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FROM PAYSLIP TO PENSION:

LIFE COURSE IMPACTS ON RETIREMENT SAVING AMONG LOW EARNERS

2026

An independent report by the PPI

FINAL REPORT: THE POLICY CHALLENGE OF SAVING FOR LOW EARNERS

This report is the fifth and final publication in the *From Payslip to Pension: Life Course Impacts on Retirement Saving Among Low Earners* series.

It brings together the findings from the full Payslip to Pension research programme, examining how UK pensions policy, particularly automatic enrolment affects low earners throughout their working lives and into retirement.
Drawing on the evidence from the previous four reports, it explores the characteristics of persistent low earners, the challenges they face in balancing immediate financial pressures with long-term retirement saving, and the policy trade-offs involved in improving retirement outcomes for this diverse group.

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ABOUT THE PPI

We're the UK's leading independent authority on pensions and retirement policy. We conduct rigorous, impartial, evidence-based research that shapes better retirement outcomes for everyone.

ABOUT THIS SERIES

The ***From Payslip to Pension: Life Course Impacts on Retirement Saving Among Low Earners*** series delivered a longitudinal analysis of the life courses of people who experienced low earnings at some point during their working lives. The research programme began in late 2024 and concluded in summer 2026, comprising five themed publications.

The series investigated not only participants' paid work, but also their wider circumstances, including key life events and the households in which they lived. The research explored how low earners interacted with workplace pension saving, identifying potential policy interventions and modelling their impact both before and after retirement.

This report is the final report in the From Payslip to Pension series.

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Contents

Executive Summary

This report explores the findings of the Payslip to Pension project, which is funded by the Nuffield Foundation and explores how low earners are affected by UK pensions policy, particularly automatic enrolment. This report summarises the findings of several existing publications, which each cover individual aspects of the project in more detail. These reports were as follows:

- **Part One:** A report which investigates risk factors for persistent low earning;
- **Part Two:** A report which investigates the capacity of low earners to save in working life;
- **Part Three:** A report which investigates the retirement needs of low earners;
- **Part Four:** A report which explores the policy options for improving retirement adequacy for low earners.

The current automatic enrolment design suppresses the contributions that low earners make through two mechanisms: the Earnings Trigger, which completely removes the obligation for an employer to automatically enrol an employee if they earn below a certain amount (currently £10,000); and the Lower Earnings Limit, which reduces the contribution that low earners make as a proportion of their total salary.

This report illustrates the key trade-off which policy makers must face: some low earners can afford to save more in working life, and may be undersaving for retirement; while others cannot afford to contribute towards pensions in working life, and may have their retirement needs met by the state. If this latter group of low earners are automatically enrolled, they may not opt out by themselves, and will lose working life income that they need immediately, without a meaningful improvement to their retirement standard of living. This report comes as the Second Pensions Commission considers how automatic enrolment might be reformed to increase pensions adequacy, with low earners highlighted as facing particularly high adequacy risks.

This report identifies how long savers may spend as low earners throughout working life, and identifies risk factors that may increase the risk of persistent low earning. This report then explores, through representative profiles, the different incentives for and against saving in working life, and the risks to adequacy in retirement. Finally, the report explores how different policy options may impact persistent low earners, and models a variety of reforms to the Lower Earnings Limit, Earnings Trigger, and contribution rates, to see how they impact persistent low earners.

While some policy options exist that may mitigate the impacts of one choice or another, ultimately, any policy may have to acknowledge a more fundamental shift in assumptions. The existence of mechanisms such as the Earnings Trigger and Lower Earnings Limit are based on assumptions that low earners may not opt out by themselves, even when it is in their best interest to do so. However, the fiscal drag on automatic enrolment thresholds that has taken place over recent years represents an implicit assumption that savers can, in fact, be safely enrolled and relied upon to protect themselves if this is inappropriate. Whichever choices are made, it is important to acknowledge any new assumptions as these may guide other policy settings. If low earners can be relied upon to protect themselves, then this may require more flexibility to opt out, or opt to reduce their contributions without forgoing pension rights entirely, and more information on how to do so. If they can’t, this may require a revision of automatic enrolment thresholds, which may no longer represent the meaningful boundary that they did before fiscal drag.

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Key Findings

The key findings of this report are as follows:

- Many individuals will spend a significant portion of their career as low earners, so any periods of higher earning are unlikely to provide sufficient savings for their retirement. For example, a woman who is a low earner at 18 and does not achieve qualifications higher than a GCSE, is projected to spend an average of 22 years as a low earner throughout her working life.
- Women, mothers, young people, people with low educational qualifications, and the self-employed are all more likely to be low earners than the general population. Low educational qualifications are a risk factor for both genders, while self-employment is explored as a risk factor for men, who are more likely to be self-employed.
- Women and those with low educational qualifications are particularly likely to be persistent low earners throughout their working lifetime.
- Saving may present immediate risks to low earners who are at risk of poverty, in debt, or in precarious or unstable employment. Even relatively small contributions under current automatic enrolment policy may exacerbate hardships, and some automatic enrolment reforms may increase these contributions.
- Some low earners may be able to afford higher rates of pension saving, particularly if they live with a high earner such as a parent or a partner.
- Pension saving may have unintended interactions with other benefits. People who are eligible for Universal Credit on grounds of disability but do not claim or are nil-award claimants, will not automatically gain state pension entitlement, and will not be able to prove that they were historically eligible. Some low earners who save small amounts into a pension may also lose Pension Credit entitlement as result.
- In retirement, some low earners face a risk of not achieving a minimum acceptable standard of living. These low earners may not be able to build significant private pension savings, and ensuring that they have an adequate retirement may be a case of ensuring that state benefits are sufficient.
- Other low earners face a risk of undersaving, so that they cannot continue their working life standard of living in retirement. This is a particular risk to people who are low earners at the beginning of working life, who may have a living standard similar to a lifelong high earner towards the end of working life, but may not compensate for a lack of saving when young.
- Divorce and renting in retirement also pose risks to retirement adequacy for persistent low earners.
- Some new policies may benefit persistent low earners, such as non-contingent employer contributions, or sidecar savings.
- No core reform to automatic enrolment is identified that does not create a trade-off or negatively impact some low earners:
    - For low earners who spend a particularly large portion of their working life as low earners, the Lower Earnings Limit reduces their contributions to such a degree that increased minimum contribution rates are unlikely to compensate for it.

- For other low earners, who may be at risk of poverty, any contribution may be too much, and the removal of the Lower Earnings Limit could increase their contribution significantly.

Section 1 – Introduction

Introduction

Low earning represents a fundamental challenge for pensions policy. Low earning refers to earning small amounts through employment, as opposed to low income, which may come from other sources such as benefits. A wide variety of people can work in low paid jobs, at different times of life, for different reasons. This means that their capacity to save into a pension, and what they need in retirement, will naturally differ.

However, the UK pensions system works by automatically enrolling people into a pension scheme, in order to achieve high levels of pension coverage, even when people may not engage with pensions sufficiently to make appropriate savings decisions themselves. While employers are free to offer a pension to all employees, many will only enrol employees when they are required to – that is, when the employees are eligible for automatic enrolment because they meet the criteria. These criteria reflect the limited information about the employee that is known to the employer. They do not, for example, reflect information about the employee's total pension savings, their family circumstances, or even whether they have another job.

For this reason, policymakers face a dilemma. One option is to restrict the extent to which low earners are required to be enrolled, by reducing minimum contributions or not requiring employers to enrol them at all. This is the approach that automatic enrolment policy in the UK currently takes. This aims to ensure that low earners who cannot afford to contribute to a pension do not have their limited income depleted automatically at a time where they may need to maximise their current income.

Another option is to make automatic enrolment treat low earners similarly to high earners. This would entail the expansion of automatic enrolment to capture more low earners, and the increase of minimum contributions to reflect the proportions that higher earners contribute. This helps people who are currently low earners, within a financially stable, long-term career, to achieve retirement adequacy in the same way that automatic enrolment helps higher earners achieve retirement adequacy.

Understanding how pensions policy affects the low earning population is key to resolving this dilemma. This report explores the nature of low earning and who it is most likely to affect, models what pensions policy means for living standards in working life and retirement, and identifies the options available to policymakers.

This is the dilemma which the second Pensions Commission must consider. The second Pensions Commission (the first 2005 Pensions Commission is referred to in this report as the Turner Commission) is tasked with improving adequacy generally, but highlights low earners as a group with particularly significant pensions adequacy risks. The second Pensions Commission's Interim Report highlights persistent low earning as an issue, and highlights that many low earners may be in a position to save[i].

This report explores the risks that exist for this group in working life and retirement and the dilemmas that are faced by those who must decide how pensions policy handles low earners.

Section 2 – How does policy treat low earners?

Automatic Enrolment

Currently, employers in the UK are required to enrol eligible workers into a workplace pension. Employers determine eligibility by assessing the employee against certain criteria, and when they are enrolled, the employer must provide at least a minimum offering to the employee.

The current policy is designed to rely on "inertia", by assuming that many employees will not proactively take decisions about their pensions if decisions are not made automatically for them. As the information that is available to the employer is limited, automatic enrolment policy has to rely on "blanket" rules, which apply relatively simple criteria to diverse groups of people. Low earners are a key group that are diverse, but must be treated with blanket rules that will not always be in their best interests.

Automatic enrolment policy currently aims to limit the amount that low earners contribute, and in some cases, to exclude them from automatic enrolment altogether. This is achieved using two rules, known as the Earnings Trigger and Lower Earnings Limit.

Earnings Trigger

The Earnings Trigger rule specifies that employers are only required to enrol employees if they earn over £10,000 a year with a single employer. This serves to protect the very lowest earners who may be financially vulnerable, and also simplify administration for employers, for whom enrolling part-time, seasonal or zero hours employees, who may only make negligible pension contributions, would be a significant burden.

