



The Wellbeing, Health, Retirement and the Lifecourse project (WHERL)

This research project investigates ageing, work and health across the lifecourse. This 3 year interdisciplinary consortium is funded by the cross-research council Lifelong Health and Wellbeing (LLHW) programme under the Extending Working Lives initiative. It examines a crucial question for ageing societies: how inequalities across the lifecourse relate to paid work in later life in the UK.

This issue is of growing importance since the UK, in common with many other governments across the world, is implementing policies to encourage longer working lives, including the postponement of State Pension age (SPa). These policy reforms affect millions of people, yet their implications for health and wellbeing are unknown. Do these policies harm, benefit or have little effect on the population? To answer this, we need to understand the lifelong drivers affecting the complex relationship between paid work in later life, health and wellbeing.

The project builds on an existing UK-Canadian collaboration examining lifecourse influences on later life work trajectories across several European countries and the US. In addition to those at the [Institute of Gerontology at King's College London](#), the consortium brings together a unique interdisciplinary team involving universities and partner organisations including the [Dalla Lana School of Public Health, University of Toronto](#); [Research Department of Epidemiology and Public Health, University College London](#); [Institute of Psychiatry, Psychology & Neuroscience also at King's College London](#); [Manchester University](#); [Pensions Policy Institute](#); [Age UK](#); and the [Department for Work and Pensions](#).



Using a wide variety of complex large-scale datasets, our interdisciplinary team is tackling projects that cover three major areas:

1. a comprehensive assessment of lifecourse determinants and consequences for health and wellbeing of working up to and beyond SPa;
2. an evaluation of whether (and how) these relationships have changed for different cohorts and over time; and
3. modelling of the financial consequences of working up to and beyond SPa for those with different lifecourse trajectories.

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Introduction

This Briefing Note examines the influence of various lifecourses on income in retirement.

The primary focus of this note is to consider how women's retirement income is affected by motherhood. This includes the impact of taking time out of work to care for children, as well as the implications of the Motherhood Penalty, which is the observation that mothers tend to have reduced incomes relative to women without children.

Summary of results

- Taking breaks to care for children can reduce retirement income.
- Women with more children tend to take longer breaks which can lead to a larger impact on retirement income.
- People who take time out to care for children may do better under the new State Pension than they would have done under the pre 2016 pension system.
- The relative impact of motherhood may be greater for higher paid women, since a lower proportion of their retirement income comes from the State Pension.
- Working longer could help mitigate some of the impact, but some people may have difficulty working after SPa.

Lifecourses

The analysis in this note is based on a large number of runs from the PPI's Individual Model, using lifecourse information derived by

Lifecourses

Table 1: The work-based lifecourses for women used in the modelling for this note

Female lifecourses	Proportion
Mostly working full-time throughout	27%
Mostly non-employed throughout	17%
Weak attachment, early exit	7%
Family carer to part-time (long break: 16 yrs)	12%
Family carer to part-time (short break: 4 yrs)	13%
Family carer to full-time (10 yr break)	18%
Full-time to part-time (at age 23)	6%

the Institute of Gerontology at King's College London from the English Longitudinal Study of Ageing (ELSA).

The lifecourses contain the working patterns and life events of particular types of individuals. For example, working full-time throughout, not participating in paid work throughout, taking time off to have a family, and leaving the workforce before SPa.

Lifecourse construction

The lifecourses were derived by the Institute of Gerontology at King's College London and are representative of people currently aged 50 or older in England.¹

The lifecourses used in this note include six scenarios for women and one for men for comparison. unless otherwise stated it is assumed that individuals in employment are making pension contributions from age 22 until they retire, which is assumed to

be at their State Pension age (SPa). This note assumes they have been contributing 9% of their earnings into a Defined Contribution pension scheme, and that they purchase an annuity at retirement.

These lifecourses are based on historical data of people currently aged 50 or older, younger cohorts retiring in the years to come may have some differences in working patterns.

The female lifecourses (Table 1) derived by the Institute of Gerontology include:

- **Mostly working full-time throughout**, under which individuals are characterised by ongoing paid employment and pension contributions from about ages 16 to 59.
- **Mostly non-employed throughout**, where individuals are largely not in paid work up to age 59, therefore

How do female lifecourses affect income in retirement?

