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# Surfing the Tsunami: A Plan for State Pension Reform

Paul Sweeting

# Index


Foreword ..... 4
Legislative History of UK State Pension ..... 5
Chapter 1 — The UK State Pension: A Brief(ish) History ..... 6
- 2,500 Years of Penson ..... 6
- The First Universal State Pension ..... 7
- Modernising the State Pension ..... 8
- Additional State Pensions ..... 9
- Contracting Out ..... 9
- The New State Pension ..... 10
- Where Does This Leave Us? ..... 10

Chapter 2 — The Impact of Changes to the State Pension ..... 11
- The Basic State Pension ..... 11
- SERPS ..... 13
- S2P ..... 13
- The New State Pension — Is It Good Value? ..... 14

Chapter 3 — The Demographic Challenge ..... 18
- Longevity: Past, Present and Future ..... 18
- The Working Population ..... 22
- The Demographic Fallout ..... 27

Chapter 4 — The Changing State Pension Age ..... 28
- The Sex Equalisation of Pensions ..... 28
- Increasing the State Pension Age ..... 29
- The Only Solution? ..... 31

Chapter 5 — Problems with Raising the State Pension Age ..... 32
- The Socioeconomic Angle ..... 32
- The Macroeconomic Angle ..... 35

Chapter 6 — Means-Testing the State Pension ..... 42
- The Problem with Means-Testing ..... 42
- A Means-Tested State Pension ..... 42

Chapter 7 — A Conclusion...and a Suggestion ..... 45
Appendix 1 — Indices Used for Increases ..... 48
- Past Increases in Line with Prices ..... 48
- Past Increases in Line with Earnings Inflation ..... 48
- Future Increases ..... 48

Appendix 2 — Projection of Annual State Pension Payments ..... 49
Appendix 3 — Calculating the Impact of Means-Testing ..... 50

# Foreword

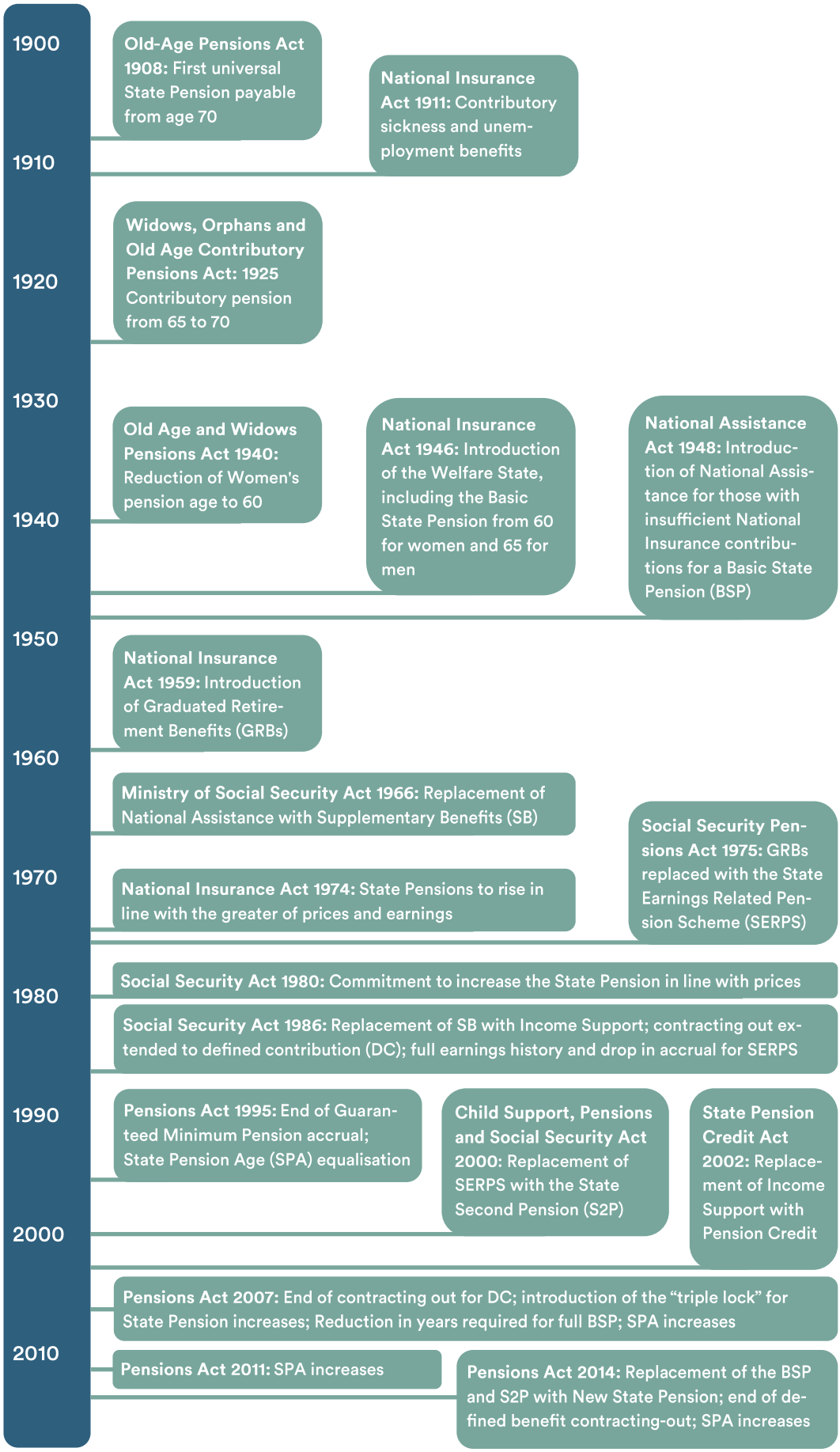
For some years the affordability of the UK State Pension has been an issue. And for some years, the most visible answer to this issue has been to raise the State Pension Age.

However, increasing the State Pension Age has a much greater impact on the least well-off — and they are the ones who are most dependent on this benefit. Just as importantly, increasing the State Pension Age is unlikely to control the cost of State Pensions in the long run.

Perhaps instead of using the State Pension Age alone, it is worth visiting the concept of means-testing. This would not be unprecedented. In fact, when the Old Age Pension was introduced in 1909, it was brought in as a means-tested benefit.

Using means-testing, whether alone or in conjunction with increases to the State Pension Age, could help to control the cost of the UK State Pension. What's more, it could do so equitably, ensuring that those who most need it are more likely to receive it.

# Legislative History of UK State Pension



Chapter 1

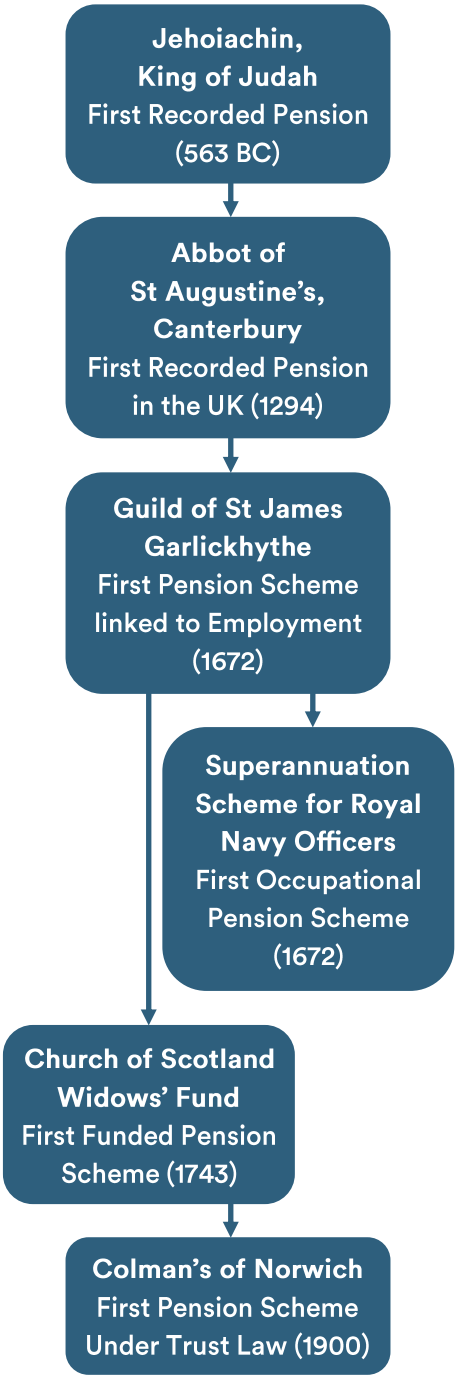
# The UK State Pension : A Brief(ish) History

## 2,500 Years of Pensions

Pensions have a long history — far longer than you might think. Take defined benefit ("DB") pension schemes. These are schemes that pay out pensions based on how much their members earn and how long they've been employed. They are generally set up using trust law, a legal structure that puts them at arm's length from the companies that set them up.

The first company to establish a scheme under trust law was Colman's of Norwich in 1900[1]. This was a funded scheme, meaning that money was set aside in advance to pay the pensions. But this wasn't the first funded scheme — a funded scheme providing pensions for widows of ministers was established by the Church of Scotland in 1743[2].

The Colman's scheme was also an occupational scheme, meaning that it was set up by the company to provide benefits for its employees. But it wasn't the first occupational scheme either. There was a superannuation scheme for certain retired Royal Navy officers in 1672[3], whilst the Guild of Saint James at Garlickhythe of London had set up a pension scheme for its members in 1375[4]. In fact, informal pension schemes existed all through the fourteenth century, making payments to groups such as retired soldiers, civil servants and household staff[5].




[1] Hannah, L. (1986). Inventing Retirement: the Development of Occupational Pensions in Britain, *Cambridge University Press, Cambridge*

[2] Blake, D. (2003). Pension Schemes and Pension Funds in the United Kingdom, Oxford University Press, Oxford

[3] Lewin, C. G. (2003). Pensions and Insurance Before 1800: a Social History, Tuckwell Press, East Linton

[4] Ibid. 2

[5] Ibid. 3

Going back even further, there is a pension being paid in 1294, to the retired abbot of St Augustine's in Canterbury[6]. But even this is relatively recent, considering that there are records of pensions being withheld from Lysias in ancient Greece, around 400 BC, and paid to Jehoiachin, King of Judah, whilst in exile in Babylon 563 BC[7].

## The First Universal State Pensions

In comparison to occupational pensions, universal state pension provision was slower to develop. The German Empire was the first to establish a universal state pension system, in 1889[8], with the United Kingdom eventually introducing a the Old-Age Pension with the Old-Age Pension Act 1908. The first Old-Age Pensions were paid in 1909. Like the State Pensions that exist today, the Old-Age Pension was set up on a pay-as-you-go (PAYG) basis. This meant that the payments to those receiving a pension were funded by those currently in work. This approach was adopted as the cost of immediately pre-funding the pensions — that is, setting money aside to pay for all the pensions that were due — would have been immense.

The Old-Age Pension played a significant part in the development of the welfare state that took place in the first half of the twentieth century. Even in the nineteenth century, poverty was essentially criminalised, with those unable to support themselves being sent to workhouses. But eligibility criteria for the Old-Age Pension were strict. For example, a person needed to be aged at least 70 and to have been resident in the United Kingdom for at least twenty years. Furthermore, anyone who had failed to work when able, been imprisoned or even convicted under the Inebriates Act risked finding themselves ineligible.

*"The most interesting feature of the Old-Age Pension is that was means-tested"*

But perhaps the most interesting feature of the Old-Age Pension is that was means-tested. Full payments were modest, at 5 shillings per week (equivalent to around £27 today). However, anyone with an annual income exceeding £26 per year (around £2,900 today) would see their Old-Age Pension reduced; and anyone with an annual income exceeding £31 and 10 shillings per year (around £3,500 today) would receive no pension at all.

[6] Ibid. 2

[7] Ibid. 3.

[8] Blackburn, R. (2002). Banking on Death or, Investing in Life: the History and Fu-

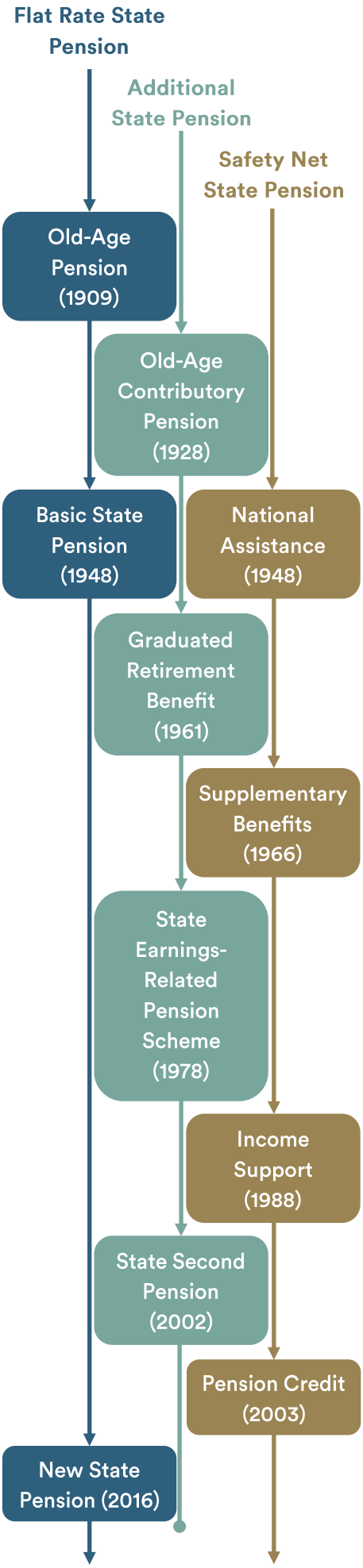
Whilst means-testing can ensure that only those that need a benefit receive it, it can also pose challenges. One of the key challenges is known as moral hazard. This happens when someone takes a risk knowing that they are protected from the consequences of this risk. With the Old-Age Pension, it could have occurred if people failed to save for retirement because they knew that the State would look after them. To avoid this, anyone making themselves poor in an effort to qualify for the pension would also have found themselves ineligible to receive payment[9].

## Modernising the State Pension

Despite earlier attempts to broaden the reach of the Old Age pension, no real progress was made until the Widows, Orphans and Old Age Contributory Pensions Act 1925. This resulted in the introduction in 1928 of a contributory — though still PAYG — pension from age 65 to 70. Receipt of this pension was based on the payment of National Insurance contributions (NICs). These had been introduced by the National Insurance act 1911, and were originally intended to fund sickness and unemployment benefits. The means-tested pension from age 70 remained unchanged.