Workers with multiple jobs may find themselves excluded from the pension scheme at one or more of their workplaces, if any of their jobs pay less than £10,000 annually. This means they may have less automatic enrolment entitlements than another worker who has the same total salary, but earns it all through one job.

Lower Earnings Limit

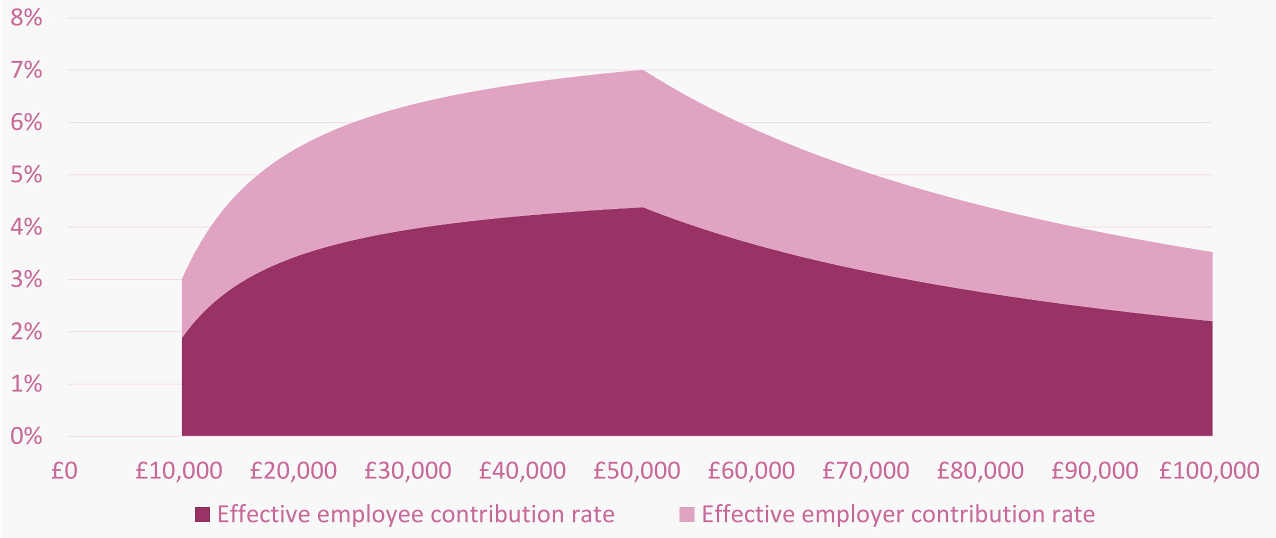
The Lower Earnings Limit is a rule which specifies that salary below a threshold, currently £6,240, is not included when applying a percentage to earnings. For example, if an employee earns £10,240, and they pay the minimum employee contribution rate of 5%, then they contribute 5% of £4,000. The effect of this is to reduce the proportion of total salary that is paid by lower earners.

As well as ensuring that low earners contribute a relatively low amount, this also means that if a worker's salary gradually increases, their contributions do not jump as suddenly once they start to earn above the Earnings Trigger. It may reduce the simplicity and understandability of pensions for workers, as the minimum 5% and 3% employee and employer contribution rates that are typically described may imply 5% and 3% of all contributions, rather than of an eligible band of earnings only.

The effect of these policies is to vary the contribution as a percentage of total salary. While contributions rates are stated as 3% employer contributions and 5% employee contributions, as these percentages only apply to the earnings within a qualifying band, the percentage of total salary that is actually contributed varies by salary, as shown in the graph below. This graph also shows the effect of the Upper Earnings Limit, which similarly disregards salary above a threshold when calculating contributions.

The Lower Earnings Limit, Upper Earnings Limit and Trigger Income mean that effective contribution rates vary by income

Effective contribution rate as a percentage of total salary, when using Automatic Enrolment default contributions rates and thresholds



This is an intentional design feature. The Earnings Trigger and Lower Earnings Limit were introduced at the inception of automatic enrolment, with the stated intention of protecting those who cannot afford to pay. Policymakers identified that many people who earn small amounts may be at risk of poverty, and that it would make sense for them to spend all of their earnings on improving their immediate standard of living. If these people were automatically enrolled into a pension, they may not realise that some of their salary was being diverted towards pension contributions, and fail to opt out.

When automatic enrolment was first introduced in 2008, no Earnings Trigger existed as such. Workers would contribute if they earned above the National Insurance Lower Earnings Limit (not to be confused with the automatic enrolment Lower Earnings Limit). This was a relatively low barrier designed to align with an existing threshold, and simplify enrolment for businesses. This had the effect of bringing relatively large numbers of people into saving, and making relatively large contributions as a proportion of take home pay, even if they were low earners.

However, after the "Making automatic enrolment work" review[ii], an Earnings Trigger was brought in, with the express purpose of excluding people from automatic enrolment if they might not be able to afford pension contributions. It was initially aligned with the Income Tax Personal Allowance, so that workers who were judged not to be able to afford to pay income tax would also be assumed not to be able to pay pension contributions.

Automatic enrolment legislation now requires that the Earnings Trigger and Lower Earnings Limit thresholds are subject to annual review[iii].

In the case of the Earnings Trigger, all annual reviews since 2014/15 have determined that it should remain at £10,000, so that it has decreased in real terms after inflation. This has meant, in practical terms, that the Earnings Trigger used to require earnings close to a full time minimum wage, but now captures a more significant proportion of part-time minimum wage workers.

The Lower Earnings Limit for automatic enrolment has a similar history, where it was originally tied to the value of the Lower Earnings Limit for National Insurance. However, in 2022/23, National Insurance thresholds increased, and so the Lower Earnings Limit for automatic enrolment was kept at its previous value to avoid shrinking the scope of automatic enrolment, and has now been frozen at £6,240 since 2020/21. This is especially consequential, as it means that each year the thresholds are kept frozen, the proportion of salary that any worker pays increases annually, unless they earn above the Upper Earnings Limit. The only exception to this is if an employer, for the sake of simplicity or out of generosity, decides to go beyond the legal requirement to consider earnings above automatic enrolment thresholds, and considers all earnings when calculating contributions.

Again, this means that the government has been gradually expanding the scope of automatic enrolment, in a way that means that employers, savers, and especially low earning savers do not experience a shock. However, it also means that the justification for these thresholds is less explicit. If they were fiscally dragged indefinitely, this would effectively remove them over a long period of time and reflect an intention to bring low earners into saving, fully but gradually.

However, if there is an intention to keep these thresholds at some significant level at some point in the future, then there is currently no indication of what this level might be. The justification could be related to some sort of other threshold, to simplify enrolment for employers, or to represent an ideological belief that if a worker can afford some other tax or benefit, then they can also afford pension contributions. Alternatively, affordability thresholds could be determined by opt-out rates, living standards, or some other measure of affordability that is based on evidence.

Why this work is necessary

A key challenge in determining automatic enrolment criteria, but also in assessing the impact of the policy, is quantifying how long people spend as low earners, and how this policy impacts people as a result. This has been identified as a data gap, and long-term low earners have previously been referred to as persistent low earners.

The longer somebody spends as a low earner, the more of a challenge they represent to policymakers. This is because, if someone spends a very short time as a low earner, then excluding them from automatic enrolment is relatively inconsequential. The amount they would save if they were enrolled would be insignificant, and if they are a higher earner for the majority of their career, then that will be when they build the majority of their savings.

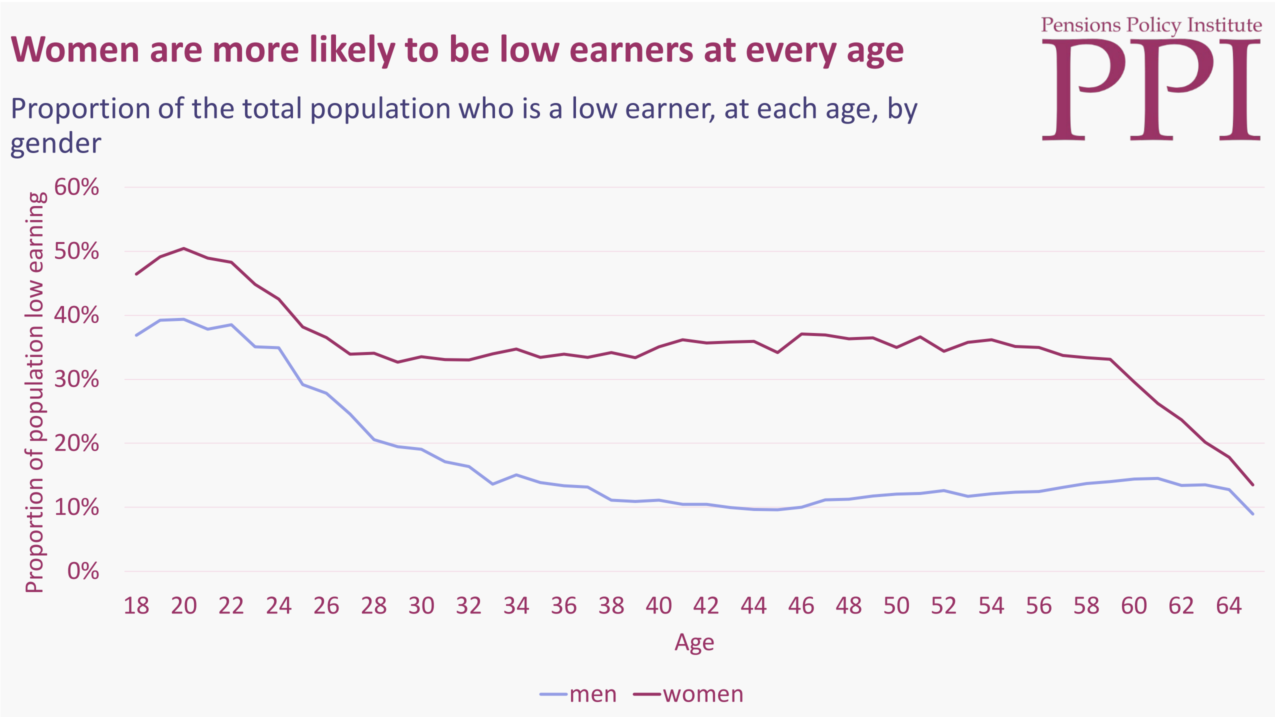
However, if someone is a low earner for a longer period, there may be significant implications for any decision on whether to enrol them into a pension scheme. Some persistent low earners may be low earning as part of a stable, financially secure lifestyle. For these people, saving may be just as important as it is for higher earners, and excluding them from saving may mean they see a reduction in their standard of living when they retire.

