.0	1447
6	3.7	13.1	13.7	19.9	16.1	18.4	10.5	4.5	600
7	2.4	16.6	9.1	16.5	9.2	14.9	14.6	16.7	138
N	31282	43380	13596	4679	1622	1309	521	131	96520

Notes: Row percentages. Table reads, for example, that 61.5% of individuals with no financial problems at $t-1$ also had no financial problems at the year t interview, while 29.5% had one financial problem at the year t interview.

Having created these indices of financial incapability, together with the number of financial problems, we now turn to describing their relationships with a range of individual and household characteristics. We take all three measures of financial hardship forwards – the income-adjusted index, the income-unadjusted index and the number of financial problems – to highlight the differences and similarities that controlling for income makes in these bivariate relationships.

6. Relationships between financial capability and other characteristics

In this section we introduce the individual and household variables collected in the BHPS with which we describe patterns of financial capability. To maximise sample sizes and to simplify the analysis, we again focus on variables collected at all BHPS waves. For the purposes of this section, we treat the data as a series of separate cross-sections and for the time being do not make use of the panel nature of the data.

We summarise how the constructed index is distributed across different groups in the population, and over time. We provide summaries of indices by a range of individual and household characteristics including age, gender, migrant status, marital status, number of children, household size and structure, health status, employment status, job type, housing related variables, education and income (it is not feasible to summarise by ethnicity because of small sample sizes within the BHPS). As before, in all tables the data have been weighted to take account of potential non-random attrition and non-random response (using weighting variable wXRWGHT), and we include all adult (aged 16 and above) respondents, irrespective of age, and focus on adults who provide non-missing responses to the variables of interest. Because of missing values on some of the variables, the sample sizes are slightly reduced to 16,348 adults contributing 122,231 person-year observations.

Income

In Table 20 we summarise the relationships between our three measures of financial incapability and real gross monthly equivalised household income. This allows us to establish the impact of adjusting for income on this relationship, and if this has changed over time.

Table 20: Mean financial incapability by income: BHPS 1991–2006

	Year				Average	
	1991	1996	2001	2006		
Income-adjusted						
Bottom quintile	0.253	0.027	-0.101	-0.017	0.043	*
Second quintile	0.180	-0.047	-0.060	-0.073	-0.026	
Middle quintile	0.066	-0.063	-0.089	-0.032	-0.050	
Fourth quintile	-0.009	-0.069	-0.112	-0.067	-0.054	
Highest quintile	0.031	0.008	-0.037	0.013	0.015	
Spearman correlation	-0.088	0.079	0.112	0.139	0.083	
Pearson correlation	-0.087	0.021	-0.007	0.034	0.000	
Income-unadjusted						
Bottom quintile	0.448	0.209	0.068	0.142	0.223	*
Second quintile	0.309	0.055	0.028	0.000	0.072	
Middle quintile	0.129	-0.035	-0.072	-0.035	-0.027	
Fourth quintile	-0.022	-0.133	-0.182	-0.160	-0.120	
Highest quintile	-0.136	-0.223	-0.265	-0.242	-0.217	
Spearman correlation	-0.384	-0.350	-0.343	-0.328	-0.339	
Pearson correlation	-0.245	-0.215	-0.230	-0.229	-0.217	
N. financial problems						
Bottom quintile	1.992	1.581	1.283	1.401	1.569	*
Second quintile	1.637	1.210	1.166	1.148	1.241	
Middle quintile	1.289	0.992	0.954	1.046	1.033	
Fourth quintile	1.003	0.815	0.741	0.797	0.854	
Highest quintile	0.786	0.676	0.602	0.644	0.686	
Spearman correlation	-0.358	-0.310	-0.304	-0.292	-0.302	
Pearson correlation	-0.268	-0.223	-0.228	-0.236	-0.217	
N	8514	8012	7542	6971	122,231	

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 adults in the bottom income quintile in the BHPS sample had a mean income-adjusted financial capability score of 0.253, compared to 0.031 for those in the highest income quintile. 'Average' shows data pooled from waves 1 to 16. * indicates that the average scores by income category over the sample period are significantly different at the 5% level.

Focusing initially on the income-adjusted incapability index, we find (by construction) an average Pearson correlation coefficient with income of zero, although there are deviations from zero across time. (The average Spearman rank correlation coefficient, however, is non-zero, although still small, which suggests that the normality distribution assumption may not hold.) Despite the average zero correlation, there are statistically significant differences in the income-adjusted index across income quintiles.

However, these are generally not systematically related to income levels as, for example, those in the highest income quintile have higher average index scores

(indicating lower financial capability) than those in lower income quintiles. On average those in the highest income quintile have an average index score of 0.015, compared with an average of –0.05 for those in the middle and fourth quintile. This indicates that there are significant factors other than income that determine an individual’s financial capability.

As we would expect, the correlations are much larger between income and financial incapability when using the income-unadjusted measures. The income-unadjusted index has a Spearman rank correlation coefficient with income of –0.339, indicating that people with higher incomes have lower financial incapability. Furthermore, the average income-unadjusted index declines monotonically as income increases. For example, people in the bottom income quintile have an average income-unadjusted index score of 0.223, compared to –0.027 for those in the middle income quintile and –0.217 for those in the highest income quintile. This pattern is evident across the whole period, and is also evident when looking at the number of financial problems. For example, on average over the period, people in the bottom income quintile suffered from more than double the number of financial problems than those in the highest income quintile (1.569 financial problems compared with 0.686). The Financial Services Baseline Survey also found that those with low incomes struggled to make ends meet, but that to some extent financial incapability was evident at higher income levels.

Table 21: Mean changes in financial incapability by income changes: BHPS 1991–2006

	Means of financial incapability indices			N
	<i>t</i> –1	<i>t</i>	Change	
Sample average				95935
Income-adjusted	–0.020	–0.032	–0.012	
Income-unadjusted	–0.013	–0.028	–0.015	
Number financial problems	1.077	1.053	–0.024	
Income increase > 10%				33267
Income-adjusted	–0.007	–0.000	0.006	
Income-unadjusted	0.041	–0.035	–0.076	
Number financial problems	1.183	1.019	–0.164	
Income fell > 10%				26615
Income-adjusted	0.035	–0.004	–0.039	
Income-unadjusted	0.000	0.055	0.055	
Number financial problems	1.104	1.242	0.138	

Notes: Table reads that individuals who experienced an increase in real monthly equivalised gross household income exceeding 10% between two consecutive years on average experienced an increase in their income-adjusted financial incapability from –0.007 to –0.000.

Table 21 focuses on the dynamics of the relationship between financial incapability and income, by focusing on the changes in financial incapability experienced by individuals who had increases and falls of greater than 10% in their real monthly equivalised gross household income. (Of course we are not assuming that a 10% change in income will be comparable across the income distribution, but it provides a convenient cut off for comparisons.) The income-unadjusted index and the number of financial problems reveal the relationships we would expect to find – substantial increases in household income are associated with falls in financial incapability while

substantial falls in household income are associated with increases in financial incapability.

Those who experience a 10% drop in income suffer an increase of 12% in the number of financial problems they face, while those that experience an increase of at least 10% in their income face 14% fewer financial problems. However, a different pattern emerges with the income-adjusted index. According to this index, individuals who experience substantial increases in their household income experience an increase in their financial incapability, and vice-versa. This suggests that such income changes are associated with other factors that influence an individual's financial incapability (changes in household composition for example, or in employment status).

Gender

Table 22 summarises mean financial capability by gender. This shows that, adjusting for income, the index of financial incapability does not differ significantly by gender. The averages for men over the sample period are consistently above those for women, indicating higher financial incapability, but these differences are small and not statistically significant. The income-unadjusted index and the number of financial problems measured, however, suggest that women have higher financial incapability than men (0.002 compared with -0.015, and 1.113 compared with 1.071), and that these differences are statistically significant. Furthermore, they persist over the sample period. From this we conclude that women on average have greater financial incapability than men, but that this difference can be explained by differences in incomes between men and women – men do better than women before adjusting for income, but not after.

Table 22: Mean financial incapability by gender: BHPS 1991–2006

	Year				Average
	1991	1996	2001	2006	
Income-adjusted					
Male	0.112	-0.028	-0.079	-0.032	-0.010
Female	0.098	-0.029	-0.081	-0.038	-0.017
Income-unadjusted					
Male	0.143	-0.030	-0.091	-0.060	-0.015 *
Female	0.152	-0.004	-0.068	-0.045	0.002
N. financial problems					
Male	1.327	1.044	0.929	1.009	1.071 *
Female	1.362	1.099	0.990	1.032	1.113
N	8514	8012	7542	6971	122,231

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 men in the BHPS sample had a mean income-adjusted financial capability score of 0.112, compared to 0.098 for women. 'Average' shows data pooled from waves 1 to 16. * indicates that the average scores by gender over the sample period are significantly different at the 5% level.

Age

Table 23 summarises mean financial capability by age category, together with the Spearman rank correlation coefficient measuring the association between age as a continuous variable and the constructed indices. The table indicates a statistically

significant association between age and financial capability using all three indices. In particular, we find that on average financial capability increases with age (that is, the indices get smaller). For example, the mean income-adjusted index of financial incapability for people below 25 years of age is 0.051, compared to –0.158 for people aged 65 and above. This pattern emerges consistently over the sample period.

A similar picture emerges using the income-unadjusted index, although the relationship is less pronounced suggesting that adjusting for income enhances differences in financial capability across age groups. Given that the population mean for these indices is zero (see Tables 11 and 17), this indicates that people aged below 45 have above average financial incapability (below average financial capability), while those aged 55 and above have below average financial incapability (above average financial capability). These results are consistent with those from the Financial Services Baseline Survey, which found that younger people (particularly those under 30) had the most problems managing their finances.

Table 23: Mean financial incapability by age: BHPS 1991–2006

	Year				Average	
	1991	1996	2001	2006		
Income-adjusted						
Under 25	0.175	0.008	–0.034	0.057	0.051	*
25–34	0.257	0.023	0.010	0.029	0.076	
35–44	0.144	0.005	–0.037	0.034	0.034	
45–54	0.133	0.026	–0.086	–0.035	0.008	
55–64	–0.008	–0.074	–0.104	–0.076	–0.063	
65 and above	–0.092	–0.148	–0.198	–0.162	–0.158	
Spearman correlation	–0.117	–0.094	–0.124	–0.100	–0.118	
Income-unadjusted						
Under 25	0.213	0.032	–0.027	0.064	0.067	*
25–34	0.267	–0.013	–0.032	–0.034	0.038	
35–44	0.156	–0.009	–0.066	–0.021	0.012	
45–54	0.127	–0.004	–0.123	–0.090	–0.026	
55–64	0.054	–0.050	–0.090	–0.095	–0.047	
65 and above	0.036	–0.048	–0.115	–0.101	–0.063	
Spearman correlation	–0.033	–0.010	–0.029	–0.016	–0.024	
N. financial problems						
Under 25	1.408	1.116	1.020	1.192	1.178	*
25–34	1.477	1.024	0.976	0.987	1.110	
35–44	1.346	1.057	0.968	1.046	1.095	
45–54	1.319	1.091	0.872	0.924	1.052	
55–64	1.251	1.060	0.968	0.967	1.065	
65 and above	1.236	1.099	0.978	1.030	1.072	
Spearman correlation	–0.011	0.017	0.003	0.014	0.006	
N	8514	8012	7542	6971	122,231	

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 those aged under 25 in the BHPS sample had a mean income-adjusted financial capability score of 0.051, compared to –0.158 for those aged 65 and above. ‘Average’ shows data pooled from waves 1 to 16. * indicates that the average scores by age category over the sample period are significantly different at the 5% level.

The differences in the number of financial problems across age groups are small and, on average over the period, again suggest that financial incapability is more pronounced among younger age groups. However, this pattern is less consistent than with the indices of financial incapability, with some suggestion of a non-linear relationship (that is, the number of financial problems is greatest for the youngest and oldest age groups).

Migration status

Table 24 summarises financial capability by migrant status. The BHPS asks each respondent their country of birth, allowing us to identify people born in a different country. We classify all people who report being born in a country other than Britain as an immigrant. (Clearly we'd expect the impact of being an immigrant to vary considerably depending on the country of origin, but sample size limitations prevent us from disaggregating this further.)

The table indicates that both on average and in all years immigrants have higher financial incapability than native born people, and these differences are statistically significant using all measures. Using the income-adjusted index, immigrants have an average financial capability level of 0.109, compared with -0.021 for natives. This difference is similar when looking at the unadjusted index. Using the number of financial problems, we see that on average over the period, immigrants experience 20% more financial problems than natives (1.292 compared with 1.081).

Table 24: Mean financial incapability by migrant status: BHPS 1991–2006

	Year				Average	
	1991	1996	2001	2006		
Income-adjusted						
Native	0.092	-0.035	-0.083	-0.039	-0.021	*
Foreign born	0.282	0.085	-0.027	0.023	0.109	
Income-unadjusted						
Native	0.135	-0.023	-0.081	-0.056	-0.013	*
Foreign born	0.318	0.100	-0.033	0.009	0.111	
N. financial problems						
Native	1.326	1.062	0.957	1.017	1.081	*
Foreign born	1.608	1.270	1.047	1.087	1.292	
N	8514	8012	7542	6971	122,231	

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 foreign born adults in the BHPS sample had a mean income-adjusted financial capability score of 0.282, compared to 0.092 for people that were native born. 'Average' shows data pooled from waves 1 to 16. * indicates that the average scores by migrant status over the sample period are significantly different at the 5% level.

Marital status

Table 25 summarises the indices of financial incapability by marital status, and shows that financial incapability differs significantly by marital status. Focusing initially on the income-adjusted index, this indicates that, on average, widowed individuals have the lowest financial incapability score of -0.137 (indicating above average financial

capability). The divorced or separated have the highest financial incapability (0.154) indicating below average financial capability. This pattern is consistent over the time period, although there is evidence that in more recent years, financial incapability has increased among the cohabiting relative to other marital status groups.

The income-unadjusted index shows a different pattern, in that the married have the lowest financial incapability (and are on average the most financially capable) while the divorced or separated have the highest average financial incapability. Therefore lower incomes explain some of the high financial incapability among the divorced. The differences in the income-adjusted and unadjusted indices also suggest that the widowed are particularly good at managing their finances (their average incapability index falls when controlling for income). The divorced or separated also suffer the largest average number of financial problems over the period (at 1.49), while the married suffer the fewest at 1.04. Therefore on average the divorced suffer 44% more financial problems than married people.

Table 25: Mean financial incapability by marital status: BHPS 1991–2006

	Year				Average
	1991	1996	2001	2006	
Income-adjusted					
Married	0.075	-0.050	-0.106	-0.069	-0.040 *
Cohabiting	0.362	0.064	0.008	0.111	0.102
Widowed	-0.058	-0.126	-0.185	-0.156	-0.137
Divorced/separated	0.401	0.132	0.048	0.045	0.154
Single never married	0.095	-0.015	-0.054	-0.011	0.006
Income-unadjusted					
Married	0.108	-0.051	-0.113	-0.096	-0.043 *
Cohabiting	0.359	0.001	-0.033	0.050	0.049
Widowed	0.078	-0.013	-0.100	-0.096	-0.034
Divorced/separated	0.482	0.196	0.090	0.066	0.207
Single never married	0.129	0.002	-0.055	-0.020	0.015
N. financial problems					
Married	1.281	1.015	0.913	0.952	1.036 *
Cohabiting	1.656	1.100	1.033	1.175	1.160
Widowed	1.313	1.138	0.982	1.002	1.102
Divorced/separated	1.964	1.510	1.244	1.295	1.490
Single never married	1.269	1.057	0.953	1.025	1.085
N	8514	8012	7542	6971	122,231

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 the widowed in the BHPS sample had a mean income-adjusted financial capability score of -0.137, compared to 0.154 for the divorced or separated. 'Average' shows data pooled from waves 1 to 16. * indicates that the average scores by marital status over the sample period are significantly different at the 5% level.

However, Table 25 focuses on levels of financial incapability rather than change. The advantage of panel data is that we can examine how financial incapability changes over time and how this is associated with other life events. In Table 26 we examine how changes in financial incapability between two consecutive years are associated with changes in marital status over the same period.

This table shows quite clearly that getting married is associated with a relative improvement in financial capability – on average people who get married experience a reduction in their financial incapability scores, and this reduction is larger (more than double) than the average year-on-year reduction experienced by the sample as a whole. For example, using the income-adjusted measure we see that individuals who married had a financial incapability score of 0.059 in the year before they were married and of 0.034 in the year after marriage. This is a fall in financial incapability of 0.029, compared to a sample average fall of 0.012.

In contrast, it is clear that those who suffer the death of a partner or who divorce or separate experience increases in their financial incapability. The average changes in the indices for such individuals are positive and are especially large for those who experience a marital dissolution. For example, those who divorce experience an increase in their income-adjusted financial incapability index from 0.133 to 0.249. This is an increase in the index of 0.116, compared to an average fall of –0.012. Clearly spousal bereavement and marital dissolution are associated with large increases in financial incapability. This may also reflect people’s ability to plan for particular events. For example, getting married is typically planned well in advance, and this may involve financial arrangements after the event. However, spousal bereavement and/or marital dissolution may occur more suddenly and without the same degree of financial forethought.