The Old Age and Widows Pensions Act 1940 reduced the women's pension age to 60 from 65. However, the biggest change came with the National Insurance Act 1946 which introduced, among other things, the Basic State Pension in 1948. This was a universal pension, payable to all men from age 65 and women from age 60 — but as part of this arrangement, the payment of NICs was extended to all workers except married women.

It was intended that the Basic State Pension ultimately be funded by NICs, albeit without sticking to strict actuarial principles. However, this implied that an adequate history of NICs would be needed to claim a full state pension. Because this would take time to achieve, the National Assistance Act 1948 introduced a safety net. National Assistance continued to be paid from 1948 to 1966, until the Ministry of Social Security Act 1966 replaced National Assistance with Supplementary Benefits. These were themselves replaced in 1988 with Income Support by the Social Security Act 1986. This too was replaced in 2003 with the Pensions Credit, by the State Pension Credit Act 2002.




[9] Thurley, D. (2008). Old Age Pensions Act 1908: Standard Note 4817. *House of Commons Library, London*

## Additional State Pensions

Even in the early days of state pensions, it was intended that the benefits should offer only a safety net. As such, there was a long-standing desire by many to add some form of Additional State Pension linked to earnings. The first realisation of this desire was the Graduated Retirement Benefit ("GRB"), introduced by the National Insurance Act 1959. Pensions under this scheme were earned between 1961 and 1978, with additional NICs buying extra "units" of pension. However, despite cumulative inflation of 300%, the level of benefits earned was not increased over this period[10].

The failing Graduated Retirement Benefit was replaced in 1978 with a more comprehensive arrangement: the State Earnings Related Pension Scheme ("SERPS"), introduced by the Social Security Pensions Act 1975. The aim of SERPS was that people would receive a pension of 25% of their "band earnings", these being earnings above a lower limit (the "Lower Earnings Limit" or LEL) roughly in line with the Basic State Pension, and below an upper limit (the "Upper Earnings Limit" or UEL) of around seven times this amount. An individual's band earnings were revalued to State Pension Age (SPA) in line with average earnings: in other words, this was a career-average revalued earnings (CARE) scheme.

*"Both the Basic State Pension and the various Additional State Pensions were replaced with the New State Pension"*

The benefits under SERPS were revised and reduced several times over the next decade and a half, until SERPS was replaced with the State Second Pension ("S2P") in 2002, thanks to the Child Support, Pensions and Social Security Act 2000. This lasted until 2016, when both the Basic State Pension and the various Additional State Pensions were replaced with the New State Pension, thanks to the Pensions Act 2014.

## Contracting Out

Many people receive reduced amounts of Additional State Pension due to a process known as "contracting out". The GRB, SERPS and S2P all offered certain DB pension schemes the opportunity to redirect a portion of an individual's NICs into the scheme. This meant forgoing the Additional State pension, although additional pension was instead received from the occupational pension scheme.

[10] Bozio, A., R. Crawford and G. Tetlow (2010). The history of state pensions in the UK: 1948 to 2010, IFS Briefing Note BN105

Until 1997, the slice of pension earned in a scheme through contracting out was recorded separately, mainly because this Guaranteed Minimum Pension ("GMP") was subject to specific and complex increase rules. However, from 1997 onwards, the Pensions Act 1995 ensured that all that was needed for a DB scheme to contract out was a guarantee to provide a particular level of benefits.

From 1988, individuals were also able to contract out of SERPS into defined contribution ("DC") schemes thanks to the Social Security Act 1986. These are schemes where individuals build up an investment fund which is used at retirement to provide benefits. Unlike a DB scheme, all the investment risk in a DC scheme sits with the individual.

Contracting out for DC schemes ended in 2012, following amendments included in the Pensions Act 2007, and for DB schemes in 2016, following amendments included in the Pensions Act 2014.

## The New State Pension

Anyone retiring after April 2016 does not receive the Basic State Pension or an Additional State Pension — instead they receive the New State Pension. Having said this, guarantees are in place in the form of "protected payments" to ensure that no-one will receive benefits lower than those accrued before April 2016; however, the level and structure of the New State Pension indicates the direction of travel for these benefits.

On the face of it, the New State Pension is more generous than the Basic State Pension, standing as it does at £8,300 per annum in April 2017. But to qualify for the full New State Pension, 35 years of NICs are needed, whereas only 30 years were needed for the Basic State Pension for post-2010 retirees. More importantly, whilst the Basic State Pension is unaffected by contracting out, the New State Pension is subject to deductions for those who have contracted out previously. This reflects the fact that it is intended to replace not only the Basic State Pension but also S2P and its predecessors.

***"Whilst the Basic State Pension is unaffected by contracting out, the New State Pension is subject to deductions for those who have contracted out"***

## Where Does This Leave us?

There have been significant changes to the UK State Pension system over the last century. Earnings-related elements have been added, removed and even outsourced. However, the complexity of these changes makes it hard to see what the impact of these changes has been, and who is impacted most. Nonetheless, it is important to try and draw some useful conclusions from the available data.

Chapter 2

# The Impact of Changes to the State Pension

## The Basic State Pension[11]

Through the 1950s and 1960s, occasional increases were made to the Basic State Pension, but there was no statutory requirement to make such increases. This policy — or lack of it — came under pressure with the high inflation seen in the 1970s. As a result, the National Insurance Act 1974 determined that the Basic State Pension, along with other benefits, should be increased by the greater of price inflation and earnings growth each year.

This continued until the Social Security Act 1980 stipulated that the Basic State Pension should increase in line with prices alone. From 2002, the Labour Government continued to link pension increases to price inflation but committed to a minimum annual increase of 2.5% per annum[12].

However, it was not until 2010 that the policy was reversed with the introduction of the "triple lock" from the Pensions Act 2007. This guaranteed that pensions will increase in line with the greater of price inflation, average earnings and 2.5% per annum.

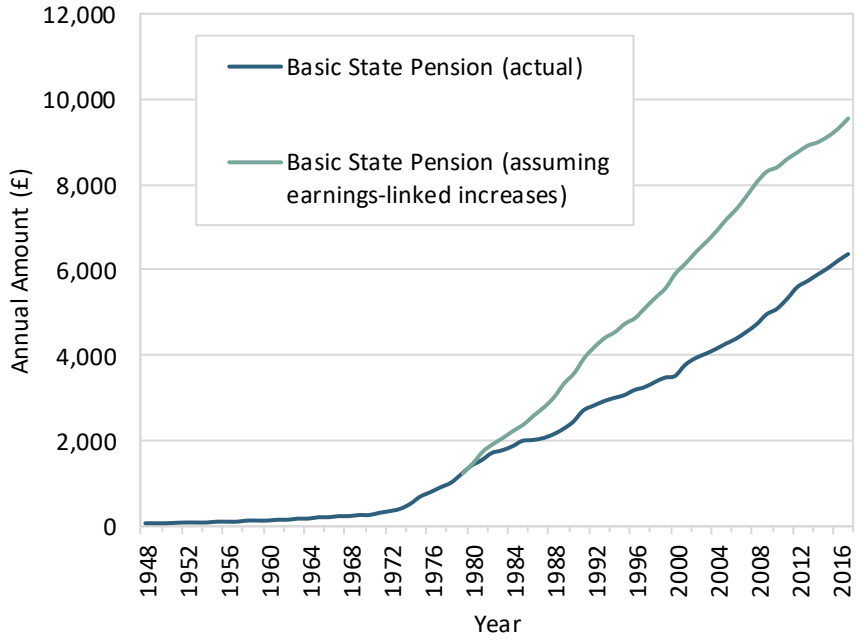
***"The Basic State Pension stands at around £6,400 per annum, whereas had the earnings link been retained it would have been over £9,500 per annum"***

But the preceding three decades had taken their toll — the Basic State Pension as at April 2017 stands at around £6,400 per annum, whereas had the earnings link been retained it would have been over £9,500 per annum — some 50% higher. This difference can clearly be seen in Figure 2.1. Considering the Basic State Pension in inflation-adjusted terms, it is clear from Figure 2.2 that it peaked in 1976, with the real-terms fall not being halted until 1986.

[11] For detail on the indices used in this chapter, see Appendix 1

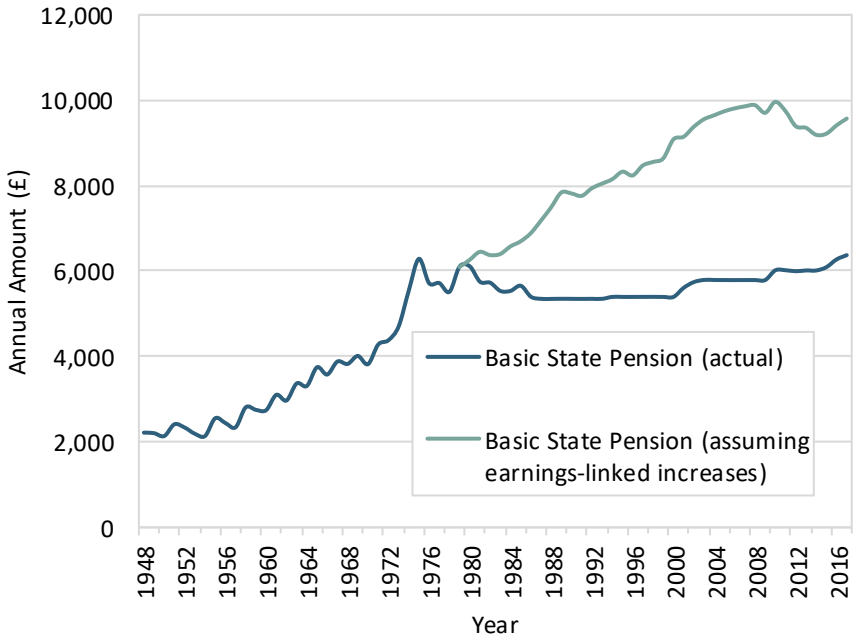
[12] Thurley, D. and R. Keen (2017). State Pension triple lock: briefing paper number CBP-07812, *House of Commons Library, London*

Figure 2.1: The Basic State Pension in Nominal Terms




Source: Rutherford (2013)[14]; Office for National Statistics; author's calculations

Figure 2.2: The Basic State Pension in Real (Price-Adjusted) Terms[13]




Source: Rutherford (2013)[15]; Office for National Statistics; author's calculations

[13] Using the Retail Prices Index (RPI) prior to 2011 and the Consumer Prices Index (CPI) from 2011 onwards

[14] Rutherford, T. (2013) , Historical Rates of Social Security Benefits, *House of Commons Library, London*

[15] Ibid. 14

**SERPS Target Pension**

1978-1986

- 25% of Band Earnings
- Best 20 years

1986-2002 (Retiring after 2009)

- 20% of Band Earnings
- Full Working Life

1986-2002 (Retiring 1999 -2009)

- 25%-20% of Band Earnings
- Full Working Life

**S2P Target Pension (based on full working life)**

2002-2010 (Earnings above UEL)

- SERPS accrual rate (SAR)

2002-2010 (Earnings below UEL)

- 2 x SAR for LEL-LET
- 0.5 x SAR for LET-SET
- 1 x SAR for SET-UEL/ UAP

2010-2011

- 40% of LEL-LET
- 10% of LET-UAP

2012-2016

- Flat rate pension
- 10% of LET-UAP

The other key change that the Basic State Pension has seen is a change in the number of years required to earn the full amount of pension. For anyone retiring before April 2010, this was around 90% of an individual's working life, with the exact period being defined in the Social Security Act 1975. However, the Pensions Act 2007 reduced the number of years required to 30 for anyone retiring after April 2010. This was intended to reduce pensioner poverty and the need for the Pension Credit.

## SERPS

As mentioned in Chapter 1, the initial aim of SERPS was that people would receive a pension of 25% of their "band earnings", revalued in line with earnings. At first, people could choose the best twenty years of revalued band earnings. This meant that SERPS effectively had an accrual rate of one-eightieth of salary for every year worked — so after twenty years of work, an individual would have accrued twenty eightieths, or one quarter, of their salary.

The Social Security Act 1986 altered the calculation such that anyone retiring on or after 1999 would use their full earnings history instead. At the same time, the target pension for pension earned after 1988 was gradually reduced from 25% to 20% of band earnings for those retiring between 1999 and 2009. Both of these factors significantly reduced the effective rate of accrual for many people.

## S2P

In 2002, SERPS was replaced with the State Second Pension ("S2P") thanks to the Child Support, Pensions and Social Security Act 2000. This initially split band earnings into three sections, with different target rates of pension: twice the SERPS accrual rate for the first tranche of earnings up to the Low Earnings Threshold ("LET"), half the SERPS accrual rate for the second tranche up to the Secondary Earnings Threshold ("SET"), and the unadjusted SERPS accrual rate for the third tranche up to the UEL. For anyone retiring from 2009 onwards, these rates were therefore 40%, 10% and 20% of the relevant earnings. This left the total target pension for anyone being paid enough to reach the UEL with the same overall target pension would have been under SERPS, but meant that those on lower incomes were better off than they would have been before. In addition, anyone earning less than the first tranche of earnings from 2002 was assumed to have earned this amount for the purposes of S2P calculation. These changes were therefore redistributive in nature.

In 2009, the UEL was replaced in the calculation of accrual with the Upper Accrual Point ("UAP"), frozen at the level of the 2008 UEL — the UEL itself remained relevant only in the calculation of NICs. In 2010, the second and third tranches of pension were combined, with the new tranche having a target rate of only 10%. These changes had been set out in the Pensions Act 2007, which also outlined a later change: the replacement in 2012 of the first tranche of pension with a simple flat rate amount. Again, this first tranche was also accrued by those with earnings below the LET; and again, these changes reduced benefits for higher earners, leaving those on lower incomes unaffected.

## The New State Pension — Is it Good Value?

It is not easy to determine whether individuals will be better or worse off under the New State Pension than they would have been under the Basic State Pension plus SERPS and S2P, due to the individualised nature of both benefits. One approach is to look at the pensions that would have been earned both by high and low earners, and to compare pensions at retirement. To do this, the total pension received by someone retiring each year from 1979 to 2016 is considered. This is calculated under the assumption that the person is a male, retiring at age 65. Under one scenario, he is assumed to have accrued the maximum possible pension under SERPS and S2P[16] each year ("high earner"); under another, he is assumed to have paid only enough to earn the Basic State Pension and, therefore, the "safety net" amount under S2P from 2002 onwards ("low earner"). This is essentially the minimum pension.