Some persistent low earners, on the other hand, may face a genuine risk of financial hardship, and it is important that they stay out of the scope of automatic enrolment.

It is important to distinguish between these two types of persistent low earner, as it reveals where the greatest risks exist. While there is an apparent dilemma, in that no blanket rule can perfectly serve both groups, it is useful to understand the size, and nature, of each group to mitigate the effects of any negative policy impact.

Section 3 – What are the risk factors for persistent low earning?

Low earning is often associated with predictable risk factors or life events. Two key groups are women and young people, as analysis of the proportion of men and women low earning at each age reveals. This analysis reveals that, when using a full-time real living wage as a threshold for low earning, women are more likely to be low earners than men at all ages, and that for both genders, rates of low earning are highest at the youngest ages.



Four groups that are explored in this analysis are women, young people, people with low educational qualifications, and the self-employed.

Women

Women are more likely than men to be low earners at all ages. Throughout most of their career, a key driver for women being low earners is motherhood, with a third of all low earners between the ages of 30 and 49 being mothers[iv]. Women may take on unpaid caring responsibilities, and as a result, may become part-time workers. Especially when considering lower thresholds for low earning, it may only be possible for an individual in steady employment to be a low earner if they are a part-time worker. For example, the Earnings Trigger of £10,000 per year represents approximately 15 hours a week on a minimum wage.

Women, and especially mothers, may also be affected by household dynamics in a way that creates pensions adequacy risks. Their partner may save into a pension on behalf of both of them, which creates financial dependence, and creates a risk of unfair pension sharing in a divorce[v]. Often, in a divorce, women may trade their pension wealth in order to "buy" their partner's half of the family home (referred to as offsetting) to provide stability for any children they may have.

Young people

Young people may be low earners because entry-level pay is lower, or because they balance part-time working with studying. The youngest members of the workforce are also more likely to be low earners because the national minimum wage is lower for people under 21, so they may have to do more hours to clear the same thresholds as older minimum-wage counterparts. The Government is "committed to removing the discriminatory age bands for adults"[vi], but acknowledges that this must be balanced with risks such as youth unemployment.

Beyond this, young people may face difficulties in establishing a career, where their skills are unproven, and there may be an incentive to take a low paid job that does not match their career aspirations.

Young people represent a particular challenge to policy makers, because it is hard to be certain about their future. Their circumstances may evolve unpredictably, in terms of their household structure and earnings profile, and their earnings in their youth may not be good indicators of their earnings in later life or their retirement needs.

People with low educational qualifications

There is a large evidence base that people with low educational qualifications earn less, and experience less pay progression.

Low qualifications may interact with other factors to affect pay. For women, education is not linked to higher wages to the same extent as men, with higher education resulting in a £240,000 increase in gross lifetime earnings for men, and £140,000 for women. The subject that graduates study may also be a significant factor in the earnings boost that graduates receive[vii].

Self-employed

The self-employed are a special case, because currently, they are not automatically enrolled, even if they earn above automatic enrolment thresholds. For many self-employed people, income is irregular, and their income may be unpredictable in the short-term future, so the pressure to maintain immediate financial stability is greater. Self-employed people may be more reluctant to contribute to a pension than those with a regular income, and when they do contribute, they may prefer to make "flexible contributions"[viii] through ad-hoc, irregular payments.

The second Pensions Commission Interim Report highlights that only 4%[ix] of people whose only employment is self-employment currently save into a pension.

There is some evidence that suggests the rates of persistent low earning for these groups differ. The second Pensions Commission Interim Report found that, over a 10 year period, different groups were more likely to escape low earnings at some point during those 10 years. Groups that were highlighted as persistent on this basis were women and young people.

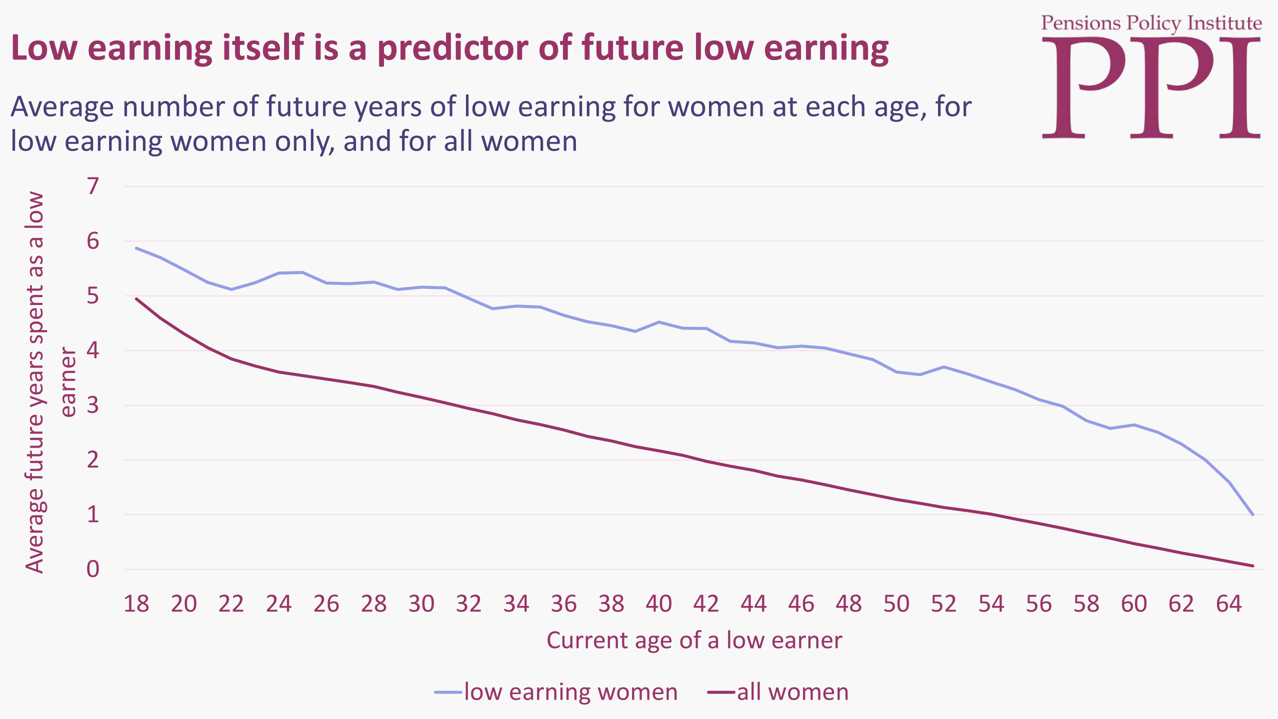
This report expands this evidence base by estimating, at each age, how long a low earner with one of these risk factors can expect to spend as a low earner, on average. This reveals the degree of persistent low earning that exists across a career, as well as where in a career it is likely to take place.

This project analyses the Understanding Society[x] dataset to examine, at all ages, the likelihood of transitioning in and out of low earning at each age. Full details of this modelling approach are available in the appendix. This means that it is possible to estimate the future number of years spent as a low earner. This does not include years spent as a high earner, and also does not include years spent out of the workforce.

If the Earnings Trigger is used as the threshold for low earning, then we see that the whole population is on course to spend roughly four years as a low earner after age 22. We also see that, if someone is already a low earner, then that itself is a strong predictor of future low earning.

We see the difference between low earners and the whole population is greatest at age 53. That is, a 53 year old low earner is projected to spend a further four years below the Earnings Trigger before retiring, while the average 53 year old may only spend one year.