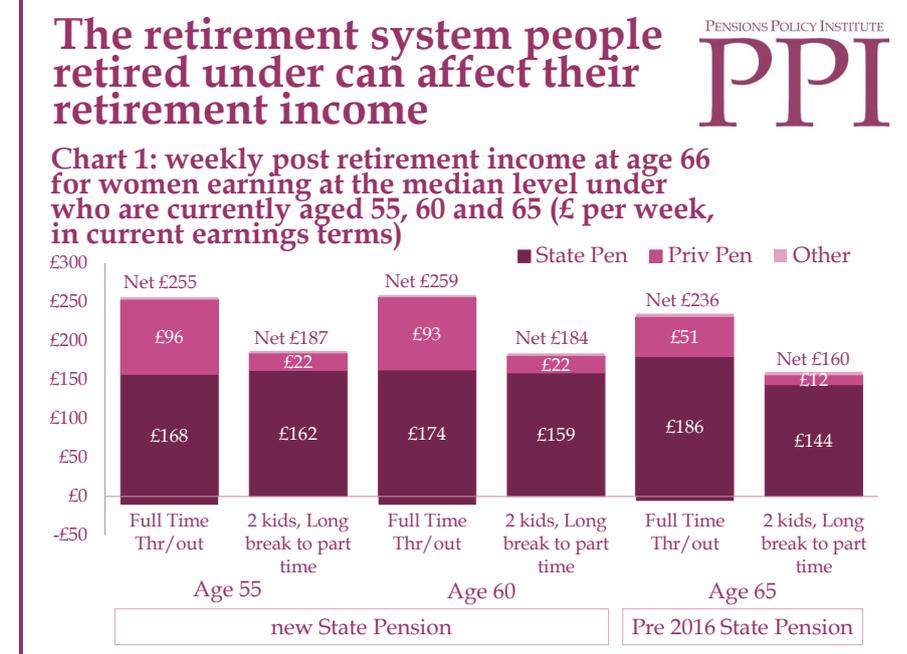
not making any pension contributions to a workplace scheme.

- **Weak attachment, early exit**, characterised by individuals who are in full-time work until about age 22, followed by a period not in paid work from about ages 23 to 33, part-time from ages 34 to 47, and then early exit at about age 48. This lifecourse was not used in the results presented in this note.
- **Family carer to part-time (long break)**, under which individuals are characterised by a long break from about ages 26 to 41, and in part-time work from about ages 42 to 59.
- **Family carer to part-time (short break)**, these individuals are characterised by a short break for family care from about ages 26 to 29, followed by part-time work from about ages 30 to 59.
- **Family carer to full-time**, individuals in this group are characterised by a medium break from about ages 26 to 34, followed by full-time work from about ages 35 to 59.
- **Full-time to part-time**, mostly part-time, where individuals are largely in part-time work from about ages 23 to 59.

The new State Pension benefits some groups more than others

The people included in the creation of the lifecourses have State Pension ages that span the current changes in State Pension reform and SPa increases.

Women aged 65 in 2016 retired under the previous State Pension system, which was in effect until April 2016. Under that system the



Explanation of income charts

The charts in this briefing note show the amount of State Pension, Private Pension and other benefits (primarily winter fuel payment and Christmas bonus) as stacked bars of weekly income before tax.

In order to show figures after tax, the bars are offset at the bottom by the amount of tax paid. The top of the stacked bar charts then reaches the net income level, which is also labelled on top of each bar.

State Pension is made up of two components; the basic State Pension and the earnings linked Additional State Pension. These were replaced in April 2016 with the single flat rate “new State Pension”.

The new State Pension is set at a rate higher than the basic State Pension. Some people have built up Additional State Pension that would have made their total State Pension more than the full level of the new State Pension. These people receive a new State Pension at the full rate along with a protected payment on top.

Chart 1 shows the difference in retirement income for individuals retiring under the old system compared to those retiring under the new State Pension system.

The 55 year old working full-time has lower State Pension, than older full-time workers. This is because the 55 year old has built up less Additional State Pension. So the older full-time workers may be likely to have a higher State Pension.

People with low Additional State Pension are likely to have a better outcome under the new State

Pension than they would have had under the previous system. This is because the pension they receive under the new State Pension is likely to be greater than the total basic State Pension and Additional State Pension they would have received under the pre 2016 State Pension system.