Table 26: Mean changes in financial incapability by changes in marital status: BHPS 1991–2006

	Means of financial incapability indices			N
	<i>t</i> –1	<i>t</i>	Change	
Sample average				95935
Income-adjusted	–0.020	–0.032	–0.012	
Income-unadjusted	–0.013	–0.028	–0.015	
Number financial problems	1.077	1.053	–0.024	
Got Married				1872
Income-adjusted	0.059	0.034	–0.029	
Income-unadjusted	0.002	–0.042	–0.046	
Number financial problems	1.049	0.996	–0.052	
Became Widow				512
Income-adjusted	–0.080	–0.078	0.001	
Income-unadjusted	0.009	0.020	0.012	
Number financial problems	1.176	1.250	0.074	
Became Divorced/separated				843
Income-adjusted	0.133	0.249	0.116	
Income-unadjusted	0.146	0.291	0.145	
Number financial problems	1.360	1.708	0.349	

Notes: Table reads, for example, that individuals who got married between two consecutive years on average experienced a fall in their income-adjusted financial incapability from 0.059 before the marriage to 0.034 post-marriage.

Number of children

Table 27 shows that average financial incapability scores vary significantly with the number of children. In particular, we find that those with no children have the lowest average financial incapability while those with four or more children have the highest, and this pattern is evident using all three measures. For example, individuals with no children have an average income-adjusted index of financial incapability score of –0.046 (and suffer from 1.04 financial problems), compared to 0.147 (and 1.583 financial problems) for those with four or more children. Although consistent over the time period, this relationship is non-monotonic. Adjusting for income reduces the differences in averages by number of children, suggesting that these are partly explained by differences in (equivalised) household income.

Table 27: Mean financial incapability by number of children: BHPS 1991–2006

	Year				Average	
	1991	1996	2001	2006		
Income-adjusted						
0	0.046	–0.054	–0.107	–0.071	–0.046	*
1	0.253	0.105	–0.014	0.086	0.097	
2	0.216	–0.029	0.019	0.059	0.047	
3	0.320	0.051	–0.048	–0.016	0.086	
4 or more	0.424	0.141	–0.103	0.305	0.147	
Income-unadjusted						
0	0.083	–0.046	–0.108	–0.088	–0.041	*
1	0.288	0.101	–0.032	0.059	0.087	
2	0.273	–0.000	0.028	0.042	0.066	
3	0.408	0.123	0.012	0.008	0.150	
4 or more	0.563	0.276	0.022	0.353	0.264	
N. financial problems						
0	1.240	1.025	0.915	0.970	1.037	*
1	1.584	1.271	1.029	1.184	1.247	
2	1.542	1.072	1.135	1.144	1.191	
3	1.765	1.352	1.106	1.175	1.359	
4 or more	2.084	1.625	1.164	1.557	1.583	
N	8514	8012	7542	6971	122,231	

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 those with no children in the BHPS sample had a mean income-adjusted financial capability score of 0.046, compared to 0.424 for those with four or more children. ‘Average’ shows data pooled from waves 1 to 16. * indicates that the average scores by number of children over the sample period are significantly different at the 5% level.

Table 28: Mean changes in financial incapability by the birth of an additional child: BHPS 1991–2006

	Means of financial incapability indices			N
	<i>t</i> -1	<i>t</i>	Change	
Sample average				95935
Income-adjusted	-0.020	-0.032	-0.012	
Income-unadjusted	-0.013	-0.028	-0.015	
Number financial problems	1.077	1.053	-0.024	
Has an additional child				3358
Income-adjusted	0.112	0.160	0.048	
Income-unadjusted	0.061	0.141	0.080	
Number financial problems	1.185	1.405	0.220	

Notes: Table reads, for example, that individuals who had an additional child between two consecutive years on average experienced an increase in their income-adjusted financial incapability from 0.112 to 0.160.

This focuses on levels of financial incapability, rather than change. Instead, Table 28 focuses on the change in financial incapability associated with the birth of an additional child. This suggests that the birth of a child is associated with increases in financial incapability, irrespective of the index used. For example, the income-adjusted index of financial incapability for individuals who experience an additional child in the household increases from 0.112 to 0.160. This represents an increase in incapability of 0.048, compared to a fall of 0.012 for the sample as a whole. Those with an additional child face an increase in the number of financial problems from 1.185 to 1.405 (or 19%). Financial incapability is positively related to family formation, despite the fact that typically families are planned in advance.

Household type and size

Table 29 looks at the relationship between the types of household in which the individual lives and their financial incapability in more detail. The results suggest that average financial incapability differs significantly between household types.

Focusing initially on the income-adjusted measure, we find that the lowest average index scores (indicating the highest level of financial capability) are found among the single elderly (-0.166), while couples with no children and couples with non-dependent children also have below average index scores. The highest average index scores (indicating the lowest financial capability) are found among lone parents (0.112) and adults living in unrelated multi-occupant households (0.208). Lone parents face almost 50% more financial problems than couples with no children (1.422 compared with 0.966). The Financial Services Baseline Survey reports similar findings.

The general pattern remains unchanged when we focus on the income-unadjusted index, with individuals in couples with no children, with non-dependent children and single pensioners having the highest financial capability and lone parents and those living in households with unrelated adults having the lowest financial capability. (This pattern also emerges when looking at the number of financial problems.) The average

index for lone parents and the single elderly is lower once we adjust for income – indicating that part of their financial incapability is caused by relatively low income. In contrast, the index increases for the single non-elderly, adults in couples with no children, couples with non-dependent children and in households with unrelated adults once we adjust for income, indicating that part of their financial capability is associated with higher income levels.

Table 29: Mean financial incapability by household type: BHPS 1991–2006

	Year				Average	
	1991	1996	2001	2006		
Income-adjusted						
Single non-elderly	0.266	0.122	0.019	0.047	0.097	*
Single elderly	-0.084	-0.149	-0.210	-0.183	-0.166	
Couple no children	0.005	-0.076	-0.135	-0.108	-0.078	
Couple dependent children	0.188	-0.010	-0.045	0.039	0.038	
Couple non-dependent children	0.045	-0.045	-0.077	-0.077	-0.038	
Lone parent	0.294	0.062	0.035	0.095	0.112	
2+ unrelated adults	0.155	0.229	0.142	0.024	0.208	
Other households	0.229	-0.056	-0.171	0.112	0.004	
Income-unadjusted						
Single non-elderly	0.276	0.118	0.001	0.005	0.081	*
Single elderly	0.072	-0.019	-0.110	-0.116	-0.048	
Couple no children	0.028	-0.096	-0.147	-0.137	-0.092	
Couple dependent children	0.232	0.001	-0.050	0.014	0.042	
Couple non-dependent children	0.046	-0.068	-0.121	-0.138	-0.069	
Lone parent	0.391	0.140	0.090	0.151	0.183	
2+ unrelated adults	0.179	0.233	0.105	-0.038	0.184	
Other households	0.257	-0.038	-0.120	0.123	0.024	
N. financial problems						
Single non-elderly	1.566	1.298	1.052	1.106	1.222	*
Single elderly	1.298	1.144	0.977	0.988	1.088	
Couple no children	1.156	0.952	0.871	0.899	0.966	
Couple dependent children	1.464	1.079	0.998	1.101	1.148	
Couple non-dependent children	1.155	0.940	0.867	0.862	0.961	
Lone parent	1.773	1.339	1.221	1.371	1.422	
2+ unrelated adults	1.477	1.614	1.171	0.966	1.422	
Other households	1.365	1.092	0.858	1.215	1.106	
N	8514	8012	7542	6971	122,231	

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 adults in single non-elderly households in the BHPS sample had a mean income-adjusted financial capability score of 0.266, compared to -0.084 for those in single elderly households. 'Average' shows data pooled from waves 1 to 16. * indicates that the average scores by household type category over the sample period are significantly different at the 5% level.

In Table 30 we examine a different dimension of the household: household size (measured by the number of people – both adults and children – living in the household). In this context, adjusting for income makes a difference – presumably because the income-adjustment used equivalent income which takes into account household needs. We see, for example, that in the income-*unadjusted* index and

number of financial problems, there is little systematic relationship between financial incapability and household size. While people in large households (with six or more individuals) have the highest financial incapability (and 30% more financial problems than single person households), there is no systematic pattern that emerges in smaller households.

However, when adjusting for income, we see that people in small households have higher financial capability than those in larger households. People in one or two person households have above average financial capability (average income-adjusted scores of less than zero), while those in three, five or six or more person households have below average financial capability (average scores of greater than zero).

Table 30: Mean financial incapability by household size: BHPS 1991–2006

	Year				Average	
	1991	1996	2001	2006		
Income-adjusted						
1	0.053	-0.032	-0.107	-0.079	-0.052	*
2	0.011	-0.066	-0.111	-0.093	-0.059	
3	0.175	0.025	-0.050	0.032	0.036	
4	0.134	-0.037	-0.036	-0.012	0.009	
5	0.207	0.001	-0.071	-0.017	0.028	
6 or more	0.402	0.069	-0.083	0.299	0.156	
Income-unadjusted						
1	0.152	0.040	-0.060	-0.062	0.008	*
2	0.038	-0.074	-0.119	-0.115	-0.064	
3	0.199	0.006	-0.074	-0.016	0.016	
4	0.170	-0.024	-0.047	-0.039	0.007	
5	0.265	0.042	-0.055	-0.010	0.060	
6 or more	0.506	0.158	0.014	0.357	0.242	
N. financial problems						
1	1.403	1.211	1.010	1.041	1.146	*
2	1.175	0.988	0.912	0.928	1.011	
3	1.430	1.108	0.946	1.059	1.120	
4	1.344	1.012	0.977	1.023	1.081	
5	1.518	1.136	1.017	1.092	1.182	
6 or more	1.931	1.444	1.184	1.630	1.507	
N	8437	7908	7417	6874	120482	

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 adults in single person households in the BHPS sample had a mean income-adjusted financial capability score of 0.053, compared with 0.402 for those in households with six or more persons. 'Average' shows data pooled from waves one to 16. * indicates that the average scores by employment status over the sample period are significantly different at the 5% level.

Table 31 looks at how the financial capability indices change when the size of the household in which people live changes and compares these changes with those for the sample as a whole. This suggests that people’s relative financial capability falls if their household changes size, irrespective of direction. For example, those in households that get bigger between year $t-1$ and t experience very small improvements to their financial capability according to the income-adjusted and income-unadjusted indices (of 0.001 and 0.007 respectively), but these improvements are smaller than for the sample as a whole (0.012 and 0.015 respectively). They experience a small (2%) increase in the number of financial problems they face. Those living in households that got smaller experience increases in their financial incapability, from 0.077 to 0.104 in the income-adjusted index and from 0.063 to 0.097 in the income-unadjusted index. They also face an 8% increase in the number of financial problems (from 1.198 to 1.297).

Table 31: Mean changes in financial incapability by household size changes: BHPS 1991–2006

	Means of financial incapability indices			N
	$t-1$	t	Change	
Sample average				95935
Income-adjusted	–0.020	–0.032	–0.012	
Income-unadjusted	–0.013	–0.028	–0.015	
Number financial problems	1.077	1.053	–0.024	
Household size increased				6810
Income-adjusted	0.120	0.119	–0.001	
Income-unadjusted	0.096	0.089	–0.007	
Number financial problems	1.255	1.279	0.023	
Household size fell				7759
Income-adjusted	0.077	0.104	0.027	
Income-unadjusted	0.063	0.097	0.033	
Number financial problems	1.198	1.297	0.099	

Notes: Table reads that individuals who lived in a household with more people at t than at $t-1$ on average experienced a fall in their income-adjusted financial incapability from 0.120 to 0.119.

Health status

At each wave of the BHPS, individuals are asked to assess their current health status. In particular, they are asked “Please think back over the last 12 months about how your health has been. Compared to people of your own age, would you say that your health has on the whole been Excellent, Good, Fair, Poor or Very poor?” For the purposes of this analysis we have collapsed this into being in good health (reporting excellent or good) and being in poor health (reporting fair, poor or very poor).

Table 32 looks at the relationship between an individual’s health status and their financial incapability. The results suggest that average financial incapability differs significantly by health. Focusing initially on the income-adjusted measure, we find that the lowest average index scores (indicating the highest level of financial capability) are found among those in good health (–0.043), while those in fair or poor health have above average scores (0.054).

The general pattern remains unchanged when we focus on the income-unadjusted index, with individuals in good health reporting consistently lower financial incapability than those in fair or poor health. (This pattern also emerges when looking at the number of financial problems, where those in fair or poor health suffer from 32% more financial problems than those in good or excellent health.) This suggests a strong correlation between self-assessed health status and financial incapability. Part of this may be explained by other factors associated with health, such as employment status. Our multivariate analysis described later sheds further light on these complex relationships.

Table 32: Mean financial incapability by health status: BHPS 1991–2006

	Year				Average
	1991	1996	2001	2006	
Income-adjusted					*
In good health	0.070	−0.067	−0.110	−0.064	−0.043
In fair, poor, very poor health	0.200	0.059	−0.014	0.032	0.054
Income-unadjusted					*
In good health	0.098	−0.071	−0.125	−0.097	−0.052
In fair, poor, very poor health	0.284	0.108	0.025	0.056	0.101
N. financial problems					*
In good health	1.243	0.954	0.867	0.933	0.998
In fair, poor, very poor health	1.624	1.346	1.172	1.232	1.314
N	8514	8012	7542	6971	121946

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 adults in good health in the BHPS sample had a mean income-adjusted financial capability score of −0.043, compared to 0.054 for those in fair, poor or very poor health. ‘Average’ shows data pooled from waves one to 16. * indicates that the average scores by household type category over the sample period are significantly different at the 5% level.

In Table 33 we examine how changes in financial incapability between two consecutive years are associated with changes in health status over the same period. This table shows quite clearly that an improvement in health status (moving from fair or poor health to good or excellent health) is associated with a relative improvement in financial capability – on average people whose health improves experience a reduction in their financial incapability scores, and this reduction is larger (more than double) than the average year-on-year reduction experienced by the sample as a whole.

For example, using the income-adjusted measure we see that individuals who experienced an improvement in their health had a financial incapability score of 0.033 in the year prior to the improvement and of −0.005 in the year after the improvement. This is a fall in financial incapability of 0.038, compared to a sample average fall of 0.012. In contrast, it is clear that those who suffer deteriorations in their health status experience increases in their financial incapability. The average changes in the indices for such individuals are positive. For example, those whose health deteriorates from excellent or good to fair or poor experience an increase in their income-adjusted financial incapability index from 0.010 to 0.028. This represents an increase the index of 0.019, compared to an average fall of −0.012. Clearly health and financial incapability are strongly related.

**Table 33: Mean changes in financial incapability by changes in health status:
BHPS 1991–2006**

	Means of financial incapability indices			N
	<i>t</i> -1	<i>t</i>	Change	
Sample average				95935
Income-adjusted	-0.020	-0.032	-0.012	
Income-unadjusted	-0.013	-0.028	-0.015	
Number financial problems	1.077	1.053	-0.024	
Entered good health				8594
Income-adjusted	0.033	-0.005	-0.038	
Income-unadjusted	0.051	0.009	-0.042	
Number financial problems	1.200	1.121	-0.078	
Left good health				9356
Income-adjusted	0.010	0.028	0.019	
Income-unadjusted	0.031	0.048	0.016	
Number financial problems	1.158	1.196	0.038	

Notes: Table reads that individuals who experienced an in health between two consecutive years on average experienced fall in their income-adjusted financial incapability from 0.033 to -0.005.

Education levels

Table 34 presents summaries of the indices of financial incapability by education, and shows that financial incapability differs significantly by education levels across all three measures.

Both the income-unadjusted index and the number of financial problems reveal a monotonic relationship with education. That is, the most highly educated who hold higher or first degrees have the lowest average income-unadjusted index scores (-0.152 and -0.099) and the fewest average number of financial problems (0.838 and 0.910), while the least educated with no qualifications have the highest average income-unadjusted index score (0.066) and the most financial problems (1.265). Furthermore, the average index and number of financial problems rise with each successively lower education level – those with no qualifications suffer 50% more financial problems than those with a first or higher degree.

However, when adjusting for income the pattern changes completely, and the monotonic relationship between financial incapability and education disappears. The highest average income-adjusted index score (indicating low financial capability) is for those with a first degree (0.017), while the lowest is for those with other higher qualifications (-0.029). These findings suggest that the large differences in financial capability between the more educated and the less educated is related to differences in income levels associated with education attained rather than the level of education itself. This has important implications, as it suggests that raising general education levels will not directly improve financial capability itself, and will only do so through an income effect.