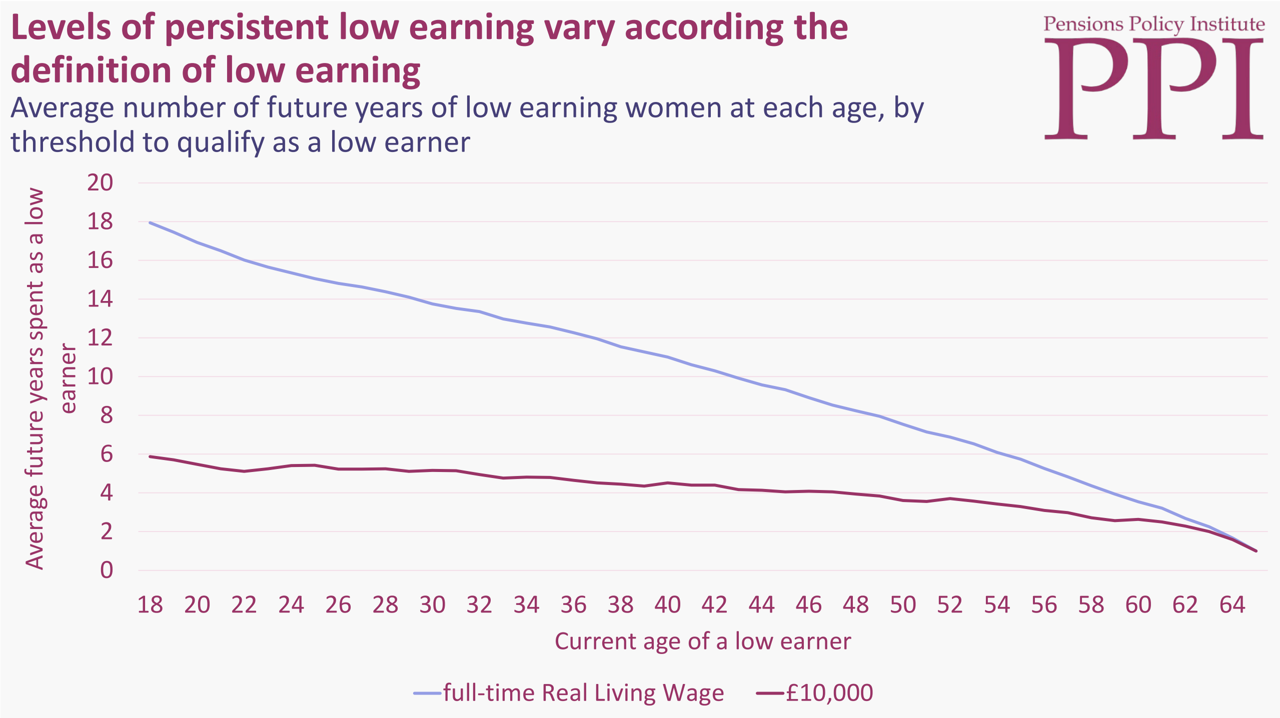
We also see that 25 year old low earners have a greater projected number of low earning years than 22 year old low earners, with an expected 6 years as a low earner between age 25 and retirement. This suggests that low earning below 25 may not be as strong a predictor of future low earning as it is at older ages. That is, if young people are low earners under 25, they are relatively likely to be temporary low earners, but if they are still low earners at 25, this indicates a higher risk of persistent low earning.



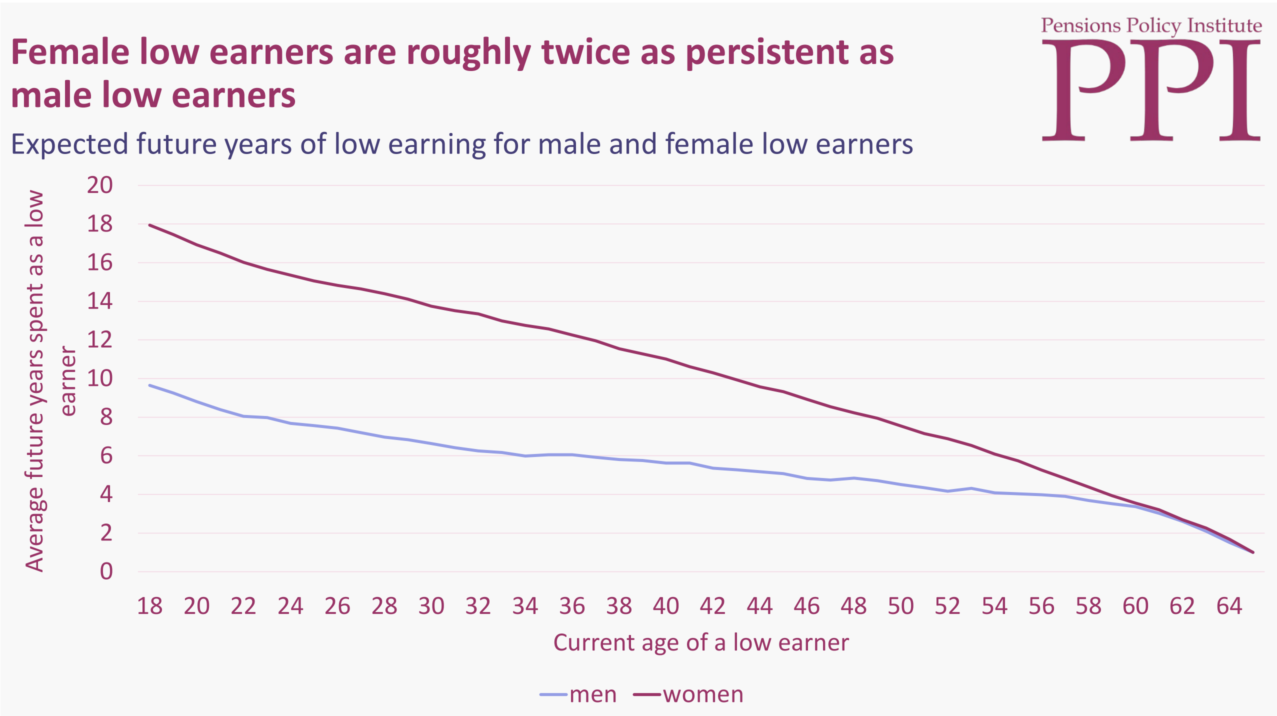
These findings use the Earnings Trigger as the threshold for low earning, and because the Earnings Trigger has been subject to fiscal drag, it is a lot lower in real terms than it was when it was first introduced. Therefore, it may no longer represent a meaningful boundary between low earners and high earners.

For this reason, this analysis also considers the full-time, Real Living Wage[1] as a threshold for low earning. In 2026, this would give an annual salary of £26,227.50[xi]. This threshold captures many part-time earners, as well as those on a full time National Living Wage. Using this threshold, we see that for women, persistent low earning increases significantly. If the Earnings Trigger is used as a threshold for low earning, a woman who is a low earner at 18 may spend an average of 6 years low earning across her career. If a full-time Real Living Wage is used as a threshold, this projection increases to 18 years of low earning across her career. This highlights that, not only are many low earners not excluded by the Earnings Trigger, but that a persistent low earner's career may involve a mix of inclusion and exclusion from automatic enrolment. Further analysis in this report uses a full-time Real Living Wage as the threshold for low earning.

[1] This assumption uses 37.5 hours a week on a UK Real Living Wage. When this analysis was conducted in 2025, the Real Living Wage was £12.60, which would yield an annual salary of 37.5 x 52 x £12.60 = £24,570 a year. This value was used, and adjusted for inflation where necessary, to conduct the analysis. In 2026, 37.5 x 52 x £13.45 yields an annual salary of £26,227.50. See https://www.livingwage.org.uk/node/29657



When considering the key groups that are highlighted as being at risk of persistent low earning, we see first of all that women are roughly twice as persistent in low earnings as men. We see that, if a 22 year old is a low earner, they can expect a further 16 years of low earning before retirement if they are a woman, but only 8 if they are a man.

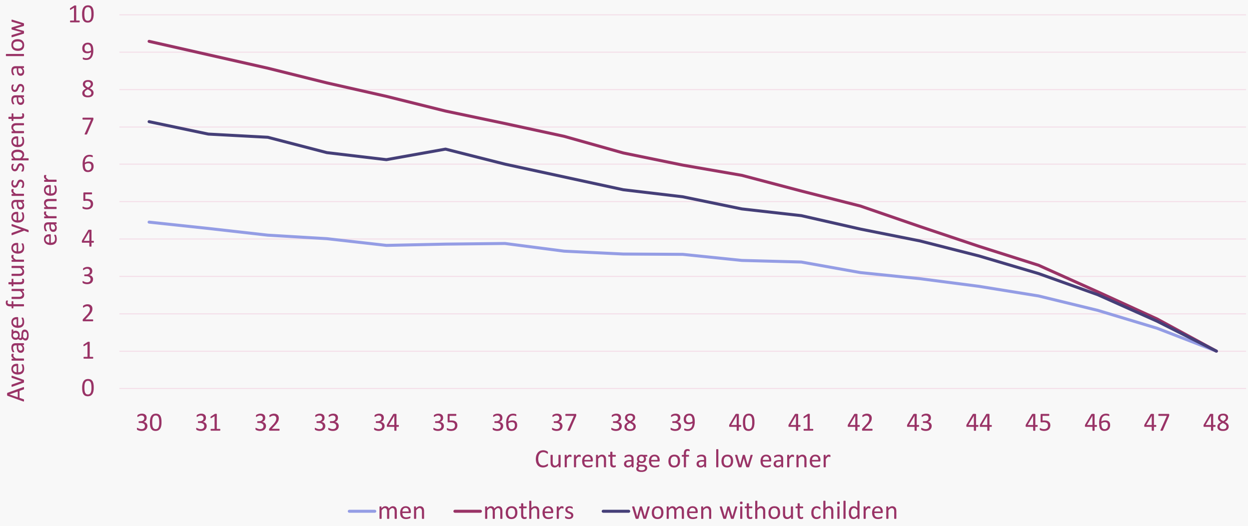


We also see that, while motherhood is one factor that makes female low earners more persistent, it is not the sole factor. Between the ages of 30 and 49, 30 year old low earners will spend an average of 9 years as a low earner if they are a woman with a child, 7 if they are a woman without a child, or 4 if they are a man. This suggests that other factors, beyond motherhood, increase the average persistence of low earning for women.

This may be a consequence of the gender pay gap, if the gender pay gap itself is driven by factors beyond motherhood. This is because, for any choice of threshold for low earnings (such as a full-time Real Living Wage in this case), people may be just above or just below the threshold. If women without children are paid less than their male counterparts, then if all other factors are equal, including working patterns, this should increase the projections of future low earning for women without children. This is because comparable men may spend similar amounts of time in persistent, low paid working patterns, but earn slightly more than any chosen threshold to be considered a low earner.