Low earners, part-time workers and those who took career breaks may be more likely to have built up low levels of Additional State Pension, and therefore have a higher retirement income under the new State Pension.

Economic conditions impact private pension levels

Chart 1 also shows that 65 year olds tend to have a lower private pension than the younger pensioners. This stems from the fact that they were working through a period of high inflation in the 1970s. At the start of the 1970s wages were much lower than by the end of the 1970s, so people who worked through the 1970s were making contributions on significantly lower salaries than those who started work in the 1980s.

Taking time out has a larger impact on private pensions than on State Pension

People who take time out of work to raise children have a reduced opportunity to save into a pension scheme. This can affect the amount of income received in retirement. The data underlying the lifecourses shows that such childcare breaks are predominantly taken by women.

Chart 2 shows projected outcomes in retirement income for women, currently aged 50, who have been earning at the median earnings pattern for women throughout working lives that were punctuated by childcare.

Women who take time out of work tend to have a reduced retirement income as a result of missing years of saving.

The higher State Pension of the women who worked throughout is a result of having built up an entitlement to Additional State Pension under the pre 2016 State Pension system. The Additional State Pension took their total State Pension entitlement above the level of the new State Pension, meaning that they are entitled to a protected payment in excess of the level of the new State Pension. Women who took career breaks accrued less Additional State

Pension, so they are not entitled to a protected payment on top of their new State Pension.

The Motherhood Penalty reduces private pensions

Academic research has observed that mothers tend to have reduced incomes relative to the general population; this is referred to as the Motherhood Penalty.²

Causes of the Motherhood Penalty include a lack of investment in training and development of mothers by employers, or mothers taking flexible employment that is considered more conducive to family life. This can have an impact on their opportunities to save for retirement.

There are a number of academic papers examining the Motherhood Penalty and estimating its size in various countries. For the purposes of this note the Mother-

Taking breaks to look after children may lead to lower private pension

Chart 2: weekly post retirement income for median earning woman currently aged 55 under various scenarios of caring for children (£ per week, 2016 earnings terms)



hood Penalty is assumed to reduce women's pay by 2% for the first child, 12% if there are 2 children and 15% for those with 3 or more children. It is assumed that after a child is 16 years old the pay level gradually returns to the unadjusted level for women without children, regaining 1% of pay each year.

Chart 3 sets out the projected retirement income outcomes of women currently aged 50, who have worked throughout their lives but had children, and have been affected by the Motherhood Penalty. The outcomes for a man, currently aged 50, who earns at the median earnings level for men throughout his working life, are displayed for comparison.

The median earning man achieves a higher State Pension and private pension. This is a result of male median earnings being higher than female median earnings.

Women who have only one child have an earnings penalty of 2% of pay for 16 years of their working life. This results in a private pension that is around 1% lower than that of a childless woman. The State Pension is also reduced, but by a lower proportion because most of the State Pension is flat rate; the difference arises from the protected payment which stems from the Additional State Pension, a small part of the State Pension.

The Motherhood Penalty has a substantially greater impact on the retirement income of mothers



who have more children. This is because the Motherhood Penalty increases quite sharply from 2% for a mother who has one child to 12% for a mother with two children.

The Motherhood Penalty increases further for mothers with three children to 15% of pay, but for a mother with more than three children it remains at 15%.

However, the more children a mother has, the longer she is likely to be caring for children under the age of 16, therefore being subject to a penalty at the higher rate for a longer time.

Higher earners receive higher private and State Pensions

The results presented so far have been for median earners. However the impact of lifecourses vary for earners at different earnings levels. Chart 4 compares the impact of lifecourses on women earning at the 30th percentile of

female earnings, and women earning at the 70th percentile.

Lower paid women receive a higher proportion of their post retirement income from the State Pension. The State Pension does not decrease for these individuals so the lifecourses affect only the private pension income for a low earner.

For a high earner, the private pension makes up a bigger proportion of their retirement income than for lower earners, and State Pension does decrease under certain lifecourses. This means that there is likely to be a greater impact of motherhood on higher earners than on lower earners.