Table 34: Mean financial incapability by education level: BHPS 1991–2006

	Year				Average	
	1991	1996	2001	2006		
Income-adjusted						
Higher degree	-0.015	-0.070	0.029	-0.067	-0.004	*
First degree	0.098	0.003	-0.038	-0.014	0.017	
Other higher qualification	0.023	-0.042	-0.079	-0.030	-0.029	
A-Levels or equivalent	0.123	-0.003	-0.081	-0.011	0.003	
GCSEs or equivalent	0.124	-0.032	-0.085	-0.029	-0.011	
Other qualifications	0.145	-0.040	-0.080	-0.004	-0.006	
No qualifications	0.118	-0.028	-0.105	-0.087	-0.022	
Income-unadjusted						
Higher degree	-0.131	-0.210	-0.094	-0.232	-0.152	*
First degree	0.012	-0.107	-0.155	-0.131	-0.099	
Other higher qualification	0.011	-0.074	-0.112	-0.071	-0.061	
A-Levels or equivalent	0.136	-0.016	-0.101	-0.033	-0.012	
GCSEs or equivalent	0.159	-0.021	-0.069	-0.024	0.002	
Other qualifications	0.209	0.008	-0.025	0.038	0.047	
No qualifications	0.220	0.060	-0.025	-0.016	0.066	
N. financial problems						
Higher degree	0.777	0.761	0.923	0.661	0.838	*
First degree	1.052	0.884	0.804	0.864	0.910	
Other higher qualification	1.066	0.960	0.882	0.981	0.982	
A-Levels or equivalent	1.281	1.039	0.885	1.028	1.059	
GCSEs or equivalent	1.350	1.033	0.974	1.074	1.081	
Other qualifications	1.453	1.124	1.076	1.188	1.188	
No qualifications	1.526	1.258	1.104	1.124	1.265	
N	8514	8012	7542	6971	122,231	

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 adults holding a higher degree in the BHPS sample had a mean income-adjusted financial capability score of -0.015, compared to 0.118 for those with no qualifications. 'Average' shows data pooled from waves 1 to 16. * indicates that the average scores by education category over the sample period are significantly different at the 5% level.

Housing

The BHPS collects a range of information on housing and housing characteristics that we relate to financial capability. The relationship between financial incapability and housing tenure is summarised in Table 35. This shows a statistically significant relationship between housing tenure and all three measures of financial incapability, and that home owners without a mortgage have the greatest financial capability (lowest values on average) while tenants have the lowest financial capability (highest values on average).

For example, the average income-adjusted index for individuals who own their own home with no mortgage is -0.184, while for private tenants it is 0.124. This pattern emerges consistently over the sample period and for all three measures. Adjusting for income reduces the differentials between housing tenure groups, and has a particularly large effect for local authority tenants, indicating that part of their financial incapability stems from relatively low income. Private tenants suffer from 50% more

financial problems than those who own their home outright, and 35% more than those with a mortgage. These results are consistent with those found in the Financial Services Baseline Survey, which found that home-owners were most able to make ends meet while tenants (and those in social housing in particular) had most problems planning ahead.

Table 35: Mean financial incapability by housing tenure: BHPS 1991–2006

	Year				Average	
	1991	1996	2001	2006		
Income-adjusted						
Own home outright	-0.199	-0.194	-0.200	-0.171	-0.184	*
Own home mortgage	0.143	-0.005	-0.064	0.008	0.017	
Local authority rent	0.301	0.063	0.010	0.038	0.098	
Private rent	0.180	0.115	0.075	0.137	0.124	
Income-unadjusted						
Own home outright	-0.125	-0.153	-0.166	-0.155	-0.146	*
Own home mortgage	0.129	-0.052	-0.118	-0.067	-0.035	
Local authority rent	0.429	0.175	0.101	0.116	0.206	
Private rent	0.238	0.143	0.100	0.135	0.149	
N. financial problems						
Own home outright	0.935	0.884	0.865	0.899	0.906	*
Own home mortgage	1.262	0.967	0.862	0.958	1.003	
Local authority rent	1.873	1.434	1.283	1.314	1.480	
Private rent	1.535	1.398	1.236	1.326	1.358	
N	8514	8012	7542	6971	122,231	

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 adults owning their home outright in the BHPS sample had a mean income-adjusted financial capability score of -0.199, compared to 0.180 for those in privately rented accommodation. 'Average' shows data pooled from waves one to 16. * indicates that the average scores by housing tenure category over the sample period are significantly different at the 5% level.

Table 36: Mean changes in financial incapability by becoming a home-owner: BHPS 1991–2006

	Means of financial incapability indices			N
	$t-1$	t	Change	
Sample average				95935
Income-adjusted	-0.020	-0.032	-0.012	
Income-unadjusted	-0.013	-0.028	-0.015	
Number financial problems	1.077	1.053	-0.024	
Became a home-owner				2203
Income-adjusted	-0.059	-0.157	-0.098	
Income-unadjusted	-0.073	-0.168	-0.095	
Number financial problems	0.970	0.820	-0.150	

Notes: Table reads that individuals who became a home-owner between two consecutive years on average experienced a fall in their income-adjusted financial incapability from -0.059 to -0.157.

Table 36 introduces some dynamics by focusing on the change in financial incapability associated with becoming a home-owner. This indicates that those who

become home-owners have lower than average financial incapability both before and after buying a property. This suggests that those buying their own home have above average financial capability. However, they also experience a larger than average reduction in their financial incapability. For example, individuals who become a home-owner have an average income-adjusted index of financial incapability of -0.059 (compared to -0.020 for the sample as a whole), and this falls to -0.157 after the event. Therefore their financial incapability falls by 0.098 compared to a sample average fall of 0.012 .

As well as housing tenure, at each year the BHPS asks home-owners to estimate the value of the house they currently live in and the size of their monthly housing costs (either in the form of rent or mortgage payments). We use the former as an approximation to wealth, as it is the only measure of wealth that is available at all 16 waves of the BHPS, while the latter provides some indication of housing debt. We summarise the correlations between current house value and monthly housing payments (deflated to January 2006 prices) and our measures of financial incapability in Table 37. We present correlations both including non-owners (who are allocated a house value of zero) and excluding them.

The correlations with house value highlight a number of notable patterns. Firstly, we find that the correlations are relatively small, suggesting that financial incapability is only weakly correlated with wealth, as measured by current house value. Focusing on the income-unadjusted measures, we find that financial incapability is negatively correlated with house value, indicating that wealthier individuals have lower financial incapability (and higher financial capability). This pattern emerges with both the income-unadjusted index of financial incapability and the number of financial problems.

Table 37: Correlations between financial incapability and current house value and housing costs: BHPS 1991–2006

	Year				Average
	1991	1996	2001	2006	
Income-adjusted					
House value all	-0.143	-0.064	-0.016	-0.013	-0.066
House value home-owners	-0.026	0.021	0.090	0.060	0.039
Housing costs	0.187	0.181	0.178	0.185	0.182
Income-unadjusted					
House value all	-0.254	-0.231	-0.191	-0.184	-0.227
House value home-owners	-0.116	-0.108	-0.077	-0.098	-0.096
Housing costs	0.042	0.002	-0.017	-0.004	-0.004
N. financial problems					
House value all	-0.212	-0.186	-0.142	-0.132	-0.180
House value home-owners	-0.077	-0.065	-0.024	-0.041	-0.050
Housing costs	0.031	-0.009	-0.027	-0.024	-0.016

Notes: Table shows Spearman rank correlation coefficients. House values deflated to 2006 January prices. 'Average' shows data pooled from waves one to 16.

In addition, the correlation is stronger when tenants are included (and given a house value of 0), suggesting that financial capability is in fact only very weakly correlated with wealth. When adjusting for income, the correlations between housing wealth and financial incapability become even smaller, indicating that much of the correlation was associated with income.

The income-unadjusted index and number of financial problems exhibit weak (and on average negative) correlations with housing costs, suggesting that there is little systematic relationship between the size of an individual's housing payments and their financial capability. However, when adjusting for income, we find a positive correlation between housing costs and financial incapability (an average Spearman rank correlation coefficient of 0.185) – people who have higher housing payments have lower financial capability once we allow for the fact that they also have higher incomes than those with lower housing payments.

Labour market variables

Table 38 summarises our measures of financial incapability by employment status, employment status of the spouse (if married) and whether or not the individual currently signs on at an unemployment benefit office. Focusing initially on current employment status, the table shows significant differences for all three measures. For the purposes of this report, we have distinguished between full-time and part-time employees, and also the self-employed. Furthermore, we have separated the economically inactive into those who are inactive and would not like a job, and those who are inactive but would like to work if their circumstances permit it.

The table shows that the highest average financial incapability is found for the unemployed. The average income-adjusted index score for the unemployed is 0.355, while the income-unadjusted score is 0.461. Therefore even after adjusting for income, the unemployed have significantly higher financial incapability than average. They also suffer from an average of two financial problems. Economically inactive individuals who would like a job also have above average financial incapability. The table shows that they have an average income-adjusted score of 0.201 and an income-unadjusted score of 0.299. Again therefore, income cannot completely explain the relatively low financial capability among this group.

The table indicates that the lowest financial incapability (and highest financial capability) is found among those in employment and the retired. Those in full-time employment have an average income-unadjusted score of -0.086 , indicating below average financial incapability, while the retired have an average income-unadjusted score of -0.057 . A similar pattern emerges using the number of financial problems. Those in full-time employment have on average 0.87 financial problems, compared with about 1.1 for those in part-time employment, self-employment and retirement, while the unemployed suffer from more than two financial problems. Therefore the unemployed on average have more than twice the number of financial problems as those in full-time work.

Adjusting for income only changes this picture slightly for those in employment. However, the average index falls considerably for the retired when adjusted for

income, from -0.057 to -0.149 . Therefore average financial capability increases when adjusting for income, suggesting that the retired are able to manage their finances well given their income level. Our findings are consistent with those from the Financial Services Baseline Survey, which found that the unemployed in particular had problems in making ends meet.

Table 38: Mean financial incapability by employment status: BHPS 1991–2006

	Year				Average	
	1991	1996	2001	2006		
Income-adjusted						
Full-time employee	0.059	-0.039	-0.066	-0.022	-0.012	*
Part-time employee	0.104	-0.040	-0.052	-0.023	-0.013	
Self-employed	0.232	-0.051	-0.069	-0.043	0.011	
Unemployed	0.597	0.290	0.246	0.325	0.355	
Inactive not like job	0.073	0.052	-0.038	0.017	0.027	
Inactive like job	0.398	0.132	0.077	0.141	0.201	
Retired	-0.078	-0.144	-0.187	-0.157	-0.149	
Spouse employed	0.095	-0.032	-0.063	-0.029	-0.008	*
Signed on	0.689	0.324	0.327	0.375	0.410	*
Income-unadjusted						
Full-time employee	0.027	-0.109	-0.148	-0.120	-0.086	*
Part-time employee	0.144	-0.024	-0.046	-0.040	-0.006	
Self-employed	0.241	-0.086	-0.065	-0.066	-0.001	
Unemployed	0.718	0.389	0.345	0.418	0.461	
Inactive not like job	0.171	0.116	0.016	0.065	0.089	
Inactive like job	0.514	0.236	0.167	0.216	0.299	
Retired	0.049	-0.045	-0.102	-0.097	-0.057	
Spouse employed	0.080	-0.088	-0.121	-0.108	-0.065	*
Signed on	0.816	0.431	0.444	0.506	0.530	*
N. financial problems						
Full-time employee	1.037	0.831	0.772	0.831	0.873	*
Part-time employee	1.311	1.017	0.970	0.991	1.051	
Self-employed	1.491	0.896	0.966	0.972	1.090	
Unemployed	2.512	1.993	1.868	1.953	2.076	
Inactive not like job	1.454	1.365	1.183	1.273	1.309	
Inactive like job	2.059	1.586	1.450	1.540	1.705	
Retired	1.274	1.110	1.009	1.039	1.092	
Spouse employed	1.188	0.907	0.862	0.889	0.956	*
Signed on	2.707	2.049	2.052	2.090	2.192	*
N	8437	7908	7417	6874	120482	

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 adults in full-time employment in the BHPS sample had a mean income-adjusted financial capability score of 0.059, compared to 0.597 for those in unemployment. ‘Average’ shows data pooled from waves one to 16. * indicates that the average scores by employment status over the sample period are significantly different at the 5% level.

The table also suggests that, according to the income-adjusted index and the number of financial problems, those with an employed spouse enjoy higher than average financial capability. The average income-adjusted index is less than zero, while they experience less than one financial problem on average. However, the income-adjusted index is very close to 0, suggesting that their above average financial capability is largely explained by higher income levels.

Individuals who currently sign on at an unemployment benefit office suffer much higher than average financial incapability, and this is apparent across all three measures. They have an average income-adjusted index of 0.41, an income-unadjusted index of 0.53 and suffer from 2.192 financial problems. These are substantially higher than the average for the unemployed in general, which may reflect that those who sign on are a selected subset of the unemployed who face considerable financial problems. The more financially capable unemployed may choose not to sign on.

In Table 39 we look at employment patterns at the household level and their association with financial capability. The income-unadjusted index and the number of financial problems indicate that people's financial capability is better when there are more employed people in the household. Those living in households where there are two, three or four or more employed people have above average financial capability (the average value of the index is negative). Those in households with no employed people face 61% more financial problems than those in households containing four or more employed people (0.798 compared with 1.288). However, this pattern is less pronounced using the income-adjusted index, indicating that part of this relationship is due to the higher income levels resulting from having more people in employment. The income-adjusted index suggests that households in which there are no people employed and in which there are four or more people employed have the highest financial capability.

Table 39: Mean financial incapability by number employed in household: BHPS 1991–2006

	Year				Average	
	1991	1996	2001	2006		
Income-adjusted						
0	0.067	-0.050	-0.149	-0.100	-0.069	*
1	0.193	0.015	-0.017	0.027	0.046	
2	0.099	-0.031	-0.071	-0.019	-0.003	
3	0.059	-0.062	-0.063	-0.024	-0.027	
4 or more	-0.049	-0.047	-0.119	-0.111	-0.063	
Income-unadjusted						
0	0.221	0.076	-0.040	-0.013	0.051	*
1	0.239	0.030	-0.007	0.012	0.060	
2	0.077	-0.096	-0.134	-0.097	-0.065	
3	0.046	-0.083	-0.123	-0.075	-0.071	
4 or more	-0.088	-0.098	-0.183	-0.210	-0.127	
N. financial problems						
0	1.588	1.346	1.115	1.171	1.288	*
1	1.508	1.151	1.096	1.134	1.210	
2	1.158	0.880	0.814	0.903	0.940	
3	1.120	0.853	0.819	0.944	0.919	
4 or more	0.825	0.839	0.748	0.660	0.798	
N	8437	7908	7417	6874	120482	

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 adults in the BHPS living in households where no one was employed had a mean income-adjusted financial capability score of 0.067, compared to -0.049 for those living in households where at least four people were in employment. ‘Average’ shows data pooled from waves one to 16. * indicates that the average scores by employment status over the sample period are significantly different at the 5% level.

Tables 40 and 41 focus on the dynamic association between employment status changes and changes in financial incapability. Table 40 indicates that entering employment is associated with significantly larger than average falls in financial incapability, and this is apparent using all three indices. For example, the average income-adjusted index falls for individuals who enter work from 0.171 before they enter work to 0.074 afterwards. This represents a fall of 0.098 compared to 0.012 for the sample as a whole. Those entering work experience a 27% reduction in the number of financial problems they face (1.145 from 1.559).

In contrast, individuals who enter unemployment suffer an increase in financial incapability, although from an already relatively high level. The income-adjusted index for those entering unemployment increases from 0.224 to 0.344 (an increase of 0.121), while the number of financial problems increases by 32%. Therefore individuals who enter unemployment have higher than average financial incapability before entering unemployment, but this increases even further once unemployed. Furthermore, this increase is not caused by the loss of income associated with unemployment.

The association between changes in financial incapability and entering retirement depends on the index being used. We find that using the unadjusted index and the number of financial problems, entering retirement is associated with an increase in financial incapability. For example, the income-unadjusted index increases from 0.000 pre-retirement to 0.055 post-retirement. However, the income-adjusted index falls from 0.035 pre-retirement to -0.004 post-retirement. This indicates that the increases in the unadjusted measures of financial incapability reflect the fall in income associated with retiring.

Table 40: Mean changes in financial incapability by employment status changes: BHPS 1991–2006

	Means of financial incapability indices			N
	$t-1$	t	Change	
Sample average				95935
Income-adjusted	-0.020	-0.032	-0.012	
Income-unadjusted	-0.013	-0.028	-0.015	
Number financial problems	1.077	1.053	-0.024	
Entered work				4350
Income-adjusted	0.171	0.074	-0.098	
Income-unadjusted	0.215	0.061	-0.153	
Number financial problems	1.559	1.145	-0.414	
Entered unemployment				1879
Income-adjusted	0.224	0.344	0.121	
Income-unadjusted	0.271	0.445	0.173	
Number financial problems	1.578	2.081	0.503	
Entered retirement				2102
Income-adjusted	0.035	-0.004	-0.039	
Income-unadjusted	0.000	0.055	0.055	
Number financial problems	1.104	1.242	0.138	

Notes: Table reads that individuals who entered work between two consecutive years on average experienced a fall in their income-adjusted financial incapability from -0.171 to 0.074 .