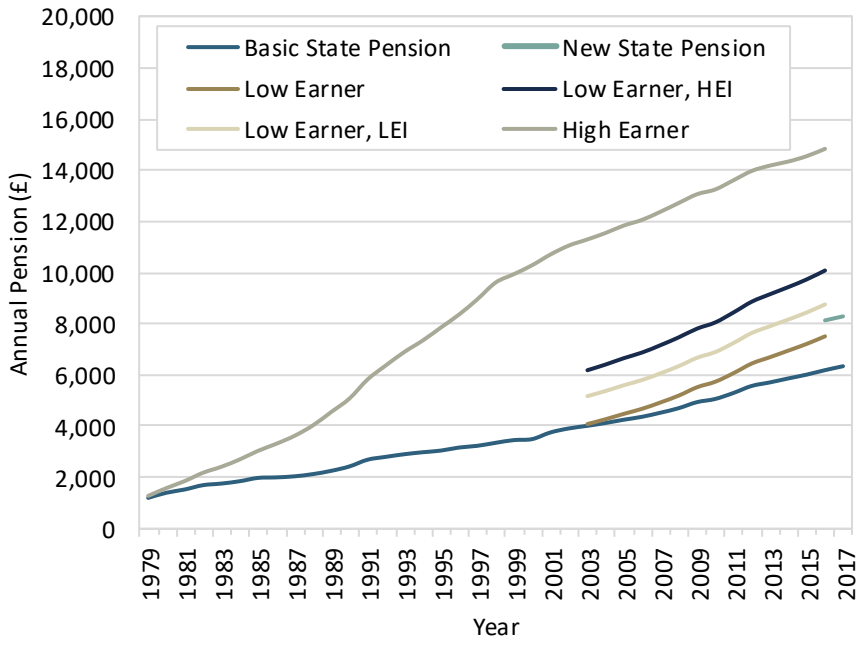
The actual level of minimum pension receivable is only one scenario used for low earners. Because such individuals would have accrued pension under this safety net for only for a maximum of 14 years by 2016, the total pension under this scenario might not be considered a fair comparison to the New State Pension. A second "low earner" scenario is therefore considered, where the minimum pension — 40% of the first tranche of earnings — is accrued from 1978 onwards ("low earner, high enhanced history"). Although this accrual rate was introduced only in 2002, this scenario gives an idea of how the minimum pension would have developed had S2P been continued. Then, because the different accrual rates did not exist before 2002, a third "low earner" scenario is also considered, where the minimum pension is accrued at 20% of the first tranche of earnings from 1978 to 2001 ("low earner, low enhanced history"). The LET before 2002 is estimated as 2.75 times the LEL.

[16] Any GRB pension is ignored in these calculations

*"If the accrual history for the minimum pension is extended, the New State Pension looks less attractive"*

Figure 2.3 shows the total pension that would have been earned in nominal terms, calculated as the Basic State Pension plus SERPS and S2P. The Basic State Pension and New State Pension are shown for comparison. The maximum pension takes some time to diverge from the Basic State Pension, as the initial level of accrual in 1978 is zero. The same is true for the minimum pension under the second scenario from 2003. Looking at the far right of the chart, the New State Pension is greater than the highest minimum pension that would have been earned. However, as noted above, this is partly because an individual on very low wages would not have been accruing an S2P for very long. If the accrual history for the minimum pension is hypothetically extended, as in the "low earner — high enhanced history" or "low earner — low enhanced history" scenarios, the New State Pension looks less attractive. And compared to the maximum pension that could have been earned, it is significantly lower.

Figure 2.3: Maximum and Minimum Pensions in Nominal Terms



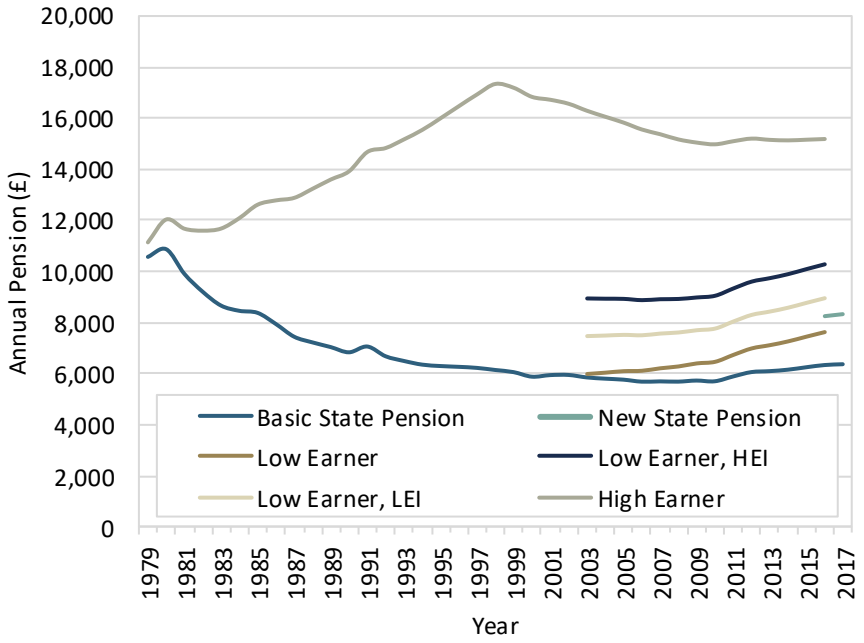

Source: Rutherford (2013)[17], Office for National Statistics; author's calculations; HEI = high enhanced history, LEI = low enhanced history

[17] Ibid. 14

But Figure 2.3 hides some interesting information, being as it is in nominal terms. Figure 2.4 shows the same information as Figure 2.3, but relative to 2017 earnings. Here, it can be seen the gradual fall and only moderate recovery of the Basic State Pension in earnings terms. It is also clear that the maximum pension fell constantly between 1999 and 2009 as the accrual rate fell. From then on, it has remained broadly constant in earnings terms. At the same time, the actual minimum pension has grown substantially under all three scenarios. This is also true for the two hypothetical scenarios from 2009.

*"The minimum pension has grown substantially"*

Figure 2.4: Maximum and Minimum Pensions in Earnings-Adjusted Terms[18]



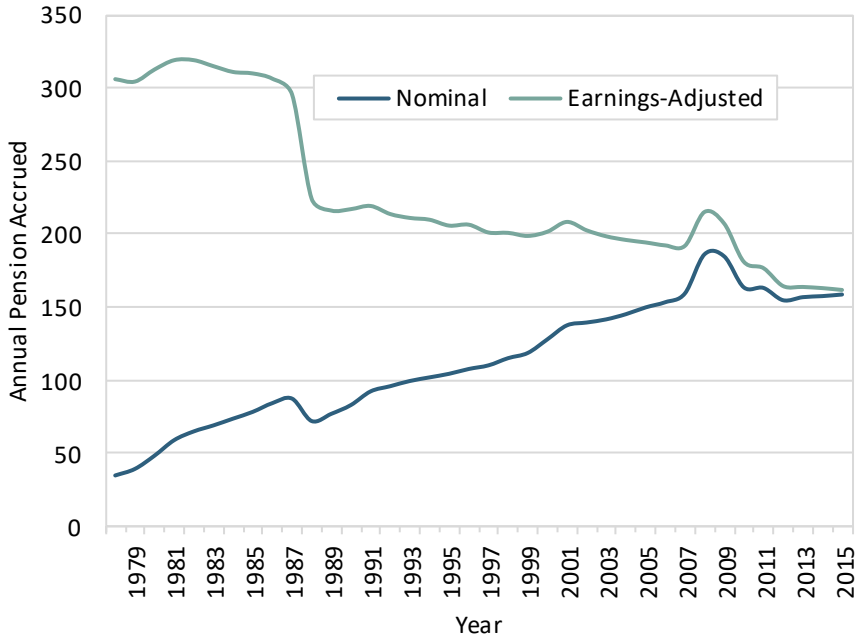

Source: Rutherford (2013)[19], Office for National Statistics; author's calculations

Figure 2.4 confirms that the changes to Additional State Pensions have been of two types. The adjustments to SERPS made in 1986 reduced the benefits for all. The reasons for this are considered in Chapter 4, but an important factor is that reducing benefits due sometime in the future is politically easier than increasing contributions now — and NICs have hardly risen since the 1980s. The scale of the reduction in accrual for someone earning a maximum pension — in both nominal and earnings-adjusted terms — can be seen in Figure 2.5. This shows the amount of Additional State Pension accrued in each tax year from 1978/9 to 2015/6 for a man retiring at age 65 in the 2016/7 tax year.

[18] All figures in terms of April 2016 earnings

[19] Ibid. 14

Figure 2.5: Additional State Pension Accrued for a Man Retiring in 2016/7




Source: Rutherford (2013)[20], Office for National Statistics; author's calculations

In contrast, the introduction of — and changes to — S2P have been mainly redistributive in nature, introducing a minimum additional pension and tipping the accrual rate in favour of lower earners. Later reductions in S2P accrual have affected only high earners. It is also worth noting that high earners were the only ones affected by the additional band of NICs introduced in 2003, which was subsequently doubled in 2011.

The State Pension has changed considerably over the last century. After a strong push to add a salary-related element to the State's pension provision, the Government has effected a gradual change in direction, reducing benefits and making the State Pension increasingly redistributive. However, some of the changes planned for the future are being driven by increasing demographic pressures, and it is these that are considered in the next chapter.

[20] Ibid. 14

# The Demographic Challenge

## Longevity: Past, Present and Future

A key focus for policymakers has been the impact of increasing longevity, and it is true that life expectancy has not only increased but also continues to increase. However, there are several ways of looking at life expectancy, and these can tell us different things.

One measure is period life expectancy. This tells us how long someone might be expected to live assuming there are no improvements in mortality rates. This could be calculated from birth, or from some other age.

*"Period life expectancy tells us how long someone might be expected to live assuming there are no improvements in mortality rates"*

The period life expectancy from any age plus that age will always be greater than the same figure from a younger age. For example, assume that the life expectancy from birth is 80 years. The period life expectancy for a 20-year-old from the same population could be 62 years, meaning they could expect to live for a total of 82 years. Similarly, the period life expectancy for a 40-year-old from the same population could be 44 years, meaning they could expect to live for a total of 84 years. The reason that the total period life expectancy increases with age is that there is a possibility that a new-born might not live to age 20 or age 40, whilst there is complete certainty that someone aged 20 or 40 has reached that age.

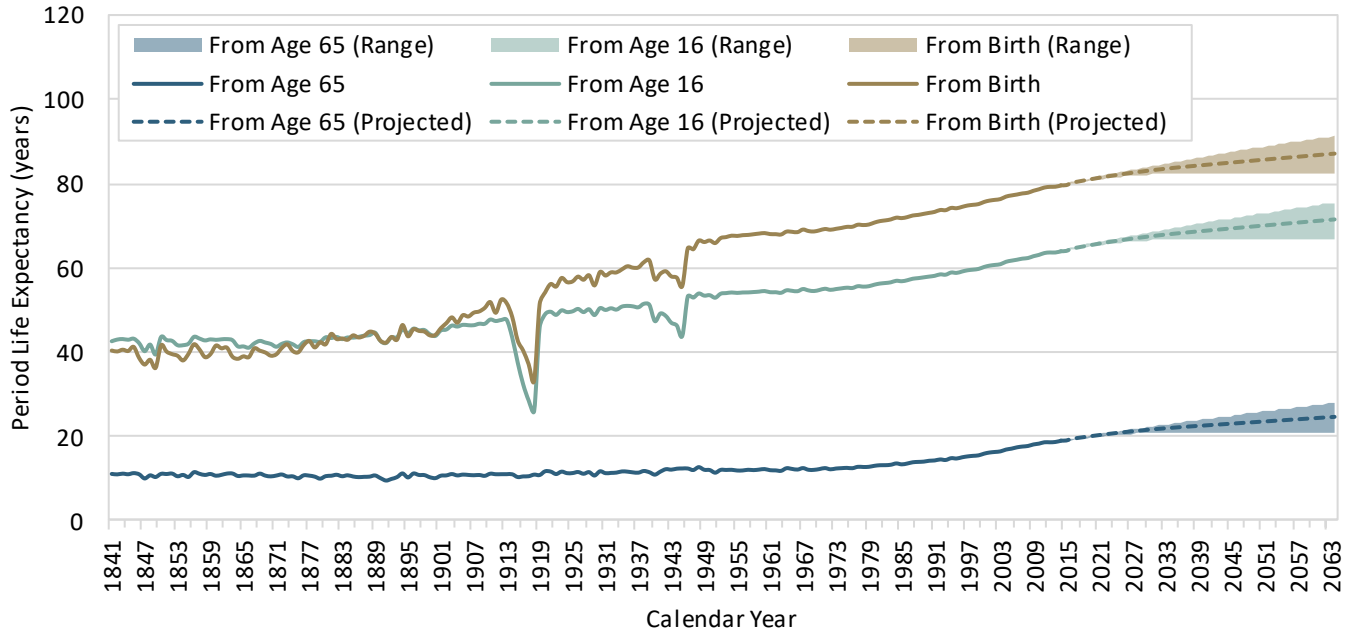
One drawback of the period life expectancy is that it does not allow for any potential future improvement in mortality rates — which one might expect. However, to allow for potential future improvement means that estimates of these improvements are needed, and this means introducing an element of subjectivity. Because these are not needed for the period life expectancy, it can be calculated objectively. This is helpful when considering life expectancy now, but also in the past when it might be difficult to determine what expectations for improvement might have existed.

*"Cohort life expectancy allows for potential future improvements"*

The measure of longevity that allows for potential future improvements is the cohort life expectancy. This is a more realistic measure of life expectancy, as it reflects how long someone might actually be expected to live. But because this measure uses projections, there is an element of uncertainty involved. This comes from uncertainty over the parameters used in any projections, but also in the mortality projection models themselves — and there are many models that are used.