Older higher earners currently have greater State Pension than lower earners. This is as a result of the protected amount arising from the Additional State Pension. In time this will reduce as

people retire having built up lower levels of Additional State Pension under the pre 2016 system

Working longer can improve outcomes

In order to mitigate the reduced retirement income resulting from motherhood, it may be possible for some individuals to work beyond their SPa. This would affect their private pension only.

Individuals are also able to delay taking the State Pension, and increase the resulting State Pension income through deferment enhancements.

The analysis in this note assumes that State Pension is paid at SPa. There are three main factors at work:

- Working longer provides income from earnings.
- Delaying retirement gives more time to save.
- Delaying retirement gives better terms on retirement products.

Working longer provides an income from earnings. Earnings from employment are likely to be larger than the income otherwise available from their private pension.

Working longer while continuing to save in a pension scheme increases the amount of contributions made into the pension scheme. The pension scheme also receives further years of investment return. Assuming investment returns over the period are positive, the extra con-

Higher earners receive higher private and state pensions

Chart 4: weekly post retirement income for woman earning at the 30th percentile, median, and 70th percentile levels under various scenarios of caring for children (£ per week)



tributions and investment period will lead to an increase in the pension fund.

Delaying taking the private pension enables the individual to get better terms on their retirement product. This is because the prod-

uct which provides an income for the rest of their life would be expected to pay out over fewer years for an older person than a younger person.

Table 2 sets out the impact of working beyond SPa for a median

Working longer can improve post retirement income

Table 2: weekly post retirement income for a median earning woman who took a career break to raise 2 children then returned to work full time under scenarios of working beyond state pension age (£ per week)

Age	At SPA			1 yr more work			2 yrs more work			5 yrs more work		
	Priv Pen	Earn	Tot Inc	Priv Pen	Earn	Tot Inc	Priv Pen	Earn	Tot Inc	Priv Pen	Earn	Tot Inc
66	£66	£0	£227	£0	£364	£465	£0	£364	£465	£0	£364	£465
67	£63	£0	£225	£70	£0	£231	£0	£360	£463	£0	£360	£463
68	£61	£0	£224	£67	£0	£229	£74	£0	£235	£0	£357	£461
69	£58	£0	£222	£64	£0	£229	£71	£0	£232	£0	£354	£459
70	£55	£0	£220	£61	£0	£225	£68	£0	£230	£0	£351	£456
71	£53	£0	£219	£59	£0	£223	£65	£0	£228	£89	£0	£248

earning woman who took a 10 year career break to raise 2 children. It is assumed that she is currently aged 55, and returned to work full-time after her career break. The table shows scenarios where she stops work 1, 2 or 5 years after her SPa.

At retirement she is assumed to receive a constant income from her private pension, which therefore falls in earnings terms. The total income in Table 2 is presented net of tax, and also includes State Pension which is assumed to be taken at SPa.

Working 1 year longer gives her an initial total income in retirement of £231 a week, compared with £227 a week if she stops work at SPa. Working a further year gives her an initial retirement income of £235 a week.

Working 5 more years beyond SPa increases her total income in her first year of retirement to £248 a week. This is at age 71 and is around the same level as

a similar 71 year old woman who worked full-time throughout without children.

Not everyone can work longer

It is not possible for everyone to work longer. While the government abolished the right of employers to force people to retire at age 65, people may find it difficult to continue in work. This could be due to their health, the nature of the work, or difficulty in finding other employment. They may have other responsibilities such as caring for parents, partners or other family members which may reduce their opportunity to work.

Conclusions

- Taking breaks to care for children can reduce retirement income.
- The more children a mother has can lead to longer breaks and a larger impact on retirement income.
- People who take time out to care for children may do better under the new State Pension than they would have done under the pre 2016 pension system.

- The relative impact of lifecourses may be greater for higher paid women, where a higher proportion of their retirement income comes from the private pension which is likely to be affected to a greater extent.

- Working longer can help mitigate some of the impact, but some people may have difficulty working continuing in paid work after retirement age.

1. Corna L.M., Platts L. G., et al *A sequence analysis approach to modelling the work and family histories of older adults in the UK*
2. Davies R, Pierre G *The family gap in pay in Europe: A cross-country study*

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Further WHERL briefing notes

Future briefing notes from the PPI under the WHERL project will illustrate further impacts arising from the lifecourse work of our WHERL colleagues.