Table 41 indicates that clear relationships also emerge between changes in the number employed in the household and changes in financial capability. In particular, a reduction in the number employed in the household (which could be caused by either an employed household member leaving work, or an employed household member leaving the household) results in an increase in financial incapability – the averages of all three measures are higher when the household experiences a fall in employment.

This is more pronounced in the income-unadjusted than the income-adjusted index, suggesting that it's partly related to the loss of income, but is still evident when using the adjusted index. Experiencing a reduction in household employment is associated with a 21% increase in the number of financial problems (from 1.119 to 1.355). An increase in household employment is associated with above average improvements in financial capability – the indices get smaller for households in which more people are employed at t than at $t-1$. Furthermore these improvements are larger than the average for the sample as a whole.

**Table 41: Mean changes in financial incapability by employment status changes:
BHPS 1991–2006**

	Means of financial incapability indices			N
	<i>t</i> -1	<i>t</i>	Change	
Fewer employed in household				12039
Income-adjusted	0.055	0.085	0.030	
Income-unadjusted	0.027	0.109	0.082	
Number financial problems	1.119	1.355	0.236	
More employed in household				11525
Income-adjusted	0.099	0.055	-0.044	
Income-unadjusted	0.137	0.040	-0.096	
Number financial problems	1.367	1.130	-0.237	
Spouse got job				3559
Income-adjusted	0.135	0.118	-0.017	
Income-unadjusted	0.166	0.079	-0.088	
Number financial problems	1.385	1.207	-0.178	
Spouse left job				3426
Income-adjusted	0.113	0.154	0.041	
Income-unadjusted	0.084	0.195	0.111	
Number financial problems	1.230	1.520	0.290	
Started to sign on				1252
Income-adjusted	0.283	0.404	0.120	
Income-unadjusted	0.333	0.507	0.174	
Number financial problems	1.668	2.169	0.501	
Stopped signing on				1487
Income-adjusted	0.403	0.240	-0.163	
Income-unadjusted	0.505	0.292	-0.214	
Number financial problems	2.180	1.588	-0.592	

Notes: Table reads that individuals who stopped signing on between two consecutive years on average experienced a fall in their income-adjusted financial incapability from 0.403 to 0.240.

The reduction is larger for the income-unadjusted index than for the income-adjusted (-0.096 compared with -0.044) which indicates that some of this is due to the additional income resulting from more employment. An increase in household employment is associated with a 17% fall in the number of financial problems (from 1.367 to 1.130). Similar results emerge for having a spouse who entered or left work. A spouse entering work is associated with an improvement in financial capability using all three measures, while a spouse leaving work is associated with deteriorations in financial capability.

The final two panels of the table look at the association between changes in financial capability and changes in signing on status. As we would expect, starting to sign on at an unemployment office (which may coincide either with a person entering unemployment or an already unemployed person starting to sign on) is associated with large rises in financial incapability. This is evident for both the income-adjusted and income-unadjusted measure, which indicates that this increase in incapability is only partly due to a fall in income.

People who start to sign on already had above average financial incapability (they have higher than average values for all indices at $t-1$), but also experience above average increases. Starting to sign on is associated with a 30% increase in the number of financial problems faced. People who stop signing on (which may or may not be because they entered work) experience a corresponding fall in their financial incapability. Again this is more pronounced when using the income-unadjusted rather than the income-adjusted index, which indicates that the improvement is partly caused by higher income. Stopping signing on is associated with a reduction in the income-adjusted index from 0.403 to 0.240, and a 27% fall in the number of financial problems (from 2.18 to 1.588). Therefore the employment status of individuals, and that of other household members, is strongly related to financial capability.

Job type

As well as employment status, each year the BHPS collects information on the types of jobs in which those in work are currently employed.

In Table 42 we summarise financial incapability by whether people are currently employed in permanent jobs, seasonal or temporary work, or on a fixed-term contract. This indicates that on average over the period, and on all three measures of financial incapability, those employed in permanent jobs have the lowest financial incapability scores (and therefore are most able to manage their finances). On average they suffer 0.9 financial problems, and have an income-unadjusted index score of -0.068 , indicating above average financial capability. When adjusting for income this increases to -0.017 , which suggests that some of their above average financial capability is due to higher incomes. A similar pattern emerges for those currently employed on fixed-term contracts – when adjusting for income, the average index increases from 0.061 to 0.114. These patterns are evident across the sample period.

Table 42: Mean financial incapability by job type: BHPS 1991–2006

	Year				Average	
	1991	1996	2001	2006		
Income-adjusted						
Permanent job	0.070	-0.054	-0.064	-0.028	-0.017	*
Seasonal/casual job	0.229	0.111	-0.062	0.069	0.089	
Fixed term contract	0.311	0.106	-0.045	-0.060	0.114	
Income-unadjusted						
Permanent job	0.056	-0.103	-0.118	-0.100	-0.068	*
Seasonal/casual job	0.264	0.121	-0.068	0.059	0.099	
Fixed term contract	0.295	0.062	-0.094	-0.150	0.061	
N. financial problems						
Permanent job	1.109	0.849	0.833	0.879	0.917	*
Seasonal/casual job	1.519	1.284	0.948	1.227	1.251	
Fixed term contract	1.523	1.111	0.876	0.832	1.168	
N	5107	4975	4877	4483	76969	

Notes: Weighted using cross-sectional weights. Table reads, for example, that in 1991 adults in permanent employment in the BHPS sample had a mean income-adjusted financial capability score of 0.07, compared to 0.311 for those employed on fixed term contracts. ‘Average’ shows data pooled from waves one to 16. * indicates that the average scores by job type category over the sample period are significantly different at the 5% level

Summary

In this section we have summarised how financial incapability is related to a range of individual and household characteristics that are available at all BHPS waves. We find that our measures of financial incapability are significantly associated with gender, age, migrant status, marital status, structure and size of the household, health, employment status of the individual respondent and other household members, job type, housing tenure and income, and also with *changes* in marital status, the size and structure of the household, health, employment status of the respondent and other household members, housing tenure and income.

In particular, we find that people with the highest financial incapability tend to be young (aged less than 35), divorced or separated, have more than one or two dependent children, live in larger households, are single non-elderly, lone parents, in fair or poor health, live in rented accommodation, are unemployed and signed on at an unemployment benefit office, or are economically inactive but would like a job. In contrast, people with lowest financial incapability are on average older (aged 55 or above), married or widowed with no dependent children, live in smaller households, in good health, home owners and working in a full-time permanent job. In addition, there is evidence that financial incapability is strongly related to education, but this relationship is much less pronounced when adjusting for income. These findings are consistent with those from the Financial Services Baseline Survey.

As well as associations between states, panel data allows us to investigate associations between events. Doing this reveals that getting married, improvements in health, becoming a homeowner, entering work or living in a household where others enter employment are associated with increased financial capability, while the death of a spouse, marital dissolution, an additional child, a deterioration in health and unemployment and signing on at an unemployment benefit office are associated with falls in financial capability.

These bivariate relationships, while interesting, do not begin to address the question of what *determines* financial incapability. For example, we find that the unemployed on average exhibit lower financial capability than those in employment. However, we cannot interpret this as suggesting that unemployment reduces financial management skills, as the lack of financial management skills may have contributed to individuals losing their jobs. Similarly, although entering unemployment is associated with falls in financial capability, we cannot say this relationship is causal because there may be a factor that contributes both to an individual losing their job and to the fall in financial capability.

The subsequent sections of this report focus on investigating these relationships in more detail and in a multivariate framework which allows more robust and interpretable conclusions to be drawn.

7 Estimating the determinants of financial capability

Estimation procedures

The final stage of the analysis investigates the determinants of financial capability in more detail. An important problem that needs to be addressed is that there are likely to be both unobservable factors (such as ability, personality, ambition or motivation) and unobserved factors (such as an individual's attitude towards risk) that are associated with both financial capability and the explanatory variables of interest. Our estimation procedure attempts to deal with this issue.

We use multivariate panel data models, and fixed effects models in particular. Multivariate analysis allows us to control for potentially confounding and mediating characteristics of individuals and the households in which they live. For example, Table 35 shows that private tenants have less financial capability than home-owners, but to what extent is this due to the fact that private tenants tend on average to be younger and in less secure jobs than home-owners? The BHPS is a particularly rich source of a wide range of such characteristics, allowing more reliable coefficients on the variables of interest to be estimated. We can write the model to be estimated as the following, where y is our measure of financial capability and x is a vector of potential determinants of financial capability:

$$y_{it} = x_{it}\beta + \varepsilon_{it} \quad [1]$$

$$\varepsilon_{it} = \eta_i + h_{it} \quad [2]$$

ε is the error term. Estimating [1] using simple Ordinary Least Squares (OLS) regression ignores any individual-specific characteristics that are included in ε . These can be separated, as in [2] where η is a time invariant individual-specific effect capturing unobservable (or unmeasured) characteristics. If this is correlated with the observable x , then estimating [1] using OLS will yield biased estimates. For example, if more highly motivated or able people are more likely to be married, a home-owner, or in employment (etc) and also have higher financial capability, then the estimated effects of these observable characteristics will be biased.

Panel data models allow us to control for the effects of unobserved variables that are fixed over time, and that might also be correlated with both financial capability and with other explanatory variables. Furthermore, fixed effects models allow such traits to be arbitrarily correlated with the observable characteristics. This may be important if, for example, more optimistic or more motivated people are also more likely to get married, be in employment or have higher qualification levels. Fixed effects models allow us to overcome potential problems of endogeneity and selection. For example, if people with particular unobserved characteristics that reduce their financial capability are also more likely to be unemployed, live in rented accommodation or have low education, then using OLS to estimate the models will result in biased coefficients on these variables of interest.

Fixed effects models are estimated by taking deviations from individual-specific means over time in both the dependent variable and explanatory variables, and therefore removing the effect of time invariant characteristics, so we estimate:

$$y_{it} - \bar{y}_i = \beta(x_{it} - \bar{x}_i) + h_{it} \quad [3]$$

Therefore, a positive value for β would imply that higher values of x are associated with higher values of y , while a negative β indicates that a higher x is associated with a lower y .

There are two issues concerning fixed effects models. The first is that they do not allow for the impact of time-invariant observable characteristics (e.g. ethnicity, gender, etc) to be estimated. We estimate models with both men and women combined, as well as separate models for each sex, to examine whether the determinants of financial capability differ for men and women. The second issue is that, although fixed effects models allow for time-invariant unobserved characteristics, and allow these characteristics to be correlated with observed characteristics (such as personality traits), they do not account for unobserved shocks that affect both the dependent variable and the explanatory variables of interest. So, for example, if individuals with particular observed characteristics experienced an unobserved event that affects their financial capability, the estimated coefficients would be biased. However, this problem is shared by all other existing estimation methods. Our models allow for a wide range of observable characteristics in an attempt to reduce such bias to a minimum.

Estimation results

We present results from both OLS and within-group fixed effects models, although in each case the fixed effects specifications are our preferred models and we mostly limit discussion to these. We have estimated the models with the income-unadjusted index of financial incapability and the number of financial problems (as dependent variables), but not the income-adjusted index. This is because we include income as an explanatory variable and so estimates from using the income-adjusted and income-unadjusted measure as the dependent variable will yield the same estimates (with the exception of that on income, which would become very difficult to interpret if the dependent variable was the income-adjusted index). We discuss the results from our models by examining the impact of groups of related variables separately. Therefore, although estimates are obtained from models in which all variables are included, we present them in separate tables in which related variables are grouped together.

Positive coefficients indicate factors that are associated with higher financial incapability, while negative coefficients indicate factors associated with lower financial incapability. Before discussing the estimates in detail, it should be noted that the R^2 's from our statistical models are quite low (less than 0.2 in all cases). This indicates that our models explain less than 20% of the total variation in financial capability. Therefore the majority of the differences in financial capability across individuals are not explained by the observed characteristics of individuals and the households in which they live.

Demographics and health

We first examine the impact of demographic characteristics and health on financial capability. Table 43 presents the estimated coefficients on sex, age, migrant status and health. The results from OLS regressions indicate that men have higher financial incapability than women – the coefficients on the male indicator are positive and statistically significant with both the income-unadjusted index of financial incapability and the number of financial problems as the dependent variable. Similarly they indicate that immigrants have higher financial incapability than the native-born. (However, these OLS estimates do not take time-invariant unobserved characteristics such as ability, motivation or personality traits into consideration and therefore should be interpreted with more caution.)

The results from the preferred within-group fixed effects models indicate that financial incapability falls with age but at a decreasing rate (the squared term is positive when using the index of financial incapability). We also find that financial capability is associated with being in good health – the estimated coefficients on the being in good health variable are negative and statistically significant in both models. People in good health have higher financial capability than those in poor health. The coefficient is much larger in the OLS models, suggesting that being in good health is related to other unobservable fixed characteristics of people that are also correlated with financial capability.

Table 43: Impact of demographics and health on financial capability: BHPS 1991–2006

	Index of financial incapability				N financial problems			
	OLS		FE		OLS		FE	
Male	0.016	[2.66]			0.035	[3.02]		
Age	0.005	[4.70]	-0.012	[2.43]	0.012	[6.10]	-0.016	[1.73]
Age squared/100	-0.007	[7.27]	0.005	[3.57]	-0.016	[8.01]	-0.002	[0.94]
Immigrant	0.069	[4.12]			0.109	[3.55]		
<i>Health</i>								
In good health	-0.119	[21.64]	-0.044	[10.44]	-0.225	[21.28]	-0.088	[10.78]
Constant	0.576	[4.51]	0.730	[3.63]	1.931	[8.73]	2.361	[6.13]
R squared	0.1664		0.0714		0.1649		0.0784	
N obs (individuals)	116062 (16082)							

Notes: Estimates from models with measures of financial capability as the dependent variable. Absolute ratio of coefficient to standard error in brackets. All specifications also include interest rate, income, marital status and household size and structure, highest educational qualification, housing tenure, house value and housing costs, labour market status of individual and other household members, regional and time indicators.

To interpret the relative sizes of these effects, we have run some simulations to show how changing an individual's characteristics will change their predicted financial capability, based on the estimates from the preferred fixed effects specifications. To do this, we have constructed a hypothetical person who is:

A 45-year-old married person in 2006, with two dependent children, who has a first degree, is employed full-time in a permanent job and has an equivalised household income of £2000 per month (the median value), in good health, and whose spouse is not employed. The individual owns his/her own home (worth £100,000 – again the median value) with a mortgage with housing payments

of £300 per month (the median value), and a prevailing interest rate of 4%. All other variables are set to zero.

This hypothetical person has a predicted index of financial incapability of -0.051 , which puts them at about the 62nd percentile in the incapability distribution. They are predicted to have 1.056 financial problems (see Table 44).

Calculating the predicted probabilities at different ages for this same person shows us the impact of age on the financial incapability index and the number of financial problems. These show that an otherwise similar person aged 25 would have an index of financial incapability of 0.117, would lie at the 77th percentile of the distribution and would suffer 33% more financial problems. An otherwise similar person aged 65 would have an index of financial incapability of -0.182 , lie at the 44th percentile of the distribution and would suffer 35% fewer financial problems.

If the person was in poor health, their index of financial incapability is predicted to increase to -0.007 , and they would face 1.144 financial problems (an increase of 8%). Health and particularly age are therefore important, and statistically significant determinants of financial capability.

Table 44: Predicted financial incapability: demographics and health

	Predicted index (percentile)	Predicted financial problems
Hypothetical person	-0.051 (62 nd)	1.056
Aged 25	0.117 (77 th)	1.409
Aged 35	0.028 (63 rd)	1.235
Aged 55	-0.121 (44 th)	0.873
Aged 65	-0.182 (44 th)	0.684
In poor health	-0.007 (62 nd)	1.144

Notes: Calculations based on estimates from within-group fixed effects models. Hypothetical person is 45 years old, married, in 2006, with two dependent children, who has a first degree, is employed full-time in a permanent job and has a household income of £2000 per month, in good health, and whose spouse is not employed. They own their own home (worth £100,000) with a mortgage with housing payments of £300 per month, and a prevailing interest rate of 4%. All other variables are set to zero.

Finances

We have included two financial measures among the explanatory variables – the Bank of England base interest rate in the month and year of interview and real equivalised household income as a cubic term. We would expect the impact of interest rates on financial capability to depend on whether individuals and households are net borrowers or net savers. If net borrowers, we would expect higher interest rates to result in less financial capability as the cost of borrowing is higher. If net savers, we might expect higher interest rates to lead to more financial capability as individuals and households receive higher returns on their savings.