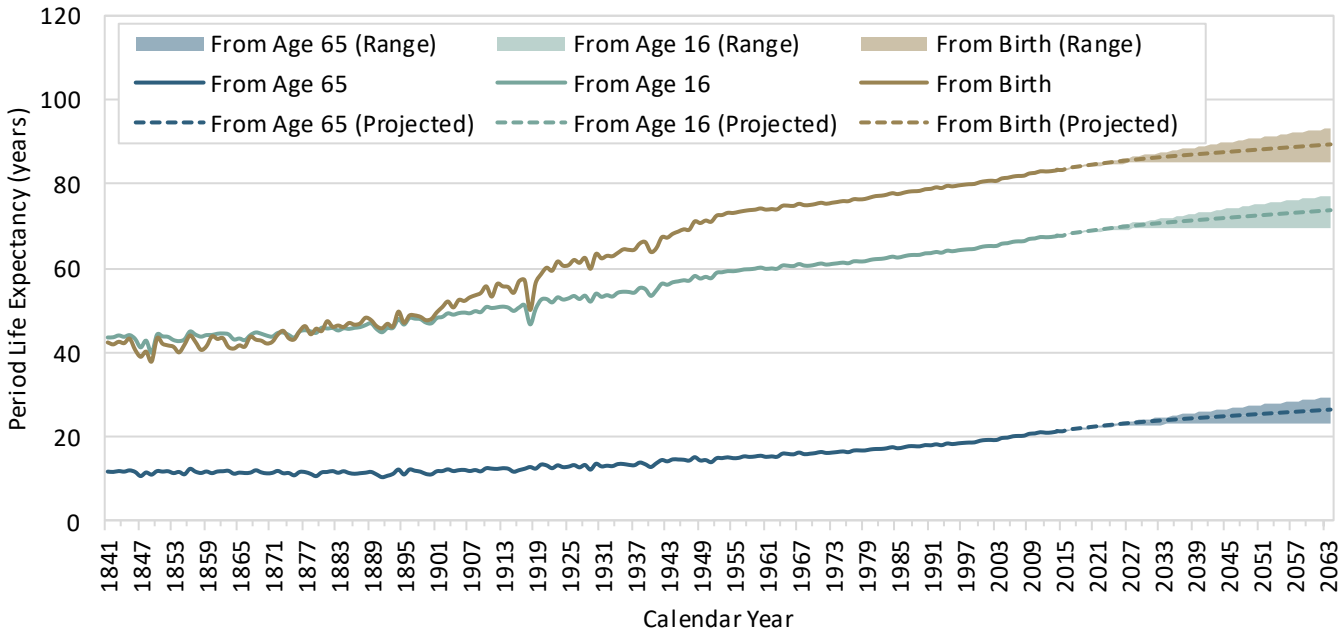
Period life expectancy can help us to understand past changes in longevity, as seen in Figures 3.1 and 3.2. These show the period life expectancies for men and for women respectively. Although both illustrate the long-term improvement in longevity, they also show two large dips in male life expectancy and two smaller dips for female life expectancy at similar times. These are the results of the two world wars, with the flu pandemic also contributing to the end of the first dip. But apart from these event-driven changes, longevity has improved consistently for more than a century and a half.

Figure 3.1: UK Period Life Expectancy for Men with confidence intervals, 1841 to 2064




Source: Human Mortality Database, Office for National Statistics

Figure 3.2: UK Period Life Expectancy for Women with confidence intervals, 1841 to 2064




Source: Human Mortality Database, Office for National Statistics

In 1841, the period life expectancy from birth was 42.5 years for a woman and 40.4 years for a man; by 2014, these figures had increased to 83.2 and 79.5 years respectively. But this is not the whole story.

It is also clear that in nineteenth century, the period life expectancy from age 16 was almost identical to that from birth. However, from around 1900 to 1950, the life expectancy from birth increased much more quickly than life expectancy from age 16. In addition, the period life expectancy from age 65 hardly changed. This is because the first half of the twentieth century saw a rapid fall in infant mortality, which affected only the period life expectancy from birth. In other words, although life expectancy increased rapidly, the mortality of the working population did not improve as quickly as that of children — and the mortality of pensioners hardly changed at all. In fact, the period life expectancy for women over 65 only really started to improve in the 1950s, whilst for men no real improvement was seen until the 1980s. This meant that the demographic pressure on a PAYG pension system were absent for most of the twentieth century, at least in terms of longevity.

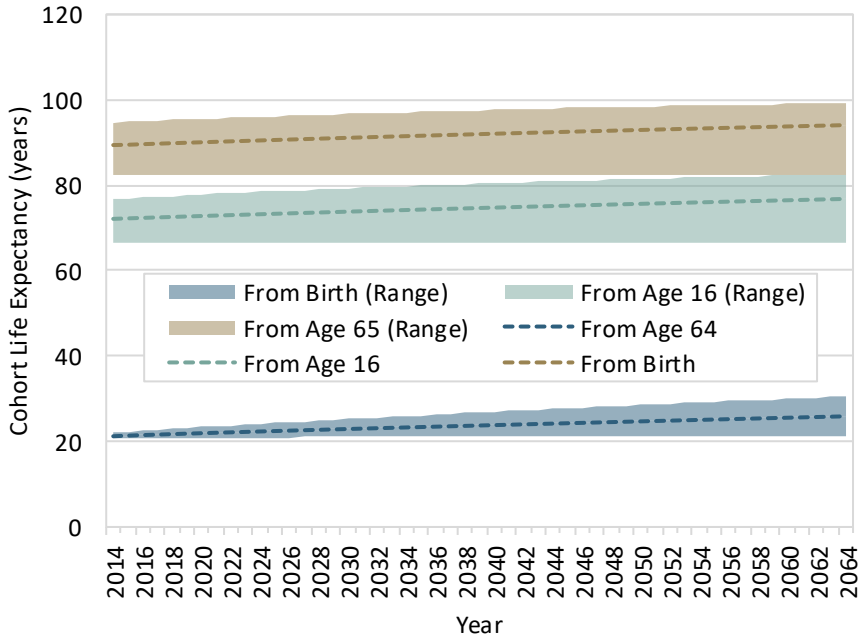
***"In 1841, the period life expectancy from birth was 42.5 years for women and 40.4 years for men; by 2013, these figures had increased to 82.9 and 79.2 years respectively"***

The improvement in mortality at older ages is expected to continue, albeit at a reduced rate. However, Figures 3.1 and 3.2 also show the uncertainty around these estimates. This uncertainty is given by the low and high mortality scenarios defined by the Office for National Statistics. It is important to note that this uncertainty only arises for future years. This might sound obvious, but it reflects the calculation of the period life expectancy: since no improvement in mortality is assumed, there is only uncertainty when this measure is calculated for some year in the future — when mortality rates at all ages will be uncertain.

***"Whilst the period life expectancy from birth for a man is 83.2 years, the cohort life expectancy is 89.4 years"***

Contrast this with the cohort life expectancy, shown in Figures 3.3 and 3.4. This gives the length of time someone from a particular population might actually be expected to live, allowing for potential future improvement in mortality rates. Whilst the period life expectancy from birth for a man is 83.2 years, the cohort life expectancy is 89.4 years; for a woman, the equivalent figures are 83.2 years and 91.7 years.

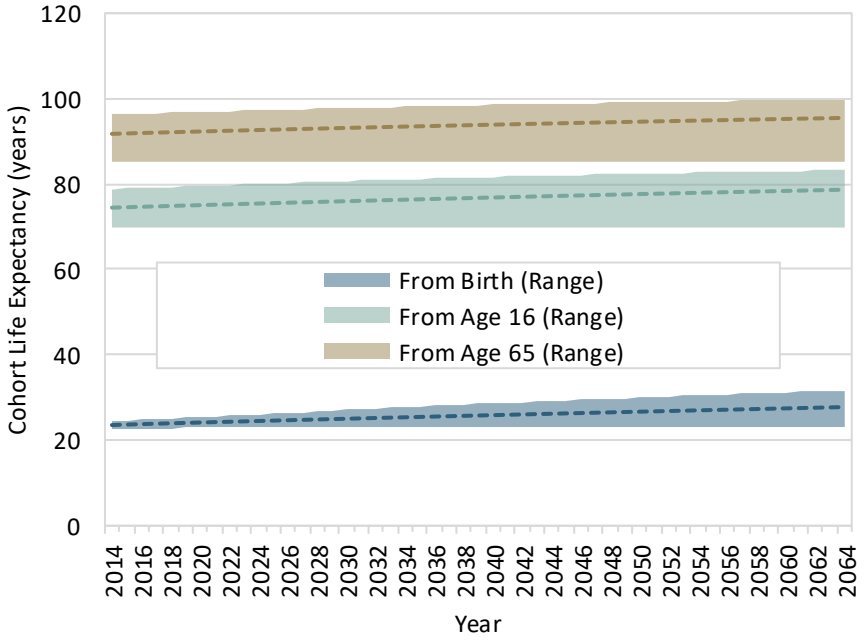
Figure 3.3: UK Cohort Life Expectancy for Men with confidence intervals, 2014 to 2064




Source: Office for National Statistics

Because future improvements are uncertain, this measure is uncertain even when calculated today. Furthermore, the younger an individual is, the greater the uncertainty. This is because the calculation requires estimates of future mortality rates farther into the future. As a result, there is a range of potential outcomes in Figures 3.3 and 3.4 for the cohort life expectancy calculated today, and this uncertainty grows over time. Again, this uncertainty is defined by the low and high mortality scenarios defined by the Office for National Statistics.

Figure 3.4: UK Cohort Life Expectancy for Women with confidence intervals, 2014 to 2064




Source: Office for National Statistics

## The Working Population

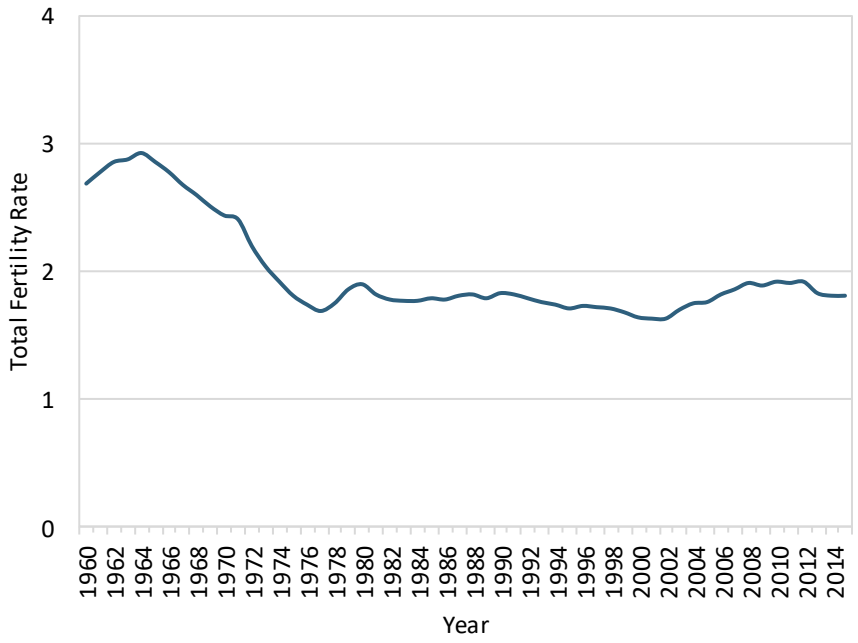
But increasing longevity is only one part of the challenge facing the UK State Pension system. As discussed earlier, the State Pension is arranged on a PAYG basis. This is why an ageing population is clearly an issue, given that it means that pensions must be paid for longer. However, there is also the question of how large a working population exists to cover these pensions.

There are several factors affecting the size of the working population, the most obvious of which is the birth rate. Because people are unlikely to be economically active until a couple of decades after they are born, it takes some time for a change in the birth rate to have an impact on the size of the working population — but there has in fact been little change for some time.

Figure 3.5 shows the total fertility rate for the UK. This represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with the age-specific fertility rates of the specified year. As can be seen, this rate fell sharply between the mid-1960s and mid-1970s. A further gradual decline followed until the turn of the millennium, after which rates rose again slightly. The key point to note here is that the birth rate has been below two children per woman for more than forty years.

*"Relative to the retired population, the working population is shrinking"*

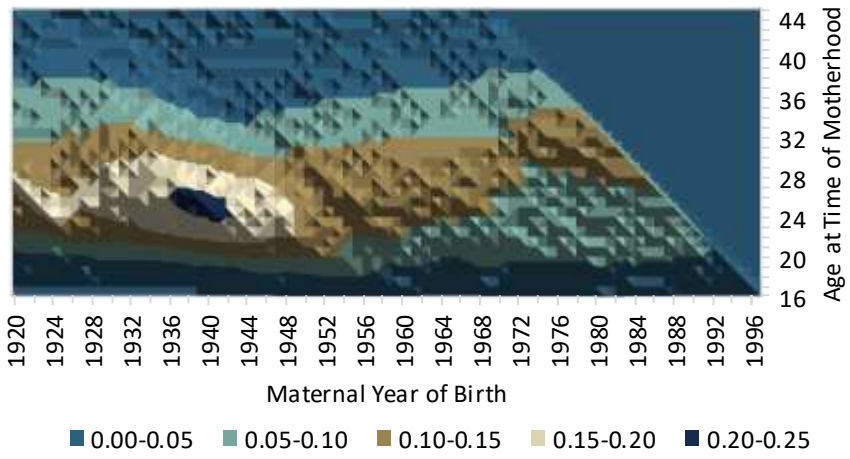
Figure 3.5: UK Total Fertility Rate, 1960 to 2015




Source: World Bank

The fall and subsequent recovery is partly due to the increase in the average age at which women have children. This can also be seen in Figure 3.6, which shows the year of birth of the mother against the age of giving birth, with the height of the chart representing the birth rate for that year of birth and year of motherhood. The drop in the height of the chart for mothers born after the end of the Second World War is clear, as is the slight dip for mothers born in the 1980s. After this there is a slight rise. The most common age at which mothers give birth has also risen since this time, as has the overall spread of ages. However, relative to the retired population, the working population is shrinking.

Figure 3.6: UK Cohort Fertility Rates, Maternal Years of Birth 1920 to 1997

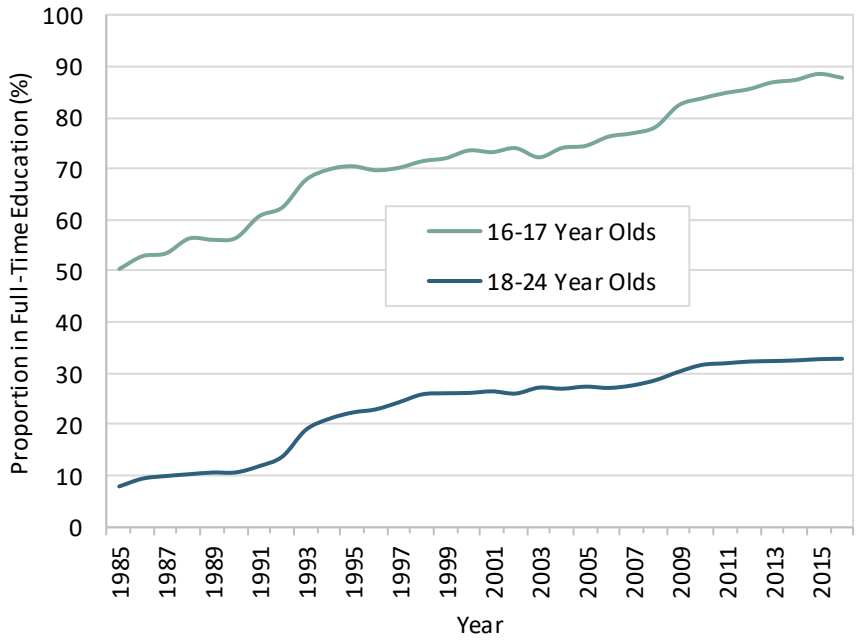



Source: Office for National Statistics; author's calculation

But it is not just lower birth rates that are having an impact on the workforce — people are also entering the workforce later. As Figure 3.7 shows, the proportion of children and young adults remaining in education has risen substantially over the last thirty years. In 1985, only 50.3% of all 16 and 17 year-olds were still in full-time education; by 2016, this figure had risen to 87.9%. For 18-24 year-olds, the rise has been no less impressive, going from 8.0% to 32.7%. However, those still receiving education are less likely to be contributing to the Government through the payment of income tax.