Motherhood is a predictor of persistent low earning, but other factors may also make women more persistent low earners

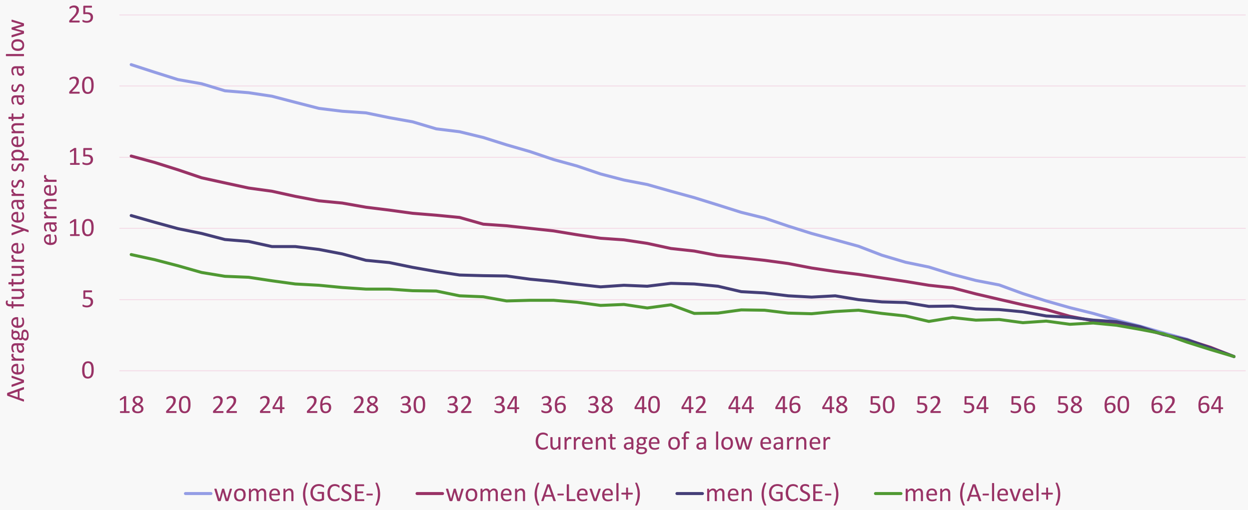
Proportion of the total population who is a low earner, at each age, by gender



In terms of qualifications, low qualifications increase the persistence of low earning. At all ages and for both genders, low earners whose highest qualification is a GCSE or less have higher levels of projected low earning. For an 18 year old low earning woman, who does not get an A-level or higher, she is projected to have an average of 22 years of low earning in her career.

Low qualifications are a predictor of persistent low earning, especially in women

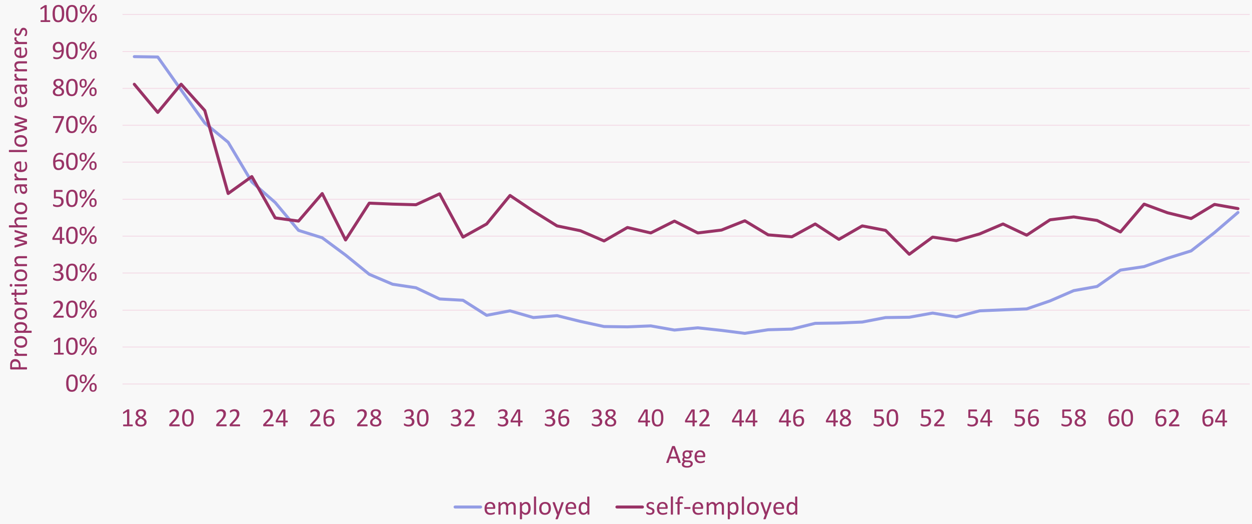
Expected future years of low earning for low earners, for men and women whose highest qualification is a GCSE or equivalent, or at least an A-level or equivalent



In terms of self-employment, which is primarily a risk factor for men, as men are more likely to be self-employed[xii], we see that while rates of low earning are high for employed men at the beginning and end of working life, rates of low earning are higher for self-employed men than employed men at ages in between.

Self-employed men are more likely to be low earners than employed men in the middle of working life

Proportion of self-employed, and employed, men who are low earners at each age



However, while rates of low earning are higher among self-employed men than employed men, self-employed low earning men are no more persistent than low earning employed men. That is, while a self-employed man is more likely than an employed man to become a low earner, once a man is a low earner, his projected future years of low earning are not affected by his employment type.

This may be because, for self-employed men who are low earners, there are still opportunities to escape low earning by switching to higher paid, employed roles. These opportunities to escape low pay may be similar for all low earning men, regardless of whether they are employed or self-employed.

Moving to an employed role is more likely to lead to higher earnings than continuing in self-employment for self-employed low earners: among the low paid self-employed, 57% of those who become an employee escape from low pay, compared to only 24% of those who stay self-employed[xiii].

Self-employed men are no more likely to be persistent low earners than employed men

Expected future years of low earning, for self-employed and employed male low earners, by age

These averages show which groups are more likely to experience persistent low earning, but they do not show how income, household circumstances, and pension incentives combine over a life course. The next section uses four representative profiles to illustrate how different factors may combine to influence saving decisions.

Section 4 – Who are low earners?

The modelling approach allows average projections of future low earning for people with certain risk factors, as in the previous section. However, it also allows for representative profiles to be generated. These profiles do not provide an exhaustive overview of the low earner population, but are helpful to understand common sets of circumstances. Four profiles are derived, which broadly represent four common ways to be a persistent low earner. Analysing people who fit these profiles makes it possible to assess how different factors combine to make saving affordable or unaffordable, and to analyse what persistent low earners may need to save to have an adequate pension in retirement.

These profiles are broadly representative of a small percentage of the entire population. That is, they may be more representative of the low earning population, but this cannot be easily quantified, as a high proportion of the population may be a low earner at some point, even if it is only for a short time. These profiles are chosen to be representative of the most persistent low earners. This means that a large proportion of persistent low earners are represented by them, and allows modelling which demonstrates the effects of policy on the most persistent low earners.

Mothers with a high household income

This group is defined by being a woman and having high earnings early in life, and then becoming a low earner in motherhood, but having an above average household income throughout. This pattern is broadly representative of about 5% of all women. She has a high probability of working in the public sector, for instance in education. She becomes a mother in her thirties, after which she begins part-time working, becoming a low earner. Upon transitioning to low earning there may be an immediate drop in disposable household income, but this quickly recovers as her partner's income increases steadily with age. She is a member of her employer's pension scheme throughout her life and never returns to high earnings.

Mothers with a low household income

This group is defined by being a mother and having low earnings whenever they are in work, and by having a below average household income throughout their life that borders on relative poverty, even after factoring in any benefit income. This life course is broadly representative of 5% of all women. A representative individual from this group has no earnings for the first few years of working age, and has two children in her early twenties. In her late twenties she enters the workforce and works part-time. She may change sectors, but continues to be a low earner, until she leaves the workforce in her fifties as a result of poor health. Her household income is low, as well as her individual income, throughout her life. Her equivalised disposable household income is below the threshold for relative poverty, which is 60% of the median, at the beginning of working life, and although it rises above the threshold later, is still below the median and close to 60%. She joins her employer's pension scheme in her thirties.

Highly qualified women with early low earnings

This group is defined by having high qualifications, and being a low earner in their early working life, before moving into higher paid work later, and is broadly representative of 9% of all women. A representative individual from this group obtains a degree, but does not immediately enter her vocational field. During her twenties, her living arrangements are a mixture of living with parents, and living away from home with housemates or a partner. In her thirties, her pay increases significantly as she moves into a sector related to her degree. She also marries a high earning partner, and together, their equivalised household income is especially high. This is in part because they do not have children, which lowers their household costs compared to other profiles.

Man with early precarious employment

This life course represents a man who is paid hourly during his low earning period, and is broadly representative of 1% of all men. In his late teens and early twenties, he experiences a mix of low paid work and unemployment. In his mid-twenties to early thirties, he works in an hourly paid job, before moving in to higher paid work in a different sector. He moves in with a partner and has a child in his thirties. During his high earning period, his household earnings are above the median, and gradually climb with age. However, he is the primary earner of the household. When he first becomes a high earner, his equivalised household income may not be as high as the other representative individuals identified in this briefing note, and may only be above the median by a relatively small margin.

Understanding the life courses of common low earner profiles is key, because multiple factors combine to determine whether someone can, or cannot, afford to save at different points in their career. Individual circumstances may incentivise or disincentivise saving, and there are key considerations for policy makers around how low earners in these positions might interact with their pensions and state benefits.

What are the incentives for these profiles to save?