Table 45 shows that the estimated coefficient on interest rates is negative in all specifications, and is statistically significant in all but the fixed effects model, with the index of financial incapability as the dependent variable. Therefore people’s financial capability improves when interest rates are higher, holding all else constant. Further investigation (not shown) reveals that the negative effect of interest rates is

significantly weaker for those with a mortgage – the impact of interest rates on financial capability depends on whether or not people have a mortgage.

The coefficients on the income terms are all statistically significant and suggest a non-linear relationship between income and financial capability, similar to that found in section 4.4. To examine the impact of household income on financial capability, in Figure 12 we plot how financial capability varies with income, based on the estimates from the preferred fixed effects specifications. This indicates quite clearly that the relationship is stronger (the curves are steeper) at lower levels of household income, and gets flatter at higher income levels. Almost 97% of the sample have incomes of less than £6000 per month, and so lie where the curve is at its steepest. Increasing income levels for these people will have relatively large impacts on their financial capability. For example, halving the income of our hypothetical person to £1000 per month increases their index of financial incapability from –0.051 to 0.02, and the number of financial problems faced by 13% (to 1.192) holding other characteristics constant.

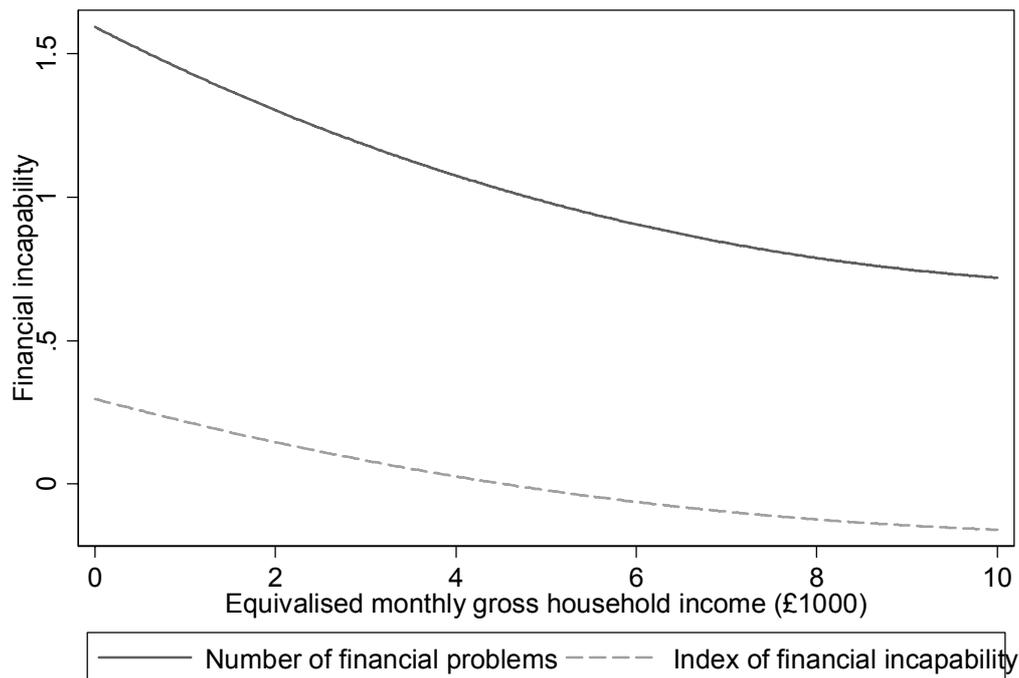
However, while the effects of halving income are sizeable, they are smaller than the effects of age, divorce or separation, being a local authority tenant and being unemployed. Furthermore, it is important to note that even controlling for income levels, other factors still have large and statistically significant impacts on an individual’s financial capability.

Table 45: Impact of financial variables on financial capability: BHPS 1991–2006

	Index of financial incapability				N financial problems			
	OLS		FE		OLS		FE	
Interest rate	–0.028	[2.41]	–0.015	[1.81]	–0.051	[2.50]	–0.032	[2.01]
Real equiv. hh income (£1000)	–0.128	[28.82]	–0.085	[29.67]	–0.232	[27.49]	–0.161	[29.57]
Income squared (£10000)	0.068	[15.11]	0.044	[18.80]	0.124	[14.50]	0.084	[18.68]
Income cubed (£100000)	–0.008	[11.24]	–0.005	[14.90]	–0.015	[10.97]	–0.010	[14.73]
Constant	0.576	[4.51]	0.730	[3.63]	1.931	[8.73]	2.361	[6.13]
R squared	0.1664		0.0714		0.1649		0.0784	
N obs (individuals)	116062 (16082)							

Notes: Estimates from models with measures of financial capability as the dependent variable. Absolute ratio of coefficient to standard error in brackets. All specifications also include gender, age, health, marital status and household size and structure, highest educational qualification, housing tenure, house value and housing costs, labour market status of individual and other household members, regional and time indicators.

Figure 12: Estimated impact of equivalised monthly gross household income on financial capability: BHPS 1991–2006.



Source: BHPS 1991-2006

Marital status and household composition

Table 46 presents the estimates on the variables related to individual's marital status, number of children and household size and structure. Care has to be taken in interpreting these estimates because of the complex interactions between them. For example, the estimated coefficients on the married variable are positive and statistically significant, suggesting that married people have higher financial incapability than the omitted category of single never married. However, the vast majority of married people live in couples either with or without children, and the estimated coefficients on these terms are negative and statistically significant and therefore people in couples on average have lower financial incapability than the omitted category of those in single non-elderly households.

The general pattern that emerges is that single never married people have higher financial capability than those who are either currently married or have previously been married. Having one child reduces financial capability (perhaps because first time parents are less aware of the financial implications involved), while larger families are associated with higher financial capability (which may be because having a number of children forces people to keep close control on their finances, or because only people with high financial capability decide to have large families). People in single non-elderly households have least financial capability.

Table 46: Impact of marital status and household composition on financial capability: BHPS 1991–2006

	Index of financial incapability				N financial problems			
	OLS		FE		OLS		FE	
Married	0.090	[6.14]	0.120	[8.35]	0.211	[7.49]	0.274	[9.97]
Cohabiting	0.170	[11.28]	0.159	[11.68]	0.367	[12.91]	0.344	[13.20]
Widowed	0.068	[4.09]	0.063	[3.24]	0.134	[3.99]	0.185	[4.92]
Divorced/separated	0.133	[7.69]	0.120	[8.19]	0.265	[8.23]	0.262	[9.35]
<i>Number of children</i>								
One child	0.086	[6.67]	0.063	[6.62]	0.181	[7.64]	0.128	[7.04]
Two children	0.040	[2.66]	0.023	[2.09]	0.082	[3.06]	0.045	[2.13]
Three children	0.024	[1.15]	0.010	[0.68]	0.057	[1.54]	-0.001	[0.04]
Four or more children	0.041	[0.98]	-0.074	[2.90]	0.088	[1.23]	-0.120	[2.47]
<i>Household type</i>								
Household size	0.017	[3.16]	0.004	[0.86]	0.030	[3.15]	0.002	[0.20]
Single elderly	-0.117	[6.37]	-0.072	[4.30]	-0.204	[5.59]	-0.131	[4.08]
Couple no children	-0.127	[7.35]	-0.154	[10.68]	-0.244	[7.42]	-0.295	[10.70]
Couple dep child	-0.171	[8.31]	-0.173	[10.06]	-0.337	[8.65]	-0.327	[9.94]
Couple non-dep child	-0.099	[5.32]	-0.102	[6.47]	-0.178	[5.01]	-0.172	[5.68]
Lone parent	-0.022	[1.22]	-0.062	[4.68]	-0.050	[1.48]	-0.131	[5.13]
2+ unrelated adults	0.009	[0.41]	0.028	[1.57]	0.018	[0.44]	0.046	[1.33]
Other household type	-0.086	[3.50]	-0.083	[3.73]	-0.204	[4.36]	-0.180	[4.25]
Constant	0.576	[4.51]	0.730	[3.63]	1.931	[8.73]	2.361	[6.13]
R squared	0.1664		0.0714		0.1649		0.0784	
N obs (individuals)					116062 (16082)			

Notes: Estimates from models with measures of financial capability as the dependent variable. Absolute ratio of coefficient to standard error in brackets. All specifications also include gender, age, health, interest rate, income, highest educational qualification, housing tenure, house value and housing costs, labour market status of individual and other household members, regional and time indicators.

However, to examine more carefully the net effects of changes in marital status, household structure and size, we have produced some predicted values, again based on the hypothetical person described earlier. These are shown in Table 47. This indicates that the impacts of household size and structure, while statistically significant, are actually quantitatively quite small. In terms of the predicted index, if our person was cohabiting rather than married (but remaining in a couple with dependent children) their financial incapability index would increase slightly from -0.051 to -0.012 (from the 62nd percentile of the distribution to the 63rd percentile).

Being widowed has similar implications, while divorce (and the resulting lone parenthood) has a larger impact on financial incapability (moving the person to the 74th percentile of the distribution). Children generally have little quantitative impact on financial capability, although the highest financial capability is reached with four children. This gives an index of -0.141 (at the 44th percentile of the distribution). This may be because either having large families forces people to keep tight control on their finances, or because people only have large families when they have high financial capability.

In terms of the predicted number of financial problems, we see that when divorced (with the associated lone parenthood) the person would face 17% more financial problems than when married (1.238 compared with 1.056). Having four children is associated with 15% fewer financial problems than with two children (0.895

compared with 1.056) and 21% fewer financial problems compared with having one child.

Table 47: Predicted financial incapability: marital status and household composition

	Predicted index (percentile)	Predicted financial problems
Hypothetical person	-0.051 (62 nd)	1.056
Cohabiting	-0.012 (63 rd)	1.126
Widowed (lone parent)	-0.001 (63 rd)	1.161
Divorced/separated (lone parent)	0.055 (74 th)	1.238
No children	-0.063 (62 nd)	1.040
One child	-0.015 (63 rd)	1.138
Three children	-0.060 (62 nd)	1.012
Four children	-0.141 (44 th)	0.895

Notes: Calculations based on estimates from within-group fixed effects models. Hypothetical person is 45 years old, married, in 2006, with two dependent children, who has a first degree, is employed full-time in a permanent job and has a household income of £2000 per month, in good health, and whose spouse is not employed. They own their own home (worth £100,000) with a mortgage with housing payments of £300 per month, and a prevailing interest rate of 4%. All other variables are set to zero.

Education

Table 48 presents the estimated impacts of qualification achieved on financial capability. The results from the OLS regressions indicate that, controlling for a range of observed characteristics, financial capability is higher among those with higher level qualifications – the coefficients are negative and statistically significant. This indicates, for example, that people with a university education have higher financial capability than those with A-Levels or the equivalent, while people with any qualification equivalent to or higher than GCSEs have more financial capability than those with the omitted category of no qualifications. These results would suggest that increasing average education levels within the population would have beneficial impacts on financial capability, although the sizes of the effects are relatively small.

The coefficients in the fixed effects models suggest differently. These suggest that people with a university education (either a first or higher degree) have *lower* financial capability than those with no qualifications (the omitted category) – they are positive and statistically significant. The results from these specifications suggest that individuals with GCSEs have the most financial capability. It should, however, be noted that these estimates are identified by individuals who change their education level over the period (see the discussion about estimation procedures in Section 6.1), and those who do so may not be generally representative of people with that level of qualification. For example, individuals who gain a degree over the period may differ in unobservable (and time-varying) ways from those who had a degree at the beginning of the sample period in 1991 (for example in terms of debt, quality of the job held, etc). Therefore these estimates should be treated with caution, and in this particular case more weight could be put on the OLS estimates. The estimates in both specifications are small, suggesting that all else equal, education level plays only a small role in determining financial capability.

Table 48: Impact of education on financial capability: BHPS 1991–2006

	Index of financial incapability				N financial problems			
	OLS		FE		OLS		FE	
Higher degree	-0.049	[2.41]	0.083	[2.48]	-0.085	[2.13]	0.147	[2.31]
First degree	-0.033	[2.64]	0.032	[1.47]	-0.052	[2.11]	0.092	[2.18]
Other higher qual.	-0.025	[2.70]	-0.006	[0.34]	-0.048	[2.61]	-0.010	[0.29]
A-Levels or equiv	-0.024	[2.23]	0.032	[1.73]	-0.047	[2.21]	0.079	[2.25]
GCSE or equivalent	-0.027	[2.72]	-0.060	[3.38]	-0.057	[3.00]	-0.136	[3.97]
Other qualification	-0.014	[1.15]	-0.033	[1.41]	-0.030	[1.31]	-0.046	[1.03]
Constant	0.576	[4.51]	0.730	[3.63]	1.931	[8.73]	2.361	[6.13]
R squared	0.1664		0.0714		0.1649		0.0784	
N obs (individuals)	116062 (16082)							

Notes: Estimates from models with measures of financial capability as the dependent variable. Absolute ratio of coefficient to standard error in brackets. All specifications also include gender, age, health, interest rate, income, marital status and household composition, housing tenure, house value and housing costs, labour market status of individual and other household members, regional and time indicators.

Housing

We now discuss the impact of housing variables on financial capability. We have included measures of housing tenure, net monthly housing costs (either rent or mortgage payments) and the respondent-assessed value of the house for home-owners. We've included cubic terms for both housing costs and house values to allow for non-linear relationships with financial capability. The estimated coefficients on these variables are shown in Table 49.

The results from the preferred fixed effects specifications indicate that people who rent a house (either from the local authority or privately) have lower financial capability than home-owners with a mortgage (the omitted category). The estimated coefficients are positive and statistically significant irrespective of whether the index of financial incapability or the number of financial problems is the dependent variable.

Both monthly housing costs and house value also have large, statistically significant, but non-linear impacts on financial capability. To assess the sizes of these effects we again estimate some predicted values using our hypothetical person, shown in Table 50. These show that changing the housing tenure of this person from home-owner with a mortgage to owning the home outright (with no mortgage) has large impacts on financial capability – the index falls from -0.051 (the 62nd percentile of the distribution) to -0.163 (the 44th percentile) while the predicted number of financial problems falls by 17% from 1.056 to 0.872. However, most of this fall can be attributed to the lack of housing costs as an outright home-owner (which we discuss further below) rather than the tenure change.

Moving the hypothetical person into tenancy reduces financial capability – the index increases marginally from -0.051 to 0.026 as a local authority tenant and to -0.002 as a private tenant. The predicted numbers of financial problems also increase by 6% and 7%. This suggests that the impact on financial capability of living in rented accommodation relative to owning a home with a mortgage, holding housing costs constant, is relatively small.

Table 49: Impact of housing variables on financial capability: BHPS 1991–2006

	Index of financial incapability				N financial problems			
	OLS		FE		OLS		FE	
Own outright	-0.004	[0.44]	0.013	[1.57]	0.017	[1.04]	0.031	[2.03]
Local authority tenant	0.120	[10.27]	0.098	[9.80]	0.220	[10.25]	0.155	[8.05]
Private tenant	0.094	[7.56]	0.071	[7.47]	0.195	[8.61]	0.129	[7.15]
Housing costs	0.499	[18.99]	0.454	[26.59]	0.907	[19.38]	0.788	[24.11]
Housing costs squared	-0.158	[9.09]	-0.136	[17.39]	-0.290	[9.68]	-0.242	[16.15]
Housing costs cubed	0.009	[8.30]	0.008	[14.92]	0.017	[8.64]	0.014	[13.98]
House value/£100,000	-0.017	[4.08]	0.022	[5.08]	0.001	[0.09]	0.057	[6.84]
House value squared	0.001	[3.56]	-0.001	[2.39]	0.001	[1.03]	-0.002	[3.54]
House value cubed	-0.000	[2.99]	0.000	[1.57]	-0.000	[1.07]	0.000	[2.47]
Constant	0.576	[4.51]	0.730	[3.63]	1.931	[8.73]	2.361	[6.13]
R squared	0.1664		0.0714		0.1649		0.0784	
N obs (individuals)	116062 (16082)							

Notes: Estimates from models with measures of financial capability as the dependent variable. Absolute ratio of coefficient to standard error in brackets. All specifications also include gender, age, health, interest rate, income, marital status and household composition, education, labour market status of individual and other household members, regional and time indicators.