***"In 1985, only 50.3% of all 16 and 17 year-olds were still in full-time education; by 2016, this figure had risen to 87.9%"***

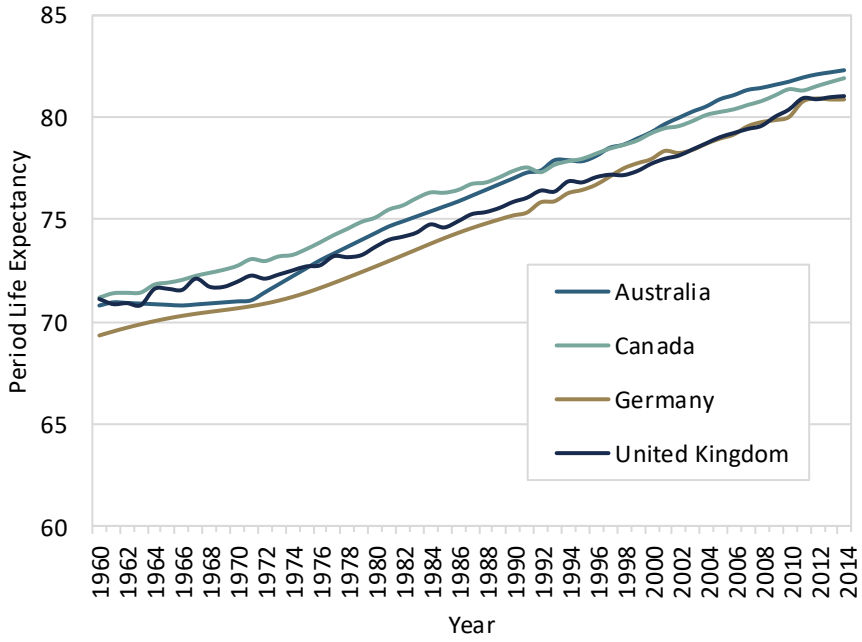
Figure 3.7: Proportion of Children and Young Adults in Education, 1985 to 2016




Source: Office for National Statistics; author's calculations

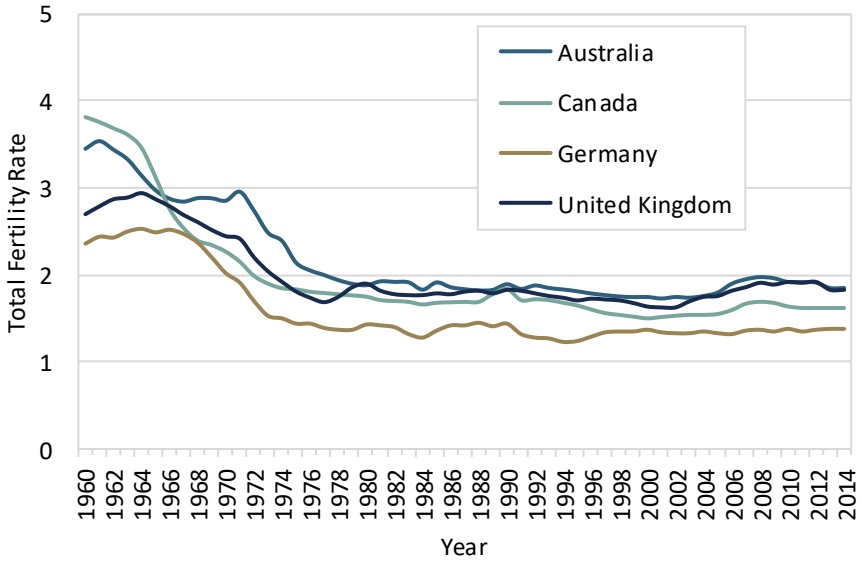
There is, though, a third factor that affects the size of the workforce: immigration. The higher the level of net immigration, the "younger" the population remains. Consider four countries: Australia, Canada, Germany and the UK.

Figure 3.8: Period Life Expectancy, 1960 to 2014




Source: World Bank

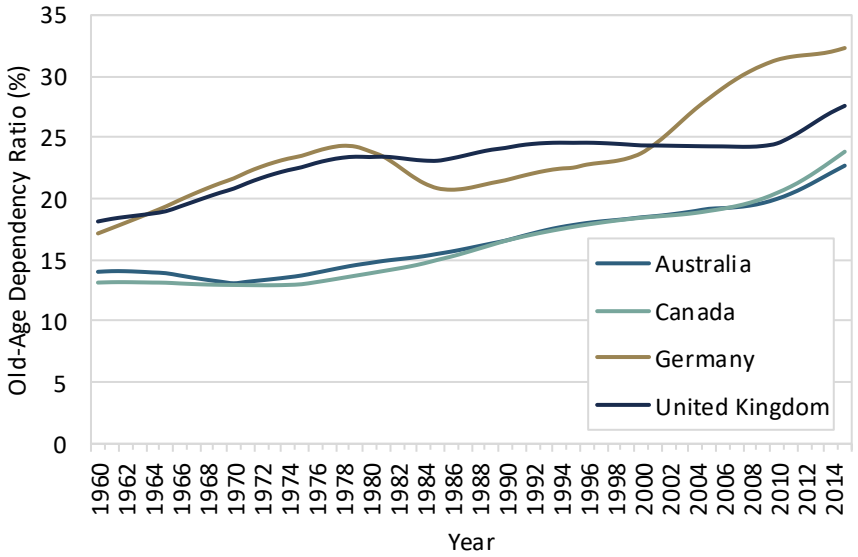
Figure 3.9: Period Life Expectancy, 1960 to 2014




Source: World Bank

Figure 3.8 shows that these countries have similar levels of longevity, measured by the period life expectancy from birth. They also have similar fertility rates, as shown in Figure 3.9, with Canada and the UK having the highest , then Australia and finally Germany. However, Canada and Australia have far younger populations — measured by the old-age dependency ratio (OADR) — than Germany or the UK. This is calculated here as the number of people over age 64 divided by those aged 15-64, for all countries, and shown in Figure 3.10.

Figure 3.10: Old-Age Dependency Ratio, 1960 to 2015

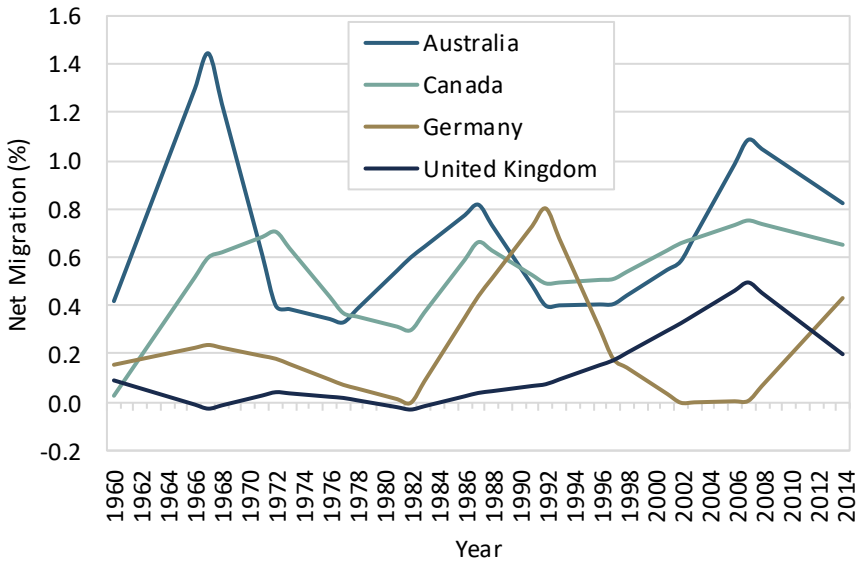



Source: World Bank

The reason for this difference in the population maturity is immigration, as shown in Figure 3.11. This shows that net migration to Canada and Australia has been consistently higher than for the UK or Germany, for at least half a century.

***"The reason for the difference in the population maturity is immigration"***

Figure 3.11: Net Migration, 1960 to 2015




Source: World Bank

## The Demographic Fallout

Increasing longevity is something that should be welcomed, but it does place a strain on PAYG retirement systems. An increase in the birth rate would make the State Pension more affordable, as would reducing the proportion of children and young adults in full time education — but the former is unlikely, and the latter is undesirable. Increasing immigration to the UK could also ease the strain on the working population, but such a solution is unlikely to be politically acceptable at present, despite its clear merits. As such, the only solution seems to have been to raise the SPA. The planned changes are reviewed in Chapter 4.

Chapter 4

# The Changing State Pension Age

## The Sex Equalisation of Pensions

Many changes to State Pensions are poorly understood, not least because the system of State Pension provision in the UK has been so complex. However, one set of changes that is widely recognised — nowadays, at any rate — is that covering the equalisation of and increases to the SPA.

At its inception, the Old-Age Pension was sex equal, as it was paid to everyone from age 70. The Widows, Orphans and Old Age Contributory Pensions Act 1925 reduced this age to age 65 from 1928 with the introduction of a contributory bridging pension from age 65 to 70, but sex inequality did not appear until the Old Age and Widows Pensions Act 1940. This reduced the women's pension age to 60 from 65. This change was cemented with the National Insurance Act of 1946 which introduced a Basic State Pension in 1948, payable to all men from age 65 and women from age 60. This persisted until the Barber judgement.

The Barber judgement of 1990[21] made it illegal for occupational pension schemes to have different retirement ages for men and women. Subsequent cases dealt not just with direct sex discrimination such as this, but indirect discriminations. This could occur where different jobs had different retirement ages, but where the gender balance of the two jobs was so different that to have different retirement ages was in effect sex discriminatory.

The focus of sex equalisation soon shifted to the State Pension system, and the Pensions Act 1995 set out a program for the equalisation of the SPA for men and women. This programme aimed to bring the SPA for women up from 60 to 65 over the period 2010 to 2020. The Pensions Act 2011 accelerated some of these changes from 2016, such that equalisation at 65 would be complete by the end of 2018.

[21] Barber v Guardian Royal Exchange, 17 May 1990

However, these changes apply only to pensions paid by the State, and not those resulting from contracting-out — the sex equalisation of GMPs has proved too daunting for the Government to tackle as yet.

Sex equalisation of pensions seems fair, not least because the life expectancy for women is markedly longer than it is for males. However, it has been somewhat controversial. Part of the controversy relates to the speed of change. The changes in the Pensions Act 2011 arguably left those close to retirement with little notice. Indeed, earlier proposals had suggested that that the changes be accelerated still further, but these were tempered in the final legislation.

The other issue that many have with pension equalisation is a perceived lack of notice given. Here, there are several views. The first is that everyone affected should have been notified by post. This would have been an unusual response to legislative change. Another view is that there was inadequate publicity in the media of the change. Several journalists have highlighted a large number of articles talking about the forthcoming increase in the SPA for women — whether these articles were in the newspapers or even the sections of newspapers that would have been read by the women affected is a point of contention.

## Increasing the State Pension Age

*"The Government has sought to raise the SPA in an effort to keep the State Pension affordable"*

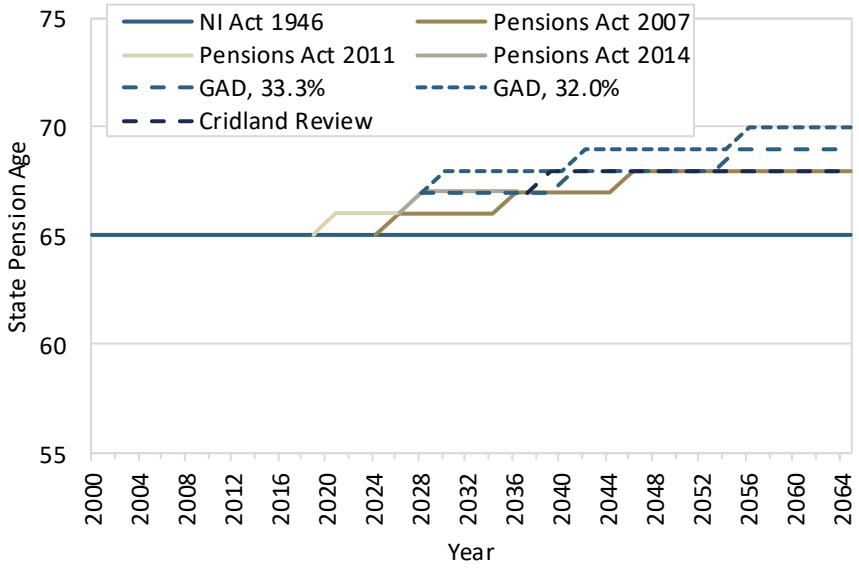
It is clear from Chapter 3 that longevity has been increasing. As a result, the Government has also sought to raise the SPA in an effort to keep the State Pension affordable. The first legislation to deal with this came more than a decade after the Pensions Act 1995 started the process of sex equalisation, with the Pensions Act 2007. This outlined further increases for both men and women, raising the SPA from 65 to 66 over the period 2024 to 2026, to 67 over the period 2034 to 2036, and to 68 over the period 2044 to 2044. Then as well as accelerating the process of sex equalisation, the Pensions Act 2011 determined that an SPA of 66 would be reached before the end of 2020. Finally, the Pensions Act 2014 brought the increase from 66 to 67 forward such that it would now take place from 2026 to 2028.

The Government Actuary recommended even greater changes to the SPA[22]. Assuming that adults would spend 33.3% of their life in retirement, the Government Actuary proposed that it rise to 68 by 2041, and to 69 by 2055; if adults are instead assumed to spend 32.0% of their life in retirement, the SPA would need to rise to 68 by 2030, to 69 by 2042, and to 70 by 2056.

However, the next changes may be in line with those outlined in the Cridland Review[23], into which the Government Actuary's report fed. This proposed a less severe series of increases, with the SPA rising from 67 to 68 over the period 2037 to 2039, and with no more than one year of change in any ten-year period. All these changes and recommendations are shown graphically in Figures 4.1 for men and 4.2 for women.