- 3 out of 4 of these profiles (all except the low household income mother) have long periods of financial resilience, whether or not they themselves are low earners during these periods. This reduces the incentive to opt out once automatically enrolled.
- All profiles are likely to work in industries with long job tenures, apart from the highly qualified woman, and the man with precarious employment, who begin working life in industries that may have shorter job tenures such as retail.
- The two mother profiles are especially likely to have some access to generous DB pensions, which may increase their incentive to save, as a larger employer contribution represents better value.
- The mother with a high household income may already have significant savings built, as she may have a well-paid career before having children. Having some savings already may reduce the incentive to save.
- The mother with a high household income may alter her saving behaviour based on her dynamic with her high earning partner. On the one hand, if pensions are considered at a household level,

it may make more sense to build pension assets through the higher earning partner's pension contributions, to achieve higher rates of tax relief. On the other hand, this creates a level of financial dependence for these low earners on their partners.

- The mother with the high household income is a significant contributor to the household that she is likely to retire in. Her circumstances are unique among the profiles, as she is best placed as a low earner to identify that her contributions to the household's working life standard of living exceed her contribution to household pension assets. She may contribute no more than £500 a year to a pension during low earning periods, while contributing a significantly higher proportion of the total household budget.
- The mother with a low household income is likely to meet the criteria for relative poverty, with her household income being below 60% of the median household income, for large parts of her working life. This means that saving may be unaffordable, and automatic enrolment into a pension may exacerbate poverty risks.
- The mother with a low household income may experience debt, and the impact of automatic enrolment on her take home pay may be enough to exacerbate debt problems and incur increased debts beyond the value of her pension contribution. Individuals that match this profile are likely to earn just above, or just below, the Earnings Trigger. For example, 34 year olds matching this profile earn an average of £10,400 a year. In this case, their pension contribution would be £166.40, or £13.87 a month, in a scheme which operated according to minimum legal requirements. The debt charity StepChange found that, in November 2023, the average monthly budget surplus of new clients completing a debt advice session was £2[xiv], although this has increased to £89 in 2025. Nonetheless, in 2025, 28%[xv] of their clients had a negative budget, where any pension contribution is likely to be better spent avoiding interest, fees or court costs relating to existing debts. StepChange has also previously identified persistent low income as a driver of hardship and debt[xvi]. The kinds of debt that might be a higher priority than pension saving exist for a significant proportion of the low earning population, with 16% of individuals in the lowest income decile being in arrears, and 25% of individuals living in a household that spends a quarter of its income servicing debts or being in arrears[xvii].

How do these profiles interact with automatic enrolment and state benefits?

- Data suggests that people who match these profiles do not commonly opt out once automatically enrolled. The rates of opt-out, or failure for employers to comply with automatic enrolment regulation, may increase for the highly qualified woman, and the man with precarious employment, who may not be enrolled when they are eligible for enrolment.
- Profiles similar to the mother with a low household income are likely to be unable to work, particularly near retirement age, for reasons of poor health or disability. In this case, it is especially important that they still gain qualifying years for years they are unable to work. They may gain qualifying years if they claim Universal Credit. However, if they do not claim it, or are a nil award claimant, they will not automatically receive a qualifying year. If an individual in this position does not qualify for Universal Credit payments, they may gain State Pension entitlement by applying for New Style ESA credits. There is no mechanism to prove historical disability and "backfill" qualifying years in the same way that people may backfill their record with extra National Insurance contributions.

- A similar issue previously existed for those who did not historically claim Child Benefit that they were entitled to, but a mechanism to prove historic entitlement to Child Benefit has since been introduced[xviii].
- If somebody is receiving Universal Credit and in paid work, contributions towards a pension will not be counted as income, and so making pension contributions while on Universal Credit may be advantageous, as 55% of the contribution is effectively covered by an increase in their Universal Credit award, and they will also gain access to employer contributions.
- The high earning household mother may have a brief period, particularly around the age of having a first child, where the household income may briefly dip below the national average. In this case, there may be an incentive to temporarily opt out of pension contributions.

PENSIONS POLICY INSTITUTE

Section 5 – What do low earners need in retirement?

When the Turner Commission initially set out to improve pension coverage in the UK, they needed to identify the standard of living that people might require in retirement, so that they could set automatic enrolment parameters (such as contribution rates) to target an appropriate level of saving. To do this, they used a replacement rate methodology.

Replacement rate methodology

Replacement rates express retirement income as a percentage of working life income. This illustrates the extent to which "consumption smoothing" is achieved – that is, how well balanced an individual's working life and retirement standard of living may be. Ideally, individuals should achieve a replacement rate lower than 100%, as living costs typically reduce in retirement. Target replacement rates also reduce with wealth, as individuals with less income may require a higher proportion of their income for essential costs. If an individual achieves a replacement rate that is too high, then they may have oversaved in working life. If an individual achieves a replacement rate that is too low, then they may not be able to continue the standard of living they are used to, or in the worst cases, may be in danger of poverty.

When using replacement rate analysis in this report, the same methodology as the Turner Commission is used. This assigns different replacement rates to different income brackets.

"Basket of goods" methodology

Basket of goods methodologies aim to provide retirement benchmarks, based on the cost of everyday items and on the stated retirement goals of survey respondents. These are useful to assess whether a retirement income is broadly aligned with typical living standards. In order to assess a retirement income against these living standards, no information is needed beyond retirement income. This is because the income standards do not relate to how the retiree might have lived during working life, but only to the standard of living they now have in retirement.

When using basket of goods standards in this report, Pensions UK's Retirement Living Standards are used. There are three standards: Minimum, Moderate, and Comfortable. Each of these standards also exists in single/couple and London/non-London variants. Non-London variants are used for the purpose of this report.

Just as it is difficult to assess a low earner's circumstances using the information that is available to an employer, it is also difficult to assess an individual's retirement needs without a large amount of context. The two methodologies described above are useful and complement each other well, as replacement rates are defined relative to working life standards of living, while basket of goods standards are absolute standards defined in terms of retirement standards of living. However, either approach has the potential to mask risks to retirement adequacy if applied out of context. Relying on a single approach to modelling adequacy may fail to illustrate the full extent of the diversity of low earners, or the policy dilemmas involved in reforming automatic enrolment to better serve them.

This is illustrated by analysing the individual retirement incomes of the four previously defined profiles. We see that all profiles achieve a similar projected retirement income, except for the low household income mother. All four profiles rely on a full state pension to be the majority of their retirement income.

When using a basket of goods approach, this suggests that the greatest risks are to low earners who match the profile of the mother with a low household income. While this profile meets the target for a minimum standard of living in retirement, she is the closest to missing it, and only does so on the assumption of a triple locked pension in the future. It is worth noting that currently the state pension by itself is not enough to hit the minimum standard for an individual, and if the current value were used, this profile would be the only one out of the four modelled to not hit the minimum standard.

If an individual like this were not to receive a full State Pension, which is highlighted as a risk in the previous section, then they would be likely to be eligible for Pension Credit. While this would help to avoid retirement poverty to some degree, Pension Credit does not currently top up an individual's income to the level of a full State Pension.

When using a replacement rate approach, the risk to different profiles is inverted. While counterintuitive, the low household income mother achieves the highest replacement rate of all four profiles. This is because her working life income is so low, and the state pension relatively generous compared to working life benefits, that a full state pension by itself is a higher income than she had in working life. This highlights an area where sensitivity to the implications of replacement rates is needed: on the one hand, it is true that for a low income individual, they may not need much to continue their working life standard of living in retirement; on the other hand, if their working life standard of living is unacceptably low, then achieving a target replacement rate may not be suitable as the sole metric of retirement adequacy.

	High household income mother	Low household income mother	Highly qualified woman	Precariously employed man
DC pot (or equivalent DC value of any DB)	£81,500	£10,400	£88,700	£110,600
Annual retirement income at SPa	£17,400	£15,500	£17,100	£17,600

	High household income mother	Low household income mother	Highly qualified woman	Precariously employed man
Income in retirement	£17,400	£15,500	£17,100	£17,600
% of Minimum RLS (individual)	130%	115%	128%	131%
% of Moderate RLS (individual)	55%	49%	54%	55%

	High household income mother	Low household income mother	Highly qualified woman	Precariously employed man
Income in retirement	£17,400	£15,500	£17,100	£17,600
% of Minimum RLS (couple)	81%	72%	79%	81%
% of Moderate RLS (couple)	40%	35%	39%	40%

The replacement rate analysis also highlights risks to other profiles that may not be apparent otherwise. While the other profiles achieve broadly similar retirement incomes, they have different retirement needs. This is most true for the profile of the man with precarious employment at the beginning of his working life. He achieves just over half of the target that is needed for his household to be able to continue their working life standard of living. This is especially significant as he may be the primary earner of his household, and cannot necessarily rely on his partner to make up the remaining half.

This risk exists to the profile of the precariously employed man, and to a lesser extent to the highly qualified woman, for three reasons: firstly, these profiles have a relatively high income in later working life. In other words, regardless of their standard of living when they were low earners, if they have a high standard of living before they retire, then they will have a high standard of living to maintain in retirement. Secondly, as these profiles do have low earning periods, their contribution history is that of a mixed earner, even if their retirement living standards are those of a high earner. Lastly, as they were low earners early on in working life, the largest benefits of compounding investment returns are not fully realised.

	High household income mother	Low household income mother	Highly qualified woman	Precariously employed man
Individual's Income in retirement	£17,400	£15,500	£17,100	£17,600
TRR Target	£22,800	£12,900	£25,400	£32,400
% of income target provided by low earner	77%	120%	67%	54%

In both methodologies, the high household income mother has a relatively low risk to her retirement adequacy. By achieving more private pension than the low household income mother, she achieves a relatively high standard of adequacy compared to basket of goods metrics. By being a low earner later in her career, she and her household adapt to having her income be relatively low later in working life, so that she needs to bring in a relatively low pension income to maintain her contribution to the household finances in retirement.