Table 50: Predicted financial incapability: housing tenure

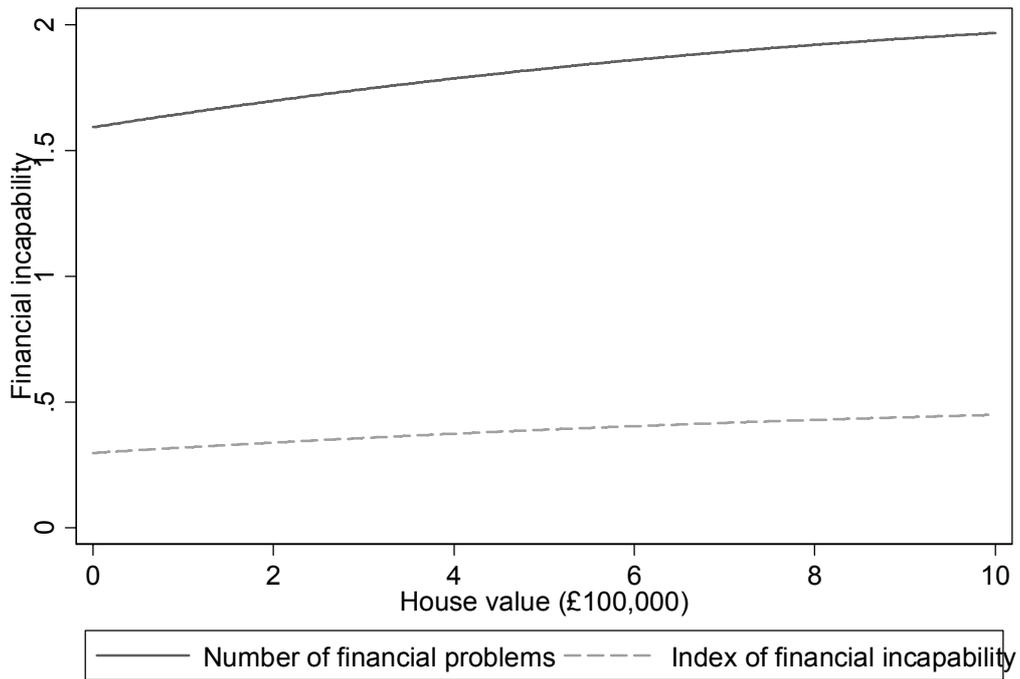
	Predicted index (percentile)	Predicted financial problems
Hypothetical person	-0.051 (62 nd)	1.056
Own outright	-0.163 (44 th)	0.872
Local authority tenant	0.026 (63 rd)	1.157
Private tenant	-0.002 (63 rd)	1.131

Notes: Calculations based on estimates from within-group fixed effects models. Hypothetical person is 45 years old, married, in 2006, with two dependent children, who has a first degree, is employed full-time in a permanent job and has a household income of £2000 per month, in good health, and whose spouse is not employed. They own their own home (worth £100,000) with a mortgage with housing payments of £300 per month, and a prevailing interest rate of 4%. All other variables are set to zero.

Figure 13 plots the impact of respondent-assessed house value on financial capability and indicates that financial capability falls (the index increases) as the value of the home increases, controlling for other factors. However, the plotted lines are relatively flat, indicating that large increases in house value are needed to have any substantial effect on financial capability.

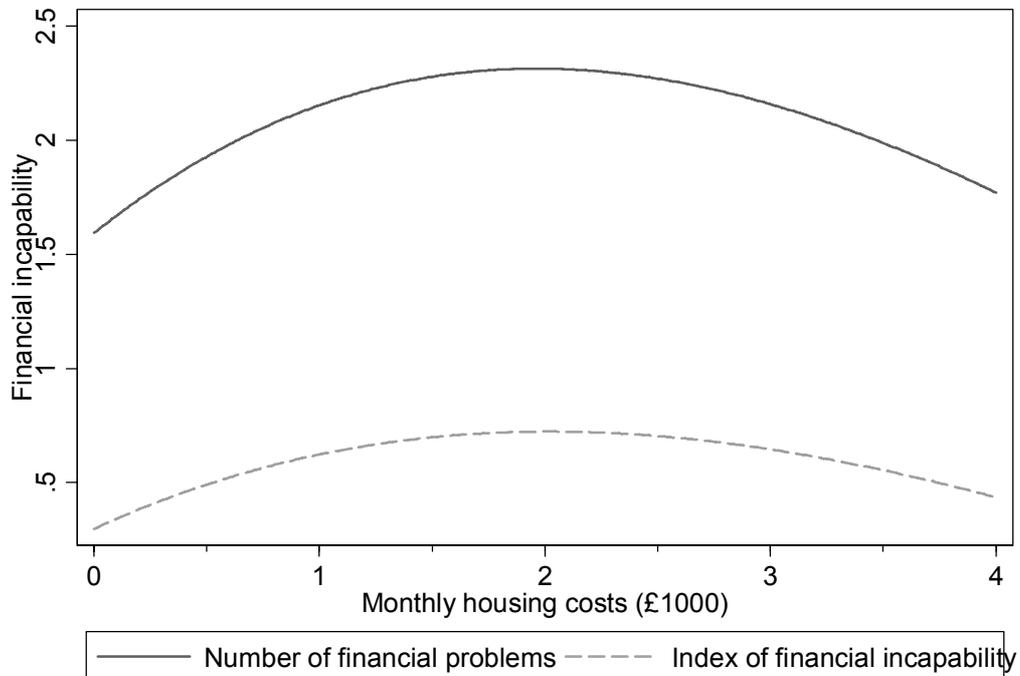
Figure 14 plots the impact of housing costs on financial capability and, as suggested previously, these have very large (and non-linear) impacts on financial capability. In particular, increasing housing costs results in reducing financial capability up to £2000 per month. Therefore for people who pay less than £2000 per month for their housing (either in rent or in mortgage payments).

Figure 13: Estimated impact of house value on financial capability: BHPS 1991–2006.



Source: BHPS 1991-2006

Figure 14: Estimated impact of housing costs on financial capability: BHPS 1991–2006.



Source: BHPS 1991-2006

an increase in their housing costs has large negative impacts on their financial capability. Of those in the sample with positive housing costs (i.e. those that do not own their home outright), 99% have housing costs of less than £2000 per month and therefore will experience a decline in their financial capability if housing costs are increased. To illustrate the size of this effect, an increase in housing costs of 10% for someone paying £1000 per month (i.e. increasing their housing costs by £100 per month) will increase the number of financial problems they face by 1.1%.

Labour market variables

The final group of variables included in the specifications relate to people's labour market status and the labour market status of others in their household. The estimated coefficients on these variables are presented in Table 51.

Table 51: Impact of labour market status on financial capability: BHPS 1991–2006

	Index of financial incapability				N financial problems			
	OLS		FE		OLS		FE	
Number employed hh	-0.005	[0.92]	-0.021	[5.49]	-0.016	[1.81]	-0.047	[6.27]
Part-time employee	0.027	[3.15]	0.079	[11.26]	0.076	[4.50]	0.177	[13.09]
Self-employed	0.024	[2.23]	0.018	[1.93]	0.078	[3.79]	0.066	[3.62]
Unemployed	0.262	[15.29]	0.226	[19.62]	0.686	[21.86]	0.614	[27.81]
Signed-on	0.157	[7.71]	0.117	[9.60]	0.329	[9.18]	0.267	[11.48]
Retired	0.055	[5.43]	0.099	[10.08]	0.217	[10.42]	0.302	[16.00]
Inactive not like job	0.054	[5.98]	0.089	[11.64]	0.215	[12.56]	0.277	[19.00]
Inactive like job	0.167	[11.64]	0.161	[16.08]	0.437	[16.52]	0.440	[22.94]
Seasonal/casual job	0.121	[9.50]	0.076	[8.14]	0.220	[9.80]	0.144	[8.12]
Fixed term contract	0.099	[6.36]	0.044	[3.91]	0.169	[6.08]	0.077	[3.59]
Spouse has job	-0.057	[6.17]	-0.046	[6.23]	-0.125	[7.11]	-0.112	[7.91]
Constant	0.576	[4.51]	0.730	[3.63]	1.931	[8.73]	2.361	[6.13]
R squared	0.1664		0.0714		0.1649		0.0784	
N obs (individuals)	116062 (16082)							

Notes: Estimates from models with measures of financial capability as the dependent variable. Absolute ratio of coefficient to standard error in brackets. All specifications also include gender, age, health, interest rate, income, marital status and household composition, education, housing tenure, house value and housing costs, regional and time indicators.

The estimates in the preferred fixed effects specifications show that financial incapability falls as the number employed in the household increases and this is holding household income constant. Therefore, financial capability is improved by having more household members in employment, and this is in addition to the beneficial effects of the additional income this raises. However, the employment status of the individual has larger impacts on financial capability, with people in a full-time permanent job having the most financial capability. Being in part-time work or self-employment increases both the index and the number of financial problems significantly (the coefficients are positive and statistically significant), as does retirement and economic inactivity (particularly if the individual would like to have a job). However, the largest increases in financial incapability are associated with being in unemployment, particularly if also signing on at an unemployment benefit office (and remember that these effects are holding income levels constant). The estimated coefficients on these variables are large, positive and statistically significant, and combined increase a person's financial incapability index by 0.343 and the number of financial problems faced by 0.881. Working in non-permanent jobs (either seasonal or

casual work or on a fixed-term contract) is also associated with lower financial capability, while people with an employed spouse have more financial capability (and again this effect is holding income constant).

To help quantify the sizes of these effects, we return to our hypothetical person and examine what happens to their predicted financial capability when we change their employment status (and that of their spouse). The results from this exercise are presented in Table 52. This indicates that moving from full-time permanent employment to part-time permanent employment (but holding household income constant) increases the predicted financial incapability index from -0.051 to 0.028 (from the 62nd to the 63rd percentile of the distribution) and the predicted number of financial problems by 17% (from 1.056 to 1.233). Moving from full-time permanent employment into retirement or economic inactivity have larger effects, moving the person to between the 74th and 77th percentile of the index of financial incapability distribution, and increasing the number of financial problems by between 31% and 46%.

However, it is unemployment and signing on that has the largest impact on predicted financial capability. Moving the person into unemployment (but leaving household income levels constant) increases the predicted index from -0.051 to 0.196 (from the 62nd to the 79th percentile of the distribution) and the predicted number of financial problems by 63% to 1.717. Therefore being unemployed has a large impact on financial capability, independent of its effect on household income. This fall in financial capability is exacerbated if the person is also signing on at an unemployment benefit office – doing so increases the predicted incapability index to 0.313 (to the 83rd percentile of the distribution) and the number of financial problems by 88% (to 1.984). Again, this is independent of the effect on household income. The additional impact associated with signing on at an unemployment office maybe caused by unemployment duration effects (those who have been in unemployment for a longer period are more likely to be signing on) or by an additional income effect (those with relatively low household income are more likely to sign on).

Table 52: Predicted financial incapability: labour market status

	Predicted index (percentile)	Predicted financial problems
Hypothetical person	-0.051 (62 nd)	1.056
Part-time employee	0.028 (63 rd)	1.233
Unemployed	0.196 (79 th)	1.717
Unemployed and signed on	0.313 (83 rd)	1.984
Retired	0.069 (74 th)	1.405
Inactive and like to work	0.131 (77 th)	1.543
Inactive not like to work	0.059 (74 th)	1.380
Spouse also in employment	-0.119 (44 th)	0.898

Notes: Calculations based on estimates from within-group fixed effects models. Hypothetical person is 45 years old, married, in 2006, with two dependent children, who has a first degree, is employed full-time in a permanent job and has a household income of £2000 per month, in good health, and whose spouse is not employed. They own their own home (worth £100,000) with a mortgage with housing payments of £300 per month, and a prevailing interest rate of 4%. All other variables are set to zero.

Having an employed spouse has relatively large beneficial effects on financial capability (independent of its effect on household income). Having a spouse in employment (either full or part-time) reduces the predicted incapability index from –

0.051 (the 62nd percentile) to -0.119 (the 44th percentile) and the predicted number of financial problems from 1.056 to 0.898 (by 15%).

From this analysis we can see that financial capability is determined by many observable characteristics of individuals and the households in which they live, including age, marital status, household size and structure, income, education, housing tenure, house value, housing costs and employment status of the individual and other household members. Although many of these characteristics have significant impacts on financial capability, our results show that age, household income, housing costs and employment status have the largest impacts. In particular the lowest financial capability is found for young adults, those with low household incomes, who are divorced, with relatively high housing costs, in unemployment without an employed spouse. In contrast, older people with relatively high household income, low housing costs, in full-time work, married and with an employed spouse have the most financial capability.

Do determinants differ for men and women?

The previous analysis has included both men and women and assumed that the explanatory variables have the same effects on both. To examine whether this is the case, we have estimated models separately by gender. Here we focus only on results from the preferred fixed effects specifications. Again we present both coefficients and predicted financial capability based on a hypothetical man and a hypothetical woman (to help quantify the relative sizes of the effects). This hypothetical man/woman has the following characteristics:

45 years old, married, in 2006, with two dependent children, who has a first degree, is employed full-time in a permanent job and has an equivalised household income of £2000 per month (the median), in good health, and whose spouse is also employed. He/she is a home-owner (worth £100,000 – again the median value) with a mortgage with housing payments of £300 per month (the median), and a prevailing interest rate of 4%. All other variables are set to zero.

Again, we discuss the results from our models by examining the impact of groups of related variables separately.

Demographics and health

We first examine the gender-specific impacts of age and health on financial capability, shown in Table 53. The estimated coefficients on age are similar for men and women and indicate that financial capability improves with age, although at a declining rate – the coefficients are negative on the age variables and positive on the quadratic terms. We also find that being in good health improves the financial capability of both men and women – being in good health reduces the index of financial incapability and the number of financial problems. The estimated coefficients are larger for women than men, suggesting that being in good health improves financial capability more for women than for men.

In Table 54 we present the predicted values to quantify the effects of age and health on financial capability. This first shows that the hypothetical man and woman are predicted to have an index of financial capability of -0.059 and -0.173 , placing them in the 63rd and 44th percentiles of the gender-specific distributions respectively. The man is predicted to face 1.001 financial problems, and the woman predicted to face 0.798 financial problems.

The predicted values indicate that age has a larger impact on financial capability for men than for women, while health has a larger impact for women than men. For example, reducing the age of the man to 25 increases his index of financial incapability to 0.142 (and to the 78th percentile of the distribution), while it increases the predicted number of financial problems faced by 45% (to 1.448). Reducing the age of the woman to 25 increases her index of financial incapability to -0.010 (to the 62nd percentile) and the predicted number of financial problems by 39% (to 1.112). Increasing the man's age to 65 reduces the index of financial incapability to -0.112 (and to the 45th percentile) and reduces the number of financial problems faced by 44% (to 0.561). For women, increasing the age to 65 has a smaller impact, reducing the index to -0.306 (to the 30th percentile) and the number of financial problems by 44% (to 0.446).

Table 53: Impact of demographics and health on financial capability by gender: BHPS 1991–2006

	Index of financial incapability				N financial problems			
	Men		Women		Men		Women	
Age	-0.014	[2.01]	-0.011	[1.64]	-0.023	[1.67]	-0.012	[1.00]
Age squared/100	0.006	[3.09]	0.004	[2.08]	0.001	[0.24]	-0.005	[1.38]
<i>Health</i>								
In good health	-0.033	[5.24]	-0.053	[9.20]	-0.070	[5.75]	-0.101	[9.23]
Constant	0.855	[2.91]	0.675	[2.45]	2.575	[4.56]	2.277	[4.33]
R squared	0.0744		0.0714		0.0818		0.0789	
N obs (individuals)	53159 (7705)		62903 (8377)		53159 (7705)		62903 (8377)	

Notes: Estimates from models with measures of financial capability as the dependent variable. Absolute ratio of coefficient to standard error in brackets. All specifications also include interest rate, income, marital status and household size and structure, highest educational qualification, housing tenure, house value and housing costs, labour market status of individual and other household members, regional and time indicators.

Table 54: Predicted financial incapability by gender: demographics and health

	Predicted index (percentile)		Predicted financial problems	
	Men	Women	Men	Women
Hypothetical person	-0.059 (63 rd)	-0.173 (44 th)	1.001	0.798
Aged 25	0.142 (78 th)	-0.010 (62 nd)	1.448	1.112
Aged 35	0.035 (63 rd)	-0.095 (60 th)	1.224	0.960
Aged 55	-0.141 (45 th)	-0.243 (42 nd)	0.780	0.627
Aged 65	-0.211 (45 th)	-0.306 (30 th)	0.561	0.446
In poor health	-0.026 (63 rd)	-0.120 (44 th)	1.071	0.899

Notes: Calculations based on estimates from within-group fixed effects models. Hypothetical man is a 45 year old married man in 2006, with two dependent children, who has a first degree, is employed full-time in a permanent job and has a household income of £2000 per month, in good health, and whose wife is employed. He owns his own home (worth £100,000) with a mortgage with housing payments of £300 per month, and a prevailing interest rate of 4%. All other variables are set to zero. Hypothetical woman is 45 years old, married, two dependent children, with a degree, is employed, with a household income of £2000 per month, in good health, owns her own

home (worth £100,000) with a mortgage with housing payments of £300 per month and a prevailing interest rate of 4%. Her husband is also employed.

In contrast health has a larger impact on women than men. For example, if the man was in poor health, his index of financial incapability would increase to -0.026 while if the woman was in poor health, hers would increase to -0.120 . Similarly, the number of financial problems faced would increase by 7% for men (from 1.001 to 1.071), and by 13% for women (from 0.798 to 0.899).

These results suggest that the impacts of age and health on financial capability are similar for men than women. Age has relatively large impacts on financial capability, which are slightly larger for men than for women. The impact of health, while statistically significant, is more modest and slightly larger for women than men.