*"If adults are instead assumed to spend 32.0% of their life in retirement, the SPA would need to rise to 68 by 2030, to 69 by 2042, and to 70 by 2056"*

Figure 4.1: Proposed Male State Pension Age




Source: Thurley and Keen (2017)[24], Government Actuary's Department (2017)[25]

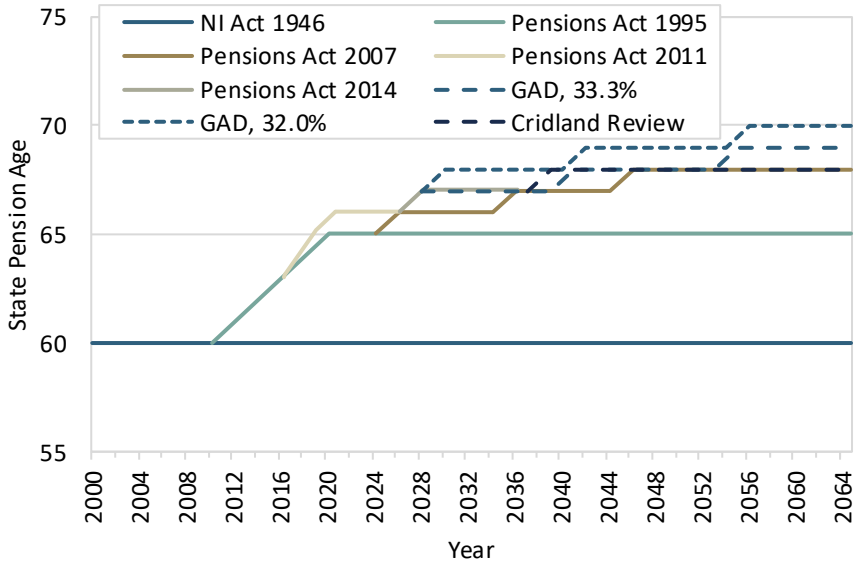
[22] Government Actuary's Department (2017), Periodic review of rules about State Pension age: Report by the Government Actuary, *HMSO, London*

[23] J. Cridland (2017), Independent Review of the State Pension Age: Smoothing the Transition, *HMSO, London*

[24] Thurley, D. and R. Keen (2017). State Pension age review: briefing paper number CBP-06456, *House of Commons Library, London*

[25] Ibid. 22

Figure 4.2: Proposed Female State Pension Age




Source: Thurley and Keen (2017)[26], Government Actuary's Department (2017)[27]

The Pensions Act 2017 requires the Government to make a decision on any changes to the legislation on the SPA by 7 May 2017; however, the announcement that a General Election would be held on 8 June 2017 has resulted in any decision being postponed until after this date.

## The Only Solution?

Increasing the SPA might seem like the only solution to the demographic challenges currently faced. However, it is not clear that this is the best approach. In particular, there is a danger that the people most affected by any rise in the SPA will be those who need it most. More importantly, if the aim of increasing the SPA is to keep the State Pension affordable, it is not even clear that this will work.

[26] Ibid. 24

[27] Ibid. 22

Chapter 5

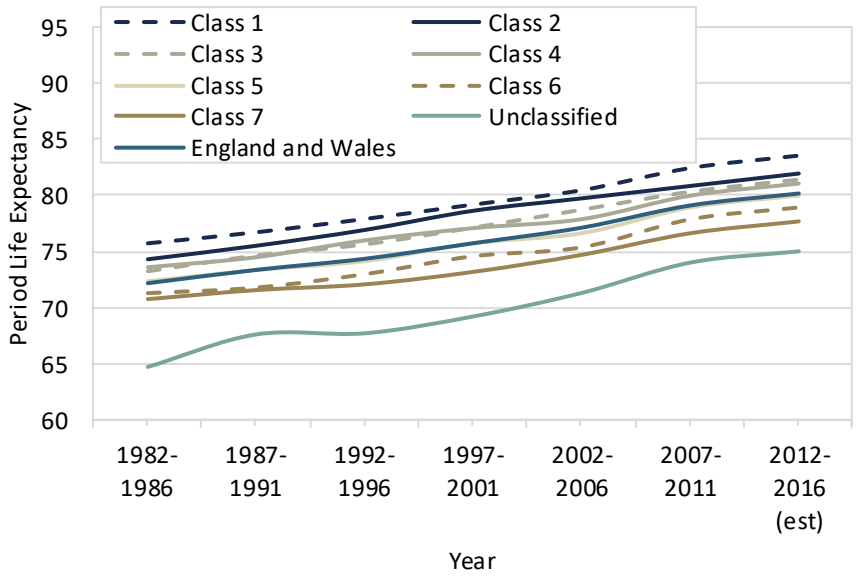
# Problems with Raising the State Pension Age

## The Socioeconomic Angle

One problem with raising the SPA to deal with affordability is that it is raised for everyone — regardless of their life expectancy. Of course, every individual's life expectancy is different, but there are also some broad patterns that exist. One of the clearest is in relation to wealth.

Figures 5.1 and 5.2 shows the period life expectancy from birth for eight socioeconomic groupings in England and Wales. Class 1 contains those who are likely to be the wealthiest, with the unclassified group containing those who are likely to be the least wealthy. Bearing this in mind, it is clear that those with the most money tend to live the longest.

Figure 5.1: Male Period Life Expectancy from Birth by Socioeconomic Group, 1982 to 2016

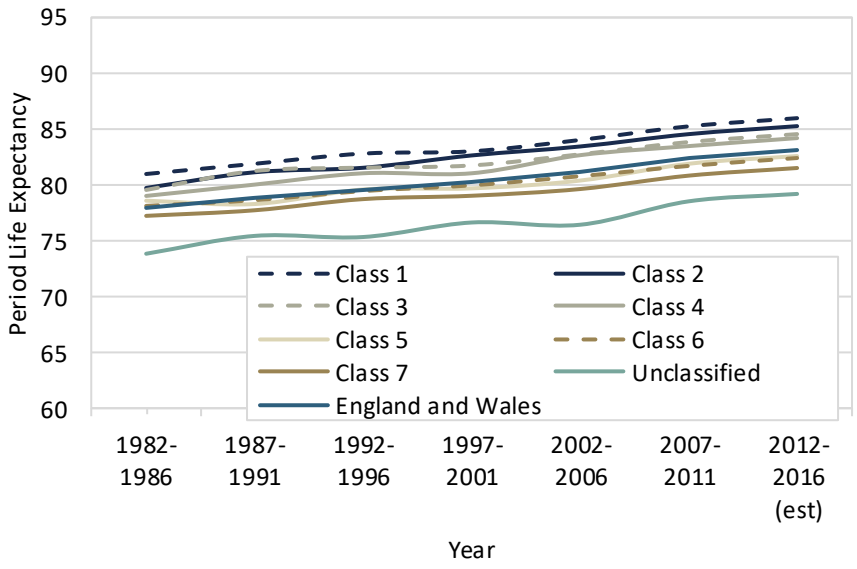



**Socioeconomic Groups (Figures 5.1 to 5.4)**

| | |
|---|---|
| Class 1 | Higher Managerial and Professional |
| Class 2 | Lower Managerial and Professional |
| Class 3 | Intermediate |
| Class 4 | Small Employers Own Account Workers |
| Class 5 | Lower Supervisory |
| Class 6 | Semi-Routine |
| Class 7 | Routine |

Source: Office for National Statistics; author's calculations

Figure 5.2: Female Period Life Expectancy from Birth by Socioeconomic Group, 1982 to 2016

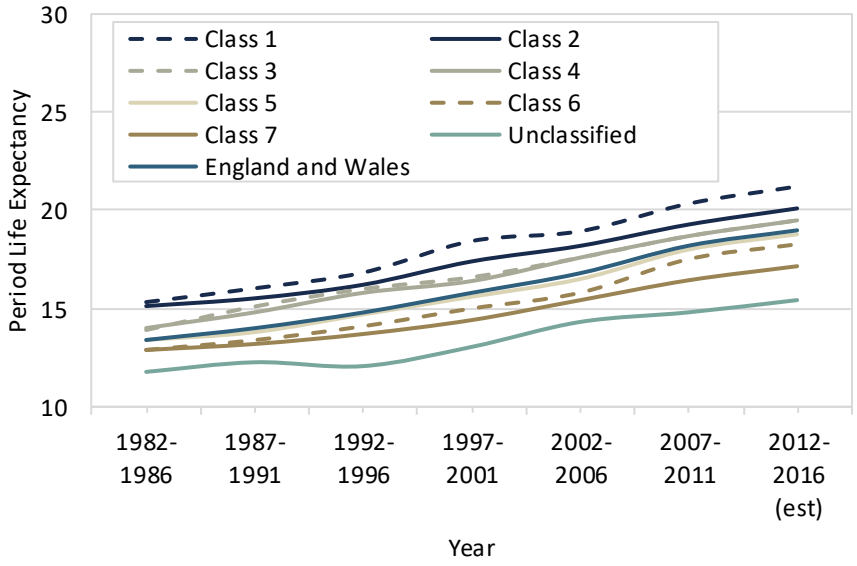



Source: Office for National Statistics; author's calculations

*"For men in particular, mortality is highly correlated to socioeconomic group"*

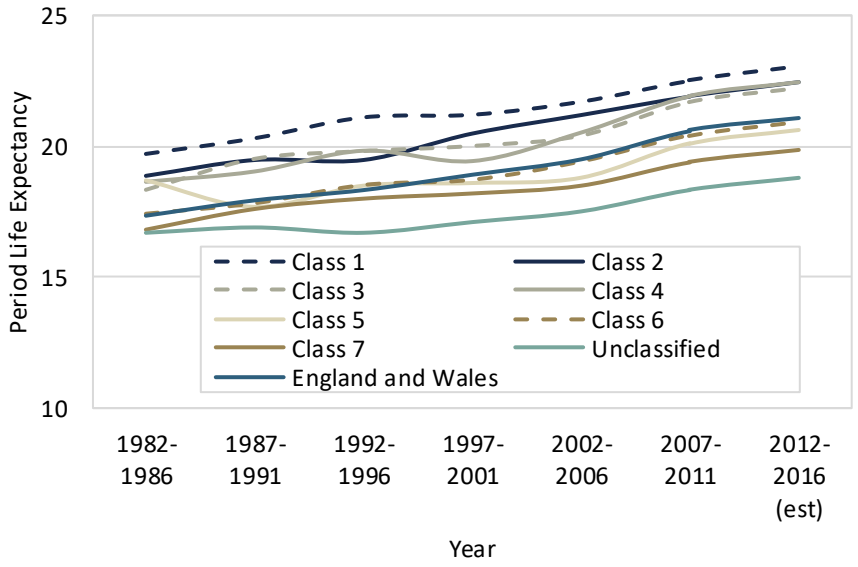
Importantly, this difference persists to retirement: Figures 5.3 and 5.4 show the period life expectancy at age 65 for the same groups. For men in particular, mortality is highly correlated to socioeconomic group. For women, there is some crossover between groups, but a clear pattern still exists — and a clear difference in mortality between the best and worst off.

Figure 5.3: Male Period Life Expectancy from Age 65 by Socioeconomic Group, 1982 to 2016




Source: Office for National Statistics; author's calculations

Figure 5.4: Female Period Life Expectancy from Age 65 by Socioeconomic Group, 1982 to 2016




Source: Office for National Statistics; author's calculations

This means that increasing the SPA could be inequitable. For example, if the SPA were to remain at age 65, a man in the lowest socioeconomic group might expect to receive his pension for 15.4 years, whilst his equivalent in the highest economic group might expect to receive it for 21.1 years — in other words, 37% longer. However, if the SPA were increased to 67, this difference would rise to around 39%; and an increase to 69 would see it climb to around 41%[28]. In other words, the worst off will be the hardest hit by the planned increases in SPA.

This is not a new insight. Indeed, the Labour Government initially opposed increases in the SPA, as it believed that it would disproportionately affect those on lower incomes[29]. However, there is another reason that increasing the SPA might not be the most appropriate response to the UK's demographic challenges — and that is that ultimately, it might not work.

***"If the SPA were increased to 69 a man in the highest socioeconomic group might expect to receive his pension for 41% longer than one in the lowest group"***

[28] These figures have been calculated by finding the multiple of England and Wales mortality rates that gives the period life expectancy from age 65 shown for each socioeconomic group in Figure 5.3. The same multiples are then used to adjust the mortality rates such that cohort life expectancy from ages 65, 67 and 69 can also be calculated.

[29] Department for Work and Pensions (2002), Simplicity, security and choice: Working and saving for retirement, *HMSO, London*

## The Macroeconomic Angle

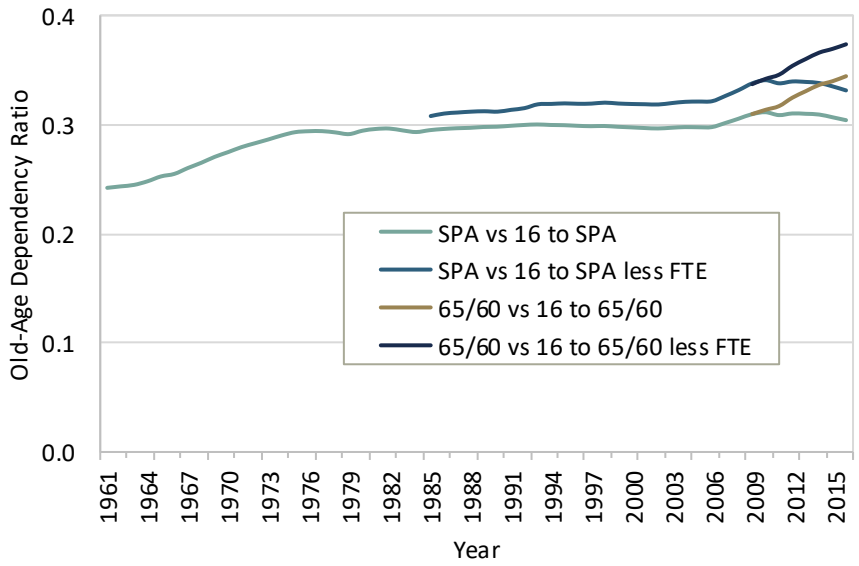
A common way to measure the affordability of a retirement system is to use OADR. In fact, this measure was used in Chapter 3 to compare the challenges faced by different countries. This involves an implicit assumption that under a PAYG system, the working population pays the pensions of the retired population. Indeed, NICs are paid only by those who have not yet reached their SPA, although there is no hypothecation — or direct allocation — of NICs to fund the Welfare State.

This implicit assumption seems a sensible one. Whilst other measures of affordability exist — for example, cost as a proportion of GDP — focussing on the ability of the working population to support the retired one is a better way to keep the system honest. This way, there is less risk that a drop in affordability will be masked until it is too late by, for example, higher corporate taxation.