However, there are two more risks that apply to all four of these households. These are the risks of divorce, and the risks of renting in retirement.

In terms of divorce, all four modelled profiles are likely to retire with a partner. Retiring with a partner significantly improves retirement adequacy. This is because shared living reduces living expenses generally, which is especially relevant given that the state pension works on an individual basis: a retired couple have less than double the retirement living costs of a comparable single retiree, but the retired couple may nonetheless receive double the state pension income, assuming they have the full amount of qualifying years.

While retiring with a partner is a factor that will reduce the retirement needs of many low earners, it should not be assumed that all low earners will retire as part of a couple. Many low earners who fit the four profiles modelled in this report may get divorced before retirement. This has the potential to change retirement planning, reduce pension wealth, and create housing instability. When looking at replacement rate targets, it becomes clear that low earners may bring in a sizeable amount of the household target, but not all of it. This means that they are simultaneously well prepared for retirement with a partner, but vulnerable in the case of divorce. This is especially concerning given that, generally, these low earners may hold relatively little of the household pension wealth, and that divorces may often involve a trade of pension and housing wealth. Some partners are unaware of their partner's pension wealth[xix], and courts may be encouraged to approve divorces that negatively impact the pension adequacy of one or both partners, in order to facilitate a "clean break" divorce. Relationship dissolution that does not involve divorce may pose similar but different risks, especially as partners may not be able to make the same legal claims to a share of their partner's pension wealth.

Home ownership is another feature of the retirement of many low earners that significantly reduces the amount of pension income needed to have an adequate retirement. Again, some people who match the four profiles may own their own home, but this does not mean it is a safe assumption for all low earners. The PPI estimates that in 2041, the proportion of retirees who are privately renting could increase from 6% to 17%[xx]. Even profiles who matched the low household income mother may have been more likely to own their own home in the past, as home ownership rates among lower earners were higher, owing to different economic factors and policies such as Right-to-Buy[xxi]. Retirement income standards generally assume no rent or mortgage costs, such as the targets used in this report. However, if these costs are added on top of retirement incomes, even the average rent in cheaper renting areas of the UK may be the same size or larger than a low earner's retirement income. These renting costs may be mitigated by benefits such as Housing Benefit, but nonetheless, renting in retirement poses a serious retirement adequacy risk to low earners.

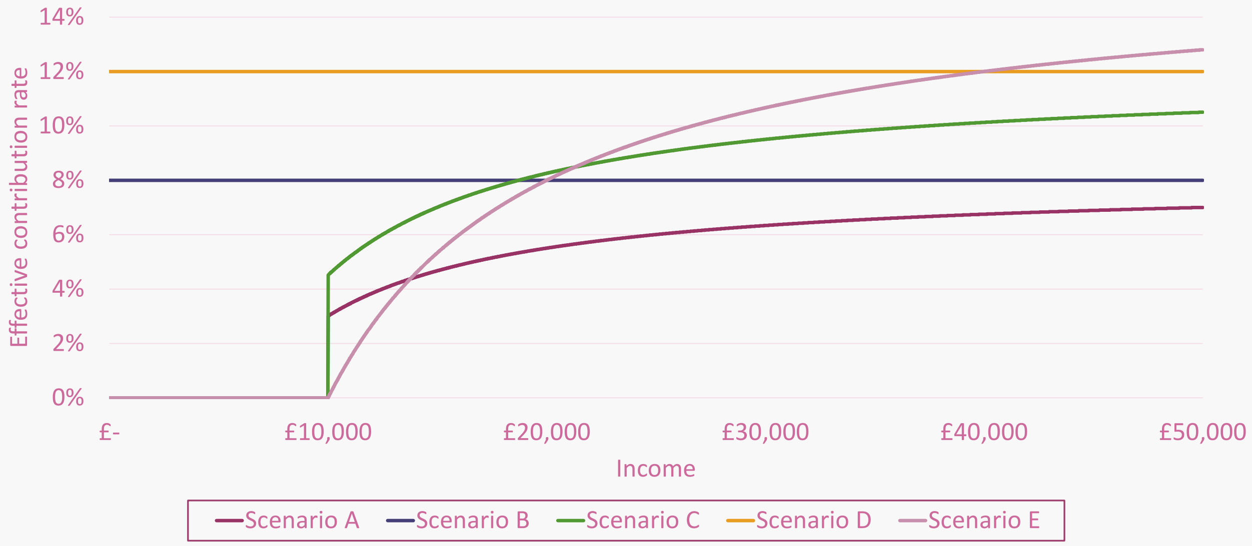
Section 6 – Policy dilemma

In order to boost retirement adequacy for different low earners, and reduce adequacy risks, the second Pensions Commission must now evaluate the different policy levers available to them. While many policy options exist, key policy levers to examine are the Earnings Trigger, Lower Earnings Limit, and minimum contribution rates.

Several scenarios are modelled, and are chosen to be broadly representative of policy positions that are commonly argued for, or to illustrate the impact of decisions around the Earnings Trigger and Lower Earnings Limit. Where increased contributions are modelled, an equal split between employee and employer contributions are assumed, for example, 12% contributions are assumed to involve a 6% employee and 6% employer contribution. The scenarios are as follows:

- **Scenario A**: Minimum contributions under current policy
- **Scenario B:** Minimum contributions under current policy, without the Lower Earnings Limit or Earnings Trigger
- **Scenario C:** 12% contributions, with the Lower Earnings Limit and Earnings Trigger
- **Scenario D:** 12% contributions, without the Lower Earnings Limit and Earnings Trigger
- **Scenario E:** 16% contributions, with an increased Lower Earnings Limit of £10,000

Effective contribution rates can be varied by changing the Lower Earnings Limit, Earnings Trigger, and contribution rates
Effective total contribution rate at different income levels for an automatically enrolled employee in different policy scenarios



Pension pot	High household income mother	Low household income mother	Highly qualified woman	Man with precarious employment
Scenario A: 8%, LEL, TI	£85,700	£11,600	£93,200	£116,100
Scenario B: 8%, no LEL, no TI	£118,000	£29,500	£117,600	£139,400
Scenario C: 12%, LEL, TI	£128,600	£17,300	£139,800	£174,100
Scenario D: 12%, no LEL, no TI	£177,000	£44,300	£176,400	£209,200
Scenario E: 16%, LEL increased to £10k	£133,400	£5,500	£158,200	£203,900

Percentage of TRR based adequacy target	High household income mother	Low household income mother	Highly qualified woman	Man with precarious employment
Scenario A: 8%, LEL, TI	77%	120%	67%	54%
Scenario B: 8%, no LEL, no TI	80%	122%	69%	56%
Scenario C: 12%, LEL, TI	81%	121%	71%	58%
Scenario D: 12%, no LEL, no TI	87%	124%	74%	60%
Scenario E: 16%, LEL increased to £10k	82%	119%	72%	59%

These projections in different policy scenarios reveal the dilemma that policy makers face. For a profile such as the Low Household Income Mother, it is clear that any saving may be oversaving, as the risk of poverty in working life may be greater than the risk of poverty in retirement. For this profile, any money that is held in a pension pot may represent money that was diverted from her when she needed it most. To refer to the earlier example, where an individual earns £10,400, they would now pay £41.60 under scenario D, as opposed to the £13.87 under current policy. In this case, policy makers may prefer to ensure she has an adequate standard of living in retirement by ensuring that state support is adequate, rather than trying to encourage private pension saving.

It may even be the case that small amounts of private savings do more harm than good for this individual. With the removal of Savings Credit, and the fact that the threshold for Pension Credit is slightly below a full State Pension income, it is even possible that this profile may lose out on Pension

Credit, and "passported" benefits such as Housing Benefit and Council Tax Support, by building enough private savings to disqualify herself from Pension Credit. Without Pension Credit, she may still be eligible for some amount of Housing Benefit or Council Tax Support, but she will no longer be automatically eligible for the full amount. Instead, they will be means tested, in which case having some private pension savings may reduce her entitlement.

However, for a profile such as the High Household Income Mother, it becomes clear that these policies, and especially the removal of the Lower Earnings Limit, have significant effects on her pension wealth. This is because, as an especially persistent low earner, she spends a significant amount of her working life earning an amount close enough to the Lower Earnings Limit that it would take a very high contribution rate to overcome the effects of the Lower Earnings Limit.

This means that, broadly, the dilemma is whether or not to suppress low earner pension contributions, and either put some low earners in danger of low living standards in working life, or put other low earners in danger of low living standards in retirement.

The modelling also reveals that, for the profiles which have high retirement targets, minimum contributions by themselves may not fully account for especially high retirement income targets, or mixed contribution histories. For individuals like this, some amount of voluntary increased contributions beyond automatic enrolment minimums may be required.

Policies that may mitigate the dilemma

While this appears to be a dilemma, there are other potential policy options that could mitigate the effects of any harmful choice.

One potential option is for automatic enrolment to include employer contributions that are non-contingent on employee contributions. This would see an employee enrolled in a pension scheme, receiving employer contributions, without having to reduce their own take home pay. This would increase overall pension wealth for low earners, and would be especially advantageous for young low earners, for whom these contributions would have more time to compound before retirement.

However, non-contingent employer contributions would increase the cost of pension provision for the employer, and may have unintended consequences if this obligation makes the employer less generous with other pension packages, salaries, or other benefits. However, if employers were to increase prices or reduce benefits, this may equally be viewed as a desirable redistribution.