Finances

Table 55 presents the estimates on the financial variables for men and women. These indicate that the interest rate has no statistically significant impact on financial capability for either men or women. Although the coefficients are negative (indicating that financial capability is higher when interest rates are higher), they are not significantly different from zero. Further analysis (not shown) indicates that interest rates have different impacts on the financial capability of tenants and mortgage holders, but the sizes of the effects are small – very large changes in interest rates are needed to have any substantial impact on financial capability.

Table 55: Impact of financial variables on financial capability by gender: BHPS 1991–2006

	Index of financial incapability				N financial problems			
	Men		Women		Men		Women	
Interest rate	-0.019	[1.54]	-0.013	[1.11]	-0.033	[1.39]	-0.033	[1.49]
Real equiv. hh income	-0.090	[20.80]	-0.078	[19.96]	-0.173	[20.90]	-0.147	[19.63]
Income squared ('0000)	0.050	[13.35]	0.040	[12.57]	0.096	[13.39]	0.074	[12.23]
Income cubed ('00000)	-0.006	[10.41]	-0.005	[10.05]	-0.012	[10.33]	-0.008	[9.73]
Constant	0.855	[2.91]	0.675	[2.45]	2.575	[4.56]	2.277	[4.33]
R squared	0.0744		0.0714		0.0818		0.0789	
N obs (individuals)	53159 (7705)		62903 (8377)		53159 (7705)		62903 (8377)	

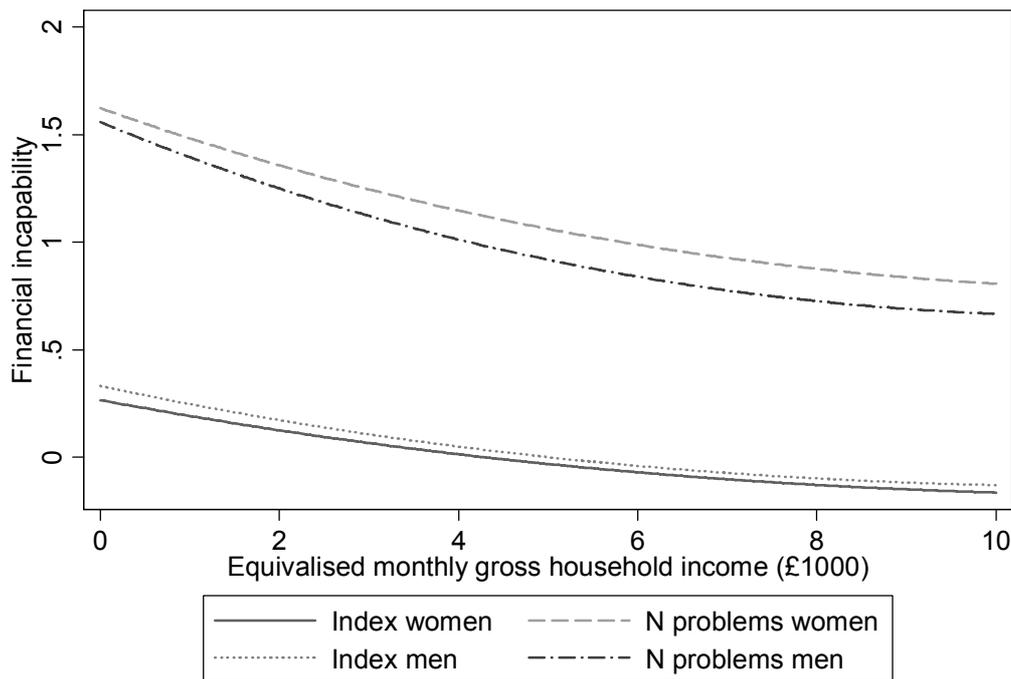
Notes: Estimates from models with measures of financial capability as the dependent variable. Absolute ratio of coefficient to standard error in brackets. All specifications also include gender, age, health, marital status and household size and structure, highest educational qualification, housing tenure, house value and housing costs, labour market status of individual and other household members, regional and time indicators.

Again, we find that equivalised household income is an important determinant of financial capability for both men and women and in particular that financial capability increases with income. However, both the quadratic and cubic terms are also statistically significant, and so to get a complete picture of the relationship, in Figure 15 we plot how the predicted values of financial capability evolve with income. These indicate a similar pattern for both men and women – financial capability increases with income, and the relationship is stronger at lower levels of income (the curves are steeper at relatively low levels of income, and become relatively flat at higher income levels). More than 96% of men and women have household incomes of less than £6000 per month, and so lie where the curves are at their steepest.

It is noticeable that the relationship between income and financial capability is stronger for men than women – the curves for men slope more steeply at lower income levels – indicating that increasing incomes of men would have a larger effect on their financial capability than it would for women.

To illustrate the size of these effects, we find that halving the household income of our hypothetical man and woman to £1000 per month, and holding all other characteristics constant, increases the number of financial problems faced by the man by 15% (to 1.146) and by the woman by 16% (to 0.923).

Figure 15: Estimated impact of equivalised monthly gross household income on financial capability by gender: BHPS 1991–2006.



Source: BHPS 1991-2006

Marital status and household structure

Table 56 presents the estimates on the variables relating to marital status, number of children and household size and structure. As before, care needs to be taken in interpreting these because of the complex interactions between them. Generally, the patterns that emerge are similar for men and women.

Single never married people have higher financial capability than those who are either currently married or have previously been married. Having one child reduces financial capability (perhaps because first-time parents are less aware of the financial implications involved) while larger families are associated with higher financial capability (which may be because having a number of children forces people to keep close control on their finances, or because only people with high financial capability decide to have large families). People in single non-elderly households have least financial capability.

Table 56: Impact of marital status and household composition on financial capability by gender: BHPS 1991–2006

	Index of financial incapability		N financial problems	
	Men	Women	Men	Women
Married	0.088 [4.26]	0.162 [7.99]	0.197 [4.95]	0.370 [9.57]
Cohabiting	0.144 [7.30]	0.189 [9.84]	0.286 [7.59]	0.428 [11.66]
Widowed	-0.036 [1.07]	0.123 [4.93]	-0.003 [0.05]	0.294 [6.17]
Divorced/separated	0.073 [3.31]	0.155 [7.90]	0.200 [4.69]	0.313 [8.34]
<i>Number of children</i>				
One child	0.085 [5.64]	0.040 [3.24]	0.172 [5.91]	0.088 [3.69]
Two children	0.045 [2.65]	0.002 [0.11]	0.098 [3.02]	-0.001 [0.04]
Three children	0.025 [1.08]	-0.005 [0.25]	0.041 [0.94]	-0.038 [0.98]
Four or more children	-0.031 [0.80]	-0.108 [3.15]	-0.037 [0.50]	-0.184 [2.80]
<i>Household type</i>				
Household size	0.010 [1.57]	-0.001 [0.25]	0.007 [0.63]	-0.003 [0.28]
Single elderly	-0.022 [0.79]	-0.092 [4.29]	-0.032 [0.59]	-0.175 [4.28]
Couple no children	-0.172 [8.40]	-0.151 [7.36]	-0.281 [7.13]	-0.332 [8.45]
Couple dep child	-0.209 [8.49]	-0.148 [6.13]	-0.355 [7.52]	-0.318 [6.88]
Couple non-dep child	-0.122 [5.54]	-0.095 [4.14]	-0.163 [3.84]	-0.200 [4.57]
Lone parent	-0.100 [4.84]	-0.057 [3.09]	-0.164 [4.13]	-0.143 [4.10]
2+ unrelated adults	0.043 [1.77]	0.004 [0.15]	0.086 [1.82]	-0.010 [0.19]
Other household type	-0.110 [3.53]	-0.070 [2.22]	-0.171 [2.85]	-0.210 [3.51]
Constant	0.855 [2.91]	0.675 [2.45]	2.575 [4.56]	2.277 [4.33]
R squared	0.0744	0.0714	0.0818	0.0789
N obs (individuals)	53159 (7705)	62903 (8377)	53159 (7705)	62903 (8377)

Notes: Estimates from models with measures of financial capability as the dependent variable. Absolute ratio of coefficient to standard error in brackets. All specifications also include gender, age, health, interest rate, income, highest educational qualification, housing tenure, house value and housing costs, labour market status of individual and other household members, regional and time indicators.

To examine more carefully the net effects of changes in marital status, household structure and size, we have produced some predicted values, again based on the hypothetical man and women described earlier. These are shown in Table 57.

These indicate that changing the marital status from married to cohabiting has relative small effects on financial capability – it increases the index of incapability from -0.059 to -0.004 for the man and from -0.173 to -0.145 for the woman, and increases the number of financial problems by 9% and 7% for the man and woman respectively. However, changing it to widow has very different impacts by gender. For the man, this has no effect on the incapability index and increases the predicted number of financial problems by 5%. For the woman, financial incapability is increased more substantially by becoming a widow. The index of financial incapability is predicted to rise from -0.173 to 0.005 (to the 62nd percentile) while the number of financial problems increases by 48%.

The table also suggests that the impact of being divorced on financial capability is larger for women than for men. For the hypothetical man, the index increases to 0.050 if divorced rather than married (to the 74th percentile of the distribution) while the number of financial problems is predicted to increase by 25%. For the woman, the index increases to 0.038 (to the 68th percentile), while the number of financial

problems is predicted to increase by 50%. Therefore marital dissolution, either through divorce or the death of a spouse, results in a relatively large deterioration in financial capability for women, but has smaller effects for men.

Financial capability changes little for either men or women with one, two or three children. Having no children is associated with slightly higher financial capability for the man (for example, reducing his predicted number of financial problems by 4%) but has little impact for that of the woman. Having four children is associated with having the highest financial capability for the man and the woman. For the man, the index falls to -0.116 (the 45th percentile) and the number of financial problems falls by 12% to 0.881. For the woman the index falls to -0.286 (the 30th percentile) and the number of financial problems falls by 22% to 0.619. This may be because either having large families forces people to keep tight control on their finances, or because people only have large families when they have high financial capability.

Table 57: Predicted financial incapability by gender: marital status and household composition

	Predicted index (percentile)		Predicted financial problems	
	Men	Women	Men	Women
Hypothetical person	-0.059 (63 rd)	-0.173 (44 th)	1.001	0.798
Cohabiting	-0.004 (63 ^d)	-0.145 (44 th)	1.090	0.857
Widowed (lone parent)	-0.059 (63 rd)	0.005 (62 nd)	1.051	1.182
Divorced/separated (lone parent)	0.050 (74 th)	0.038 (68 th)	1.254	1.200
No children	-0.087 (61 st)	-0.175 (44 th)	0.963	0.791
One child	-0.028 (63 rd)	-0.133 (44 th)	1.067	0.900
Three children	-0.070 (62 nd)	-0.181 (44 th)	0.952	0.757
Four children	-0.116 (45 th)	-0.286 (30 th)	0.881	0.619

Notes: Calculations based on estimates from within-group fixed effects models. Hypothetical man is a 45 year old married man in 2006, with two dependent children, who has a first degree, is employed full-time in a permanent job and has a household income of £2000 per month, in good health, and whose wife is employed. He owns his own home (worth £100,000) with a mortgage with housing payments of £300 per month, and a prevailing interest rate of 4%. All other variables are set to zero. Hypothetical woman is 45 years old, married, two dependent children, with a degree, is employed, with a household income of £2000 per month, in good health, owns her own home (worth £100,000) with a mortgage with housing payments of £300 per month and a prevailing interest rate of 4%. Her husband is also employed.

Housing

The impacts of the housing variables on financial capability by gender are shown in Table 58. These indicate that, all else held equal, owning a home outright makes little difference to financial capability relative to having a mortgage (the omitted category).

Table 58: Impact of housing variables on financial capability by gender: BHPS 1991–2006

	Index of financial incapability				N financial problems			
	Men		Women		Men		Women	
Own outright	0.022	[1.93]	0.005	[0.49]	0.037	[1.66]	0.026	[1.22]
Local authority tenant	0.070	[4.66]	0.116	[8.51]	0.096	[3.36]	0.190	[7.31]
Private tenant	0.062	[4.56]	0.075	[5.72]	0.118	[4.54]	0.135	[5.37]
Housing costs	0.469	[18.00]	0.454	[19.80]	0.798	[15.96]	0.801	[18.27]
Housing costs squared	-0.153	[11.66]	-0.129	[13.09]	-0.267	[10.61]	-0.233	[12.35]
Housing costs cubed	0.009	[10.23]	0.008	[11.08]	0.016	[9.48]	0.013	[10.50]
House value/£1000000	0.022	[3.46]	0.022	[3.62]	0.055	[4.58]	0.056	[4.93]
House value squared	-0.001	[1.63]	-0.001	[1.67]	-0.002	[2.47]	-0.002	[2.43]
House value cubed	0.000	[1.05]	0.000	[1.10]	0.000	[1.73]	0.000	[1.67]
Constant	0.855	[2.91]	0.675	[2.45]	2.575	[4.56]	2.277	[4.33]
R squared	0.0744		0.0714		0.0818		0.0789	
N obs (individuals)	53159 (7705)		62903 (8377)		53159 (7705)		62903 (8377)	

Notes: Estimates from models with measures of financial capability as the dependent variable. Absolute ratio of coefficient to standard error in brackets. All specifications also include gender, age, health, interest rate, income, marital status and household composition, education, labour market status of individual and other household members, regional and time indicators.

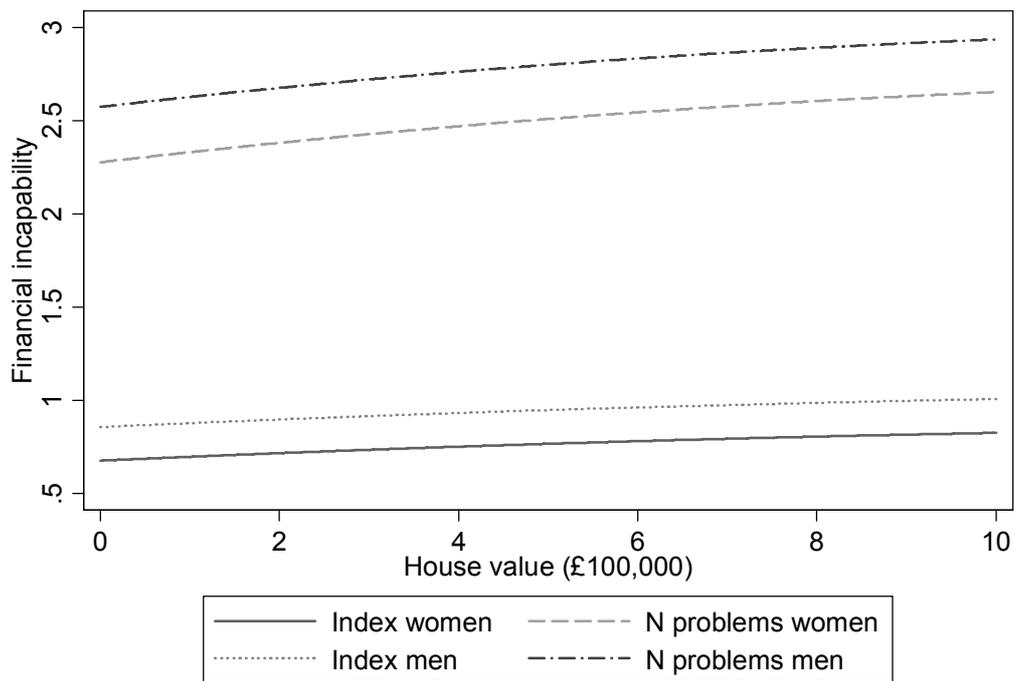
The coefficients are not statistically significant from zero for both men and women in each specification. However, tenants have lower financial capability than homeowners and this is particularly apparent for women renting from local authorities. The coefficients on being a local authority tenant and a private tenant are positive, indicating higher financial incapability, and differ significantly from zero. Both housing costs and, to a lesser extent, house value also affect financial capability significantly. To gauge the relative sizes of these effects we again estimate some predicted values using our hypothetical person, shown in Table 59, and plot the impact of respondent-assessed house value and housing costs on financial capability in Figures 16 and 17.

Table 59: Predicted financial incapability by gender: housing tenure

	Predicted index (percentile)		Predicted financial problems	
	Men	Women	Men	Women
Hypothetical person	-0.059 (63 rd)	-0.173 (44 th)	1.001	0.798
Own outright	-0.164 (45 th)	-0.292 (30 th)	0.822	0.604
Local authority tenant	-0.010 (63 rd)	-0.078 (60 th)	1.044	0.934
Private tenant	-0.018 (63 rd)	-0.118 (44 th)	1.066	0.879

Notes: Calculations based on estimates from within-group fixed effects models. Hypothetical man is a 45 year old married man in 2006, with two dependent children, who has a first degree, is employed full-time in a permanent job and has a household income of £2000 per month, in good health, and whose wife is employed. He owns his own home (worth £100,000) with a mortgage with housing payments of £300 per month, and a prevailing interest rate of 4%. All other variables are set to zero. Hypothetical woman is 45 years old, married, two dependent children, with a degree, is employed, with a household income of £2000 per month, in good health, owns her own home (worth £100,000) with a mortgage with housing payments of £300 per month and a prevailing interest rate of 4%. Her husband is also employed.