The OADR measure used in Chapter 3 is one calculated consistently across a range of countries by the World Bank. Specifically, it is the number of people over age 64 divided by those aged 15-64. But when looking at the UK situation, a more relevant measure is helpful.

As a starting point, consider the number of people who have reached their SPA divided by those aged from 16 to their SPA. This would reflect the fact that the SPA for women is increasing from 60 to 65, and that the youngest age someone can start working full-time is 16.

Figure 5.5: UK Old-Age Dependency Ratio, 1961 to 2016




Source: Office for National Statistics; author's calculations

As Figure 5.5 shows, the OADR climbed from a value of around 0.24 in the early 1960s to around 0.29 in the mid-1970s, but has since remained more or less level — a small increase in the years before 2010 has since been reversed, and as at 2016 the estimated OADR on this basis is around 0.31. This reversal is due to SPA equalisation. The OADR calculated assuming that the women's SPA remained at 60 is also shown in Figure 5.5. This suggested that the OADR would by now have risen to 0.34.

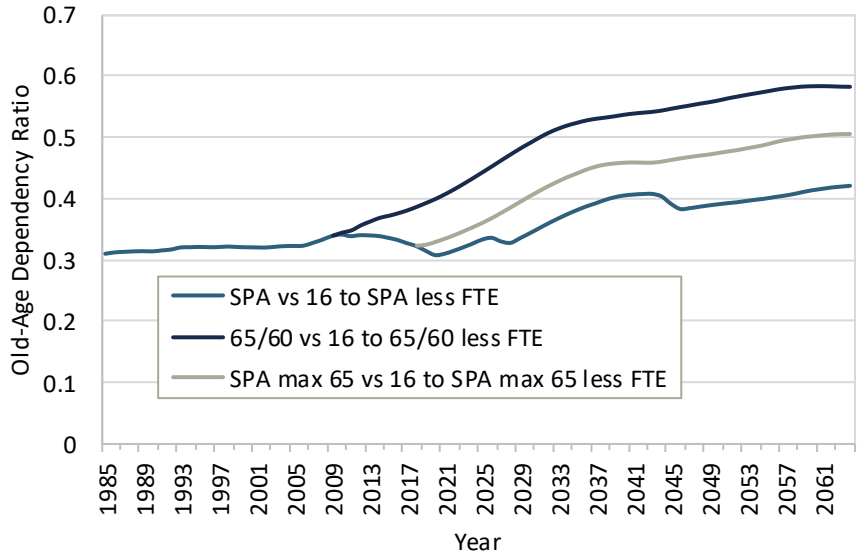
A more accurate assessment of the OADR would mean taking a few more people out of the working population, in particular, those in full-time education from age 16 to 24. Reliable numbers are available for those in education from the 1985. These show that the OADR calculated on this basis has been slowly climbing, from 0.31 in 1985 to 0.33 in 2016. Again, it would have been even higher if were not for SPA equalisation, reaching 0.37 in 2016. Both of these scenarios are also shown in Figure 5.5.

***"The OADR has been slowly climbing"***

These numbers suggest that the numbers remaining in full-time education have caused a small rise in the OADR, but that there is no cause for alarm. They also suggest that any moves to reverse SPA equalisation — as some have called for — would be completely unaffordable.

However, does the future look as positive? Figure 5.6 suggests that the answer to this question is "yes", at least until 2030. The forthcoming rise in SPA is projected to reduce the education-adjusted OADR at around 0.30 by 2020. It is then expected to rise to 0.33 in 2026, at which point another set of SPA increases reduce it slightly by 2028. After this, it appears to climb again, reaching 0.41 in 2044, at which point the final planned set of SPA increases are set to reduce the OADR to 0.38 in 2046.

Figure 5.6: UK Old-Age Dependency Ratio, 1985 to 2064




Source: Office for National Statistics; author's calculations

*"Keeping the SPA at age 65 without making any other changes would be prohibitively expensive"*

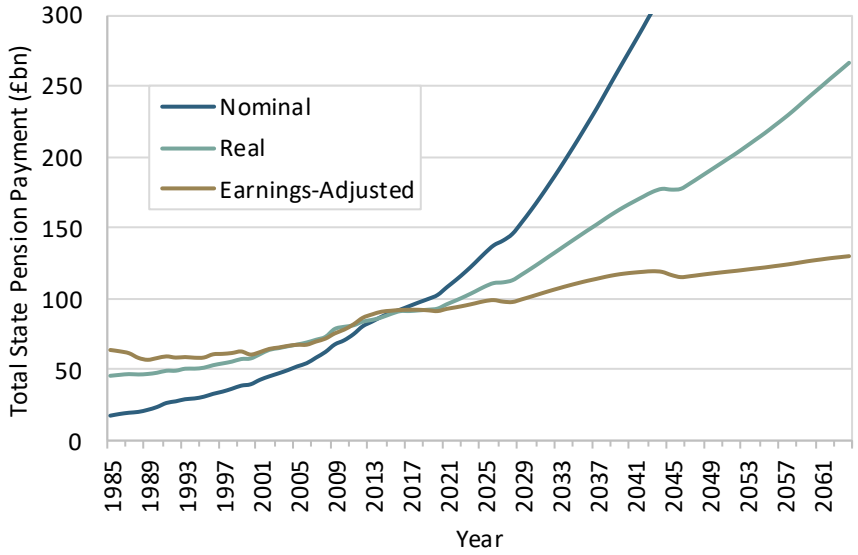
These projections also show that keeping the SPA at age 65 without making any other changes would be prohibitively expensive — the projected OADR would reach 0.47 in 2046. And reverting to an SPA of 60 for women would cause it to rise to 0.55 by this date. So, on the face of it, raising the SPA is the only solution, and one that works.

However, the OADR does not take into account the actual level of State Pension paid, or the increases to these pensions, which are assumed to be subject to the "triple lock", or at least a "double lock", given that earnings increases are projected to be higher than the 2.5% per annum cap. Any lock involving earnings will result in significant increases to the pensions being paid. However, to remove the earnings link would be favouring existing pensioners over future ones — this is clear from Figure 2.2, which showed how pensions had fallen relative to earnings in the absence of such a link. This is important because without an earnings link, each generation of pensioners would find themselves retiring with a pension that was smaller as a proportion of their earnings.

In fact, they may face this issue in any case, even with an earnings lock, given the decreasingly generous nature of the Additional Pension and its successor, the New State Pension. This should increase the future affordability of the State Pension, to a degree.

Putting all this together gives us Figure 5.7, which shows the historical and projected annual cost of State Pensions[30] in nominal, real and earnings-adjusted terms. This calculation includes the Basic State Pension, the New State Pension (including protected payments) and all Additional State Pensions.

Figure 5.7: Historical and Projected Annual Cost of UK State Pensions, 1985 to 2064



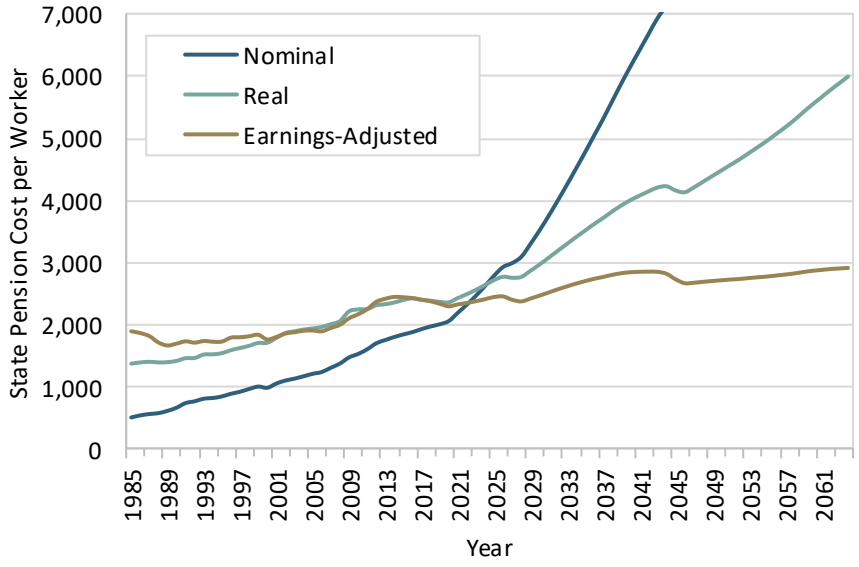

Source: Office for National Statistics; author's calculations; earnings-adjusted figures are calculated in April 2016 terms

In nominal terms, the rise in cost appears unrelenting, to the extent that increases beyond £300bn per annum are ignored; in real terms, it appears relatively stable up to 2020, after which it increases rapidly, barring the pauses when SPA increases are implemented; and in earnings-adjusted terms 2030 appears to be the point at which significant rises are again seen. But it should be noted that the current period of stability comes after a period of significant earnings-adjusted rises since about 2000, and real-term rises since about 1990.

[30] Projections to 2021/2 were provided by the Department for Work & Pensions, for the 2016 Autumn Statement; the approach used for years beyond 2021/2 is outlined in Appendix 2.

To get a true picture of the burden of the State Pension, though, it makes sense to look at how much each individual still in the work-force needs to pay to support these payments. To calculate this, the numbers in Figure 5.7 are divided by the number of individuals aged from 16 to the SPA, again excluding those in full-time education. The results of this calculation are shown in Figure 5.8, again in nominal, real and earnings-adjusted terms.

Figure 5.8: Historical and Projected Annual Cost of UK State Pensions per Worker, 1985-2064

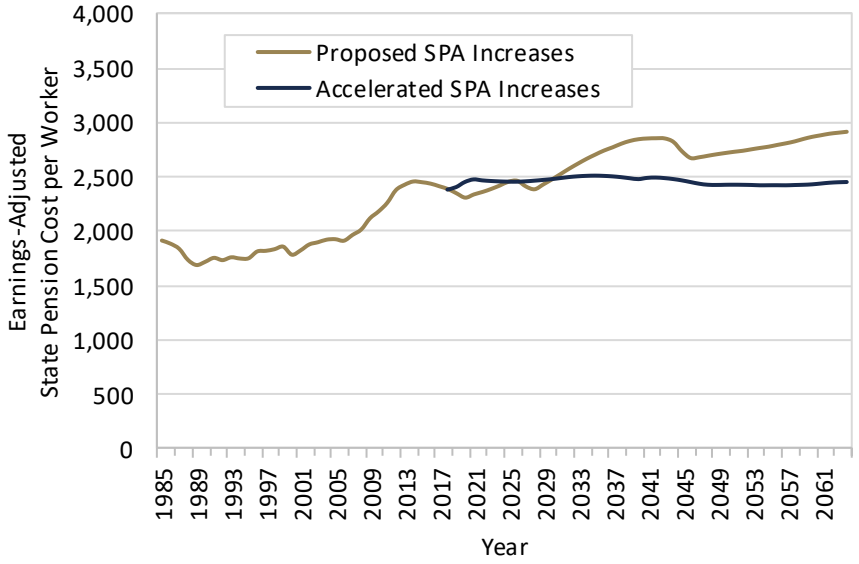



Source: Office for National Statistics; author's calculations; earnings-adjusted figures are calculated in April 2016 terms

The key line to focus on here is the earnings-adjusted one — this gives the best indication of cost faced by an individual over the years. This shows that in terms of today's earnings, each individual was paying somewhere under £2,000 per year from the mid-1980s until around 2009 to cover the payment of State Pensions. The cost then rose to around £2,500 per person by around 2015, where it is expected to stay until the late 2020s. After this, it is projected to rise to almost £2,900 per person by 2040, with a slight fall only coming with the rise in the SPA that decade.

It is possible to limit the cost of pension provision to £2,500 per person in terms of April 2016 earnings. All that would be needed would be to bring forward planned increases in the SPA, and add further increases in due course. Specifically, the SPA could remain at 65 until 2020, after which it would need to increase at a rate of one year in every five, reaching 69 in 2040. After this, the required rate of increases slows to a rate of one year in every fifteen, reaching 70 in 2055, reflecting the dominance of the lower-value New State Pension. The per worker cost is shown in Figure 5.9.

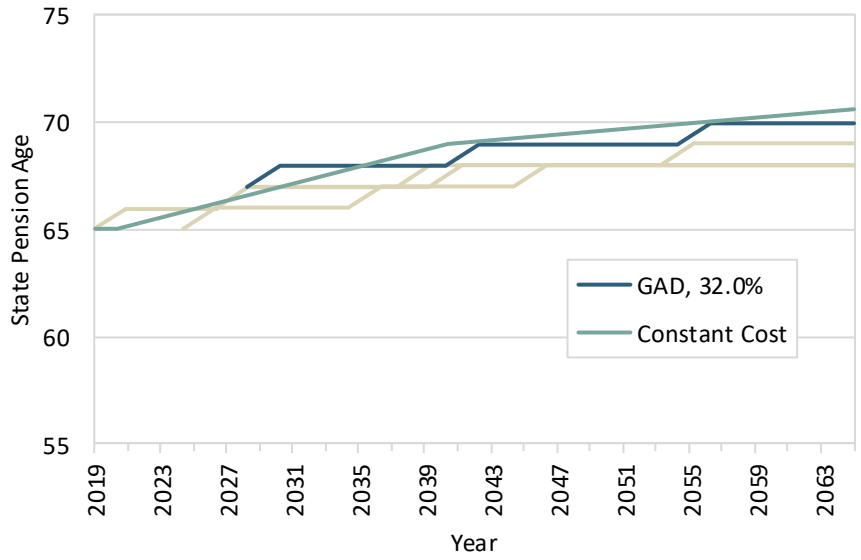
Figure 5.9: Historical and Projected Annual Cost of UK State Pensions per Worker with Cost-Controlling SPA Rises, 1985-2064




Source: Office for National Statistics; author's calculations; earnings-adjusted figures are calculated in April 2016 terms

As Figure 5.10 shows, the required profile of SPA increases would be similar to the GAD's 32.0% scenario, which itself is much more aggressive than the programme of increases allowed for in legislation.

Figure 5.10: Cost-Controlling SPA Rises




Source: Government Actuary's Department[31], author's calculations

However, this cost-limiting set of SPA increases would result in the wealthiest receiving an ever-increasing share of the State Pension. This does not feel like the best solution; perhaps it is worth instead going back to the approach first used for the Old-Age Pension, and revisiting the concept of means-testing.

[31] Ibid. 22

Chapter 6

# Means-Testing the State Pension

## The Problem with Means-Testing

Means-testing is controversial. On the one hand, it can be used to ensure that resources are targeted at those that need them most. However, a means tested benefit can require more administration than the universal alternative. Whether this is an issue or not depends on the potential saving compared to the cost of administration — and for a benefit such as this, administration will not be the defining criterion.