Another potential policy that may serve to protect vulnerable low earners is sidecar savings. This is a mechanism by which pension contributions would be paid in to a separate, accessible savings account first, and only when this account reached a certain size, would they be paid into a conventional, harder-to-access pension pot. This would create an emergency fund that would be more accessible and allow people to make pension contributions more confidently in financially unpredictable times.

Sidecar savings have been trialled, but it is still unclear how they might work in practice – for example, who they would be available to, and the limit when savings became a pension pot[xxii]. These considerations are key to knowing how much added complexity they would bring to employers and pension providers, and how much protection they would bring to low earners.

Other Policy Interventions

Other policy interventions exist, which are not primarily aimed at low earners, but may still be helpful.

Many low earners, especially those who are young or in certain industries, may have a large number of small pots. These may mean that more pension wealth is lost to charges, financial planning is harder, and pots are more likely to get lost. Interventions aimed at small or lost pots, such as default consolidators or dashboards, may be of particular benefit to these low earners.

Many low earners, especially those such as the high household income mother, may be financially dependent on a higher earning partner. In these cases, these low earners may benefit from reforms to divorce law that ensure that there are more checks to ensure pensions adequacy is accounted for, and less pressure to prioritise a "clean break" when this is facilitated by sacrificing pension adequacy.

Core assumptions behind automatic enrolment

While these policy interventions may help low earners, they may not fully resolve the core dilemma. Ultimately, the basis around the introduction of automatic enrolment was that workers may not engage to take the most appropriate decisions by themselves, but as the Turner Commission suspected at the outset, there is not a single appropriate decision for all low earners.

To resolve this core dilemma itself, it may be necessary to question assumptions that have been inherent in automatic enrolment since the beginning. When automatic enrolment was first introduced in 2008, and when features such as the Earnings Trigger were introduced shortly after, they were based on a few key assumptions:

- Some low earners need protecting.
- These low earners may not voluntarily opt out, even when it may be in their best interests.
- Many savers at all earnings levels may require automatic enrolment, as they may not engage with their pensions to voluntarily opt in to saving.
- Higher earners who are enrolled automatically will evaluate their own circumstances, and contribute more voluntarily if minimum contributions are insufficient for their needs.

In the years that followed, evidence has developed showing that some of the assumptions behind automatic enrolment were correct. Automatic enrolment has been a success in terms of significantly increasing pensions coverage. However, the assumption that higher earners would voluntarily contribute more has proven to be flawed, with many interpreting the legally required minimum contribution as an appropriate level for their individual needs.

In terms of the assumptions around low earners, the evidence is less clear. Opt-out rates have not increased beyond 11% during cost of living crises[xxiii]. Low earners who earn less than a Real Living Wage may opt out more than other workers, at a rate of 17%[xxiv], but a significant majority still do not opt out. These data could support different assumptions: this could be evidence that people value saving, even when it is hard to afford, and will opt out if necessary; or, it could be evidence that people will not opt out in large enough numbers, even when it is actually in their best interest.

Any removal of the Lower Earnings Limit or Earnings Trigger would imply new assumptions: that there are not many low earners who need exclusion from automatic enrolment, or that low earners who do need to be excluded are capable of opting out by themselves. If these policies changes were pursued, it would be important to acknowledge these new assumptions, because other policies may need to follow on from them. Low earners may need to be given increased flexibility to opt out or down, alternative protections, or more information about their options.

If, on the other hand, it is assumed that there is still enough risk to not be able to fully lift these suppressions, then this too should be acknowledged. As automatic enrolment thresholds have been subject to fiscal drag in recent years, they may no longer represent a meaningful boundary. If low earners do in fact need protecting, this could imply that automatic enrolment thresholds need revision. It would also be likely that under this assumption, new mechanisms to increase contribution rates with pay rises, age, or salary bands may also be considered, and these too would need to be designed with low earners in mind. As this report demonstrates, most low earners are not low earners for life, so considering how automatic enrolment affects low earners may become a question of considering how it affects them during their high earning years.

Section 7 – Conclusions

The evidence in this report highlights that low earners are a highly diverse group, and that policy makers must create rules for how an employer must enrol them into a pension scheme based on little information. These rules may have a significant impact on individuals, particularly persistent low earners, who may spend the majority of their career being affected by these rules.

Low earners, and especially persistent low earners, are not only diverse in terms of demographics such as age and household income, but also in terms of their ability to afford pension contributions and their needs in retirement.

This means that improving low earner adequacy involves difficult trade-offs between retirement living standards for some low earners, and working life living standards for others. No single policy strategy exists which does not create risks to some section of the low earning population.

In order to best serve low earners, it is necessary to consider a wide range of policy options, but also to examine the assumptions behind automatic enrolment policy. Currently, assumptions around low earners appear to be shifting: they are excluded from automatic enrolment to a degree, but as thresholds reduce with inflation, more people are gradually brought into scope. While this may be a sensible way to gradually test whether low earners can contribute, it also creates a need for clarity. Whether or not low earners are assumed to be safe to bring into scope of automatic enrolment, this assumption should be explicit, so that any other relevant policy can follow on from this assumption.

Technical Appendix

Modelling approach

Most information about profiles, such as working life earnings, is obtained from Understanding Society. The algorithm used in this modelling approach is based on grouping responses from multiple waves of Understanding Society by age, creating distinct states at each age, and then observing how multiwave respondents transition through these states as they age, so that probabilities of transitioning through an entire working life can be derived. It is important to note that no respondent has been in the survey for the entirety of their working life.

This "roadmap" of working life should not be seen as representing the complete life histories of respondents, but rather the lives that people would be expected to live if policy, and all other variables, remained the same as they are today. The first step of the algorithm is, for each age, to analyse all the responses from respondents who were low earners at some point (and possibly filtered by some other variable, for example, having A-levels).

This means that states where they were high earners, or not earning, are still analysed, so their transitions in and out of low earning are still captured. The algorithm identifies which variables are the best predictors of future low earning, so that states are created with as much variance in expected future years as possible. To do this, the algorithm starts with the oldest age, where expected future years of low earning are either 1 or 0, and then iterates backwards.

At each age, the optimal variables to use are identified by first clustering the responses in that age group. This is done by calculating a Gower distance matrix between each response, to account for the mix of continuous, ordinal and Boolean variables in the survey. The clusters within the age group are then identified using agglomerative clustering. Once the clusters have been identified, a decision tree is used to identify the clusters as closely as possible. A score is assigned to each solution, which takes into account the tightness of the clustering, the accuracy of the decision tree, and the deviation in expected years among states, weighted by the membership of each state.

This simultaneously ensures that states are roughly equal in size and that the variables identify different low earner outlooks as well as possible. Once the variables that determine states have been identified, the algorithm then fills in the states with all respondents, regardless of whether they were ever low earners, so that transition probabilities and state sizes represent the whole population. This creates a transition graph which allows, for any node, to look at the expected number of future years of low earning, which is a product of transition probabilities by the future years of low earning in each subsequent state, +1 if a given subsequent state is a low earning state itself. To obtain the expected number of future years low earning for a whole age group, or all low earners at that age, a weighted average can be taken of either all states or all low earner states at that age. Consideration must be given to sample size and weighting strategy. All UKHLS waves are used, but no BHPS waves. This is convenient as it means that the oldest survey responses used coincide with the introduction of automatic enrolment. It also ensures an adequate sample size, with each state within an age containing a sample size in the order of hundreds. It also somewhat mitigates the cohort effects that may be introduced by using older responses from the earliest waves of the BHPS. Respondents are weighted by the longitudinal weights provided by Understanding Society. This introduces a bias towards respondents from earlier waves, who are more likely to have responded in all waves up to that point. However, this is still preferable to calculating a custom weight, which may not mitigate sampling bias as accurately.

Information about contribution rates among populations that fit low earner profiles is not available in Understanding Society. Data on contribution rates by sector was obtained from the Annual Survey of Hours and Earnings, using a secure access dataset to obtain precise information based on age and sector. This work was undertaken in the Office for National Statistics Secure Research Service using data from ONS and other owners and does not imply the endorsement of the ONS or other data owners. Minimum contributions are ultimately assumed for the purposes of projections, to reflect findings from the pensions commission that large proportions of low and medium earners are contributing the minimum amount, and to ensure that low earner savings are not overestimated based on average contributions for similar workers who may be higher earners. However, these figures also reveal that the two "mother" profiles are likely to be members of DB schemes, which may significantly increase pension income for some people who fit these profiles.

Historic data, such as tax thresholds and automatic enrolment parameters, are updated to the most recent historical values at the time of modelling, and uprated according to economic determinants from the OBR. Figures are given in 2026 earnings terms, which means they are not directly comparable to those in the third report in this series.

In general, the profiles in this modelling, and the assumptions around pensions policy, assume that all modelled individuals are 18 in 2025, and that policy stays "frozen" as it currently is throughout their lives. These profiles are not intended to model individuals born at a particular time in the past, but rather individuals as they would be if they spent their whole life under current policy, demographic, and economic conditions. This includes the Triple Lock remaining indefinitely, and uprating of thresholds at current levels (as opposed to continuing fiscal drag), where thresholds are modelled as being kept.

Target Replacement Rates use the following bands:

Gross Pre-retirement (50-SPa) Earnings	Pension Commission (2004)	2023 Earnings Terms	BHC Target RR	AHC earnings	AHC Target RR
Band 1	Less than £9,500	<£15,900	0.8	<£13,500	0.84
Band 2	£9,500-£17,500	£15,900-£29,000	0.7	£13,501-£26,000	0.75
Band 3	£17,500-£25,000	£29,001-£42,000	0.67	£26,001-£38,000	0.71
Band 4	£25,000-£40,000	£42,001-£67,000	0.6	£38,001-£62,000	0.63
Band 5	Over £40,000	>£67,000	0.5	>£62,000	0.53

This table is taken from DWP official statistics[xxv].

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