Figure 16: Estimated impact of house value on financial capability by gender: BHPS 1991–2006.



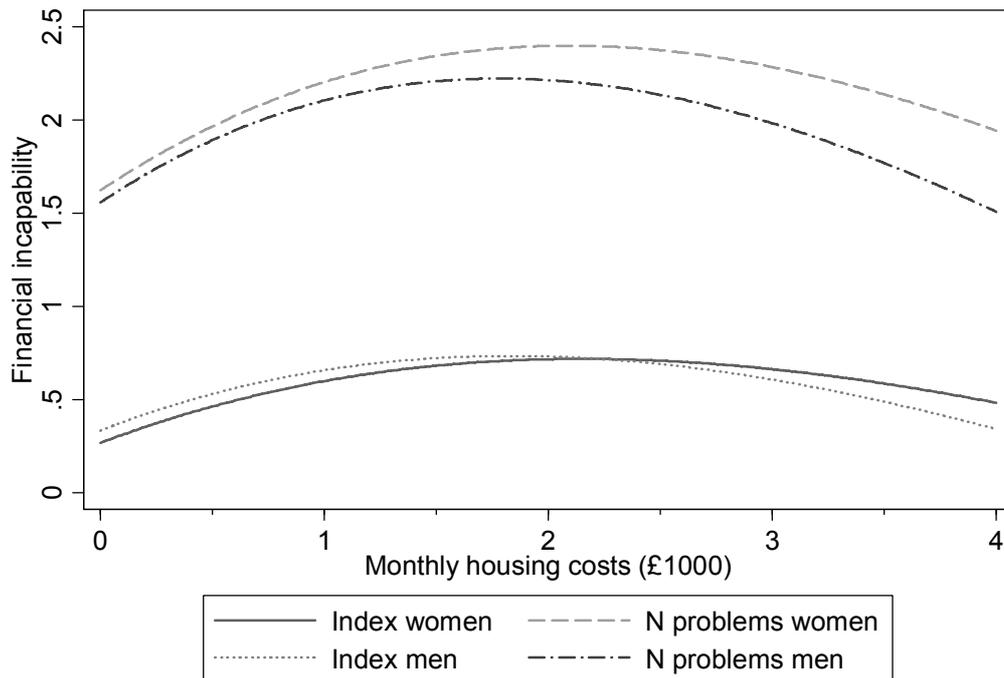
Source: BHPS 1991-2006

The predicted values indicate that being a tenant (either local authority or private) has small positive effects on financial incapability for both the man and the woman. The largest effect is found for the woman in local authority housing, which increases her index of financial incapability to -0.078 (the 60th percentile) and the number of financial problems by 17% (to 0.934).

Being an outright home owner (rather than owning with a mortgage) is associated with large falls in financial incapability, but this can be explained by the associated lack of housing costs rather than the housing tenure change itself (we discuss the impact of housing costs on financial capability below). Removing the burden of housing costs by becoming an outright home-owner reduces the predicted value of the index of financial incapability to -0.164 (to the 45th percentile) for the man and to -0.292 (the 30th percentile) for the woman. A similarly large fall is apparent in the predicted number of financial problems. The removal of the housing costs implied by becoming an outright home owner reduces the predicted number of financial problems by 18% (to 0.822) for the man and by 24% for the woman (to 0.604).

Figure 16 indicates that financial capability falls (the index increases) as the value of the home increases, controlling for other factors, and the relative size of this effect is similar for men and women. However, the plotted lines are relatively flat, indicating that large increases in house value are needed to have any substantial effect on financial capability.

Figure 17: Estimated impact of housing costs on financial capability by gender: BHPS 1991–2006.



Source: BHPS 1991-2006

Figure 17 plots the impact of housing costs on financial capability and, as suggested previously, these have very large (and non-linear) impacts on financial capability for both men and women. Increasing housing costs results in reducing financial capability up to about £2000 per month, although the upward part of the curve extends further for women than for men, indicating that the positive association between housing costs and financial incapability extends to higher housing costs for women than for men.

Therefore, for men and women who pay less than £2000 per month for their housing (either in rental or in mortgage payments), an increase in their housing costs has large and negative impacts on their financial capability. This accounts for more than 99% of those with non-zero housing costs. To illustrate the size of this effect, if we double the housing costs paid by our hypothetical man to £600 per month, his index of financial incapability increases to 0.042 (to the 74th percentile) and the number of financial problems faced increases by 17% (to 1.171). Doing the same for the woman increases the number of financial problems faced by 23% and their index of financial incapability from -0.173 to -0.070 (to the 62nd percentile). Therefore housing costs are an important determinant of financial capability for both men and women.

Labour market

The final group of variables included in the specifications relate to men and women's labour market status, and the labour market status of others in their household. The estimated coefficients on these variables by gender are presented in Table 60. They show that financial incapability falls by similar amounts for men and women as the number employed in the household increases – and this is holding household income constant. Therefore, financial capability is improved for both men and women by

having more household members in employment, and this is in addition to the beneficial effects of the additional income this raises. The employment status of the individual has larger impacts on financial capability, with men and women in a full-time permanent job having the most financial capability. Being in part-time work or self-employment increases both the index and the number of financial problems significantly (the coefficients are positive and statistically significant). The sizes of the coefficients are larger for women than men – moving from full-time to part-time employment or self-employment has a larger detrimental effect on financial capability for women than for men.

**Table 60: Impact of labour market status on financial capability by gender:
BHPS 1991–2006**

	Index of financial incapability		N financial problems	
	Men	Women	Men	Women
<i>Labour market status</i>				
Number employed hh	-0.021 [3.74]	-0.023 [4.21]	-0.046 [4.28]	-0.050 [4.79]
Part-time employee	0.081 [4.81]	0.086 [10.27]	0.177 [5.50]	0.192 [12.03]
Self-employed	0.007 [0.63]	0.038 [2.35]	0.033 [1.46]	0.127 [4.10]
Unemployed	0.262 [15.27]	0.202 [12.75]	0.666 [20.24]	0.580 [19.18]
Signed-on	0.098 [5.88]	0.125 [6.69]	0.237 [7.43]	0.282 [7.92]
Retired	0.093 [6.18]	0.106 [7.97]	0.281 [9.75]	0.321 [12.65]
Inactive not like job	0.074 [5.70]	0.098 [9.97]	0.239 [9.64]	0.301 [15.99]
Inactive like job	0.168 [9.88]	0.160 [12.57]	0.451 [13.81]	0.441 [18.10]
Seasonal/casual job	0.101 [7.13]	0.058 [4.71]	0.176 [6.51]	0.122 [5.17]
Fixed term contract	0.058 [3.80]	0.031 [1.92]	0.100 [3.42]	0.058 [1.86]
Spouse has job	-0.004 [0.37]	-0.101 [8.96]	-0.021 [1.11]	-0.231 [10.76]
Constant	0.855 [2.91]	0.675 [2.45]	2.575 [4.56]	2.277 [4.33]
R squared	0.0744	0.0714	0.0818	0.0789
N obs (individuals)	53159 (7705)	62903 (8377)	53159 (7705)	62903 (8377)

Notes: Estimates from models with measures of financial capability as the dependent variable. Absolute ratio of coefficient to standard error in brackets. All specifications also include gender, age, health, interest rate, income, marital status and household composition, education, housing tenure, house value and housing costs, regional and time indicators.

Being out of work, either in retirement or economic inactivity, reduces financial capability and more so for women than for men. The coefficients are positive and statistically significant and larger for women than men. However, for both men and women the largest increases in financial incapability are associated with being in unemployment, particularly if also signing on at an unemployment benefit office. The estimated coefficients on these variables are large, positive and statistically significant, and combined increase a man's (woman's) financial incapability index by 0.36 (0.327) and the number of financial problems faced by 0.903 (0.862). Working in non-permanent jobs (either seasonal or casual work or on a fixed-term contract) is also associated with lower financial capability for both men and women. However, having an employed spouse increases financial capability among women (the coefficients are negative and statistically significant), but has no significant effect for men (and again this effect is holding income constant).

To help quantify the sizes of these effects, we return to our hypothetical man and women and investigate what happens to their predicted financial capability when we change their employment status (and that of their spouse). The results from this exercise are presented in Table 61. These show that having a non-working spouse reduces financial capability for both the man and the woman (holding household

income constant). For the man, the impact is relatively small, increasing the number of financial problems faced by 7%. For the woman the impact is substantial, moving her from the 44th to the 62nd percentile of the index distribution and increasing the number of financial problems faced by 35% to 1.079. Therefore having an employed spouse makes a bigger difference to the financial capability of women than men.

Moving from full-time work into part-time work reduces financial capability for both the man and the woman, increasing the number of financial problems faced by 16% and 18% respectively relative to being in full-time work. Smaller reductions in financial capability are associated with being in seasonal, casual or fixed-term employment rather than in a permanent job.

Table 60: Predicted financial incapability by gender: labour market status

	Predicted index (percentile)		Predicted financial problems	
	Men	Women	Men	Women
Hypothetical person	-0.059 (63 rd)	-0.173 (44 th)	1.001	0.798
Full-time employee (spouse not working)	-0.035 (63 rd)	-0.049 (62 nd)	1.068	1.079
Part-time employee (spouse not working)	0.046 (74 th)	0.037 (62 nd)	1.245	1.271
Unemployed (spouse not working)	0.248 (83 rd)	0.176 (78 th)	1.779	1.709
Unemployed and signed on (spouse not working)	0.345 (83 rd)	0.300 (82 nd)	2.016	1.990
Retired (spouse not working)	0.079 (76 th)	0.080 (75 th)	1.395	1.449
Inactive and like to work (spouse not working)	0.154 (78 th)	0.134 (77 th)	1.565	1.570
Inactive not like to work (spouse not working)	0.060 (74 th)	0.072 (74 th)	1.353	1.430
Employed in seasonal job (spouse not working)	0.066 (74 th)	0.009 (62 nd)	1.244	1.201
Employed in fixed term job (spouse not working)	0.023 (63 rd)	-0.018 (62 nd)	1.168	1.137

Notes: Calculations based on estimates from within-group fixed effects models. Hypothetical man is a 45 year old married man in 2006, with two dependent children, who has a first degree, is employed full-time in a permanent job and has a household income of £2000 per month, in good health, and whose wife is employed. He owns his own home (worth £100,000) with a mortgage with housing payments of £300 per month, and a prevailing interest rate of 4%. All other variables are set to zero. Hypothetical woman is 45 years old, married, two dependent children, with a degree, is employed, with a household income of £2000 per month, in good health, owns her own home (worth £100,000) with a mortgage with housing payments of £300 per month and a prevailing interest rate of 4%. Her husband is also employed.

The largest effects on financial capability are related to not being in work. Being unemployed and signing on moves the man to the 83rd percentile of the distribution of the index of financial incapability and the woman to the 82nd percentile. The number of financial problems faced are predicted to increase to about two for both the man and the woman, increases of 89% and 84% respectively relative to being in full-time work. The effects of being retired and economically inactive are slightly larger for the woman than the man, moving both to between the 74th and 78th percentile of the index of financial incapability, and increasing the number of financial problems faced by between 27% and 47%.

Therefore people's labour market status, and that of their spouse, have large impacts on their financial capability, holding all else (including household income) constant. Men appear more adversely affected than women by unemployment, while women are more adversely affected than men by their spouse being out of work.

8 Summary and conclusions

The aim of this project is to investigate the determinants of financial capability and to establish which characteristics of individuals and the households in which they live have the largest effects on their ability to manage their finances. We create an index of financial incapability using variables measuring: perceived current financial situation; reporting that the situation worsened since last year; whether respondent saves; whether household has housing payment problems; whether such problems have required borrowing; whether they have required cutbacks; and whether the household has been two or more months in housing arrears in the previous 12 months. As an alternative, and as part of the validity checking process, we have constructed a simpler measure that counts the number of financial problems each individual is facing.

Estimates from panel data models indicate that financial capability is determined by many observable characteristics of individuals and the households in which they live. The key determinants include age, marital status, household size and structure, income, housing tenure, house value and housing costs, and the employment status of the individual and other household members. Although many of these characteristics have significant impacts on financial capability, our results show that age, household income, housing costs and employment status have the largest impacts.

In particular the lowest financial capability is found for young adults, those with low household incomes, with relatively high housing costs, in unemployment without an employed spouse. In contrast, older people with relatively high household income, low housing costs, in full-time work with an employed spouse have the most financial capability. The effect on financial capability of halving an individual's income, while large, is smaller than the effects of age, divorce or separation, being a local authority tenant and being unemployed. Furthermore, it is important to note that even controlling for income levels, other factors still have large and statistically significant impacts on an individual's financial capability.

Estimating gender-specific models show that being young and in unemployment have a larger negative impact on the financial capability of men than women. In contrast, being in poor health, divorced or separated and having a spouse that is not in employment have larger negative effects on the financial capability of women than of men. However, the wide range of observed characteristics included in our statistical models, explained only a small proportion of the total variation in financial capability, indicating that most of the differences in financial capability across individuals remain unexplained.

We have found that a person's financial capability varies considerably between one year and the next. If financial capability at the individual level is highly variable from one year to the next in an unpredictable way, then this makes it harder to design policies to improve it. The results from our analysis lead us to conclude that people do have particular observable characteristics that determine their financial capability and which allow the appropriate policies and programmes to be targeted to those most in need. This will be particularly beneficial for the FSA's financial capability programmes and policy. Examples would be low-income households and young people in general, particularly those that experience unemployment or marital

dissolution, and households which experience an increase in their housing costs. Furthermore, this research does not address what it is about being unemployed or divorced or widowed that causes people's financial capability to change, given that we are already allowing for the associated income shocks and changes to other characteristics. Qualitative studies of particular subgroups of the population may help in answering this question.

Further research into the factors contributing to the changes in financial capability which are unexplained by observable life events would be beneficial. People may experience shocks, events or particular characteristics that we do not observe that might affect their financial capability. Our estimation procedure allows for time invariant unobserved or unobservable characteristics of individuals, such as ability or motivation, which may affect both financial capability and other observable characteristics. However, if there are particular events that people experience, but that we are unable to capture in our data, that affect both their financial capability and other characteristics, then these may confound the effects we found using statistical models.

9 References

- Atkinson, A., McKay, S., Kempson, E., and Collard, S. (2006). 'Levels of Financial Capability in the UK. Results of a baseline survey.' Bristol: University of Bristol.
- Capellari, L. and Jenkins, S.P. (2007), 'Summarising multiple deprivation indicators', in *Inequality and Poverty Re-examined*, S.P. Jenkins and J. Micklewright (eds), Oxford University Press, Oxford.
- Financial Services Authority (2006), *Financial capability in the UK: Establishing a baseline*, FSA: London.
- HM Treasury (2007), *Financial capability: the Government's long-term approach*, HMSO.
- Melhuish, E., Belsky, J. and Malin, A. (2008), *An investigation of the relationship between financial capability and psychological wellbeing in mothers of young children in poor areas in Britain*, Occasional Paper no 30, Financial Services Authority, London.
- National Institute of Adult Continuing Education (2007), *Financial capability: the Government's long-term approach. A NIACE response to the HM Treasury paper*, <http://www.niace.org.uk/organisation/advocacy/Treasury/financial-capability.htm>.
- Nunnally, J.C. and Bernstein, I.H. (1994), *Psychometric theory*, 3rd Edn. New York: McGraw-Hill.
- Skrondal, S. and Rabe-Hesketh, S. (2004), *Generalized latent variable modelling: multilevel, longitudinal and structural equation models*, Chapman & Hall/CRC.
- Taylor, M.P., Berthoud, R and Jenkins, S.P. (2004), *Low income and multiple disadvantage 1991-2001: Analysis of the British Household Panel Survey*, A report for the Social Exclusion Unit in the Breaking the Cycle Series, ODPM: London.
- Townsend, P (1979), *Poverty in the United Kingdom*, Penguin.

10. Appendix

Sample sizes by wave and gender: BHPS 1991–2006

Year	Men	Women	Total
1991	3938	4599	8537
1992	3758	4450	8208
1993	3623	4228	7851
1994	3684	4326	8010
1995	3529	4153	7682
1996	3734	4373	8107
1997	3816	4390	8206
1998	3698	4355	8053
1999	3686	4324	8010
2000	3597	4308	7905
2001	3585	4183	7768
2002	3480	4063	7543
2003	3429	4063	7492
2004	3335	3911	7246
2005	3262	3889	7151
2006	3291	3880	7171
Total	57445	67495	124940

Notes: Unweighted sample sizes for adults with non-missing information on relevant variables at each wave. Total row sums all waves. BHPS 1991–2006.

The Financial Services Authority
25 The North Colonnade Canary Wharf London E14 5HS
Telephone: +44 (0)20 7066 1000 Fax: +44 (0)20 7066 1099
Website: <http://www.fsa.gov.uk>

Registered as a Limited Company in England and Wales No. 1920623. Registered Office as above.