However, the main issue that many people have with means-testing is that it encourages moral hazard. This problem was recognised when the Old Age Pension was introduced in 1909. In that instance, the pension could be withheld if someone tried to become eligible through "self-impoverishment".

But the extent to which moral hazard is a problem depends on the "rate" of means-testing. For example, if £1 of benefit is lost for every £1 of additional income received above a certain level, then the risk of moral hazard is high. This is means-testing at its highest rate. Would the same level of moral hazard exist if £1 of benefit were lost for every £10 of additional income received? Or £20? Probably not. For this reason, the starting rate of means-testing proposed here is relatively low.

## A Means Tested State Pension[32]

It is possible to use means-testing to give a similar profile of costs per person to the proposed increases in SPA, at least out to the 2040's — but while keeping the SPA at age 65 for both men and women. This could be done by setting a limit for means-testing at the income level for higher rate (40%) tax — currently £45,000 a year.

[32] See Appendix 3 for details of how the impact of means-testing was assessed

**Means-Testing Scenarios**

| Year | Income Earned Per £ Lost: "High and Fast" | "Low and Slow" |
|---|---|---|
| 2019 | 10 | 20 |
| 2020 | 9 | 15 |
| 2021 | 8 | 12 |
| 2022 | 7 | 10 |
| 2023 | 6 | 8 |
| 2024 | 5 | 7 |
| 2025 | 4 | 6 |
| 2026 | 3 | 5.5 |
| 2027 | 2 | 5 |
| 2028 | 1 | 4.5 |
| 2029 | 1 | 4 |
| 2030 | 1 | 3.5 |
| 2031 | 1 | 3 |
| 2032 | 1 | 2.25 |
| 2033 | 1 | 2 |
| 2034 | 1 | 1.75 |
| 2035 | 1 | 1.625 |
| 2036 | 1 | 1.5 |
| 2037 | 1 | 1.3 |
| 2038 | 1 | 1.2 |
| 2039 | 1 | 1.1 |
| 2040 | 1 | 1 |

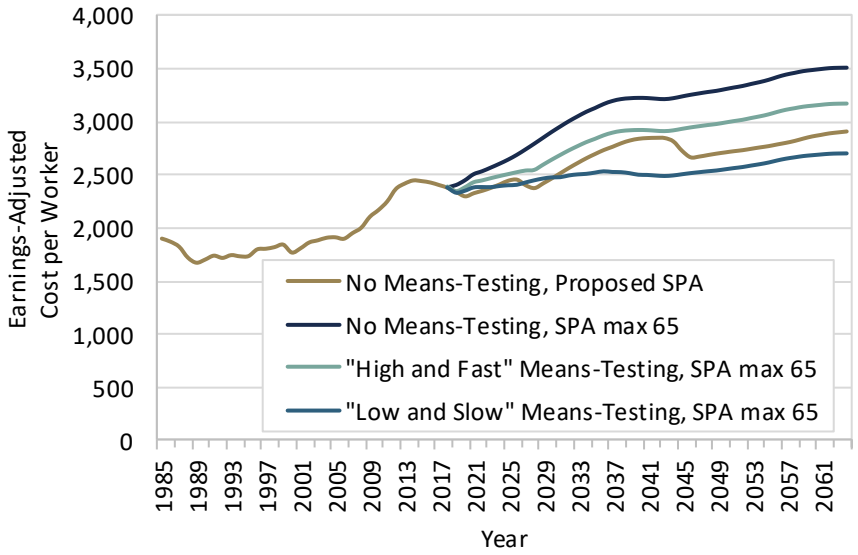
It would need to start in 2019, when the next rise in the SPA is due to occur. In that year, anyone earning enough to pay higher rate tax would give up £1 of their Basic State Pension or New State Pension for every £10 income received in the higher tax band. This would keep the per-worker cost of the State Pension at about the same level as if the rise in SPA had occurred, even though the number of workers — defined as those between 16 and SPA, and not in full-time education — would be smaller, due to the lower SPA. It could also be done without applying means-testing to the Additional State Pension, but still paying it from age 65.

In 2020, the rate of means-testing would be £1 of pension lost for every £9 of income in the higher tax band; then £8 in 2021, £7 in 2022 and so on, until a rate of £1 lost for £1 earned was reached in 2028. This rate of full means-testing would then continue indefinitely. It could be that some increase in the SPA would be required at some point, but a divergence in cost only starts to occur in 2044 — when the proposed SPA increase from 68 to 69 begins. This is the "high and fast" scenario.

But it is also possible to provide an outcome for the working population that fixes the cost per worker — again, until the 2040's — at £2,500 a year in terms of April 2016 earnings, with the SPA again remaining at 65. This could be done by setting the limit for means-testing at half up the band for basic rate tax (20%), currently around £30,000 a year.

With this income level, the rate of means-testing could initially be much lower, and could increase more slowly. Specifically, the £1 of Basic State Pension or New State Pension would be given up for every £20 earned above the means-testing limit in 2019, with then for every £15 in 2020, £12 in 2021 and so on, only reaching full means-testing in 2040. This is the "low and slow" scenario. The profiles for these scenarios are shown in Figure 6.1. They are contrasted with the per-worker cost for the non-means-tested pensions assuming the proposed SPA changes and an SPA capped at age 65.

Figure 6.1: Historical and Projected Annual Cost of UK State Pensions per Worker with Means-Testing, 1985-2064




Source: Office for National Statistics; author's calculations; earnings-adjusted figures are calculated in 2017 terms

In other words, by limiting the extent to which the better-off receive the Basic State Pension and the New State Pension, the SPA can stay at 65 whilst the cost for the working population who must fund the benefits can be controlled — for three decades or more.

***"By limiting the extent to which the better-off receive the Basic State Pension and the New State Pension, the SPA can stay at 65 "***

Chapter 7

# A Conclusion...and a Suggestion

So it is possible to keep the SPA at 65 and to keep the earnings-adjusted cost of the SPA per worker fixed. But this result can be interpreted in one of two ways. The first is as a proposal for a sustainable State Pension system that pays out when needed. This system is one that provides a full State Pension from a relatively young age, but only to those that need it; ultimately, the wealthiest must make their own provision.

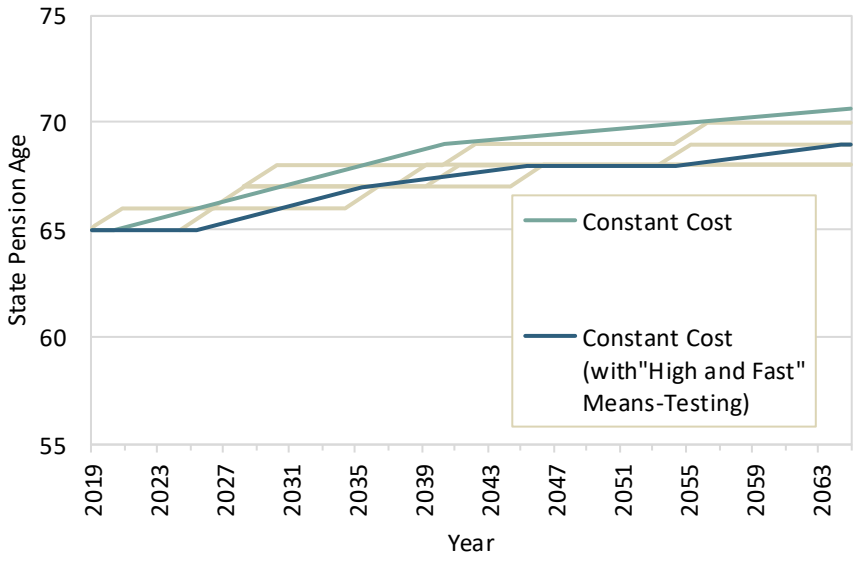
Another way to interpret the analysis is as one end of a spectrum. If the objective is to keep the cost of pension provision at a fixed proportion of earnings for the working population — which seems a reasonable aim — then means-testing is necessary to keep the SPA at age 65. But there has already been a significant move to redistribution in the State Pension System, not least through the abandonment of an Additional State Pension in favour of the New State Pension. But if universality is more important than the age of receipt, then a painful program of SPA increases would need to start from 2020. Or there could be some half-way house of slower increases with an element of means-testing.

For example, if means-testing were introduced only for higher rate tax payers — the "high and fast" scenario — then the cost per worker could be held in earnings terms with more moderate increases in the SPA than those currently legislated for.

The first rise would not be needed until 2025, at a rate of a one-year increase every five calendar years, reaching an SPA of 67 in 2035. This is one year earlier than currently allowed for in legislation. Then, the SPA would increase at a rate of one year over the next ten calendar years, arriving at 68 in 2045. Again, this is one year ahead of current legislation, but less severe than the Cridland recommendations which would see an SPA of 68 being reached in 2039.

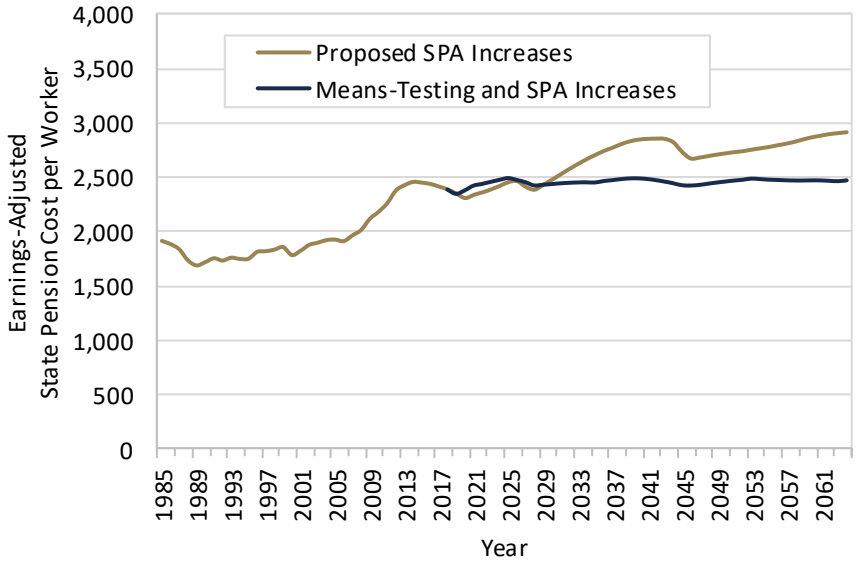
But after this, further increases would be needed until 2054 when a further, gradual increases of one year over the period 2054 to 2063 would see the final increase, to 69. This profile is shown in Figure 7.1, with the cost shown in Figure 7.2.

Figure 7.1: Cost-Controlling SPA Rises with "High and Fast" Means-Testing




Source: Government Actuary's Department[33], author's calculations

Figure 7.2: Historical and Projected Annual Cost of UK State Pensions per Worker with "High and Fast" Means-Testing and Cost-Controlling SPA Rises, 1985-2064




Source: Office for National Statistics; author's calculations; earnings-adjusted figures are calculated in April 2016 terms

[33] Ibid. 22

Whatever approach is take, there will be challenges. There would be an incentive for people to transform income into capital gains to avoid the means test — this would have to be guarded against. And as the rate of means-testing increased, there would be less of an incentive to save for retirement. This might mean introducing compulsion to retirement saving. This could be needed anyway, given the state of the UK pensions system— but that is another story…

# Indices Used for Increases

## Past Increases in Line with Price Inflation

The measure of price inflation used prior to 2011 was the Retail Prices Index (RPI). Following this, the Consumer Prices Index (CPI) was instead used. Increases calculated using CPI are typically lower than those calculated using RPI. This is because the prices for each item in RPI are calculated using an arithmetic average, whereas for CPI the average is geometric. The latter approach is less likely to be biased upwards by outliers. For the Basic State Pension, RPI was also used to calculate the 2011[34] increase to ensure that the value of the pension was at least as generous as under the previous uprating rules. The effective date for the price inflation index is the September prior to the increase awarded the following April.

## Past Increases in Line with Earnings Inflation

The measure of earnings inflation used prior to 2010 was the Average Earnings Index. From 2010, Average Weekly Earnings were instead used. In both cases, the figure used to calculate increases to State Pensions in April was the three-month average of the increases at the previous July.

## Future Increases

Future increases in RPI, CPI and earnings are assumed to be in line with the projections provided by the Office for Budget Responsibility[35].

[34] Ibid. 12

[35] Office for Budget Responsibility (2017), Economic and fiscal outlook, March 2017, *HMSO, London*

Appendix 2

# Projection of Annual State Pension Payments

Projections of State Pensions from up to 2021/2 were provided by the Department for Work and Pensions (DWP) for the 2016 Autumn Statement. For years beyond this, two factors were used to project the payments forwards: financial and demographic.

The financial factors were the values of the triple lock using forecasts from the Office for Budget Responsibility. These forecasts also end in 2021/2 — projections in subsequent years were assumed to be equal to the values in this year.

The demographic factors were the constructed using the United Kingdom principal population projection produced by the Office for National Statistics. The population for relevant age groups, such as over SPA, was calculated from this data. It was further divided into those retiring before and after 2016.

The DWP breaks the State Pension into six components:

- Basic State Pension [1];
- Graduated Retirement Benefit [2];
- Lump Sum Payments [3];
- SERPS/S2P [4];
- New State Pension (excluding Protected Payments) [5]; and
- New State Pension (Protected Payments) [6].

The values of [1] to [4] are projected in line with the financial factor, and the population of those over SPA (actual or assumed) for those retiring before 2016; the values of [5] to [6] are projected in line with the financial factor, and the population of those over SPA (actual or assumed) for those retiring on or after 2016.

Appendix 3

# Calculating the Impact of Means-Testing

The impact of means-testing was calculated using the 2014-15 Survey of Personal Incomes[36]. This gives, among other things, the mean and median income before tax for five year age bands, split by men and women. With these two statistics, it is possible to fit a lognormal distribution to these two measures for each age. Using information on personal allowances and tax band limits, it is then straightforward to calculate the proportion of the population at each age that would be caught by means-testing at a particular level relative to the tax bands, and the impact of the means-testing at a particular rate. This is then converted to an effective proportional reduction in the pension payable in each age band.

[35] HM Revenue and Customs (2017), Survey of Personal Incomes 2014-15, *HMSO, London*

Paul Sweeting is a Professor of Actuarial science at the University of Kent. Prior to this, he held a number of senior roles in the investment industry, most recently as Head of Research at Legal and General and Investment Management. At the University of Kent, his research focuses on longevity, retirement policy, investment strategy and risk management. He has written a number of papers, chapters and books, including Financial Enterprise Risk Management, the standard text for actuarial risk management. Professor Sweeting is a Fellow of the Institute and Faculty of Actuaries, the Chartered Institute for Securities and Investment, and the Royal Statistical Society. He is also a Chartered Enterprise Risk Actuary and a CFA Charterholder.